National TRS-80 Users Group

Newsletter

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INFORMATION ON THE GROUP

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

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

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

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

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

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers (not just TRS-80s or Video Genies).

The Group maintains two software libraries (Model I and Model II) which are free to members. Library lists are obtainable from the Secretary (price £1). The medical and educational sub-groups maintain their own libraries.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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MEMBERS' LETTERS

From Adrian Morant

I want to take this opportunity to say thank you for your efforts in organising the recent meeting at Southall.

Even though, due to my commitments, I was unable to be there from the beginning and consequently was too late to attend the session on monitors I learnt quite a lot from discussions with others. The afternoon session in which Leo Knaggs talked on DOS for beginners (Learners? -- does this make it LDOS???) taught me things that I probably would never get from books and, I feel, will make it easier for me to convert to discs in due course.

Consequently, I look forward to attending future National meetings in addition to the local ones at Northwick Park.

Everyone that I speak to underlines the necessity of keeping copies of the Newsletter as even if you don't understand the content at the time you will in due course. A problem that I have experienced is how to retain and file them. For that reason, I have taken the liberty of enclosing two possible layouts which could (if there were no snags in their adoption) make filing easy. I favour style "A" as one could use an ordinary binder and have four pages visible at one time without having to crick one's neck. I only raise this point because I have benefitted from turning to back issues.

Adrian Morant

From Trevor Jordan

Many thanks for the quality of the Newsletter. Like all beginners it is often above my head, but as someone said recently the back issues will make sense as we progress - after all I don't expect to understand disc operations until I get one, in just the same way as I didn't really understand anything about BASIC from all the magazines I bought while trying to decide what micro to buy : but now I have my hands on the keyboard it is beginning to make sense. There is no substitute for experience, and the Newsletter is full of that. And to any other rank beginners out there I would say don't be afraid to ask even if the question sounds silly - even the experts were beginners once !

Trevor Jordan

EDITORIAL

Here we are at the start of Volume 4 of your newsletter. We have now been going for about three and a half years. Looking back at the first issue - four pages written entirely by me - I see that a set of RAM chips cost £108 (plus VAT and postage). The current price is under £8! Hardware has certainly got cheaper since we started.

By the time you receive this issue we shall have had a three day workshop at Luton. This will include one whole day for business users.

The threatened article on Prestel has finally made it in this issue, but not from me! Bob Denton (he's not a TRS-80 user, I think he's got an Apple) has done a much better job of it than I could. Thank you, Bob.

Brian tells me that the subscription renewals are coming in quite satisfactorily.

It is nice to see members who have received some assistance from the Group, writing up their experiences for publication.

I would like to receive a lot more short articles, hints and tips, that sort of thing, for the Newsletter. Whilst long articles are very welcome - they make my job much easier - it would be nice to have short contributions from a much wider range of members. They are very good for filling up odd parts of a page, which would save me a lot of work with scissors and paste.

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.

2. Ensure your ribbon is in reasonable condition if using a printer.

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

4. If you send in handwritten material, write legibly.

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

Leon Heller

Lib. commands:

BUILD) Set up and execute a list of DOS commands (sim. to
& DO) CHAIN in other DOS')
BREAK Enable/disable break key.
CAT Short form directory (sim. to DIR in most DOS's-can
also handle Model III TRSDOS disks on a d/d system)£
DIR Extended directory (as in Mod.III TRSDOS, or DIR (A)
on Mod I. Output from CAT & DIR can be sent to printer
CLEAR Empty a file, or clear RAM.£
CONFIG Set up system params e.g. drive step rate, 5"/8" drives
double sided drives, speed up mod etc£.
COPY Devices can be copied as well as files. (e.g. keyboard
can be copied to a disk file)£.
CREATE Opens a file of specified no. of records and LRL on disk
FREE Disk free info. Gives map of free and used granules.
FORCE) Device routeing commands, e.g. screen output can be sent
to
JOIN) printer, or disk file.
FORMS Sets printer page width, length, etc. (even for BASIC
programme listings), also supports serial printers.
RS232 Set RS232 parameters (baud rate etc.)
(all lib commands can be used from BASIC via "CMD" function)

Utilities:-

COPY1 Single drive file copy.
CONVERT *+ Copy files from Model III to Model I (d/d system only)£
CRUNCH + Compress BASIC programme.
DISKDUMP+) Disk file and sector editing programmes (sim. to
SUPERZAP)
DISKZAP)
MAP *+ Maps out location of files on the disk
PURGE *+ Displays disk file names and asks if file to be killed.
Defaults to visible files only (inv. and sys files can be

selected by parameter).
RESTORE + Brings back a file from the dead! Restores accidentally
killed files, a VERY useful feature!.
SPOOL + Printer spooler.
TAPE Tape to disk & vice versa for m/c code programmes (sim.
to LMOFFSET).
TRANSFER*+ Copies all user files from one disk to another (useful if

changing DOS's, saves a lot of typing!)

NOTES:-
* These commands can have a mask to specify the file or files you wish to operate on e.g. B/CMD will specify all files starting with a letter B and having a /CMD extension.£
+ Can be used from BASIC via "CMD" function.
£ Substantially different, or new in version 3.4.

DOSPLUS - TRS-80 Disk Operating System

There is a multiplicity of operating systems available for the TRS-80 and it's relatives, I know of TRSDOS, LDOS, NEWDOS+ (still available!), NEWDOS/80, DOSPLUS, MULTIDOS, VTOS (no longer available?), TURBODOS (Model II only), ULTRADOS, OS80, and of course CP/M, and that little list may not be exhaustive! Most of these have passed through several versions in their history, with numerous patches to deal with buss and deficiencies. The ones that have become generally more established in the U.K. are the NEWDOS family, LDOS, and to a lesser extent VTOS, not forgetting Tandy's own TRSDOS. DOSPLUS (why do they always have to spelled with capital letters?), has recently become available in the U.K., and I have been using it for several months, ever since installing a double density controller in my expansion interface. My orisinal 3.3D ('D' is for double density) version came with my LNDoubler board), and was upgraded to 3.4D, for the princely sum of $25 (dollars, not pounds) in January. To follow on from the articles by Ken Grey in recent newsletters, I would like to add a few comments of my own.

I have found DOSPLUS to be fast, flexible, and easy to use. It has powerful features, and although lacking some of the 'bells and whistles' of NEWDOS or LDOS, it has it's own advantages, especially in the area of double density operation. The double density format is also reasonably compatible with LDOS and at least one d/d version of Model I TRSDOS that has somehow escaped from Fort Worth, or so I am informed. NEWDOS/80 v.2.0 uses a different d/d format, and can't read a d/d disk formatted by DOSPLUS or LDOS. The BASIC has all the, by now, usual facilities, and a few extras of its own, such as 'INPUT@', a substitute for those slow 'INKEY$' routines that are usually required when constructing forms on the screen. Automatic lower case driver and repeating keyboard are also included. I have listed most of the features that are provided in addition to the normal TRSDOS facilities.

The things that have impressed me have been the speed of operation, the ease of handling different disk formats, (there's no need to set up complicated 'PDRIVE' parameters), the all round ease of use, and the speed and reasonableness of price of the upgrade. I had the last in about three weeks, by airmail, and $25 is a bit different from the $45 plus $8 for every month of ownership for the recent LDOS upgrade. The main thing I don't like about DOSPLUS is the manual, 3.3 was best left undescribed, all 52 pages of it (sic!), 3.4 is much better, but still not up to the standard of LDOS, or NEWDOS/80. The fact that the system lacks some of the more esoteric NEWDOS/80-LDOS features doesn't mean that its not versatile. Indeed if it had come out before those two, it would be thought to be pretty remarkable. The list of features should help to show what I mean.

DOSPLUS Features:-
==========

KARADAWN SINGLE BOARD COMPUTER

Since I am currently doing a lot of consultancy work on CP/M-based systems, I have been looking around for a cheap way to convert my ancient Model I into a 64K CP/M system with 8" and 5 1/4" drives. Why not use the Omikron Mappers? Simply because there is no easy way to get a full 64K of usable RAM with those otherwise excellent pieces of hardware. The ideal solution, when I finally get it sorted out, appears to be a single board computer available from Karadawn Ltd., in Warrington, at a cost of £399.

This extremely compact board contains a 4 MHz Z80, 64K RAM (using the new 64K chips), CP/M boot ROM, two serial ports, two parallel ports, disk controller for 8" and 5 1/4" drives (single/double density) and DMA. The board came with CP/M on both sizes of disk. Both 8" and 5 1/4" drives can be on the system at the same time. A 5V and +/- 12V supply is required.

On receipt of the board, my first job was to modify one of my power supplies for the required output voltages. I then had a set of connecting cables for 5 1/4" and 8" drives made up, and a serial interface cable. I then took the whole lot round to a friend of mine with a lot of S-100 - based hardware running under CP/M. We plugged his terminal into the Karadawn board, connected one of his 8" disk drives, inserted the system disk supplied, and booted the system. After a lot of messing about with jumpers on the board we eventually got CP/M up and running.

I then went home, modified the board jumpers so it would boot up on the drives I normally use on my Model I (Shugart 5 /14"), configured my Model I as a terminal using ST80-III, and connected everything together. After several hours of messing about, I gave up and 'phoned Karadawn. Their Mr. Farrer were very helpful - apparently they had given me the wrong information about configuring the system for 5 1/4" drives. On rectifying matters, I was able to bring CP/M up without any trouble, except that my drives, being the early Shugart SA400, would only read double density disks, they could not write in double density! I then went out and bought a second hand Tandy (Teac) drive from the local Tandy dealer for £150 - he has three more at that price. Contact me for details. Upon connecting this up I was able to write to disk; Teac drives can handle double density. I was unable to back the disk up - for some reason the SYSGEN utility did not work, and I then managed to format the only backup disk I had, and corrupt the main system disk! Karadawn are sending me some replacements which, hopefully, I will be able to back up.

One minor problem with this system is that the 5 1/4" drives are running continuously. I'll probably modify the

BASIC utilities & extensions:-

DU	Duplicate and insert line
DI	Delete and insert line.
RENUM	Renumber BASIC programme.
REF	Lists references to variables, to selected parameters, e.g. line no's, keywords, variable(s) etc.
TRON	Single step through BASIC programme.
CMD"M"	Displays values of variables on screen or printer (not arrays).
CMD"O"	Built in machine code sort routine£.
SR	Search for (and replace if desired), occurences of expressions in the BASIC text. (sim. to facility found in word processors).
INPUT@	Controlled screen input. You specify screen position, prompt string, and length of field, which is then displayed as a series of dashes. Replaces the usual slow INKEY$ routines used in setting out forms on screen£.

(Many BASIC commands, such as list, load, save, edit, run, kill, auto, delete, can be abbreviated to the first letter:- e.g. L'TESTPROG/BAS".)

TBASIC A tiny BASIC, lacking the extended facilities set out above, but providing about 4.5K more RAM than standard disk BASIC

(If anyone is interested in trying DOSPLUS for themselves, I have a copy of 3.3S (Model I, single density) for sale, complete with manual and registration card for £25 plus £1 towards P&P. Give me a ring on 051-220 9733).
Peter Tootill
(reprinted from NW TRS-80 Group newsletter)

SCRIPSIT UNDER NEWDOS 80V2

One of the frustrations I have experienced has been that, when using Scripsit I suddenly needed to save text without knowing which disk had sufficient free space! Now, thanks to Byte 6/82, I have found the benefit of transferring Scripsit to Newdos 80v2; under ND80 one can use the 'DFG' keys to call up the Mini-Dos and then do a 'free' or a 'dir'. Type MDRET and you are back with your Scripsit programme! Marvellous - if only that Newdos manual had been more explicit and readable then I'd have known this six months ago!

David Washford

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MKSS PRELIMINARY ANNOUNCEMENT

G7 ROBOT SERIES

The above is now being developed for the TRS-80 Cassette & DOS systems.

Users can use data sheets or Packs available from MKSS

As the above will be developed over the next year detai can be obtained by a SAE

40a High Street, Stony Stratford, Milton Keynes.
0908-564374

Visicalc: Sorting, and using with MX80

Possibly because I use Visicalc not only for calculations, I really do miss the ability to sort numbers. One of my uses for VC is for depot stock lists, which in addition to showing quantities, unit prices, and discounted prices (for which VC is admirably suited), I also have to show part number, source depot bin location, and receiving depot bin location. The depots each want the list in their own bin location sequence, whilst admin. needs it in part number sequence! Newdos80 2.0 came to the rescue with its CMD"O" function which allows sorting on any one part of a string - you just specify the starting point and sort string length, rather like a MID$ instruction.

The first job was to save a copy of the file using the PF option, from which Scripsit could be used to convert each line into a data statement, starting with line number 100. Probably due to carelessness in setting up the VC records, these lines then had to be edited to bring them all into line with each other (for example, what was Visicalc column three might be one space different on line 4 to the previous lines, and I either inserted or deleted that space) Next, I re-saved that file under Scripsit using the ASCII option, and then renamed it to a Basic title. Finally, I added these lines:

```
10 CLEAR10000:DEFINT X:DEFSTR A:DIM A(150)
20 FORX=1TO150:READ A(X):NEXT
30 CMD"O",150,A(0)(1,8)
40 FORX=1TO150:LPRINTA(X):NEXT
```

Running this program gives a printout in part number sequence. Changing the contents of the second pair of brackets in line 30 to read (12,6) gives a printout in source depot, location sequence, whilst (24,6) gives the same list in receiving depot sequence. Naturally, all contents of each line move with the sorted element, and so this programme - which seemed rather tedious at the time - is much preferable to setting up countless arrays and then trying to cross-index all the other related elements (and I must confess that I am still totally bogged down with the Newdos documention on REN and iav1's).

The only problem that I then had was how to get more than 80 characters printed on one line, try as I might in my non-machine code knowledge state, I could not get Visicalc to accept Epson printer codes (I understand that it does under LDOS 5.1). Suddenly I remembered that the Epson, once fed a smallprint instruction does not forget it, and so before running the program I typed 'LPRINT CHR$(15)' and guess what - IT WORKED!

DOS so that the drives are normally switched off.

When I finally get it all working I'll have a system with similar capabilities to the Model II under CP/M, at a cost of around £600, plus quite a lot of time. I think it will be worth it.

Karadawn's address is:-

Karadawn Ltd.,
2 Forrest Way,
Gatewarth Industrial Estate,
Great Sankey,
Warrington.
Tel: (0925) 573212.

Mr. I.T. Farrer is the Sales Manager.

Leon Heller

REVIEW OF AUDIO COMPUTERS MEMORY EXPANSION

The review will be brief. I ordered a 32K add-on memory board from Audio Computers of Southend - £46 inclusive of post & VAT. Being a bit clumsy with the old soldering iron (my only previous experience was soldering brass plate and piano wire to make slot racing [illegible]) I asked a friend to 'advise' me. Off with the Genie's cover, and 'glide' the new board under the keyboard metal template - actually it is a tight fit so it doesn't 'glide' but is firmly located. Out with Z27, plug it into the new board and replace it with the connector A. There are then eleven wires to solder. For simplicity all but the CAS were soldered to plated-through holes on the Genie board, CAS being soldered directly to pin 14 of Z37. A quick check of all connections, check the numbers on connector A match the holes in the Z27 socket and power up ! PRINTMEM - and a screenful of garbage ! My electronics engineer friend finally traced the fault - connector A is not plugged into socket Z27 so the numbers match, but rather as the diagram in the instructions ! Then PRINTMEM - 48340 ! It looked quite easy to instal (if you follow the diagrams :) and I think good value for money. Now for lower case.....

Trevor Jordan

FOR SALE - * BOSPLUS 3.38 *

One original copy of Bosplus 3.38 Model I single density operating system, complete with manual, and registration card. (retail £59.95)

ONLY.... £25.00

Peter Tootill, 101 Swanside Rd., Liverpool L14 7NL. (051)220 9733

* * * U.K. DOSPLUS Users Group * * *

S.A.E. for details to ;-

Peter Tootill, 101, Swanside Rd., Liverpool L14 7NL.

TRANSFERRING FILES FROM A MODEL I TO A MODEL II RUNNING CP/M

I recently needed to transfer a large amount of data (15 files, each between 10K and 20K) from a Model I to a Model II running under CP/M 2.2 (the Lifeboat Associates version).

I first tried Tandy's transfer package using TRSDOS on the II, and then converting the TRSDOS files to CP/M format using the Lifeboat utility GETFILE. The files transferred quite happily over the serial link between the machines, but the GETFILE utility just converted a couple of lines and then returned to CP/M. Apparently it only works properly with the earlier version of CP/M (don't ask me why). We could have purchased a different utility (£90 + VAT) which worked, but my client has already spent a lot of money on this project, so I thought I'd try a technique suggested by Jim Norris, and use the standard facilities provided by CP/M.

The steps are as follows:-

1. Connect the Model I serial interface cable to the Model II serial port A.

2. Using ST80-III configure the Model I for the desired baud rate.

3. Get the file to be transferred into the Model I buffer.

4. Using CONFIG.COM on the Model II, set serial port A to the desired baud rate.

5. Using CONFIG.COM assign the Model II reader to serial port A.

6. On the Model II, enter PIP <filename>=PTR:[E]. This sets the Model II up so that all input from the Model I goes into a file on the Model II and is echoed on the Model II display.

7. Using ST80-III, transfer the file. It will be written to disk on the Model II.

8. When the end of the file has been reached, control Z on the Model I keyboard will close the file on the Model II and return you to PIP.

9. Exit from PIP.

10. Use CONFIG.COM again to return the Model II to its

Then I remembered reading in the Newsletter last year about Epson control codes, and digging out the article prompted me to add two more lines to the above program:

```
15 LPRINT CHR$(15)
50 LPRINT CHR$(18)
```

Beautiful! The printer is now initialised to print in 132 character-per-line mode, and switched back to normal at the end of the program. I did know about chr$(15), but grateful thanks to I. Howard Wright for chr$(18) (July 81 Newsletter).

Now a possible tip on trouble curing. I frequently find that, after carrying my equipment around somewhere, drive 0 refuses to communicate with drive 1! Usually, though only goodness knows why, this was overcome by simply swapping the drives over on the cable, but last week the d....d thing drove me beyond the edge of endurance! With the benefit of 48 very frustrated hours experience, I suggest that if you ever have this trouble then you access the disk controller chip in the interface and gently push it firmly into its socket! If you have long fingers then you can just manage this via the printer cable opening on the side of the interface.

David Washford

Disk drive cleaning.

Further to the query in the June newsletter about the above, I can't comment on double headed drives, but my experience may be interesting. I used to get quite a lot of problems with disk I/O errors. When formatting disks I'd get a few grans locked out, and doing bulk file copying, using Dosplus's 'transfer' command, I'd usually halt a couple of times with errors. I recently cleaned the heads, and things have improved greatly. This even on double density and 80 tracks, which is stretching things to their utmost! (310 Kbytes free on a sytem disk with BASIC!)

Peter Tootill

(* Unless you have problems, I do not think that it is advisable to clean your drives on a regular basis. The Shugart service manual states that no routine maintenance is needed on their 5¼" drives. The same probably applies to other manufacturers. This is not the case with 8" drives. Apparently they do require some attention from time to time, or so I am informed. LFH.)

PROBLEM SECTION

I am having some problems with my NEC 8023B-C printer. When in the dot-image graphics printing mode errors are produced when transferring graphic data X using LPRINT CHR$(X).

The following suggested sub-routine written by NEC is for their micro and does not work with the TRS-80:-

```
100 'PUTCHAR
110 OUT &H10,C:OUT &H40,0:OUT &H40,1
120 A=INP(&H40) AND 1:IF A=0 THEN RETURN ELSE 120

called by C=X:GOSUB 100
```

I would appreciate help from any member in solving this. The most inconvenient error which seems to ocurr is in the transfer of "0"s from the data statement although the printing of other odd codes takes place.

Otherwise I am delighted with the printer.

Reg Kendall,
1 Charlottes,
Washbrook,
Ipswich,
Suffolk.

I was using Scripsit and tried to print without the printer being turned on. it turned out that the plug was not making good contact with the socket. Pushing the plug home firmly cured the problem but glitched the computer despite having a mains suppressor fitted. I tried the recovery program published by Laurie Shields but despite his guarantee it did not work. The directory confirmed that the file existed but it did not contain anything.

I am using Scripsit on LDOS and have PDUBLE and SOLE to give me a double density disk. Could this be the cause of the problem, or is it because I have the patch for the Epson printer print commands.

Derek Trawler,
88 Grosvenor Drive,
Hornchurch,
Essex RM11 1PW.

(* I think that when the glitch occurred Scripsit crashed in a big way and wiped all the contents of memory. Spikes from the printer seem to get through my mains filter also, at times. LFH. *)

normal configuration.

This procedure should work in reverse. That is, you could transfer files from a CP/M machine to a Model I.

Leon Heller

NEW HARDWARE AND SOFTWARE FROM TANDY

Someone (I forget who it was)* recently sent us a copy of the latest catalogue from Tandy in the States. Here are some details of what we can expect over here before too long.

HARDWARE

Double density kit for the Model I - $149.95 (installation extra).
Computerised home remote control - $39.95 + modules at approx. $20.
Model III networking - $599.
Model 16 16-bit system using 68000 processor - $4999.
Computer terminal - $699.
High resolution graphics for Model II - $1499.
Line printer VIII with proportional spacing and bit image graphic printing - $799.
Multi-pen colour plotter - $1995.
Digitizer - $499.
New pocket computer (like the new Sharp) - $279.95.
Videotex system (like Prestel) - $399.

SOFTWARE

Personnel, time and project management software - $99.95 each.
SuperSripsit supporting proportional spacing etc. - $199.
Medical office system - $299.
Loads of educational software: calculus, plane analytic geometry etc. - $39.95 each.
COBOL for Model 16 - $299. (I think that Tandy have made a mistake in only providing COBOL initially).

Leon Heller

* STUART GROVE (LONDON)

I wonder if any of our members could solve a little BASIC programming problem that has so far proved too much for me?

When scoring in duplicate Bridge, a hand is played a number of times by different North/South and East/West combinations. Scores are arranged in order, highest to lowest, and points are awarded as follows. If the hand has been played N times, the top score gets (2N-2) points, the next (2N-4) and so on with the bottom score getting 0. However when two or more get identical scores, points are averaged. For example:- When there are 10 plays (N=10) and scores are 600, 200, 200, 200, 150, 150, -50, -50, -50, -100 then points would be awarded 18, 14, 14, 14, 9, 9, 4, 4, 4, 0. I can cope with the sorting of the pairs combinations and the ordering but am stuck on awarding the points. I want to put the ordered scores into an array and print out the pair nos with the correct points which I will subsequently total.

Every now and again I have a program which gets a great deal of 'garbage' attached and ruins the program. This sometimes clears away after using a machine language program; RENUMBER for example. Is there a way or a program which clears out garbage in high memory. You can see that I am very much an 'L' user.

Lawrie W. Hallam,
Hartley,
11 Chinnor Close,
Goldington,
Bedford MK14 9TQ.

(* If you have an expansion interface fitted I would suspect the connector between the keyboard and EI. Make sure the contacts are clean. Otherwise, you might have a hardware problem in your keyboard which should be investigated as soon as possible. LFH. *)

PRINT TIP

Here is a tip which might be of use. I was printing a table of values which included a set of frequencies. These were output as 123,456 or 1.2345678E+08 etc. and the formatting of the table would not allow the latter. What was required was: 1.234E08. The following lines will achieve this:-

```
1000 Y=(INT(LOG(F)/2.2303)-3):Z=INT((10↑Y)+.5)
1010 IF Y>2 THEN PRINT INT(F/Z)*Z; ELSE PRINT F;
```

where F is the input frequency.

R. Robson.

£50 TRS-80 LOOKALIKE!

According to a recent Sunday Times article, Binatone are working on a computer that will be software compatible with the TRS-80, and will sell for £49.95! 16K of RAM will be provided, expandable to 64K, and colour graphics. I suppose it will be a 'chinese copy' of the TRS-80 Colour machine, not the Model I.

Anyway, I think the announcement was somewhat premature, as Binatone do not appear to even have a working prototype. The costings seem to have been based on a quickly prepared parts list, according to an article in one of the weekly computer publications.

Leon Heller

The queries are these : is there a routine to provide inverse video characters like on the PET or ZX80/1 or does it need a hardware mod ? And what is the printer address for the Video Genie ? The background to the latter question is that I borrowed a copy of Electric Pencil from Mike Gibbons when I bought his old Black Box printer : the Pencil worked fine except when shift-P (I have no lower case fitted yet) was entered for a hard copy of my magnum opus (I think it was twinkle twinkle little star :) but the Genie took to contemplating its innards for a while then came back with the cursor as though satisfied. But from the printer there was not a whisper , although it works OK from BASIC and even from my Kansas City Systems Monitor. I guessed that there was a different printer address but how to find it ? (Told you I was ignorant of the technical bits :) Can anyone out there help ? (Actually Mike Gibbons is trying to find the answer for me but I guess it may have more general interest than merely allowing me to re-write nursery rhymes !)

Trevor Jordan,
Hardley House,
84 Market Street,
Ashby-de-la-Zouch,
Leics.

A couple of pleas for information. First, does anyone have any patches to make Kansas' Arcade series work with the Atari Joystick? Second, am I doing something wrong, or is it actually quite difficult to transfer the Cornsoft Scarfman from cassette to disk. I've tried the Acorn Tdisk, and LMOFFSET, and neither will transfer it.

Paul Godier,
83 Trinity Road,
Wimbledon,
London SW19 8QZ.

Could someone please explain to me how the "MEM" command works on a non-disk Level II. How does the computer know how much memory is available? Does it write into several locations, then read them and if what is there agrees with what is written, it assumes that portion of memory is active?

R. Robson,
Shallowell,
6 Picket Piece,
Andover,
Hants. SP11 6LU.

THE HARDWARE EFFORTS

Late in 1981 all interested parties gathered to discuss how we could get the service underway and the reality of Telesoftware has its origin at that meeting.

The first decision was made to establish the CET format as the standard and the other contenders gracefully withdrew their systems. Although the format question is left dormant for now it was made clear that if a better system should emerge then it would be reconsidered.

The MicroTantel shortcomings (and short delivery!) were discussed and the development of the TeleSoftTantel created by Prestel ordering 250 units from Tandata. This unit has an RS232, or industry standard, interfaces that make connections easier.

For the Apple II a simple connection from the existing MicroTantel's DIN cassette port to the Apple's twin mini-jack cassette port achieves the hardware solution. For the Pet the TeleSoftTantel is needed and the connecting lead requires a small printed circuit board built into it. For the TRS80 again the TeleSoftTantel is necessary and a 25 pin to DIN lead.

This product-by-product appraisal is all-important because no one-off solution is practicable. The largest computer user base is, of course, the Sinclair ZX80/1 and it was felt essential to have a low-cost hardware solution to suit this market.

Prestel announced a contest with a £1000 prize which excited much comment but only two entries. Lion Viewdata produced a low-cost unit but the software would not function on judgement day. Matochoice produced a Mullard Lucy based unit (the heart of the Tantel, too!) which had good embellishments and worked well but was not really a low price solution. The prize was split between the two and we now await their plans to reach production.

THE SOFTWARE ACTIVITY

All the real accolades are deserved by the various individuals who were commissioned to write the necessary software packages. David Bolton and John Sharp for Apple, Stephen Rabagliati for Pet/Vic and Roger Hamlet for TRS80.

[illegible] - the realities!

by Bob Denton Electronic Insight *850

I have read so many articles on this subject recently but none have captured the essence of what has been happening.

The current benefits of Telesoftware are in the fast and efficient distribution of non-commercial software. By non-commercial I mean the programs designed by teachers in individual schools that are not intended to be money-earning but need speedy and broad distribution to all schools. Also by non-commercial I mean that vast storehouse of programs each computer user club amasses that relies on members dedicating time to duplicate and distribute to other members.

Any writer of software who is wanting kudos for a program need look no further than Prestel Telesoftware as a medium.

THE BACKGROUND

For over a year Prestel have been trying to set up a full service for Telesoftware - this does not just mean the creation of a format or the production of relevant hardware or the development of necessary software but the complete service to include all of these plus a good database of telesoftware programs.

IPC have had the word Telesoftware displayed on their free node *357 for over a year but still have no downloadable programs, simply giving program listings that the Prestel users must note and then transcribe onto their computers.

The CET, Council for Educational Technology, *211 , have been actually offering downloadable programs for some time but because of their concentration on the educational area and the Research Machines 380Z computer their impact has been very selective.

It was only when Tandata issued their MicroTantel that things started to move. For the first time a low cost means of connecting low-cost microcomputers to Prestel was available. However it did not solve all of the problems.

Theoretically the MicroTantel was able to interface with any computer but in fact it proved very simple for the Apple II but almost impossible with the Pet.

For a detailed catalogue and brochure ,leave write to:-

'Electronic Insight', Bushfield House, Orton Centre, Peterborough PE2 0UW.

Further, if you require a kit for the Apple II, Pet 3000, 4000, or 8000 please specify which and ask for a quotation.

Or Phone 0733 237111 business hours
or 0234 721088 out of hours.

Bob Denton

ODDS AND ENDS

Yet another one to LPRINT beyond 64. Either at the beginning of your program or prior to the LPRINT TAB(xx) try the following. POKE 16851,195 : POKE 16852,5 : POKE 16853,43. You can now LPRINT up to TAB(255)

Doing a calculation outside a loop will improve the operating speed. EG: Instead of....

```
FOR I = 1 TO 100
PRINT A * B
NEXT
```

Use the following

```
C = A * B
FOR I = 1 TO 100
PRINT C
NEXT
```

Use the INSTR function in menu selection.....

```
500 INPUT A$
510 X = INSTR ("ABCDE",A$) : IF X < 1 THEN 500 ELSE ON X GOTO
600,700,800,900,1000
```

As INSTR in the above will return the position of the character entered for A$ in the string ABCDE then X will return a value from 1 to 5 for a valid entry and zero for any other character. Combined with other tests such as LEN an input can be protected from unwanted entries.

Disable break key (Oh no ! Not again ? ... Yep) .....

```
POKE 16396,241
```

Enable break key (Can't have one without the other !)

```
POKE 16396,201
```

Cassette recorder heads become magnetised through time, more so when used for the recording / playback of data. A tape head de-magnetiser is a cheap and easy way of ensuring your tape heads are in good condition. A lot of the problems with poor loading (particularly with the Genie) can be cured by a 10 second run through with a de-magnetiser.

Further to cassettes..... Use only good quality tape, TDK gives good reliable results and is not too expensive. Don't use tapes longer than C60 to avoid tape stretch.

Ken Grey

For each micro two mirror-image programs were needed - th loader and the downloader. The CET format determines the shape of the program but the uploader has to take a normal program listing, format it and then deliver it onto the Prestel database. The downloader, of course, has to handle the reverse task and check that the program has been correctly received.

To date we have concentrated on the largest volume micros but the task must continue through all of the other worthwhile systems.

TO BECOME A TELESOFTWARE USER

Any user of one of the previously mentioned micros may soon use telesoftware. This will require the user to obtain a Prestel jackplug and become a Prestel user and the purchase of the necessary package.

The package consists of the relevant Prestel adaptor, the downloading software, the connecting lead and full instructions - see page *80061.

THE DATABASE

Once the service started to come together there was a flurry of IP activity to become involved. However, in order to ensure a focal point and to make sure that problems and queries could be effectively centralised, Prestel themselves have established a database called Aladdin's Cave *700.

On Aladdin's Cave a broad range of public domain software has been established to reflect each micro as its package is available.

Electronic Insight has been involved in acquiring these programs and maintains a full subject index on *80066 with almost one hundred programs available now! Further, many computer user groups who have contributed this software have a news and comment section on *80085.

THE FUTURE

To permit commercial software to utilise these techniques requires one of a variety of methods. As most will be aware, the 50p maximum charge per frame is to be increased, but it is more likely to come about by the use of a 'Gateway-ed' third-party database or by 'dongler'-ising micros. (The 'Dongler' is a component that is hired to decode the program received - without it, the program would be meaningless).

Getting rid of LMOFFSET

There are times when you have a ...../CMD program on disk which you put there from tape and now you want to get it back off again because your tape is faulty. If you used LMOFFSET to get it there you will of course have moved it in memory and so if you put it back onto tape and tried to reload into a 16k machine it probably would not run. So the hard part is to get rid of the offset routine and reposition the program in memory. This, the hard part was done by Stephen Hall (V.G.), all I have done is to try to write it down in a way that I can understand.

Probably the easiest thing to do is to prepare a disk with CMDFILE and RSM48K on it. You could use Monitor 3 or 4 just as well for the commands are very similar. Also transfer the program to be moved onto the same disk.

Run CMDFILE and then by using that find the START, END and ENTRY (sometimes called TRANSFER) POINTS of the file concerned. You may get numbers like 6100 9E14 9E00. The numbers need to be written down at this point as once they go off the screen you cannot get them back except by restarting.

Now reboot and LOAD ...../CMD so that it goes into memory but does NOT run. When the DOS READY sign comes back run RSM48K, or MON3 or MON4 if you wish. As LMOFFSET put its piece onto the end of the program it has to be the first thing read so the ENTRY POINT of 9E00 has to be where it starts and it goes on to 9E14 in this case. By disassembling 9E00 to say 9E17 we get everything in LMOFFSET and find out how to get rid of it at the same time. The command for this in RSM48 is S9E00 9E17 or D9E00 9E17 for MON 3/4. You could use 9E14 but you might miss something. Take the few extra bytes to be sure to get everything.

If all has gone well and the program was moved by LMOFFSET you should be looking at something like this:

```
9E00  F3        DI
9E01  21E303    LD    HL,03E3H
9E04  221640    LD    (4016),HL
9E07  210061    LD    HL,6100H
9E0A  110043    LD    DE,4300H
9E0D  01003D    LD    BC,3D00H
9E10  EDB0      LDIR
9E12  C35043    JP    4350H
```

All the information you need is in the lines around the line with LDIR in it. LDIR in Z80 Assembly Language stands for the following "Transfer data between memory locations until byte counter is zero, increment destination and source addresses". This means that whatever in is memory at HL onwards (in this case HL is 6100 HEX) is moved byte by byte to DE on (4300 HEX in the list above) and the number of bytes moved is 3D00 HEX as listed for BC. Then then program follows the JP command and goes to 4350 which

TWO NEW GAMES FROM BIG FIVE

The Big Five software company are noted for producing excellent 'arcade' games for the TRSBO and their two latest releases are no exception to the rule.

DEFENSE COMMAND

In this game you have a lazer base at the bottom of the screen protecting some fuel cans. The lazer can be moved accross the screen using the arrow keys and firing is with the space bar. The object of the game is to prevent the nasties which swoop down from grabbing and flying off with the fuel cans and appart from the lazer cannon you have a limited supply of anti - matter bombs which clear everything from screen. Big Five's number one bad guy the alien flagship appears from time to time to add to the excitement of the game. A new nastie the 'slicer' which resembles a revolving blade from a rotary mower chews up everything in it's path and if it reaches the bottom of the screen will eat up all the fuel cans. Like Robot Attack this game has voice sound effects for announcing the player number and telling you what a "great score" you have achieved. The game is very addictive and should go down well with arcade gamers of all ages. The graphics are excellent as is the sound.

STELLAR ESCORT

This arcade game is different in approach from the previous Big Five games. You are in command of an escort and your job is to escort the ship which appears in the centre of your screen. You are armed with a beam which fires from the four corners of the screen to a point just ahead of the ship being escorted. Alien ships appear from the distance getting larger until they materialise on screen. The controls are the four arrow keys and firing is with the space bar. To 'zap' the nasties needs quick reactions and good coordination. From time to time the 'Gobbler' works it's way accross screen and extra points can be scored by killing him off. Failure to achieve a good score gets you dismissed from the service, and a good score is very difficult to achieve. Nice graphics and sound, not the best of the Big Five games but never the less well above average in the arcade scene.

Both the above games work with joysticks and certainly Stellar Escort would benefit from the use of one. Like all Big Five's games, the cassettes come attractively packaged, load first time and are easy to transfer to disk.

Ken Grey

IM VED LLIST FOR MULTI - STATEMENT LINES

When a Basic program is written with multi - statement lines the resultant listing from the printer can be difficult to follow. The filter program that follows was written for 2 reasons. Firstly to allow experimentation with relocatable filter modules. Secondly to provide a way of improving Basic listings from programs I had packed using Compak, without loosing track of the original program line numbers. The actual filter is only 16 bytes long and has one draw back, namely if a print statement contains a colon then the program will still act on it. This could have been catered for in the program but I decided to keep things simple. The program can be adapted for trapping of any character that would normally go to the printer, so if your printer does weird things when it encounters graphic codes these could be changed for another character. Just write the necessary routine and call the first line START and the last line LAST and the rest of the module will do the work of relocation and adjustment of the high memory addresses. The program was written for Newdos 80 using the Misosys Disk*Mod Edtasm.

This is an example of the progam output...

```
(As normal)
100   CLS:PRINT"DEMO":INPUT"ENTER    A    NUMBER";X:IFX>99THENPRINT"A
NUMBER LESS THAN 99":GOTO100

(Via filter)
100 CLS:
PRINT"DEMO":
INPUT"ENTER A NUMBER";X:
IFX>99THENPRINT"A NUMBER LESS THAN 99":
GOTO100
```

```
                00100 ;PRINTER FILTER ROUTINE TO GIVE A CARRIAGE RETURN EACH
                00110 ;TIME A COLON IS ENCOUNTERED. THE FILTER LOCATES ITSELF
                00120 ;BELOW THE CURRENT HI MEM ADDRESS THEN ADJUSTS THE HI MEM
                00130 ;POINTER TO PROTECT THE FILTER. WRITTEN FOR USE WITH
                00140 ;NEWDOS 80. EASILY MODIFIED FOR OTHER DOS OR FOR TRAPPING
                00150 ;OTHER CHARACTERS.
                00160 ;K. GREY
                00170 ;1982
4049            00180 HIGH    EQU     4049H   ;HI-MEM ADDRESS
402D            00190 EXIT    EQU     402DH   ;RETURN TO DOS
4467            00200 DSPLY   EQU     4467H   ;DISPLAY ROUTINE
058D            00210 PROM    EQU     058DH   ;PRINTER ROUTINE IN ROM
4026            00220 PRVECT  EQU     4026H   ;PRINTER VECTOR ADDRESS
5200            00230         ORG     5200H   ;SET START ABOVE DOS
5200 211F52     00240         LD      HL,MSG  ;DISPLAY MESSAGE
5203 CD6744     00250         CALL    DSPLY
5206 2A4940     00260         LD      HL,(HIGH)       ;GET CURRENT HI-MEM
5209 010F00     00270         LD      BC,LAST-START   ;CALCULATE FILTER LENGTH
520C AF         00280         XOR     A
520D ED42       00290         SBC     HL,BC
520F 224940     00300         LD      (HIGH),HL       ;STORE NEW HI-MEM
5212 23         00310         INC     HL      ;POINT TO ENTRY ADDRESS
5213 222640     00320         LD      (PRVECT),HL     ;STORE NEW PRINTER ADDRESS
5216 EB         00330         EX      DE,HL   ;MOVE ROUTINE TO TOP OF RAM
5217 213B52     00340         LD      HL,START
521A EDB0       00350         LDIR
521C C32D40     00360         JP      EXIT    ;BACK TO DOS
521F 50         00370 MSG     DEFM    'Printer filter ..... Colon'
```

Getting rid of LMOFFSET

starts the program running in its new location.

Looking at line 9E07, the 6100 tells you where the program starts in memory now. The 4300 in the next line shows where it came from. 3D00 is the numbers of bytes in the program and finally 4350 in line 9E12 is the old entry point when it was on tape.

No matter what other numbers may be concerned those five lines are always there, and they give you the same information.

Now to chop off LMOFFSET routine and at the same time put the program into its proper place in memory.

Maaaa bbbb cccc is the command needed where aaaa is the present start point at 6100.bbbb is the end of the memory to be moved and is 1 less than the ENTRY POINT of 9E00 so that is 9DFF. LMOFFSET put its piece onto the end of the program at 9E00 so the old program must end at 1 less, 9DFF. cccc is the place in memory you want to put it, in this case 4300. So the whole COMMAND line will be M6100 9DFF 4300.

Finally the tape has to be PUNCHED and that needs three numbers: the START,END and ENTRY POINTS, in that order. The START POINT you know as 4300 because it was put there by the M command. The END POINT is not so critical. You can go back to the disassembly and do some hexadecimal arithmetic by adding the BC number, 3D00, to the start point, but however your maths come out your maximum memory size on tape is 7FFF, so just use that as the END POINT. If you take too much that way you will never use it for the program should not get to it. The ENTRY POINT is in line 9E12 and is 4350.

Alternately you could work out the END POINT by some more HEX arithmetic. The program ran from 6100 HEX to 9DFF HEX; this is a difference of 3CFF, so by adding this 3CFF to the 4300 where the program now stands, this gives an answer of 7FFF.

The COMMAND is P4300 7FFF 4350. When you enter this the screen will come up with NAME? Give the program a name and if the tape recorder is ready it will now punch the tape for you and it should be able to be loaded by the old SYSTEM Command.

Although I have used a real program for this I have not mentioned the name. You will have different numbers to deal with but I hope you can follow this well enough to do it for any program. There is one other thing to add and that is that the newer LMOFFSET which comes with NEWDOS 80/2 does insert 64 NOPs in a row so this means you have to disassemble a bit more but the rest is the same.

Perhaps someone would like to work out how to remove the OFFSET which disables DOS in NEWDOS 80/2.

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Scholes,
Leeds LS15 4AU. (0532)735942

TRS 80 And The Epson MX80 F/T III Printer.

Having just purchased an MX 80 Graphics printer to supplement my Selectric I am surprised that no one has commented on the problems a beginner might face if he tries such a combination.The following are some of my experiences :

1. If one tries to initialise the printer using CHR$(27);"@" as the manual suggests the automatic carriage return output by the TRS 80 will cause a line feed which will ruin any carefully preset 'top of form position' already established. Within a running program the C/R can be suppressed by a trailing semicolon but in command mode a problem may ensue if form position must be maintained. Most users will overcome the problem easilly by the use of a poke statement instead of the @ symbol: LPRINT CHR$(27);:POKE 14312,64 but without experience will a newcomer to the game?

2. The second problem is that many of the printer codes require a zero or CHR$(0) to be sent. This is required for example to turn off the underline facility. It will also be probably the most used code to be sent to the printer when graphics are being printed.The TRS 80 will not send a CHR$(0) to a printer in this form. Neither will it send a zero or null byte for any function equating to zero such as 5-5. Once again Poking must be resorted to.When only a couple of bytes are to be sent such as I suggested in the initialisation above it is not normally neccesary to check the printer status as provided it is on line the printer buffer (255 Characters) will accept input faster than the TRS 80 can send them. In graphics mode however large numbers of zeros may be sent. Then it is neccesary to ensure the printer is ready for all its data. An example in text mode would be as follows:

```
10 LPRINT CHR$(27);"-";CHR$(1);   'underline on
20 LPRINT "Underline";
30 LPRINT CHR$(27);"-";:POKE 14312,0 'u/l off
40 LPRINT "Off"
```

The code at line 10 turns on the underline. Ending line 10 with a semicolon ensures no C/R is output.
Line 20 prints the word Underline. line 30 turns off the underline (note the poke not followed by a semicolon). Line 40 prints the word "off" still on the same line.

3 A further problem is that The TRS 80 will not output a true CHR$(10),(11) or (12) to the printer port. If the printer control codes or graphics are being used to the full these will sooner or later be required. In the TRS 80 CHR$(10) will send a true C/R wich is really CHR$(13). CHR$(11) & (12) will send a series of Line feeds corresponding to a 'Top of Form' code and not at all what is required to output a code 11 or 12 to the printer. Once again Pokes must be resorted to. In the case of graphics printing some codes such as CHR$(0) will be used repeatedly and printer status must then be checked.

the following is an example program using the MX80 to plot a simple f( )function. It will illustrate some points about the graphics)ograming and demonstrate the need for poke statements.

```
     72 69 6E 74 65 72 20 66
     69 6C 74 65 72 20 2E 2E
     2E 2E 2E 2E 20 43 6F 6C
     6F 6E
523A 0D          00380          DEFB    0DH
523B 380A        00390 START    JR      C,GBYT  ;THE FILTER
523D CD8D05      00400          CALL    PROM
5240 FE3A        00410          CP      ':'     ;IS IT A COLON ?
5242 C0          00420          RET     NZ      ;NO ... GO BACK
5243 0E0D        00430          LD      C,0DH   ;YES .. GIVE A CARRIAGE RETURN
5245 18F4        00440          JR      START
5247 C38D05      00450 GBYT     JP      PROM
524A             00460 LAST     EQU     $
5200             00470          END     5200H   ;FINIS
00000 TOTAL ERRORS
```

K. GREY

Quick Entry of Subroutines

Mr Harding of Molimerx prints the full assembly of a valuable short program for use with TRSDOS, NEWDOS and other DOS's on page 129 in his latest July Listing of his Software which enables a succession of subroutines to be entered by a single entry - as can be done by owners of LDOS. It works excellently and reduces time and also the likelihood of the errors one gets in typing several entries. I have applied it to my Daisy Patch program for entering BSCRIP followed by SCRIPT. (My program enables all the characters on the Daisy Wheel of the Daisy II Printer to be printed as well as many more features). I use this so frequently that it is a boon.

One little quirk, of no importance, occurs in the latter. If one at any time enters BREAK ?D0 or ?D1 to get the Directory, the Directory very briefly appears but disconcertingly immediately vanishes. However, if one does this a second time, all is then normal and it stays as usual on the screen until one presses ENTER: it continues to work properly for any subsequent entries of ?D. I cannot quite see what causes it but it has happened every time I have used the program for entering SCRIPT.

Bill Cowhig 21 Priory Road Sale M33 2BS Tel 061 973 3604.

In the example lines 220-300 test for the print head dot which is to be fired at horizontal position X for one of the 50 passes across the graph and saves this value in I(X). At line 370 Pass 25 is tested for to allow a gosub 480 to plot a central X axis.
This program is not given as a particularly good example of BASIC program technique but the peeks at line 380 to check printer status are demonstrated and the plotting using pokes at line 390 give some idea of how it must be done in BASIC. At least the program works (for me). It takes about Two Hours to complete. Yes,Two hours!. That,I think amply explains plotting in BASIC. Actually the program takes about 5 minutes to complete when run under ACCEL3 and could be improved further. Has anyone written a machine code driver for plotting yet??.

5 A further problem I ran up against which I am sure must have been discussed elsewhere is the performance of the so called ESCAPE function of the new ROM TRS 80.
I have so far been completely unable to get any association with an ASCII ESCAPE from it. I assume it should LPRINT a CHR$(27)!.The manual shows it as obtained by SHIFT + UP ARROW keys. If I LPRINT these two keys together I get nothing out of the printer port. If I hold them both down and a letter as well in an LPRINT statement something certainly happens at the printer port but what is it supposed to be?. The output is the same for any key held down with the SHIFT +UP ARROW. The output obtained in binary at the port is:

1	0010 0000	or dec.32= space
2	0011 0000	or dec. 48= char.zero
3	0010 0000	dec 32= space again
4	0000 1101	dec 13= normal C/R after any

LPRINT. All the above are output with a strobe to printer. If anyone can put me right on what relationship this has with the ASCII ESC code I would be gratefull. I am sure there is one or I am using it wrong. The machine is seldom wrong!!.

I hope some of this is useful to prospective MX80 purchasers. The lack of CHR$(0) must affect other printers too but I have never seen it mentioned.

Any comments? Ring me on 01-304-3856

****

Roy Darber

RS 232 INTERFACE

Bare pcb with instructions, proven design and fully compatible with all TANDY software. Fits either keyboard (pcb has full decoding) or in expansion interface compartment. Can also be fitted to MOD 111 or VG (both externally !). Complete with power supply board. Ideal fo modems (bulletin boards etc.) or printers.

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E. Hartley, 91 Quebec Road, Blackburn, BB2 7DP.

```
10 CLS:PRINT"EXPERIMENTAL GRAPH PLOT 4"
20 PRINT"GRAPH PLOT FOR MX80 FT3 PRINTER. SET TOP OF FORM.
   ENTER EQUATION AT LINE 65.      LOAD ACCEL 3.":PRINT
30 INPUTX:INPUT"ENTER TITLE.";Q$
40 DEFINT A-W
50 LPRINT CHR$(27);"@"
60 LPRINTQ$
70 DIM Y(450),I(450)
80 LPRINT CHR$(27);"3";CHR$(24);
90 FOR K=1 TO 400
100 X=K/200
110 Y(K)=SIN(4*3.1416*X)'EXAMPLE. ENTER EQN. LIKE THIS.
120 Y(K)=(200*Y(K))+200
130 NEXT K
140 DEFINT X
150 '
160 LPRINTUSING"@";1
170 I(1)=128:I(2)=128:I(3)=255
180 FOR N=50 TO 1 STEP-1
190 PRINT@660,"DOING IFS...";N;
200 Q=8*(N-1)
210 FOR X=1 TO 400
220 IF Y(X)>8*N AND Y(X)<8*(N-1):I(X+3)=0:GOTO 330
230 IF Y(X)>Q+7 AND Y(X)<Q+9:L(8)=128
240 IF Y(X)>Q+6 AND Y(X)<Q+8:L(7)=64
250 IF Y(X)>Q+5 AND Y(X)<Q+7:L(6)=32
260 IF Y(X)>Q+4 AND Y(X)<Q+6:L(5)=16
270 IF Y(X)>Q+3 AND Y(X)<Q+5:L(4)=8
280 IF Y(X)>Q+2 AND Y(X)<Q+4:L(3)=4
290 IF Y(X)>Q+1 AND Y(X)<Q+3:L(2)=2
300 IF Y(X)>Q AND Y(X)<Q+2:L(1)=1
310 I(X+3)=L(1)+L(2)+L(3)+L(4)+L(5)+L(6)+L(7)+L(8)
320 L(1)=0:L(2)=0:L(3)=0:L(4)=0:L(5)=0:L(6)=0:L(7)=0:L(8)=0
330 NEXT X
340 '++++++++++++++++++++++ PLOT
350 LPRINT CHR$(27);"K";CHR$(147);CHR$(1);
360 FOR X=1 TO 403
370 IF N=25:GOSUB 480
380 IF PEEK(14312)<>63:GOTO 380
390 POKE 14312,I(X):NEXT X:IF N=25:LPRINT"2*3.14*X";
400 LPRINT
410 NEXT N
420 '
430 LPRINT"-1"
440 LPRINT:LPRINT:LPRINT
450 LPRINT CHR$(27);"@"
460 END
470 '
480 I(X+3)=I(X+3)+128:P=P+1:IF I(X+3)>255:I(X+3)=128
490 IF P>7:P=1:I(X+3)=I(X+3)+64+32:IF I(X+3)>255:I(X+3)=128+64+32
500 RETURN
510 '
520 END
```

and a gentle touch freed it and all was well again. A few days later the replacement chips arrived and once inserted worked perfectly. It was several weeks untill the monitor arrived but at last my system is up and running and I can start to unravell the mysteries of LDOS.

Has it all been worthwhile ? I think so , I have a better system than the the equivalent Tandy one and one which cost me less. I have learnt a little more about my system and have had the satisfaction of having solved some minor problems.

My advice to all of you who like myself were a little aprehensive about messing about with the hardware side of things is to go ahead , its not as bad as it seems.

Finally my sincerest thanks to Leon and Mr Sheppherd, your assistance was invaluable gentlemen.

P. Tombling

x x x MDBS PROGRAMMING SERVICE x x x

I shall shortly be arranging an OEM contract with ISE-Pactel, the UK distributors of the MDBS data base management system.

Using MDBS I can produce 'bespoke' software at not much more than the price of an 'off-the-shelf' package. In most cases I will be able to show you a rudimentary version of your package up and running at no cost to you, before you commit yourself to a firm order, within a few days!

The minimum hardware configuration is a 64K Model II under CP/M, although a better buy would be a Shelton Instruments system with an 8 Mb Winchester, or the Onyx Sundance with a 6.7 Mb Winchester.

Using Onyx hardware and MDBS III I can develop multi-user systems for up to four users (under Oasis or MP/M).

Possible applications for MDBS include:-

- Integrated accounting packages
- Energy management
- Inventory control
- Medical records
- Education systems
- Job costing
- Professional time billing and accounts
- Library control
- Mai[illegible]list processing

Leon Heller
Tel: (0908) 613004

DISKS WITHOUT TEARS.

After scrimping and saving for what seemed an eternity I was finally ready to upgrade to disks. The final plan was Expansion Interface from Tandy, single Olivetti Disk Drive and memory chips from Kram Electronics and a 9 inch Green screen momitor from Crofton Electronics. Together with LDOS from Hardings.

The saga began with a telephone call to the Tandy Computer centre at Bristol. I ordered my Expansion Interface and enquired about fitting a Numeric keypad to my keyboard. I was assured by Tandy that they could fit the keypad while I waited , when I called to collect the Expansion Interface. I sent my orders for Disk,chips,monitor and LDOS and sat back and waited. Finally the day arrived to collect my Expansion Interface from Bristol. With my keyboard under my arm I made my way to Bristol to encounter setback No 1. I could collect the interface but I would have to leave the keyboard with Tandy to have the Numeric keypad fitted. I left my keyboard with Tandy having arranged to collect it the following week.

During the next week the Disk drive,memory chips and LDOS arrived. Openning up the interface the chips were inserted and the two power supply units shoe horned into place with the greatest of difficulty (surely a design fault Tandy). Finally the day came to collect my keyboard. Rushing back home I immediately set up my system only to encounter setback No 2. A fault appeared in the memory, the ammount of memory available varied and was usually around 36K (it should have been 48K). Suspecting that some of the chips were faulty some replacement chips were ordered. Meanwhile while trying to backup LDOS the Disk drive developed a fault. The initial display of garbage remained on the screen and nothing I could try would solve the problem. It was at this stage I called Leon asking if he could offer any advice. He suggested I contact Mr Sheppherd who lived close by. A phone call to Mr Sheppherd,and a few moments later found me making my way around to his home ladened down by my system. Substituting a piece of my system for a piece of Mr Sheppherds finally confirmed that the fault was indeed with the disk drive. Eventually the fault was found to be the cam which moved the read/write head across the ( ). This had jammed

* Write a file .. Writes a file to disk using the same filename as was used to load the file. This command will not work if an append has been used. The main use for the write command is to update a file.
* Copy a file .. This copies the contents of the text buffer to disk and is how you would create a new file on disk.
* Memory .. Simple, prints the amount of free memory.
* Exit from program .. When this command is used it automatically does a Write before returning to DOS and is the 'safest' way to leave the program.
* Quit .. A straight forward exit from the program back to DOS
* New .. Clears the text buffer.
* Print .. Sends the contents of the text buffer to the line printer.
* Tidy .. An odd one this, it tidies up the text in the buffer to give (as the manual states) a reasonable amount of what you see is what you get.
* Exit to another program .. This command allows the text itself to specify the next program to be run. The program first does a Write then checks the text for a DOS command.

****** Comments on the command mode .....

I have given only brief details of the functions of the commands in this mode as they really are quite complex in their operation. My favourite command is the Exit, where an automatic write is done prior to returning to DOS. This can save the embarassment of leaving the program with all the text in the buffer and nothing on the disk because you forgot to write out the file or (as happens in Pencil) the cursor was in the wrong place. I have not as yet found a use for the exit to another program (specified in text) but I suppose it could be useful. The need for the tidy command is the way the program operates, more on this later.

Pressing <ENTER> once takes you into the Edit mode which I will cover later, pressing <ENTER> again takes you to the Text Enter mode. In this mode the cursor resembles either a golf club or a large reverse letter L. Distinctive would be an understatement in terms of a description of this cursor. The first thing that becomes apparent is the lack of repeat key facilities which I personally have come to expect as normal in a word processor. The second most noticeable thing is the need to leave the text enter mode for editing except for backspacing over previously typed characters on the current line. The cursor can not be moved to a preceeding line without being in the edit mode. Pressing shift - up arrow activates the lower case and doing the same again returns to upper case.

Some of the best features of Ajedit appear in the Enter mode, with text embedded commands I have not seen in any other word processor and which can give excellent formatted print outs of the text. A list of the text - embedded commands are as follows ....

* Set page number. * Set line number on which page number will be printed. * Set page length. * Set form length. * Set line number for printing of heading. * Set line number for printing of footing * Special parameter setting allows for setting of the line numbers for the page number, heading etc, all in one command. * Set number of characters in a line. * Set indentation. * Carry out a set number of line feeds. * Set instruction for a line feed after every carriage return. * Turn on / off listing to screen during printing. * Turn on / off output to printer. * Start new page. * Turn on / off page numbering. * Initialise line counter. * Specify text to be printed at the Top and Bottom of each page. * Send control codes to printer, will allow use of various print sizes etc. * Turn text formatter on / off. * Turn on / off automatic paragraph

*** A REVIEW OF AJEDIT ***

Before I review Ajedit I would like to say something on the subject of reviewing programs. It is not an easy task to review a major piece of software such as Ajedit and be certain you have covered every aspect, found any bugs (if they exist) and highlighted all the interesting or special points. There are a number of reasons for this, firstly you must be very well acquainted with the actual program by having used it for some time to appreciate the various points. Secondly, you can not help forming personal opinions based on what you like or dislike about the program or compare it with some favourite piece of software. Lastly, "you can't please all of the people all of the time" meaning, what I think is good in a program, someone else may not, and vise versa. Give ten reviewers the same program and at the end of the day you will have ten very different reviews !

Word processors are becoming as common place as the ubiquitous typewriter but with fewer vices and far more to offer. They are to be found everywhere from a Fleet Street newspaper office to the home computer in the corner of the living room. Two programs in particular, Electric Pencil and Scripsit have been around for some time and are familiar to a lot of TRS80 users. When Molimerx advertised their Ajedit word processor I was very interested to see how it would compare to the other word processors on the market and in January I purchased the program. Now, after a few months, I feel as though I know the program well enough to be able to write a review about it.

Ajedit comes, with manual, in a plastic coated ring binder and the program itself is on a 35 track TRSDOS disk. If you have not used a word processor before then take some time to read the introductory section of the manual. Also, if it so happens that it is your first venture into a disk based operating system, the manual will lead you through the intializing steps very clearly and simply. As with all software the first job to be done is the making of a back-up copy and this is very easy with Ajedit. It can also be very readily transferred to your preferred DOS, although Molimerx do recommend leaving it on TRSDOS.

Typing AJEDIT will take you straight into the program with a prompt indicating the machine type / model. In my particular case it shows "Genie" and the version number 1.4 There are three modes in the program ... the "Command", "Edit" and "Text Enter" modes each having it's own distinct cursor designed to prevent confusion as regards which mode you are in. On entry you are in the "Command" mode..

When in the command mode the cursor is an asterisk followed by a greater than sign followed by a flashing graphic block. It is in this mode that the disk in / out and print operations are controlled. A summary of the commands for this mode is as follows ...

* Any valid DOS command .. DIR, KILL, FREE etc are supported.
* Load a file .. A straight forward command which loads a file from disk.
* Reload a file .. This will reload a file from disk, overwriting what is in the buffer at present but retaining the current parameters. This command should be used with caution, ensure the file being worked on has been saved to disk before issuing the reload command.
* Append a file .. This command will append a file from disk to the file already in memory. Very useful for adding blocks of text from a previously written library.

of text may be listed (16 lines) by pressing P and the previous page by pressing B. There are commands to take the cursor to the start or end of text. The route to the command mode is by pressing the / key and the return to text enter is by pressing enter or with an actual edit command. A list of the commands is as follows ...
* Move cursor 1 character to right. * Move cursor 1 word to the right. * Move cursor one place to left. * Move cursor down to start of next line. * Move cursor to start of preceeding line. * Move cursor to starting line. * Move cursor to last line. * Display first 16 lines. * Advance 16 lines. * Display previous 16 lines. * Change n (number) characters. * Delete n characters. * Hack and insert. * Insert. * Kill text to right of cursor. * Kill n lines of text. * Replace n characters. * Search line for character. * Move cursor to end of line and add more text. * Find a string in text.

******* Comments on the Edit mode .....

There are certainly advantages in having the same edit commands as appear in Basic but, as most of us know, they do lack the ease of use that full screen editing (as appears in Pencil for example) gives the user. There was a change in release 1.4 to add another command key to permit intra-line text addition as the previous version did not support wrap around when doing text insertion and this complicates the editing proceedure. Even though there is a degree of awkwardness in the edit mode the text can be manipulated as required. One unusual feature is the "text-tidy" command. This is necessary when using the add text with wrap-around as there could be a gap at the end of the line after the last character entered. After issuing the tidy command the text on screen is neatly sorted and gives a better idea of what the final output will look like. As in the text enter mode the lack of the repeat key for cursor movement is a handicap.

*** Conclusions ***

As I said when I started the review, Ajedit is a major piece of software and it is very difficult to ensure that you do not miss any important points during the review. I hope I have covered the various commands in not too boring a manner but it is only by listing the various command options that I can give some idea of the complexity of this program.
Ajedit has just about everything that is required in a word processor. It has good communication with the disk and DOS. The printer control commands help the user to get the best out of his printer. The mail merge facility is easy to set up and use. An excellent manual gives help to all, from the novice to the seasoned word processor user. If the user is experienced with the edit functions of Basic then there is no need to re-learn a new set of edit commands. The safe exit to DOS could save a lot of tempers and re-typing.

There are some minus points as I have mentioned. The lack of the repeat key, type-ahead and edit while typing makes life that little more difficult if you use the program often. Travelling between the three modes can break the "flow" of using the program. I am not very enamoured with the "golf " cursor being more accustomed to the usual graphic block. If you wish to change the cursor I have put the necessary details at the end of the article.

I contacted Molimerx mentioning the lack of type ahead and suggested that Ajedit could be made more compatible with LDOS and could use some of that DOS's features (as does Scripsit and Pencil) to give the necessary improvements. I am pleased to report that in a recent letter, John Harding

recognition. ¤ Force printing to terminate. ¤ Pause printing at the end of each page to allow for single sheet insertion. ¤ Restart printing of current text. ¤ Eject paper to bottom of page. ¤ Pause printing until any key is pressed. ¤ Link text files. ¤ Centralise text. ¤ Enable Mail / Merge. ¤ Specify file to be used for mail merge. ¤ Clear string space. ¤ Terminate printing. ¤ Tabulate to specified column.

The list is very impressive and the permutations of the various commands seem endless. If you can't format the text to your requirements with these commands then throw away the printer because it sure ain't the program ! Let us look at three of the commands to get some idea of the power of the facilities in the program.

The control code command, which is supplemented by a special command allowing you to specify either a Centronics 737 or an Epson printer, will allow you to change all the various print sizes / types that your printer will allow, for example .. condensed, bold, elongated and italics to name but a few. The command is in the following format .CC n1,n2 where n1 and n2 are the required codes, .CC 27,69 for example will give emphasised characters on an Epson (the characters being used for this very print - out)

The Tabulate command was added in the later versions of Ajedit (1.4 on) and with another control character added at the same time will allow tabulation from within a text line. Imagine having varying length descriptions of items starting in the first character position on a line and ending anywhere from character position 30 to 60 but you require the prices printed out neatly in column 70. With the embedded tab command it is very easy to obtain this effect. You can also embed printer control codes in text in the same manner to allow for a change of print size on the same line.

The next command could almost be considered a separate program never mind a separate command. Mail Merge is a facility generally found as an add - on to a word processor program or as a separate program in it's own right. Ajedit has mail merge as a standard part of the program and it works in the following manner.

You first create a "mailing list" with a suitable file name. Next you write your "standard" letter and for the address and name you substitute a special command character. You embed the special mail merge command in the text and the file name of the mailing list. When you issue the print command each time the program meets the special command character it reads the next piece of information from the mailing list file specified. ¤¤¤¤¤¤ Comments on the text enter mode .....

The absence of repeat key and "edit while typing" is a major draw back as far as I am personally concerned. Most authors edit and shuffle text about as they go and it is as much a part of typing in the text as entering the words themselves. The embedded commands are excellent in their variety and operation. Ajedit has no type - ahead buffer and it is only too easy to drop a character at the end-of-line word shuffle. The program is better than Pencil in this respect but it is still annoying to see the odd missing letter in a word just typed.

The Edit mode is entered from the text enter mode by pressing down arrow. There are quite a number of commands in this mode and they are very much as those used to edit in Basic. For example pressing H will hack and insert and pressing K will kill text to the right of the cursor. The edit mode has a different cursor, a flashing graphic block, which may be moved about the text using the arrow keys and space bar. The next page

The Setup program is purely to establish one contiguous block of disk space for a prescribed random access file, & is remote from the main suite of programs as its use will wipe any file data clean.

The Master program is purely a menu allowing the selection of the required action, which merely calls & runs the selected program.

All other programs are self contained procedures, which upon completion of the task will, unless a further requirement is made, return control to the Master menu.

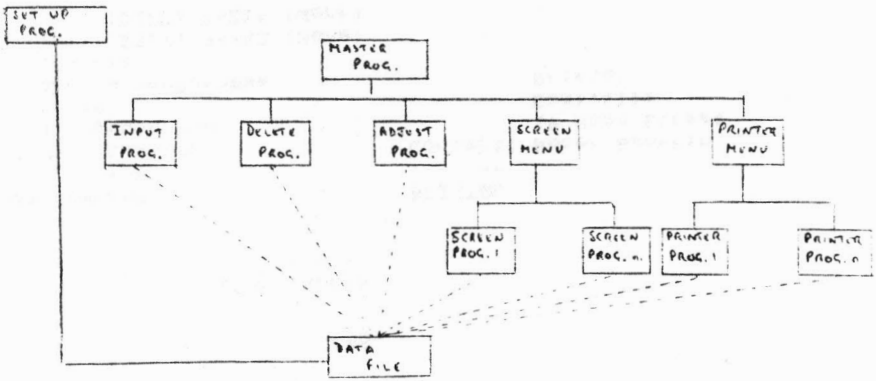
The system performs moderately well, but certain improvements would better be reported:-

1) Much of the data is capable of being stored in a better manner, namely in a single data code, for then the data entry can be quicker, the file can be more compact & the routines within the program for selections can be less elaborate.

2) When performing some operations, especially printing, no escape procedures are available, which say in the event of an erroneously selected long print would more than be desirable.

I face a certain conflict here as such an escape is not provided in the I.B.M. system. Their premise would appear to be that any system is to be USER FRIENDLY but perhaps should not provide excessive avenues of escape, for then it would encourage sloppy & undisciplined users - a feature I have to avoid as connections to a Warwick computer via a G.P.O. phone is expensive enough for the correct results. However in some operations I do feel an escape should be made possible & so avoid frustration on an unwanted lengthy operation.

3) The suite of programs was not supposed to be total in covering all possibilities of reporting, but new report programs could be written by individual users. This would not occur due to the need to get to grips with the logic in the Screen & Print programs. To regain the objective of user developing report programs I would suggest :-



said that he had contacted the program's author to look into the use of Ajedit with LDOS. I am looking forward to seeing the outcome.

Finally, to answer the question before it is asked, yes I would recommend the program and I believe that it does represent value for money considering the number of features in the program.
If you are wondering what to do with a word processor, why not use it to contribute to the news letter ? This article was prepared using Ajedit, proof read with Hexspell 2 and printed on an Epson MX80 using emphasised print.

Ken Grey

********** Coming Soon .... A review of Newscript **********

MODIFYING AJEDIT'S "TEXT ENTER" CURSOR

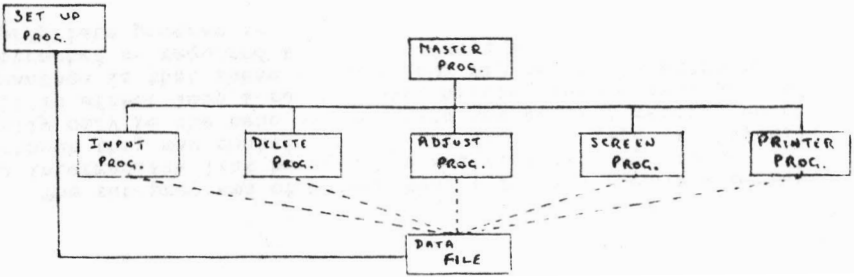
Using Prozap or Superzap, modify Relative File Sector 12H Byte B8H which should be BAH into whatever you want for a cursor. Remember to work an a back-up copy !

PROGRAM SUITE DEVELOPMENT

This consists of a history of experience in developing a suite of programs for use by DISK to put the Club Records on computer. Although written for Disk it is not impossible to write & use the principle for Cassette, but under these circumstances there will be considerable delays in loading & running the programs plus the data access.

Initially I decided that the basis would be on the lines of a method I use with I.B.M. The basic software is supplied by I.B.M., with each user responsible for developing his own programs, especially the control program. The system is called V.S.P.C. (Virtual Storage Personal Computing). This is in reality each user actually uses a small run-time memory, with all data & programs stored on disk, with the control program calling up the appropriate data base, format, programs, sorts etc.

Using only the idea (& NOT the content) of the system I quickly developed this :-



LOCAL GROUPS

BARROW-IN-FURNESS

Contact: Jack Lowther
131 South Row
Roose
Barrow-in-Furness
Cumbria
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(0229) 26214 (Work)

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Contact: Mike Gibbons
1 New Street
Castle Bromwich
Birmingham
Tel: (021) 747 2260

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Contact: John Bedford
19B Rose Walk
Goring-by-Sea
West Sussex

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Contact: R. Hamlett
Pine Lodge
Desden Road
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Contact: Jim McPherson
Tel: Uddingston 813717
or 812797

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Contact: Roger Bampkin
19 Wood Street
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Contact: Os House
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Higher Shaftesbury Road
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Contact: Peter Chapman
36 Park Court Road
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(0656) 3484

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Contact: Roy Smith
8 Mallard Close
Layer-de-la-Haye
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EDUCATIONAL SUB-GROUP

Contact: Dave Futcher
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Middle School
Beaconsfield Road
Southall
Middx.
Tel: 01-574 3506 (School)
01-743 5310 (Home)

****

FOR SALE

16k Level II TRS-80
Green Screen Monitor
Software 350.00 Pounds

Expansion Interface 200 Pounds

500 Pounds the LOT

Contact M. L. EVANS 143-690174 evs.

****

The sub-programs of Screen Menu & Printer Menu are merely the intermediate link between the Master & the Report, & although they may contain one or two standard reports they will really only be the menu of selecting the desired report, which will in effect load & run the user written report program. The advantage is that these sub-programs may be easily added or subtracted as required & only involve 4 actions in the appropriate program :-

1) Adjust the screen display of the menu.

2) Adjust as necessary the ON GOTO line.

3) Insert/Delete the line affected by the ON GOTO.(e.g. RUN "NEWPROG").

4) Write your own required new program (or kill the unwanted one).

Rod Bullard
Southern TRS-80 Club

(* I have been using a similar technique for over a year, with a considerable amount of success. This technique is ideal for use with the MDBS package. LFH. *)

MAILBOX

The above is a facility provided on the minicomputer based at Luton College of Higher Education, for all the secondary schools in Bedfordshire.

I have obtained verbal agreement for the TRS-80 members to use the above after school hours to try out their communications packages and equipment. The rate used is 110 baud, and the full documentation is available if a SAE is sent to me.

Using ST80 or TERM is quite straightforward, and dead easy if a tutor is to hand. Leon has used ST80III and has transferred files from my system to the College. These files were lecturers timetables previously sorted on my system, and then transferred to Luton for printing on their fast line printers.

I anticipate our department receiving four files over the 'Phone with the college doing all the printing, with my TRS-80 doing all the sorting-by lecturer-by room-by time-by class.

Brian Pain

****

8OUS MAGAZINE

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DEALER PRODUCT NEWS MARCH 82

EPSON MX RANGE RIBBONS

"Good morning I'd like a replacement ribbon for my EPSON MX80 printer." "Certainly Sir that will be £6.50" (stunned silence) "Are you sure that seems an awful lot to pay." "That includes a discount of £2.00 on the recommended price Sir." "Look I only want the ribbon not the whole cartridge, don't you stock the ribbon on its own."

Now it may be that you haven't had that conversation with your customers yet, but it won't be too long now before the second option is a reality. The replacement market for Epson ribbons is well established in the States and we intend to repeat that here.

Now during the early days some dealers will take our product on and others will dismiss it. If you want to get the customers into your store then here's your ideal "LEADER". Establish a reputation for low cost options and keep the customers coming to your store.

Replacing the ribbon in any model MX printer is a five minute job and quite surprisingly is a reasonably clean one. All that is required is a little patience and care.

The savings are worth the effort to the user and the margin makes it worth your while. As an inducement to establish the product in your store we offer a sample order of SIX ribbons only at the regular discount of 30%.

The market is a considerable one and the investment minimal. Don't lose sales to the replacement market join Work Force and get the customers coming in to your store.

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BASIC COURSE LONDON 10/17th JULY 1982

This was our first venture at a specialised course instead of using a workshop format. Judging from the responses of those who attended the aim was achieved.

Martin Miller very kindly agreed to be the lecturer/tutor for the two days and answered the multitude of questions very well. The best parts were where members had a go at entering their own programs, including the homework set the previous week. The course was structured around a simple database which gradually grew & grew, and here members saw how to write in a series of blocks. Each of these blocks were proved before going on to the next.

Martin provided a printout of the members' programs, giving them a reminder of the fun and quite hardwork over the two Saturdays.

Tandy at Seacoal Lane have suggested that we do another on machine code over 4-6 Saturday mornings using their excellent classrooms, which will assist both them & us in providing facilities for our 'customers'.

Brian Pain

CAMEL MICROS
33A, COMMERCIAL ROAD, WEYMOUTH, DORSET

TRS80 SOFTWARE

MATCAL - A matrix calculator.

Includes a 27 page manual containing an introduction to practical applications of matrices in business, engineering, & science (e.g. trend prediction, statistics, structure calculations, electrical networks etc.). Handles single & double precision matrices of any size up to the maximum allowed by memory limitations, and will calculate correlation and covariance matrices from raw data, as well as the usual matrix operations (add, multiply, inverse etc.).

32K Disc version (state Model 1 or 3)	£ 12.50
16K Tape version	£ 10.50
Manual	£ 2.50

Price includes V.A.T. & postage
(Note manual not included in the above prices)

ELECTRONIC WORKSHOP

This program provides many functions commonly used in circuit design, for example Colpitts, Square, and Sawtooth oscillators, coax cable inductance, thermal & shot noise calculations, diode charactersitics, feedback amplifiers etc.). Menu driven.

Tape only £ 6.90
(includes V.A.T., postage, & manual)

* SPECIAL PRINTER OFFER *

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Memdisk is an absolute boon for the single drive user. Files may be copied from his single drive to the drive in memory, disks changed and then copied back. To coin a phrase — the applications are only limited by the imagination of the user whether you have one drive or more — after all, you always need another!

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National TRS-80 Users Group

Newsletter

VOLUME 4 ISSUE 2 AUGUST 1982

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INFORMATION ON THE GROUP

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

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

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

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

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

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers (not just TRS-80s or Video Genies).

The Group maintains two software libraries (Model I and Model II) which are free to members. Library lists are obtainable from the Secretary (price £1). The medical and educational sub-groups maintain their own libraries.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

With a bit of effort it looks like we are back on schedule with the newsletter. As I am writing this we are half way through the month, so you should get your copy well before the end of the month.

A couple of months ago, the chairman of the Amateur Computer Club, Peter Whittle, asked me if I would take over the editorship of ACCumulator - their newsletter. I said that I wasn't very keen, but if they could not find anyone else, I might have a go at it. Well, no-one else volunteered their services, so from November I shall be wearing two hats. ACCumulator is much smaller than our newsletter, and is bi-monthly, so it will not mean too much extra work.

Contrary to popular belief, the newsletter does not take up much of my time. This issue has taken a total of around four hours or so to put together.

Please read my article on aids for the handicapped, and see if you can do something. Aids for the physically handicapped are an obvious use for the microcomputer, but do not forget about the mentally handicapped. A tremendous amount of useful work can be done in these areas by ordinary hobbyists.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.

2. Ensure your ribbon is in reasonable condition if using a printer.

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

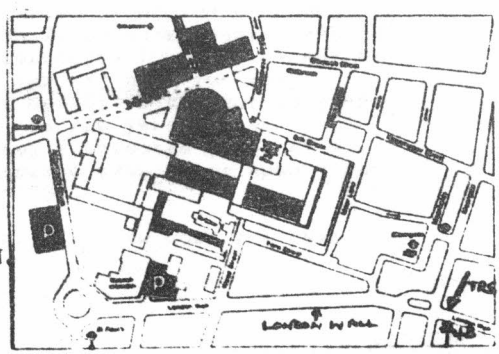
4. If you send in handwritten material, write legibly.

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

Leon Heller

*****PCW SHOW 11th SEPTEMBER*****

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MEMBERS' LETTERS

By Jove Leon that was an excellent piece of machine code software ! A fine example of the sort of powerful utilities that Macro80 users are creating every day. What was it now, a hundred lines of coding and that excludes all the extra routines called in from your relocatable object module library. Couldn't have done better myself.

. . . But then again . . . . What was the object of the exercise ? Counting words in a Scripsit text.

Now if I'm not mistaken, Scripsit always has the whole of its text file in memory and memory isn't wiped clean when exiting the program. So why not instead follow the first principle of good programming ie 'Keep It Simple .....' and simply PEEK the information out of memory.

```
1  DEFINT A-Z: N=32610
2  CH=PEEK(N) AND 127:
   IF N=32767 THEN N=-32768 ELSE N=N+1
3  IF CH=32 OR CH=13 THEN WO=0
      ELSE IF WO=0 THEN WO=1: CN=CN+1: PRINT CN;
4  IF CH<>0 THEN 2 ELSE PRINT"Words ="; CN: END
```

Perhaps with a little bit of effort Jeremy could reduce this to a one-liner but it might spoil the structure.

(PS Leighton you can have this for the library. Do you want me to send it on cassette or disk.)

Talking of cassette, how about a version of yours Leon for the cassette user ? Mine only needs the 32610 in the first line changing to 28369 and it works perfectly.

Whilst on the subject of large inefficient machine code programs doing jobs that could be done quicker with neat little Basic ones, I got fed up the other night waiting for Profile to sort itself out. I hadn't used Profile before and thought people were exaggerating about the time the Sort took - but not any longer ! Its disgraceful. Anyway the outcome was a Basic program - completely standard TRS 2.3 and this sorts my Profile disks quicker (about two thirds of the time) than before (much less if GSF sort is used), and it tells me what's happening.

With a more advanced Dos, capable of proper logical record length file accessing and a machine code in-memory sort such as GSF, Infinite Basic, or better still Newdos80's CMD"O", the whole thing gets done in no time.
My testbed is a small 1 disk database of 160 records, 50 in use. Profile takes 4min 30sec to re-arrange it and all of this time is spent thrashing the disk apparently reading and sorting one record at a time. Under Newdos80 Basic

my general purpose fifty line sort program does the same task in 55 seconds.

Part of this involvement with Profile came about when I was asked to convert an existing Model 1 database to Model 3 and then to expand the files to use the larger disk capacity available. The whole operation brought to light some fascinating nasties in the TRS 1.3 Dos, the most worrying being an inability to correctly input a sequential file. The final solution as you might have guessed was to put 1.3 back in its wrapper and move everything over to NWD80.

If, passing through Chesterfield in the coming months, you should happen across a tall, rather frantic looking steel-founder stamping on a harmless CTR80 and muttering oaths like "cload" and "cmdt" and "blinking stars", don't worry - it will just be Nigel trying to apply by cassette the latest upgrade to the stock / orders / production control package. As the complete suite includes two main modules both in excess of 20K, an advanced sort program, various file restructuring modules, line-printer filter and automatic chain file for initialisation, he's got his hands full.

One point Charles forgot to mention with his(?) date routine was that it took us some time to get the original Hewlett Packard program to work. Eventually the penny dropped and by replacing a few '+' signs with '-' ones and vice versa it hummed beautifully. The problem was due to the different way that HP Basic evaluated the condition TRUE compared with Microsoft. In the former TRUE is represented by 1 whilst with the latter -1 is used. This 0 to -1 switch is used in lines 520, 610 and 620 with expressions like -(M>2), yes 'M greater than 2', and -12*(M<3).
If you are transferring the formula to any other machine then check first on which protocol your particular form of Basic uses. (Hint: Key PRINT A=A and PRINT A<>A)

For the last couple of weeks I've had the opportunity to see one of Aculab's print buffers in use. It is hard to describe fully the advantages that this has brought about even with a fairly fast (Line printer III) bi-directional matrix printer. The unit is a stand alone Z80 controlled chunk of RAM, 16K and 64K versions are available, with switch selectable parallel and serial I/O. Simply plug it into the mains with one side to the computer and the other to the printer, using whichever type connections are appropriate and then run your software as normal. What happens next is far from normal. The computer never has to wait for the printer as LPRINT's are executed instantly without the usual hanging around; and the printer suddenly gets supercharged, every line being printed without a pause.

If the phone rings then just switch the printer off line and you have peace and quiet, but the computer doesn't stop until the buffer fills up (about 2 to 3 full pages for 16K). With a slower printer running a program with large amounts of output, the program can have shut down, data disks backed and another package can be re-booted and running whilst the listings are still coming from the first. A necessary luxury for any organisation.

The differing behaviour of the TAB command, mentioned over the last few issues, is directly attributable to geniuses at Fort Worth, who in their infinite wisdom never thought that anybody would want to Tab more than the width of the video. Consequently early TRS80's had this limit on the Tabbing routine burnt into the Rom. Later on when they developed the expansion interface they must have aquired a printer and realising their mistake changed the value to 127. Probably the printer was an old teletype or something similar that had a maximum of 128 characters. They must still be using that same old printer in their R & D labs as the latest Model 3 is still limited to tabs of 127.

If you get an LNW or the new Genie 3 then by switching from Rom to Ram you could Poke your own value into the machine. 80-Microcomputing published an article some months back with a machine code routine that intercepted Basic's tab function and allowed you set your own limit.

Just in case anyone hasn't heard, Zen is about to break into the American market via The Alternate Source, but you can still get your copy from the address below, Disk £44.50 and Cassette £22.50 (both Model 1 or 3).
The latest release (Zen82 vers 2.0) contains many major enhancements and an update service is available, at two thirds the difference in price plus postage, to purchasers of earlier versions. The most significant improvements are Scripsit type text editing, block moves, global replacements, library file support, printer formatting commands, etc.

All the Aculab software, @ZEN, Patches to Scripsit and Pencil are also available, as are the Holmes memory expansion, speed up boards (Model 1 & 3), and disk interfaces.

Part 2 (Written after the Luton meeting)
Congratulations Brian, Leon, Dusty and anyone else involved in the organising of the Luton 23rd to 25th July weekend. Nostalgia prevents me from saying the best yet but it was excellent in all respects. One small point though Brian could you slow the clocks down for the next one as there never seems to be quite enough minutes in the hours nor hours in the days.

Speaking of B & L, I'm told that some people have got the impression, from where I can't imagine, that Leon and I are daggers drawn and don't get on. Well just to put the matter straight, when my machine was a 16K Level 2 and I thought it as just a bit better than a calculator, it was Leon who showed me the full disk-powered potential of the TRS80, compiling a Fortran program which, up till then I had thought not possible on anything less than a room full of IBM. It was also Leon who rang me the other night to point out a bug in the little Basic program at the start of this contribution, where I had missed out an 'IF THEN' when copying it from the listing. O.K. I know I should have saved it in Ascii first and then read it into Scripsit but that's another lesson learnt. The only matter on which Leon and I disagree is whether or not the world would be a less complicated more beautiful place if Macro80 had not been invented. I don't suppose he will ever change his views and in a masochistic sort of way it would be waste if having achieved the near impossibility of understanding how to work it that the skills should not be applied somewhere.

G O O D N E W S for anyone who has to write S O R T S.

For Newdos 80 users who either can't manage with just 9 arrays or can't understand the manual.
For Model 3 TRS Dos users whose sorting requirements are somewhat more complicated than their primitive CMD"O" command can handle.
For Model 1 TRS Dos or Newdos+ users who haven't got CMD"O".
And for All cassette users who are fed up with these disk people talking about CMD"O" all day.

The Alternate Source have released a $20, plus postage etc, sort facility that works with all disk & cassette systems, sorts integer, floating point numbers and string arrays up to a maximum of 65, yes sixty five arrays not elements, and has an instruction manual that anyone can understand. So put that in your Dos+ twenty-array-pipe and smoke it. The Alternate Source also publish a magazine of the same name and no self respecting TRS80 owner who takes their computing seriously should be without it. So write to Charley Butler at 704 North Pennsylvania Ave, Lansing, Michigan 48906, U.S.A. and order your copies now !. By the time you read this I should have some copies of TASORT available for distribution.

Many of you, especially Brian, must be hoping that Leo will get round to writing up the 'Art of Superzapping' soon and last Sunday he told me that he keeps putting it off because he couldn't stand the thought of JKL-ing the Superzap file-sector display to a printer and then keying it into Scripsit. Before the Yorkshire continsent start bellowing ROUTE *PR to LEO/TXT or whatever the latest version the

LDOS ...ute command is, they must remember that Ldos hasn't got Superzap. To eliminate any more time wasting I sent Leo this little program today that simply intercepts the printer output and puts it into memory. By zeroing out the whole of Ram used for the text storage first and then using Scripsit's text start address we end up with everything in memory from whence it can be sent to disk with ease.

```
   1                ; PRINTMEM/CMD .
   2
   3                          ORG  7800H     ; Above Superzap
   4                BUFFER:   EQU  7F62H     ; Model 3 Vsn
3.2 uses 7DB8H
   5                INIT:     EXEC INIT
   6 7800 21627F              LD   HL,BUFFER
   7 7803 AF        CLEAR:    XOR  A         ; Zero out all
Ram
   8 7804 77                  LD   (HL),A    ; to 0FFFFH
   9 7805 23                  INC  HL
  10 7806 7C                  LD   A,H       ; Over the Top ?
  11 7807 B5                  OR   L
  12 7808 20F9                JR   NZ,CLEAR
  13 780A 211378              LD   HL,LPRINT ; Put adddress
of new
  14 780D 222640              LD   (4026H),HL; routine in
Printer DCB
  15 7810 C32D40              JP   402DH     ; Back to Dos
  16
  17 7813 2A2178   LPRINT:    LD   HL,(POINTER); Get address
of next byte
  18 7816 71                  LD   (HL),C        ; Put
character there
  19 7817 79                  LD   A,C
  20 7818 BE                  CP   (HL)          ; Test that
it worked
  21 7819 23                  INC  HL
  22 781A 222178              LD   (POINTER),HL ; Move
pointer to next
  23 781D C8                  RET  Z         ; Return if all
OK
  24 781E C30000              JP   0         ; LDOS users
don't do this
  25
  26 7821 627F     POINTER:   DW   BUFFER
  27                          END
Exec Addr 7800
```

For Zen owners, and Leo qualifies in this respect, getting the resultant text to disk is simply a matter of powering up Zen and keying S (for Scripsit), W (for Write) and supplying a filespec. So its up to you now Brian don't let Leo put it off any longer.

At long last someone, Bob Sparling from Swindon, has shamed

me into fixing Superscript to run under Ldos and Newdos80. He wanted it patching for operation on double density and having got it sorted out it works quite nicely. Certainly <Break> ?D is a lot nicer than <DFG> into minidos, DIR and then MDRET.

Laurie Shields, 151 Longedge Lane, Wingerworth, CHESTERFIELD. Tel 0246 75568

(* Thanks for those few kind words, Laurie! Have you actually tried your program on a large text file? It really is abominably slow. Even on a relatively small file like the above letter, I got fed up waiting and went and made myself a cup of coffee. There is also the hassle of loading BASIC and then running the program.

My program did the count in a few seconds. Since it took me about half an hour to write the program, I reckon that just using it on a couple of large text files would justify the time spent on writing it, not to mention the time saved by other people who use the program! I have a nasty feeling that if I had written it using your beloved Zen, it would have resulted in a markedly different reaction! I still maintain that assembly language is ideal for small utility programs, BASIC is simply too inefficient. LFH. *)

From Arnold Handley

There is always advertising pressure on us to upgrade our systems. But how much life can we expect from a TRS-80 before we need to budget for a replacement ?

And what do they die of ?

Can we run a little quiz among members to find out (a) who owns the oldest machine, (b) who owns the one with the highest mileage ?

It would give us a good idea of Tandy reliability.

If I could start the contest rolling with my machine ... as a datum line, not as a contender ... it was bought secondhand from the guys at Aculab in November 1979 when it must have been a few months old. Since then it has worked under Electric Pencil and Scripsit for, what ?, six hours a day, five days a week with no servicing and no cleaning.

Arnold Handley

Wanted :- Two 5 x 7 character generator chips for a Tandy Printer I / Centronics 779. Both 28 pin.
Marked on one chip: 27001 Gold 3007 A01 SMC 7849B
Centronics part no. 35512027 - 1018 (upper case)
The other gives lower case :-
Centronics part no. 35512027 - 1031
Telephone Arnold Handley 0206 - 241725 (Colchester)

From Tony Bailey

I have attached to this letter some details of a USA product intended to get over the eternal problem of the "oxidising contacts" syndrome, with which most TRS-80 owners will be familiar. I have a set of these fitted to my own machine and this particular problem is now a thing of the past.

I suspect that User Group members will be interested in this product, and if so I am willing to Import the connectors in quantity. They should cost around £13.00 for the standard keyboard to interface pair, or £7 each, after duty and VAT.

Perhaps you could mention them in the Newsletter (congratulations on an excellent publication) with a request for members to drop me a line if they are interested together with details of how many are required. If there is sufficient response then I will let you have firm details.

Tony Bailey,
20 Farnham Avenue,
Hassocks,
West Sussex BN6 8HS

LEICESTER SUB-GROUP

The group in Leicester is being organised initially by David Blaker-Hedges. The unofficial membership at present numbers about 30. Meetings at the moment are held on the club nights of the Leicestershire Microcomputing Club (L.M.C.) in the same building, but in its own corner, so to speak. Interest is good but a little shy at present.

After my holidays (August 1 - August 16) we may be able to have our own club night very cheaply. Any members who are interested in joining Leicester Group or who wish to help in running it, please phone me, David Blaker-Hedges, on Leicester 884474 (day or night) and let me know what you want on your club night. Once we have a mandate we can go ahead and make some firm arrangements. So either get your pens out or phone me, let me know what you want on your club night. This will be your club, hopefully run how you want it. don't be apathetic, do it now! Phone me, write to me.

David Blaker-Hedges.

****
* WANTED *
****

Expansion interface for Model I TRS-80. Phone David Blaker-Hedges on Leicester (0533) 884474

ADDITIONS to SUPERSCRIPT

Steve Atherton's note on page 10 of June 1982 copy of the Newsletter prompts me to detail the additions made possible by my Daisy Patch when using a Daisy Wheel printer (in my case Tandy's Daisy II). I sell the program for £ 12 inclusive of postage. It needs different addresses when used with different DOS's so you need to send a disk with Superscript on it saying which DOS you use. It prints the 39 characters normally inaccesible on the Daisy Wheel, and has 19 other codes which give other characters or enables the drawing of single and double lines of any chosen length.

The first four lines show the facilities provided by SUPERSCRIPT (i.e. as before):

1. **BOLDFACE** Not BOLDFACE **BOLDFACE**

2. Underline Space underline space

3. $\log_e R$ $X^2 + Y^2$ ø

4. []{}^ $X^t + Y^t$

The following lines (5 to 14) are examples of what is made possible with Daisy Patch:

5. â ê î ô û ä ë ï ö ü

6. ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

7. ¨ ¨ ¨ ¨ ¨ ¨ Θ Θ Θ æ æ æ

8. DOUBLE Underline No Space

9. £ à ù é è ä ö ü ç ƒ Ä Ö Ü ¢ ¥ µ ß ™ † ® { }

10. [ ] _ _ \ | ~ ° ´ ¼ ¾ ½ ¶ ¨ § ^ •

11. ĭ ê ø ò ç Θ

12. ———————

13. ———————————————————————————

14. ═══════════════════════════════

Bill Cowhig 21 Priory Rd Sale Cheshire M33 2BS Tel 061 973 3604

MACHINE LANGUAGE SPEEDS UP AN ANALYSIS ROUTINE.

I am a practising accountant I have been interested in computing for some time and purchased a TRS80 about three years ago and since that time have developed a number of programs for use in my office to assist in the preparation of accounts.

With 32k of memory, an Aculab Floppy Tape unit and an Epson TX80B printer I have been quite satisfied with its performance and this has been helped with Aculab's Extended Basic.

The main program regularly used is an "analysis program" to process raw information consisting of a Code No. and Amount pair. From its initial design the program has been gradually developed by the inclusion of new features as and when these have occurred to me and by the end of 1981 I thought that it had at last been completed.

In January, however, the program faced its biggest test, since I wished to deal with about 1250 pairs of figures, one of the pair being an integer, the other a double precision figure. These were to be spread over up to 999 code headings.

Having completed the initial entry of the figures I was ready for the processing and printing. This started at about 11a.m. and I hoped would take only a few hours, but it actually took no less than 6 hours 30 minutes!

The processing was carried out by two loops which looked for the lowest code number and then dealt with all the amounts in the list which bore this code number. It then looked for the next code number and repeated the process.

Because of restraints on memory, I had had to discard a routine which sifted out the codes not used and there were therefore a great number of unnecessary passes through the data.

Around about this time, I purchased Laurie Shields Notes on Assembler to see whether he could throw some light on machine code to improve the performance of my program and with his notes, the Howe book, the Tandy book and finally Laurie Shields @ZEN, I set out to find a way out of the problem.

I had read about linked lists and thought that this might be a solution although I could not see how I could retain the order of original entry of the data, which I considered to be of some importance. Eventually light dawned and after a great deal of puzzlement, I have ended up with a machine language routine within the original Basic program which now prepares what I think of as an "address array".

This week the job reared its ugly head again - only more so since this time the number of entries would be 1815 - nearly 50% more than the previous time.

AFter the entries had been made I called up the new routine. The initial preparation of the address array took about 3 minutes and the subsequent processing and printing was completed in 52 minutes - a saving of at least 6 hours for a greater number of entries.

This was an incredible improvement, brought about with the aid of the books mentioned about and, I think helped greatly by @ZEN, particulary for its convenient breakpoint routine to debug the machine code program.

A further improvement has now been made, to provide a simpler means of saving data compared with the Aculab Extended Basic sequential data file routine, quite efficient but rather slow and also wasteful on memory as XBAS takes about 2.5K of memory. My routine repositions the numerical arrays which are then saved as a block of memory with the Aculab @Save routine. It can be a little costly on tape space but it is so much quicker I will put up with that. I think the same routine could be used as a basis for saving data to cassette tape but I have not yet worked this out - back to the drawing board and @Zen (in which I hold no shares!).

I read Laurie Shields comments about programs for Aculab with interest. It is a pity that there is not a greater demand for such programs as I think that the unit has a lot of merit and I know of one practising accountant who uses it regularly in preference to discs which he has found to be less reliable. One problem with the Aculab is the occasional loss of the directory but this can sometimes be overcome (see my advert in the November 1981 Newsletter.)

P. ERRINGTON,
Cardiff.

SAVING GSF ON FLOPPY TAPE.

That excellent set of machine code sub-routines from Racet Computes called GSF is supplied on cassette and the manual which comes with it describes how to save the routines to disk. However, life is not so easy for those of us who still persevere with floppy tapes. The routines cannot be saved using SYSTEM/CMD under XBAS as they are not written as a contiguous block, consequently, rather more subtle techniques have to be used.

What follows is largely the work of Laurie Shields, who devised this technique for me some months ago, and I am very grateful to him for it. As with David Washford's contribution in the June Newsletter (p.4), the writing up of this technique has been prompted by conscience pricking as a result of Laurie's letter published in the April Newsletter.

Machine Code programs can be saved to F-tape by the simple expedient of entering the following command from the keyboard:-
@SAVE"FILENAME/EXT",(sectors),(start address),(entry address)

(Where the entry address is optional, allowing the program to be @RUN if used.)

Each sector is 256 bytes long and the F-tape ALWAYS records a complete 256 byte sector, NEVER a part of one. If the end of memory is reached before a complete 256 byte sector has been recorded then the "infernal machine" goes back to the beginning of memory and starts recording the ROM until all 256 bytes have been used up. (With interesting consequences on reloading!) In order to prevent this, it is vital always to begin recording 256 x no. of sectors to be recorded, addresses BEFORE the end of memory.

Unfortunately, in the case of GSF, the program is not an integral number of 256 bytes long and thus simply using the appropriate MEMORY SIZE address as the start address in the @SAVE procedure results in chaos on trying to reload. To prevent this, the start address to use must be the next integral of 256 before GSF starts (16K=29696, 32K=45568, 48K=61952) i.e. 254 for 16K, and 216 for the others, addresses lower than the memory size addresses quoted in the GSF manual.

When reloading it is important to remember that, on power up, the appropriate one of the values quoted above should be used in response to the MEMORY SIZE? prompt rather than the GSF manual value. If the latter is used, the routines will partially load over the stack which is only 50 bytes below the MEMORY SIZE address on power up,

again causing chaos and not recommended!

Provided all the above is followed, GSF can be saved to, and loaded from, F-tape successfully in the normal way. However, following the rest of the cassette loading procedure given in the manual, i.e. entering CLEAR, does not appear to cause GSF to autostart when called from a BASIC program. The reason seems to be that the appropriate entry address has not been located in the USR memory addresses (16526 and 16527 - as described in the LEVEL II BASIC MANUAL). These entry addresses for GSF are given in the manual on the last page in the instructions for saving to disk under "cccc".

There are various ways to overcome the problem, the easiest being to include a POKE statement line in the BASIC program BEFORE the first call to GSF i.e.

```
POKE 16526,LSB:POKE16527,MSB
```

The MSB and LSB values are calculated from the "cccc" values given in the GSF manual for the appropriate size of memory.

Alternatively, a small autostart machine code routine can be incorporated at the beginning of GSF before @SAVEing it using some of the spare 254/216 bytes created by having to save an integral number of 256 bytes. The assembler program for the routine is as follows:-

```
00100   ORG                 ;Convenient starting point before
00110                       ;GSF according to size of memory.
00120   LD    HL,ccccH      ;Load HL registers with entry
address
00130                       ;obtained from GSF manual
00140   LD    (16526),HL    ;Load USR addresses with contents
00150                       ;of HL registers.
00160   JP    1A19H         ;Jump back to BASIC
00170   END
```

This can be converted into machine code using any of the assembler programs on the market. I do not own a copy of ZEN or MACRO-80 so I have no idea whether either, or both, is/are the "best thing since sliced bread".However, as part of the job lot which I acquired when I bought my TRS-80 second hand, was a copy of EDTASM which did the job perfectly well and joined the result to GSF.

Using:-

```
@SAVE "GSF",14,(start address),(entry address)
```

it is now possible to save GSF to F-tape and then auto start it using @RUN "GSF" before loading the BASIC program with which GSF is to be used. (N.B. In this case, "entry

address'='start address'= ORG address in the above program.)

For those who do not have an assembler program at all, the machine codes corresponding to the above program are (in HEX):-

21 LSB MSB (of relevant entry address) 22 8E 40 C3 19 1A

This can be put into the appropriate memory locations prior to @SAVEing either by using a monitor program, or even the 'M' facility of the humble T-BUG program (which I also acquired in my job lot). Or, again before @SAVEing, the data can be converted into decimal giving:-

33 LSB MSB (of entry address) 34 142 64 195 25 26

and the following BASIC program run:-

```
10 DATA (decimal values as above)
20 FOR I=1 TO 9
30 READ D
40 POKE ADDRESS+I-1,D
50 NEXT
```

(Where ADDRESS is the appropriate starting point for the size of memory being used.)

Laurie originally asked me to write this up so that even a beginner like me could understand it. I hope I have succeeded and I apologise to all those of you whose greater knowledge has meant that this article has appeared incredibly long winded.

R.C. Bailey.
(P.S. Laurie, have you sorted out the permanent mods. for @SCRIP which you promised me yet?)

PERSONALISING YOUR DISKS

Now that I have had even a little sleep, may I thank Brian for another momentous weekend! Thanks are also gratefully given to all those who stood up and freely gave of their hard-earned knowledge - their tips and hints amply repay the cost of attendance!

I was asked, both at Luton, and in three phone calls since, how I managed to 'personalise' my Newdos disks, so for all those who still haven't yet ventured into Superzap - here goes. I have zapped my disks so that, 1. the banner incorporates the latest Zap(patch) number that has been applied, 2. so that the disk titles and the Dos Ready signs are personalised.

First of all, make a backup copy! Put it in drive 0, and take the disks out of any other drives that you have. This isn't really necessary, but if you don't know how to put your name on a disk, then it follows that you don't yet know how to be sure that you don't wipe out a good disk! Load Superzap, press <enter>, and type in 0,17 (the comma IS important!). The screen is now filled with the HEX and ASCII detail of sector 17; down the bottom on the right you will see the name APPARAT,.INC..
Type in M O(alpha) D F2 and the cursor is rapidly winking at you over a number 41. 41 is the hex code for letter A,

and using hex codes you can now type in what you like in those 12 spaces - and if you only want to use 6 letters then follow them with 20 (the hex code for space), six times. As you type in new numbers you will see the name change, if you make a mistake it is OK to use the backspace arrow to retype the correct entry. When you are satisfied with your efforts, press <enter> and you will see the message 'Press Y if OK to write to disk' - make sure you haven't got a write-protect tab on the disk before pressing Y!

The screen now shows the previous picture of hex and ascii codes; press X and you will return to the Superzap menu. Press <enter>, followed by 0,18 <enter> and you will see a similar picture. On the right you will see the messages 'VERSION 2.0', and, lower down (spread over two lines) 'MODEL.1'. I changed my messages to read 'MOD 1 VN2.0' and 'ZAP 079' respectively; to change the first one you type in MOD33 and the cursor will now be over the 56. Enter up to eleven hex codes, using 20(space) where necessary. If you are confident enough you can now use the arrows to move the cursor down to the seventh row, over the 4 of the last entry on the row (4D) and change these seven letters. If you are not sure of this, then just press enter, and Y again to put the first change to disk, and when the screen comes back type in MOD6E - this will put the cursor over that 4.

When these are done, press X to return to Superzap menu. Press <enter> and type in 0,164 <enter>. By now you should know what to look for! Down on the right you can see the letters LTO.MINI-NEWDOS/80.READY. This NEWDOS/80 READY is THE message that appears when you reboot, so if you want to see 'GET A MOVE ON' or 'JOHNNY IS READY' then this is the bit to change. (I must say that I was impressed by someone's machine at Luton - his message simply, but usefully, said 'You are in DOS'). So type in MODC9 and the cursor will jump to over the 4 of 4E. Now type in the phrase of your choice, taking care not to go any further than the Y in READY. Press <enter>, enter Y,press X and you are back again at the Superzap menu.

So far we have changed screen messages. The last two alterations are for disk names. Press <enter>, type in 0,170 <enter> and you will see an almost empty right hand side of the screen. Down the bottom is NEWDOS80mm/dd/yy, and whilst the date is that of the disk creation, the name is that of the disk. To change it type in MODD0 and enter up to eight hex codes for the name you want.<enter>, Y, X back to the menu. <enter>, 0,217 <enter> will show us the name used when formatting disks: on the fourth line and continuing into the fifth is the legend 'BNOTNAMED2:/4:/::. Again type MOD, followed by 3D, and the cursor is over the 4 of 4E - NOT the 4 of 42, you don't change the B! Type in eight hexcodes for whatever you want your data disks to be called, press <enter>,Y. Press X to return to menu, type EXIT to return to DOS, and it's all done!

Now that you can see how easy - and how dangerous - zapping can be, get yourself a good book and learn about sectors, tracks, hex, and things that go bump in the night!

David Washford,
1 Alexandra Rd,
Bournemouth,
BH6 5JA

SIMPLE TERMINAL PROGRAM

I have decided to write a 'poor man's' version of ST80III (when I can find the time) which will sell for very much less than the £80 or so that ST80III costs.

I originally intended to base it upon Tandy's TERM program, which is listed in the RS-232 manual. However, I found Tandy's program quite impossible to understand, so I wrote my own dumb terminal program, which I intend to enlarge upon over the next few weeks. My initial efforts can be seen in the following listing, which might be of some help to other members who have had trouble with Tandy's version. My program does essentially the same thing, but is, I feel, quite easy to follow, being highly structured, and modular.

Using my program I have successfully accessed the Birmingham University DECsystem 20, and a couple of bulletin boards.

```
;       * * * DUMBTERM/MAC * * *
;
;DUMB TERMINAL PROGRAM FOR THE TRS-80 MODEL I
;WITH THE TANDY RS-232 BOARD.
;VERSION 1.0 - 18/7/82
;WRITTEN BY LEON HELLER
;
;
        ASEG
;
        EXT     DSPLY,CLS
;
START   EQU     7000H
RESET   EQU     0E8H            ;UART MASTER RESET
BRG     EQU     0E9H            ;BAUD RATE SELECT
CNTRL   EQU     0EAH            ;UART CONTROL REGISTER &
                                ;HANDSHAKE LATCH
DATA    EQU     0EBH            ;TX/RX DATA REGISTER
MODEM   EQU     0E8H            ;MODEM STATUS REGISTER
SENSE   EQU     0E9H            ;SENSE SWITCHES
UART    EQU     0EAH            ;UART STATUS REGISTER
;
        ORG     START
        LD      SP,START        ;INIT. STACK POINTER
        CALL    INIT            ;INITIALISATION
MLP:    CALL    CHRIN           ;GET CHARACTER
        CALL    CHROUT          ;OUTPUT CHARACTER
        JR      MLP             ;GO ROUND AGAIN
;
;       * * * INIT * * *
;
;INITIALISATION SEQUENCE
;
INIT    EQU     $
```

```
        DI                      ;DISABLE INTERRU
        CALL    CLS             ;CLEAR SCREEN
        LD      A,0EH           ;DISPLAY CURSOR
        CALL    DSPLY
        OUT     (RESET),A       ;RESET UART
        IN      A,(SENSE)       ;READ SENSE SWITCHES
        AND     0F8H            ;MASK OFF LOWER 3 BITS
        OR      04H             ;RESET RTS, DTR SET BRK IN
                                ;HANDSHAKE LATCH
        LD      (IMAGE),A       ;SAVE IMAGE OF LATCH BITS
        OUT     (CNTRL),A       ;LOAD UART WITH SW. IMAGE
        IN      A,(SENSE)       ;SET BAUD RATE ACCORDING
                                ;TO SWITCH SETTINGS
        AND     07H             ;MASK OFF UPPER 5 BITS
        LD      HL,BDTBL        ;POINT TO FIRST LOCATION
                                ;IN BAUD TABLE
        LD      B,0             ;ZERO B REGISTER
        LD      C,A             ;OFFSET IN C
        ADD     HL,BC           ;ADD OFFSET TO HL
        LD      A,(HL)          ;LOAD POINTED VALUE
        OUT     (BRG),A         ;LOAD BRG WITH TABLE VALUE
        RET                     ;RETURN
;
;       * * * CHRIN * * *
;
CHRIN   EQU     $
        IN      A,(UART)        ;LOAD UART STATUS
        BIT     7,A             ;TEST DATA RECEIVED FOR HIGH
        RET     Z               ;RETURN IF NOT
        IN      A,(DATA)        ;RECEIVED CHARACTER IN A
        AND     7FH             ;STRIP MSB
*       CALL    DSPLY           ;DISPLAY CHARACTER
        RET
;
;       * * * CHROUT * * *
;
CHROUT  EQU     $
        CALL    2BH             ;SCAN KEYBOARD
        OR      A               ;KEY PRESSED?
        RET     Z               ;NO, RETURN
        PUSH    AF              ;SAVE CHARACTER
STATIN: IN      A,(UART)        ;LOAD UART STATUS REGISTER
        BIT     6,A             ;TEST TRANSMITTER HOLDING
                                ;REGISTER FOR A HIGH
        JR      Z,STATIN        ;TRY AGAIN IF NOT
        POP     AF              ;RESTORE CHARACTER
        OUT     (DATA),A        ;LOAD HOLDING REGISTER
                                ;WITH CHARACTER
        RET                     ;RETURN
;
BDTBL:  DB      22H             ;110 BAUD
        DB      44H             ;150 BAUD
        DB      55H             ;300 BAUD
        DB      66H             ;600 BAUD
        DB      77H             ;1200 BAUD
```

* Insert: CP ØAH
RET Z
to avoid double LFs on TRS-80.

```
          DB      0AAH          ;2400 BAUD
          DB      0CCH          ;4800 BAUD
          DB      0EEH          ;9600 BAUD
;
IMAGE:    DS      1             ;IMAGE OF HANSHAKE LATCH
;
          END     START
```

Leon Heller

Date Display Program

The way Ldos requests numerical input for the date and then converts it into a nice display of Day and Month has obviously intrigued Laurie because he has written this little program in Basic which will do the same thing

This program used as a subroutine in a basic program requiring the date
would make the finnished result very professional

```
10 CLS
20 PRINT
30 DIMF$(7),M$(13)
40 FORK=1TO12          'READ IN MONTHS FROM DATA
50 READM$(K)
60 NEXT
70 FORJ=0TO6       'READ IN DAYS FROM DATA
80 READF$(J)
90 NEXT
100 PRINT@465,"DATE (MM/DD/YY)";
110 INPUTC$
120 IFLEN(C$)<>8THENCLS:GOTO100     'CHECK FOR SINGLE FIGURES
130 O$=LEFT$(C$,2)          'FIND VALUE OF MONTH
140 M=VAL(O$)
150 IFM>12ORM<1THENCLS:GOTO100
160 P$=MID$(C$,4,2)         'FIND VALUE OF DAY
170 E=VAL(P$)
180 IFE>31ORE<1THENCLS:GOTO100
190 Q$=RIGHT$(C$,2)        'FIND VALUE OF YEAR
200 Y=VAL(Q$)
210 Y=Y+1900          'ADD 1900 TO YEAR
220 X=Y
230 IFM<3THENY=Y-1    'NUMBER OF MONTH CALCULATED AS MARCH
240 IFM<3THENFM=M+13 'BEING 1, THEREFORE ADJUSTMENTS MADE TO
250 IFM>=3THENFM=M+1   'MONTH AND YEAR
260  N=FIX((365.25*Y))+FIX((30.6*FM))+E-621049   'ZELLER'S   CONGRUENCE.
GIVES NO. OF DAYS FROM 1ST MAR 1700 TO DATE ENTERED.
270 BN=(N/7-FIX(N/7))*7
280 BN=FIX(BN+.1) 'MODULO 7 OF NUMBER OF DAYS
290 CLS
300 DA$=F$(BN)+","+STR$(E)+" "+M$(M)+","+STR$(X)
310 PRINT@470,DA$
320 DATA"JAN"   , "FEB" , "MAR" , "APR" ,  "MAY" , "JUN" , "JUL" , "AUG"
, "SEP" , "OCT" , "NOV" , "DEC"
330 DATA"SUN" , "MON" , "TUE" , "WED" , "THUR" , "FRI" , "SAT"
```

Bob Sparling.
Southern TRS-80 Club.

A BUG IN TRSDOS?

Over the past few months I have become convinced that there is a bug in TRSDOS which can cause occasional disc parity errors. The problem seems to arise in the driver routine usage of the disc terminate command (D0 Hex) which appears sometimes to be sent too early after a write operation, and may cause the last byte of a sector to be corrupted. The solution seems to be simply not to send the instruction, by nulling the appropriate bytes in the driver. The command does not seem to serve any useful purpose in single-sector writes anyway, which is all that TRSDOS uses. The two bytes to be nulled occur in relative sector 2 of SYS0/SYS (actually sector 7 track 0) and in bytes AC and AD (Hex) of that sector, which are normally 36,D0. This is easily done with PROZAP or similar. If anyone is troubled with parity errors and is brave enough to try the mod., I would be interested to hear if it made a difference. Alternatively, send a TRSDOS disc to Camel Micros (see advert for address), and I will do the necessary (include return postage, please!).

J.R. Keneally

Educational Software Review
by Dave Futcher

For TRS-80 National Users Group Newsletter

PROGRAM:	Look it up
SUPPLIER:	G.E.D. Software 15 Arran Drive, Frodsham, WARRINGTON.
PRICE:	£3.50
MACHINES:	TANDY TRS-80 Model 1 VIDEO GENIE I and II

LOOK IT UP has been designed to provide practise for children to work on alphabetical order. During the program the child is given a number of words one at a time and is asked to search for the word through an, on screen dictionary. When the child is given the word he is shown parts of the dictionary and asked which part the word would be found in. The program provides two levels that can be preset by the teacher prior to the children commencing the exercise. These are to

search on the first letter only
or to search on the word

Once the level has been set the program begins and moves to a screen display which is well laid out and clear. This display controls and provides all the information that is needed in LOOK IT UP.
On the left of the screen are drawn the parts of the dictionary, in level 1 these are

A-C D-G H-J K-M N-Q R-U V-Z

in level 2 as the search is on the word rather than the letter the seven parts of the dictionary are

ABACUS - DEEP	DEER - GINGER	GIPSY - JOKE
JOLLY - MAGNET	MAGPIE - POLE	POLICE - TOLL
TOMATO - ZULU		

These dictionary parts are clearly boxed and numbered and on the right of the screen is the question and score area. When the quetions begin you are asked to type in the part of the dictionary that you will find the word you have been asked. This is done by specifying the number by that part of the dictionary.
The program then comes right into its own and the graphics capabilities are used. Once you have chosen the dictionary part a claw appears on the left of the screen and crosses the screen and moves towards the part of the dictionary that the user has chosen. The claw pops into the dictionary and ... If the child has chosen correctly the claw pulls out the word it was looking for and the score sequence starts and another box appears and flashes <CORRECT>. If the wrong part of the dictionary has been chosen the claw pulls out a message <YOUR'E WRONG> and the score sequence flashes <WRONG>
Each childs turn is ten goes, and the programs is then run again after the score for the turn sequence. There is an option to finish the program after each turn. The rerun of the program goes straight into the action and misses the instruction and teachers notes part of the program.
It is a great shame that when the child does choose the wrong response there is not a help sequence, or even a chance at another turn, this would be so simple to program and would make a very good program so much better. Even the children were surprised that they were deprived of another chance.
At present the program contains sixty words stored as data to use in both levels. They can be altered very easily by just retyping those lines of data in the program, and then rerecording the program. Thus the program can easily be made suitable for many age ranges and levels of ability.
I particularly liked the two levels of operation that is searching on the letter and on the word, this of course went down very well with many of the teachers too.
We have used the program in school for over six months and have found it valuable for providing practise in this area of study skills. We have because it is so easy to alter the level of the words been able to use it with top infants right through to third year juniors.
Of course because of thatt claw sequence LOOK IT UP has proved very popular with all the children that use it, they especially enjoy how the claw pulls out the actaul word that they have been set to find.
The program comes with no separate writtens instructions but that is no criticism as GED SOFTWARE provide full on screen instructions and teachers note at the start of a run.
The program is supplied on good quality computer cassette and caused no trouble with loading. It is good value for money at £3.50 and I would recommend its place in a school software library.

PROGRAM: Alphakey
SUPPLIER: Tandy Corporation (UK)
Tameway Tower, Walsall, West Midlands
PRICE: £18.95
MACHINE: TANDY TRS-80 Model 1 and Model 3

Alphakey was originally written for the American market by BERTAMAX and is produced under license by the Tandy Corporation. It is supplied in a strong three ring binder with versions for cassette and disc systems and the most extensive operating and teaching notes that I have come accross for a long time.
The package has been designed for classroom rather than home use according to the notes for use with four to six year olds. We have used it extensively with six and seven year olds and have found it a useful package.
According to the notes the program has two functions

to teach the child the alphabet using the computer display and the keyboard.
and to teach the child the locations of the letters on the computer keyboard.

Once the program is running you are presented with a choice of three modes of operation these are

1 practice of the alphabet using large letters.
2 practice with small letters.
3 working on the alphabet with no help from the computer.

When you choose modes 1 or 2 you move into a sequence that displays a large graphic keyboard and one large graphic letter. As this is a program that teaches the alphabet the modes always begin at the beginning, so a large graphic A is displayed at the centre bottom of the screen and at the same time the position of the A on the graphic keyboard flashes. You then move through a sequence of five letters. If everything is being answered correctly a graphic face appears on the screen to indicate this to the child, of course when things are not going so well the face disappears. After five letters the screen clears and the five letters that you have just been working with are all shown on screen together and you are expected to type them in without the keyboard display to help you. After the whole of the alphabet has been worked through the child or teacher is given a pretty full report as to how the child has done. This includes all the letters that have be found first try and the mistakes that have been made. As well there is given the average time taken to respond

I was very pleased with the quality of the graphic letters created in these two modes. The upper case ones are presented in inverse video and the black letter shapes stand out very clearly from the green screen
I found the lower case letters very good too, although it is very difficult to create the curves of lower case letters easily the programmer has suceeded where others have failed.
The third mode of operation is more of a test in the dark, as the child is presented with large blank graphic blocks that have to filled up with the alphabet in order of course. It like the rest of the program runs easily and is liked by the children.

ALPHAKEY is a well produced package that has much to commend it. It certainly has prove to be a popular program in our First school and has helped children a lot with the learning of their alphabet. The handbook is so extensive, if at times a little long winded. There are many control functions that can be used to exit and re-enter the program too, but I am worried about the price. A good program that could help a lot in an English Primary school but overpriced at £18.95.

PROGRAM: Trolls Gold
SUPPLIER: Microcomputer Applications
11 Riverside Court, Caversham, RG4 8AL
PRICE: £4.00
MACHINE: TRS-80 Model 1 and Model 3

Although certainly writtten as a game, this program written in the U.S.A. by George Blank and distributed there by SOFTSIDE, has tremendous value as an educational program. That is, if the use that it has been put to over the last eighteen months or so at my school are anything to go by.
The program provides plenty of practice of using directions to move arround a maze like structure. Two versions of the game are actually available, but it is very easy to alter the program to whatever one you prefer. One version works on the four cursor control keys -- the four arrows, while the other works with

<L>EFT <R>IGHT <U>P <D>OWN

The game is made a lot more interesting than the normal maze by the event being set in a deep cave. And deep in the heart of this cave lies a TROLL, and yes you have guessed it, it is a nasty one at that. The Troll is very keen in looking after his gold, and anyone who ventures, into the cave system has to beware, because the troll, will have no hestition in eating up anyone to happens to come near his pots of gold.
The idea then is to wind your way down through the cave system, and through the passages, that open and and shut during each movement turn, to where the Troll has the gold stored. As you make you way deep into the heart of the cave the Troll moves arround after you. By choosing the directions in which to move, you hopefully dodge the Troll and snatch the gold from the Troll's lair. But then the game is but halfway over. Now you have to wind you way back to above ground level and escape the Troll.
TROLLS GOLD is a well produced program that has provided plenty of practice in directional skill acquistion at my school, it is a popular program with staff and children alike. The screen layout is clear and the graphic representation of the Troll and the person looking for the gold are quite acceptable. The program does I think represent very good value for money.

S.W. LONDON GROUP MEETINGS

September 7
September 16
October 5
October 21

Ron Everitt

PROGRAM: Facto Bingo
SUPPLIER: BRYANTS EDUCATIONAL 1, The Hollies, Chalcraft Lane, North Bersted, PO21 5SX
PRICE: £3.50
MACHINE: TANDY TRS-80 Model 1

Facto Bingo is a game based on bingo for three players, and the object of it is to allow children to practice their factors and thus to develop their multiplication table skills.
After the title sequence and the 'entering of the three players names, the game starts. Three bingo boards are cleverly displayed accross the screen each with the players name by each board. The numbers on each board are presented in 32 character mode and just like real bingo boards there are large graphics blocks. The boards and their numbers are well displayed and clear to the users.
Each board contains fourteen numbers chosen at random from the non-prime numbers up to sixty. So that the game runs without dispute between the player the numbers are unique to each player.
In FACTO BINGO the computer play the part of the "caller". The caller uses the last two lines of the screen and here the problem is set. Each of the children playing can take it in turn to respond to the caller's question. This question takes the form

? x ? = 49
First number is -

and the child's whose turn it is would have to respond with the necessary two factors to answer the question.
Whoever's bingo board the answer number appears on then flashes and the number is covered. The game continues until one of the three boards are clear of numbers and bingo can be called. The program has been designed that so that it will not accept wrong responses and it will thus cycle until the correct factors are given.
The idea of factoring is useful and the program makes a good attempt to link it into a game situation. Some children enjoyed playing the bingo part and I suppose it is a bit like real bingo in that you don't have any real control over whether your number is going to come up or not. But many children found the idea not very exciting. Especially when the were quite good at working out the factors when it was their turn to answer the caller and to find that the number to disappear off the bingo card was not off their card.
Bryants sell this program like the majority of their other educational material for £3.50. It comes with no written instructions and unfortunately there are no on screen instructions at the begining of the program either, so that it really a quetion of working it out for yourself before using it with the children. This is not one of the best of Bryants programs, it obviously set out to be of eductional value but as far as I'm concerned it did not get much further than a simple game. It's a shame really as a lot of programming obviously went into the creation. But maybe its me and my feelings about bingo.

PROGRAM: Witches Brew
SUPPLIER: G.E.D. Software
15, Arron Drive, Frodsham, WARRINGTON.
PRICE: £3.50
MACHINES: TANDY TRS-80 Model 1
VIDEO GENIE I and II

Anagrams are always popular with children, particularly if they are not too difficult, and they are linked with things that they have been involved in school. GED Software have produced a simple but very useful little program that does just that. This is WITCHES BREW.
Witches Brew is all about, a witch, that is about to do some cooking in her large pot, but gets herself into a right muddle, and ends up not knowing what she has organized.
This is how the anagrams come to happen, and this little story presented to the children, on screen at the beginning of the program certainly sets the scene for the exercise. The child is asked to actually help the witch out by spelling the words correctly.
Gail Dowdle the programmer, thoughtfully has given the user two options, thus varying the levels that the children can work at. These are -- some help with the answers
no help
In the help level the child is not presented with the complete line of blanks and expected to work out hte anagram. Instead the user is given a few letters to help. This I think is very helpful and it certainly helped the children get going on the concept of guessing anagrams.
Once the level of operation has been set, the program proper begins.
You are presented with a clear and uncluttered screen that is so well linked with the name of the program. On the left of the screen is the big witches pot. Sticking out of it is even a stick for stiring. When the turn begins the pot flashes and bubbles while the letters are being mixed up. Then in the pot you are presented with the mixed up letters that you will need to use. On the right of the screen arethe lines for where the unjumbled word has to go. Prompting the reply is a flashing cursor at the place of the first letter. This is another good and sensible idea, for it is made quite clear to the child where the begining of the response is expected from. When the child has worked out the response and typed it in, the witch that has been on screen all the time at bottom right tells you how you have done. She gives a lovely nod of her head, witches hat and all to signify a correct response, and an equally pleasant shake of her head if the response is wrong. Another turn is allowed with the witch telling you to try again. This graphic sequence was liked a great deal by the children. The instant feedback by the computer is so important, and it is even better when the computer has been programed to do it in a fun way such as in this program.
The Jumbling up the the words have been done in a random way and they will change in each game played. Altogether there are 55 words at present stored as data, but more could easily be added, and the words themselves can be very easily ammended.

```
100 '************************************************************
110 '**                                                        **
120 '**          DOODLE/BAS                                    **
130 '**                                                        **
140 '**          Program in TRS 80 Level II Basic.             **
150 '**                                                        **
160 '**          (C)  D.E.HAINES.   Harrogate.   1981.         **
170 '**                                                        **
180 '**          Software     Consultancy     Tuition          **
190 '**                                                        **
200 '************************************************************
210 DEFINTP:DEFSTRI,T:CLS:RANDOM:X=RND(47):Y=RND(127)
220 PRINT@155,"DOODLE/BAS"
230 PRINT@272,"By D.E. Haines.       Harrogate.
240 PRINT@336,"---------------       ----------
250 PRINT@461,"<T>race on       and/or       <R>andom
260 PRINT@584,"Use the arrow keys for drawing or erasing lines
270 PRINT@715,"turn <O>ff the Trace or Random conditions
280 PRINT@914,"";:INPUT"Press a key to instructions ";T:CLS
290 CLS:PRINT@194,"Allow first player say ten seconds to set up a pattern.  Then
300 PRINT@322,"time second player at using the point to remove the pattern
310 PRINT@450,"The winner is the one who can remove his opponents pattern in
320 PRINT@600,"The least time.
330 PRINT@720,"Press enter to start playing "
340 PRINT@860,"DOODLE"
350 T=INKEY$:IFT=""THEN350
360 CLS
370 T=INKEY$:IFT<>""THEN480
380 IFR=0THENP=PEEK(14400)ELSEIFFR>VTHENRESTORE:R=RND(8):FORN=1TOR:READP:NEXT:V=RND(40)ELSEFR=FR+1
390 IFA=0THENRESET(Y,X)
400 IFP=8THENX=X-1ELSEIFP=16THENX=X+1
410 IFP=64THENY=Y+1ELSEIFP=32THENY=Y-1
420 IFP=40THENY=Y-1:X=X-1ELSEIFP=80THENX=X+1:Y=Y+1
430 IFP=72THENX=X-1:Y=Y+1ELSEIFP=48THENX=X+1:Y=Y-1
440 IFX<0THENX=X+1ELSEIFX>47THENX=X-1
450 IFY<0THENY=0ELSEIFY>127THENY=127
460 SET(Y,X)
470 GOTO370
480 IFT="O"THENA=0:R=0:S=0
490 IFT="T"THENA=1
500 IFT="R"THENR=1
510 GOTO370
520 DATA8,16,32,64,40,48,72,80
530 '   N.B.    Anyone who would like a free cassette copy is welcome, provided
540 '           you send a cassette + suitable packing and sufficient postage.
550 '           My address :-   82, Westville Oval, HARROGATE, HG1 3JW
```

GED SOFTWARE have produced another fine but simple program that has been great fun for our children to use. They have carefully thought out what appeals to children and also added two levels so that different ability ranges can make use of the material. I would recommend it above the many other anagram programs that are arround. It is certainlly very appealing.

Dave Patcher

PROBLEMS WITH A LNW DOUBLE DENSITY BOARD

Whilst attending the recent Birmingham workshop I had the good fortune to be given a faulty LNW D/D disk controller (* Many thanks Andy *).

The LNW board consists of a p/c card measuring approx 4.5 by 3.00 inches with a FD1790 disk controller a socket for the FD1717, a 16Mz xtal and 11 misc i.c 's. All of the i.c 's had been scraped to remove the identification.

After returning home that evening I opened up my expansion interface and removed the Tandy FD1717 ic and fitted the LNW, refitting the FD 1717 in the socket provided. I then booted up New dos 80 vs 2 !!!!. Alas the disk refused to boot nor did Trs dos 2.3 .

I decided that a scope might be of aid, so with this I checked the clock pulses around the xtal, as these were present I tried to boot up again and this time I was rewarded with 'NEW DOS 80 vz 2'.I quickly prdrived a new master disk for d/d and copied over my first d/d file. All appeared well until I powered up the next day. The problem had returned, neither single or double density disks would boot up; but after waiting 15 mins either disk booted ok.

The fault appeared to be heat dependent so it was decided to use 'Freezer' to locate the offending part. Freezing each of the ic 's in turn then pressing re-set to boot DOS I quickly discovered the faulty ic (U9). My biggest problem now remained what was it ???.

A call to Leon Heller gave me a few names to play with, Ron Everett finally furnishing me with a complete break down of all the ic's used on the board. U9 turned out to be a 74LS161, this was removed and a new socketed one fitted (* Many thanks to all concerned *).

I was now the proud owner of a d/d operating system with 80% more storage capacity than before . The system appears to work perfectly formating and writing at high speed (The 2.66 Mz speed mod) with most programmes running without zaps.

PS My system consists of 48K 2.66 Mz CPU,2 40 trk drives,Microline 80 printer and misc hardware mods

Jim Roden
10 Morvale Gdns
Stourbridge
West Midlands

List Variables (VARILIST) 26.7.82 M.C.Matthews

```
60000 CLS:CLEAR10000:S=1:E=59999:DIMZ$(150),Z1$(150),Z2$(150),Z3$(150):DE=0
60010 INPUT"Start line number or Auto (A)";P$
60020 IFP$="A"ORP$="a"THEN60040
60030 S=VAL(P$):INPUT"End line number ";E:IFE<STHEN60030ELSEIFE=0THENE=59999
60040 AD=PEEK(16548)+PEEK(16549)*256
60050 AE=AD+1:IFAE>32767THENAE=AE-65536
60060 AF=AD+2:IFAF>32767THENAF=AF-65536
60070 AG=AD+3:IFAG>32767THENAG=AG-65536
60080 NA=PEEK(AE)*256+PEEK(AD):IFNA>32767THENNA=NA-65536
60090 LN=PEEK(AG)*256+PEEK(AF)
60100 PRINT@900,LN;:IFLN<STHENAD=NA:GOTO60050
60110 IFAD=OORLN>ETHEN60400
60120 J=AD+4:IFJ=>32763THENJ=J-65536
60130 P=PEEK(J):IFP=34THENGOSUB60370:IFPEEK(J)=0THENAD=NA:GOTO60050
60140 IFP=39ORP=136ORP=147ORP=177THENAD=NA:GOTO60050
60150 IFP<65ORP>90THEN60340
60160 P$=""
60170 P$=P$+CHR$(P):J=J+1:IFJ=32768THENJ=-32768
60180 P=PEEK(J):IF(P>64ANDP<91)OR(P>47ANDP<58)THEN60170
60190 IFP=35ORP=36ORP=37ORP=40THENP$=P$+CHR$(P):J=J+1:IFJ=32768THENJ=-32768
60200 IFP()35ANDP()36ANDP()37ANDP()40THENJ=J-1:IFJ=-32769THENJ=32767:P=PEEK(J):
      ELSEP=PEEK(J)
60210 IFLEFT$(P$,2)="AS"THENP$=RIGHT$(P$,LEN(P$)-2)
60220 T=0:FORI=1TOK:IFP$=Z$(I)THENT=I:NEXT:ELSENEXT
60230 IFT=0THEN60320ELSEN=LEN(Z1$(T))-2
60240 IFMID$(Z1$(T),N,1)<>" "THENN=N-1:GOTO60240
60250 J$=RIGHT$(Z1$(T),LEN(Z1$(T))-N):IFINSTR(J$,
      "/")=0ANDVAL(J$)=LNTHENZ1$(T)=Z1$(T)+"/2":GOTO60280
60260 IFINSTR(J$,"/")<>0ANDVAL(J$)=LNTHENN=INSTR(J$,"/"):A=VAL(RIGHT$(J$,LEN(J$)-N)):
      A=A+1:Z1$(T)=LEFT$(Z1$(T),LEN(Z1$(T))-LEN(J$)+N)+RIGHT$(STR$(A),
      LEN(STR$(A))-1):GOTO60280
60270 Z1$(T)=Z1$(T)+","+STR$(LN)
60280 IFLEN(Z1$(T))>245THENZ3$(T)=Z2$(T):Z2$(T)=Z1$(T):Z1$(T)="":ELSE60320
60290 N=LEN(Z2$(T))-2
60300 IFMID$(Z2$(T),N,1)<>" "THENN=N-1:GOTO60300
60310 Z1$(T)=RIGHT$(Z2$(T),LEN(Z2$(T))-N):Z2$(T)=LEFT$(Z2$(T),N-1):Z1$(T)=" "+Z1$(T)
60320 IFT=0THENK=K+1:Z$(K)=P$:Z1$(K)=STR$(LN)
60330 IFP=34THENGOSUB60370:GOTO60140
60340 IFPEEK(J)=0THENAD=NA:GOTO60050
60350 J=J+1:IFJ=32768THENJ=-32768
60360 GOTO60130
60370 J=J+1:IFJ=32768THENJ=-32768
60380 IFPEEK(J)<>34ANDPEEK(J)<>0THEN60370ELSEIFPEEK(J)=0THENRETURNELSEJ=J+1:
      IFJ=32768THENJ=-32768
60390 P=PEEK(J):RETURN
60400 DIMSL(13),SR(13)
60410 T=1:SL(1)=1:SR(1)=K
60420 L=SL(T):R=SR(T):T=T-1
60430 I=L:J=R:I$=Z$(INT((L+R)/2)):PRINT@900,J,T;
60440 IFZ$(I)<I$THENI=I+1:GOTO60440
60450 IFX$(Z$(J)THENJ=J-1:GOTO60450
60460 IFI>JTHEN60520
60470 W$=Z$(I):Z$(I)=Z$(J):Z$(J)=W$
60480 W$=Z1$(I):Z1$(I)=Z1$(J):Z1$(J)=W$
60490 W$=Z2$(I):Z2$(I)=Z2$(J):Z2$(J)=W$
60500 W$=Z3$(I):Z3$(I)=Z3$(J):Z3$(J)=W$
60510 I=I+1:J=J-1
```

NOTE:- The character - ^ - denotes an embedded line feed

List Variables (VARILIST) 26.7.82 M.C.Matthews

```
60520 IFI<=JTHEN60440
60530 IFI=>RTHEN60550
60540 T=I+1:SL(T)=I:SR(T)=R
60550 R=J
60560 IFL<RTHEN60430
60570 IFT<>0THEN60420
60580 IFPEEK(14312)<>63THENCLS:PRINT@896,"SWITCH PRINTER ON":GOTO60580
60590 CLS:LPRINTCHR$(7):PRINT:PRINT"Is the printer ready";:INPUTA$:
      IFA$<>"Y"ANDA$<>"y"THEN60590
60600 LPRINTCHR$(15);:POKE&H4028,65:POKE&H4029,0:LINEINPUT"Title? ";T$
60610 PRINT:PRINT"Do you want line numbers printed? If so press ENTER.  If you
       only want the variables then enter V";
60620 V$=INKEY$:IFV$=""THEN60620ELSE:V=ASC(V$):IFV<>13ANDV<>86ANDV<>118THEN60620
60630 IFV<>13THENLPRINTCHR$(14)TAB(5)T$:LPRINT:FORI=1TOK:LPRINTTAB(10)Z$(I):
      GOSUB60880:NEXT:GOTO60850
60640 LPRINTCHR$(14);TAB(5)T$:LPRINT
60650 FORI=1TOK:LPRINTTAB(5)Z$(I);
60660 IFZ2$(I)=""THENY=0:GOTO60690
60670 IFZ3$(I)=""ANDZ2$(I)<>""THENZ$=Z2$(I):Z2$(I)=Z1$(I):Z1$(I)=Z$:Y=1:Z=1:GOTO60690
60680 Z$=Z3$(I):Z3$(I)=Z2$(I):Z2$(I)=Z1$(I):Z1$(I)=Z$:Y=2:Z=2
60690 IFLEN(Z1$(I))<71THENLPRINTTAB(20)Z1$(I):GOTO60840
60700 J=60
60710 IFMID$(Z1$(I),J,1)<>" "THENJ=J+1:GOTO60710
60720 A$=LEFT$(Z1$(I),J):LPRINTTAB(20)A$:GOSUB60880
60730 B$=RIGHT$(Z1$(I),LEN(Z1$(I))-J+1):IFLEN(B$)<71THENLPRINTTAB(20)B$:GOTO60820
60740 J=60
60750 IFMID$(B$,J,1)<>" "THENJ=J+1:GOTO60750
60760 C$=LEFT$(B$,J):LPRINTTAB(20)C$:GOSUB60880
60770 D$=RIGHT$(B$,LEN(B$)-J+1):IFLEN(D$)<71THENLPRINTTAB(20)D$:GOTO60820
60780 J=60
60790 IFMID$(D$,J,1)<>" "THENJ=J+1:GOTO60790
60800 E$=LEFT$(D$,J):LPRINTTAB(20)E$:GOSUB60880
60810 F$=RIGHT$(D$,LEN(D$)-J+1):LPRINTTAB(20)F$
60820 IFY=1ANDZ=1THENZ$=Z1$(I):Z1$(I)=Z2$(I):Z2$(I)=Z$:Z=Z-1:J=60:GOTO60690
60830 IFY=2ANDZ>0THENZ$=Z3$(I):Z3$(I)=Z2$(I):Z2$(I)=Z1$(I):Z1$(I)=Z$:Z=Z-1:J=60:
      GOTO60690
60840 GOSUB60880:NEXT
60850 LPRINTCHR$(12):PRINT:PRINT"Do you want another list?";
60860 Y$=INKEY$:IFY$=""THEN60860ELSEIFY$<>"Y"ANDY$<>"y"THENEND
60870 POKE&H4029,0:GOTO60610
60880 IFPEEK(&H4029)>60THENLPRINTCHR$(12):LPRINTCHR$(14)TAB(5)T$:LPRINT:RETURN:
      ELSERETURN
```

NOTE:- The character - ` - denotes an eabedded line feed

FOR SALE

TRS-80 Pocket Computer and printer interface. Brand new and boxed. Both items cost a total of £175. Will sell for £125. Also lots of Level I and II games software tapes (not copies). SAE for list.

D. Gadeke,
4 Catherine Close,
Brentwood,
Essex
Tel: (277) 74143

COPYART and some other word processors

Simutek describe their **Copyart** as a word/graphics processor, meaning that as well as the usual word processing (w/p) functions it allows creation and manipulation of pixel drawn graphics as ordinary text. As far as I know it is the only word processor to have this ability so will be of particular interest to anyone wanting to put illustrations or graphs in their text.

Mine was ordered by phone and Access, with the assurance that I could return it if I didnt like it. Unless otherwise requested it is sent 1st class - which costs $20 - and customs charges and VAT are payable on the postage too!. I've been using it for about 4 months now, and consider that it lives up to the advertised claims.

My w/p habits are relatively short periods of heavy use, while an article or chapter is actually in preparation, separated by often long periods with only occasional letters, and I usually work straight onto the keyboard . This needs commands that won't be forgotten in the intervals and are simple and logical enough not to interrupt a train of thought when I want to add a word or two to what is on the screen.

Copyart's text entry and editing is fast and easy. Unlike Pencil there are no lost letters as the lines wrap round - even our 90 wpm secretary ,going full out, couldn't out-type it. Like Scripsit editing is done in text entry mode, using ∂ as Control but the command keys are the obvious ones (I,D,W,L,B for insert,delete,word,line,block etc) and all autorepeat. Once through the manual and the commands will probably be as automatic as typing. A 'help' file is available if you do forget.The programme also has prompts to prevent loading or saving text where you hadn't intended to but doesnt remember the current programme name.

∂G puts you into graphics mode when you can draw with the pixel at normal or fast speed, using the arrow keys.Typing G again puts you back into text entry mode. Text and graphics are completely mixable.
Special signs like [, {,~, can be printed as control codes.Copyart can also create giant characters, 1/2" to about 12" high ,printing horizontally or vertically in normal or reverse video.(I havent actually tried the largest sizes). If you need to do signs or posters it is easy with Copyart.

The Epson fonts are supported directly as are Okidata and Centronics,including proportional spacing and control codes for any printer can be included in print format lines. Boldfacing in mid line and underlining are simple but may need switching one of the dipswitch pins on the Epson .

The manual is clear and simple enough for even a complete beginner but mine had some important omissions (not least the instructions for crash recovery).However the programme was still at its introductory price of $99.95 when I bought it and judging from the speed and efficiency with which Simutek replied to my queries, any deficiencies have been remedied by now.

What don't I like in Copyart?. It takes up 31 grans,which doesnt leave much room on a 35 track disk. Printing and text entry are separate CMD files and formatting can only be done in text entry so a lot of file switching may be needed while getting the printout right. My copy 'freezes up' occasionally, although this is not a major defect since text recovery is easy unless memory has been corrupted.The programme protection is a "key" which plugs into the cassette port - a nuisance if you use this port for sound,as I do. Minor carps are -:There is no line wrap-round in delete. If you forget to set video width before loading a file with a non default (ie not 64) width the file has to be reloaded. Finally there are no commands for "widow-suppress" or hyphenation.

Ken Grey (May(?) newsletter) asked for the pros and cons of available word processors.I can offer a personal view of 6, having started word processing with Pencil, briefly used Scripsit patched for the Epson,tried out John Newgas' Lazywriter and John Bedford's Ajedit and have been test-driving Geoff Smith's Scripsit patch for some weeks.

Lazywriter is the most expensive (£160 or $175) and has the most functions. I particularly liked being able to restore deleted text ,the backward and case independent Finds and the 'remember cursor position' facility. Other unique (in this context) abilities include programmable predefined function keys , automatic U/L case conversion, save & view formatted text and reading Pencil & Scripsit files.It also has the best formatting.Not surprisingly it also has the most commands - there are 18 commands for moving through text,apart from the arrows,alone! so in spite of menmonic keys it is not that easy to use to the full.

Copyart ($150) is the easiest to learn and use ,does almost everything I want of a w/p and is the only one which allows drawings to be entered as and with text and rapid creation of giant letters for posters ,banners etc.

Scripsit plain (£70) has good and powerful text control and formatting and allows tape backup of text but it needs thought in use and lacks some important facilities, including no support for Epson , Centronics etc.features

Geoff Smith's patch (£15) remedies most of Scripsit's defects ,adding mnemonic commands (optional),autorepeat on character insert, block graphics (as printer format lines),DOS commands ,Himem protection ,text recovery after reboot ,support for the

Epson,and control codes for other printers,special characters like { , ~ , [and a 'help' file

Ajedit is the cheapest (£50), has excellent formetting and built in Mail Merge but I found it the most irritating for text entry and editing .One can't overtype and there is no autorepeat. Editing is similar to editing a Basic programme, - definitely not conducive to a smooth flow of ideas.

Electric Pencil must be the original TRS 80 w/p ancestor and shows it. It needs a special control key, doesnt support Epson etc and is well known for losing letters at line wraparound. However it is easy to use in spite of non mnemonic commands and is the only practical one for 16K and long texts. I couldn't find a price for it so it is probably about to be replaced by a modern version.

For those **without disks** the choice is more restricted . If you have an Aculab Laurie Shields has patched tape Pencil and Scripsit to run on it, with improvements that include "dos" commands and support for printer control codes in eSCRIP.I've no experience of tape word processors other than Pencil, but a tape version of Copyart is available for 32k machines

These are strictly my own personal opinions and obviously there cant be one "best buy" for everyone. What suits a practiced typist who simply wants typescripts to send to editors probably wont suit somone who needs to send short letters round a mailing list or who wants to make nicely formatted instruction booklets - and price may matter less than best suitability for your particular applications.

The ideal way to decide is to chose from ads and reviews and then find someone who owns your choice and would let you try it out,as I did Lazywriter and Ajedit. Some suppliers, like Simutek, will take back their product if you dont like it , but that still leaves p & p & customs charges. Perhaps the Group could organise a register of who has which programmes. for word-processors and similar relatively expensive business software?. Ariela Taylor

(Prices to nearest $ or £. Written with Copyart & a slightly misaligned Epson MX80 F/T)

Ariela Taylor-North London

GROUP EQUIPMENT

1) **Modem & RS232.** This is available for two weeks, and other members are on hand to act as tutors. The equipment has to be collected from Milton Keynes, and members can ring for further info. on the availability.

2) **Voice Recognition** We still have this for members use & this will work on the 16k system. Ring for details on availability.

3) **RS232 Bare Board** We need a volunteer to build this up and write a review. I would prefer somebody who has not written in before, is a member of the gang of 800.Nudge-Nudge.

Brian Pain

FURTHER STORIES OF DOUBLE DENSITY

If you look back through the recent issues of the news letter you would find two contributions from me relating to the fitting of double density to my Video Genie and EG3013 expansion box. The fitting of the double density adaptor proved to be somewhat of a trial with yours truly eventually coming out on top. I started my venture into double density with Dosplus 3.3D which caused me some problems in having to get round the difficulties of incompatibility with the Genie. I would like to pick up the story where I left off and tell you of some of the other problems that have occured since I went double density.

When using Dosplus I was continually getting data errors, from directory read error to gat and hit errors. I was informed that, when using the EG3021 double density adaptor with the EG3013 expansion box that there were problems with data integrity because the data was being fed directly to the 1771 controller. With the help of a friend, who knows far more about the 1771 than I do, plus the expansion box circuit and the 1771 data sheet, a cure was found by feeding the data to the controller via a schmitt. The IC was plugged into (as a result of the DD conversion) a now redundant socket on the main board. A new socket was fitted to the main board, into which the double density adaptor plugged, because the type that was fitted was thought to be unreliable, and voila ! data errors reduced to a minimum. Those errors that I now obtained were due to Dosplus itself (I had no problems with LDOS running DD) and the Teac disk drives.

I have two 40 track Teac disk drives, which I had been perfectly happy with for some time. It had never crossed my mind that they could be part of the reason for the occaisional data error. It was when I decided to buy an 80 track drive for drive zero that I suddenly realised I had a problem with the 40 tracks. The 80 track is also a Teac and when I bought it I had worries that, using it with double density I would have problems. The reverse proved to be true. I have had no problems at all with data errors using the 80 track drive, and indeed it out-performs the 40 track drives all together. After many experiments and tests I have arrived at the following conclusions ...

If you intend to run double density with an EG3013 and the EG3021, then buffer the data to the 1771 with a schmitt and ensure the piggy back board fits very well into the vacated 1771 socket on the main board, and if it does not, change the socket. Chose your disk drives with care. Cheap drives may look good value for money but if you loose hours of programming because of them then it could be false economy. Use good quality disks such as Verbatim double density. Cheap disks are as dangerous, if not more so, than cheap drives.

As a last comment on the subject, I am now perfectly happy with the system and running under LDOS 5.1.3 I have no problems whatsoever. With Dosplus I was becoming somewhat of an expert in recovering data from crashed disks and learning the right and wrong things to do when running double density. I now have a disk storage system that copes with all my requirements and should do for some time. With all the utility, word processor programs and the full LDOS system on drive zero I still have 90K of space remaining. I've only one worry, if I crash an 80 track double density disk, I loose a lot of data !

Ken Grey

My wife buys me computer books for birthdays and Xmas presents and for the former she bought me two books, "Introduction to Forth" and "TRS80 Assembly Language Programming Made Simple", both published by Sams from the Blacksburg group's "Continuing Education Series". As I read through them it crossed my mind that some of the news letter readers may be interested in these books as they are both for the TRS80. The book on Forth was purchased as I am going to attend a college evening course on robotics using Forth as the control language. The book on assembly language programming was chosen for two reasons. First my wife picks any book with TRS80 on the front and secondly she reckons anything which will stop me kicking the cat whenever my assembly languge program dives into memory size can't be too bad.

The "Introduction to Forth" is written by Ken Knecht and is designed to be used with MMSFORTH for the TRS80, from Miller Microcomputer Services. The system is advertised in a recent 80 Micro for $129:95 (plus 20% for foreign orders). Even though the book has been written with a particular operating system in mind it is still an excellent introduction to the Forth language.

The book draws comparisons between Level II Basic and Forth which is helpful if it is your first tour into the World of Forth programming. Chapter one deals with some simple commands and explains the use of the stack, integer numbers, word arithmetic, operators, numerical formats, number bases, variables, constants and memory usage. Chapter two covers creating a new word, writing programs, debugging and the TASK word. Other chapters explain such things as input / ouput, conditionals, loops, strings and random numbers. The book has an excellent index and it is well written but it would be much easier to follow with the MMSFORTH operating system. If you are thinking of adding Forth to your computer then whatever system you choose this book should be a great help.

As one of my bad habits is programming in Assembly language I was intrigued to see that someone had decided to write a book to make my life easier by simplifying the learning of assembly language programming. The "TRS80 Assembly Language Made Simple" is written by Earles L. McCaul and it is written around the use of TBUG. Like most books on the subject the early chapters cover the Z80 architecture and instruction sets. Chapter 3 is on getting acquainted with TBUG. Chapter 4 gives details of the TRS80 memory map. Other chapters cover formatting, moving and converting data, arithmetic functions, cassette / printer input-output and linking Basic with machine language programs.

The book is well written and certainly will be useful when entering the World of bits, bytes and nibbles. It is not cheap in the UK (12 pounds 95) which is somewhat annoying because in the States the book costs in dollars what it costs here in pounds. It makes easy reading, which is more than I can say for some books on the subject I have come across. The use of ROM routines throughout the various examples shows how to save time when writing programs by using what is already there. A good book, a pity it wasn't cheaper.

If you are not sufficiently round the bend with L II Basic why not go really nuts with Forth and Assembly ? I don't see why I should be one of the lunatic fringe when there are so many more out there to be recruited into it's ranks.

Ken Grey

A PROBLEM WITH THE RS-232 INTERFACE

Ever since I first fitted the Tandy RS-232 interface to my Model I expansion interface I have been plagued with problems caused, I thought, by poor connections between the RS-232 board and the special connector in the interface. I have always overcome this problem by slackening off the fixing screws and wiggling the board about until it works. I recently got fed up with having to do this every time I wanted to use the RS-232 interface, and decided to hard wire the interface with a short length of ribbon cable (at least 30 minutes rather fiddly work). Having disassembled the expansion interface I removed the special connector from the main PC board, and noticed that the contacts on the PC board were extremely dirty. I had always assumed that the contacts on the RS-232 board were to blame. Before soldering in the board, I decided to try cleaning the contacts on the main PC board. Having done this and re-assembled everything, I found to my surprise that I had cured the problem. Apparently the wiggling of the board must have just helped the contacts on the underside of the main PC board to connect properly for a while.

The board has now worked perfectly for about two weeks. The moral of this little story is: always go for the simple solution first, it might just work!

Leon Heller

REVIVE YOUR RIBBON

The life of a printer ribbon can be increased by giving it a squirt of WD40 lubricant. To revive an old Epson ribbon, prise open the case and give three 'passes' with the WD40 over the concertina ribbon, leave for 5 minutes, wind the ribbon manually to help spread the WD40 and then leave the ribbon standing for at least 24 hours before use. The process can be repeated 3 to 4 times over the life of the ribbon before it eventually gives up the ghost. At the very least poor old Leon won't have to put up with feintly printed contributions to the news letter and at best you should extend the ribbon life by 200 percent !

Ken Grey

(* Brian tells me he does something similar - he re-inks his ribbon by pouring stamp pad ink over it. WD40 helps to lubricate the print head wires, of course. LFH *)

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TRS-80 Model I Level II. 48K RAM, VDU, dual drives, cassette recorder, Praxis daisy wheel printer (modified for use with TRS-80), Scripsit, various utilities and games. Will demonstrate. Offers over £1000 to:-

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Tel: 01-674 1563

SINGLE CHIP MODEM

AMD have just announced their Am7910 device. This 28 pin chip contains nearly all the circuitry for a modem! I managed to get hold of a preliminary set of data from one of AMD's distributors and some details might be of interest.

The only additional components required are a buffer for the RING signal, an OP amp duplexer, a crystal and a few resistors. All filtering is done on the chip by a couple of digital filters. The device can interface directly to a UART, so no RS-232 drivers are needed if it is combined with the UART on the same PCB. It even operates at the same frequency as a UART, saving a crystal.

Both Bell and CCITT frequencies are available by programming certain pins, and Prestel frequencies can also be obtained.

Sample quantities are expected next month, at a cost of £70. Production quantities will be available in December; the cost will probably be about £30. Modems using this chip should be available for around £100 by this time next year, I should think.

Leon Heller

Review of TRS 80 Versafile/Bas

Much has been said about Visicalc being a useful program to have, and it certainly is. I use it greatly and it saves me a lot of time. Another very useful program I came across recently is called Versafile. It is a sort of general database for any information that you wish to store. It is very handy for putting lots of useless bits of information into, the sort of thing that gets lost in your diary or notebook, and it is easily retrieved.

At present I am trying it out on something a little bit more ambitious. I have reserved a data disc especially for manufacturers and suppliers information in the hope that access to this information will be quicker and more reliable.

It works like this: I have some information from Bell & Howell regarding microfilm equipment that I want to record. All I do is type "Bell & Howell supply microfilm readers" and ENTER. This information will now be stored on the data disc. Agfa also supply microfilm readers, so at a later date, I might want to add that to the suppliers file.

When someone wants to access the information as to who sells readers for microfilm, all they do is ask the question "Who are the suppliers of readers ?", and after a few seconds of searching the screen will display the message that "Bell & Howell supply microfilm readers" and also "Agfa supply microfilm readers".

The program will automatically cross reference any information given to it, even abbreviated names. It is very much like a card index reference system without the hassle of trying to cross reference every aspect of the information. If data changes, you can kill an individual entry or group of entries and reinstate updated information.

The program can be used for such things as recording names and items of specific interest to those names, telephone numbers, suppliers, bad debtors, useless bits of information you don't really feel you want to get rid of anyway, diary dates, people who have borrowed things from you and many other uses. It is understandable why Tandy, the suppliers, have called it "Versafile", it really is.

David Blaker-Hedges

PROBLEM SECTION

Can anyone help me trace Tom Ravensdale? I read an article about his activities as an independent accident investigator. He uses a TRS-80 (naturally) to help establish speeds, angles, weights, etc. of vehicles involved in accidents. Apparently he has a very good reputation and I would like him to help me on my case, to disprove liability on my part.

I understand he hails from the London area. If anyone knows of his whereabouts, could they contact me on Leicester (0533) 884474.

David Blaker-Hedges.

AIDS FOR THE HANDICAPPED

If you belong to a computer club, or a sub-group, and want to do something more constructive than 'ripping off' software and playing Space Invaders, why not get in touch with a local special school for the handicapped. Many of these schools now have computers, or are thinking of getting one, and would welcome some assistance in developing special software or modifying hardware to meet the needs of their pupils. Here in Milton Keynes, our computer club is involved in a project to help a very severely handicapped little girl to use an Apple that her school has acquired. Robyn cannot use a keyboard (even with a head stick) as she has no control over any part of her body. Moreover, she cannot speak. I think she can hear, though. A possible solution is to use an approach similar to the Possum aid for the handicapped, in which a matrix of letters and other symbols is displayed in the lower half of the screen, with a block cursor scanning the symbols. By operating a switch (possibly operated by the chin or a suck-blow tube and pressure sensor) as the cursor is upon the desired symbol, the symbol is transferred to the upper part of the screen, where a second cursor is maintained. I have written a simple program to do this in BASIC for the Model I which is being adapted to run on the Apple. An editing facility can easily be added.

If this approach is successful, we can expand the software with a hierarchy of matrices, containing whole words and, perhaps, enable Robyn to achieve some measure of control over her environment. A speech synthesiser could even be controlled by the computer, enabling her to converse with people, albeit somewhat slowly.

If any of you are interested in this sort of activity, please get in touch with me.

Leon Heller

LUTON 3 DAY RESIDENTIAL WORKSHOP JULY 1982

First the credits, Dave Washford for pleading that the weekends should continue, Nigel Hyde for the encouragement to organise a business oriented day, and finally my wife, Jackie, who promises an article one day on how she puts up with me and my activities.

After Friday's lectures I went home, unable to sleep and resorted to the BBC's overseas news on an earphone to send me off. There was so much hard input from the sessions that everybody said how worthwhile it had been.

Leon was available during the morning to show the KARADAWN board, the 8088 board and his current progress on the MBDS package. Due to the distances being travelled the first formal lecture was by Derrick Rowe on the Model 1 & II in big busines plus his opinions so far on the hard disk in a working environment.
John Wellsman & John Carne followed with a review of an accounting package they have written for the small business. Both are always available to discusss the above over the 'Phone to give members a better chance of evaluating the program.
After the evening meal Colin Ashford and Leon Heller explained their evaluations of two different DATA BASE management systems which showed that others' experiences are always going to be invaluable when approaching this problem. Again Colin & Leon are always available over the 'Phone to be of assistance.

The last session was to be on business users experiences, but as Norman Baust had came along I suggested that a programmers experience should be put forward as another area to be considered when approaching a business application.

Although I left around 10.30, the others locked the front door and with the college's permission went on to a rather late hour. The systems room was very large, carpeted, air conditioned, just perfect for serious users to gather around a system and demonstrate or unravel a problem.

Once Dusty Miller had received his toast from the refectory, the Saturday morning started with Andrew Donald doing a long session on EPROMS. The conclusion to this was "when is his booklet coming out". The afternoon was all about string packing by Marc Leduc from Nottingham, and Marc would be rather embarassed if I quoted every compliment I heard.

The evening was taken up with Laurie Shields first , followed by Leo Knaggs with members being able to ask that whole variety of questions which accumulate over a period of time. I had structured the weekend along the lines, whereby Laurie, Leo & Leon were available during the day for this type of questionning. Judging from the feedback the concept worked.

Mention must be made of Clive Keech's session on ORCH-80 where those with musical aspirations enjoyed a full explanation and demonstration of this very economical piece of software/donsel that Clive can show off so well. Victor Saleh stocks this product and will be only to happy to advise on the current availability and cost.

Sunday mornin aw some very tired weekenders, joined by the fresh daytrip. s. John Newgas very kindly stepped in and gave an overview of the current compiler situation which judging from the feedback will have to be repeated For those interested I gave a short demonstration on the Timetabling Program developed for the accounting department at Luton College of H.E. After lunch Laurie went through various sorting techniques available eg GSF, SRTV, CMD O, BASIC and their various merits.
I finished off the day with an overview of the Mysteries series and the current situation on our Robot Project at MKMUG.

The weekend went very smoothly, there were no beefs on the food !, the rooms were perfect, and the only grumble was no Parking outside the front door, oh yes SMOKERS will not get away with smoking under a request for NO SMOKING sign. Our manners when out amongst fellow enthusiasts must be of the highest order.

BRIAN PAIN.

BLANDFORD FORUM WORKSHOP 15th AUGUST 1982

This was a most enjoyable day, due to the superb decisions taken by Os house and myself on the Monday Preceding, which required around 6 minutes on the 'Phone.

The systems room was busy all day and still going strong at 7 when we left for home, and the lectures were well attended even if a little short due to the number.

Leo Knaggs did some lowish level BASIC, followed by his son, Peter on fast cassette loading using the B-17 system, with Leon and myself on the MKMUG robot Project and handicap Person assistance going up to lunchtime

After lunch Nigel Hyde(from Chesterfield !) explained how his programs now run faster using the utility FASTER, followed by Laurie Shields holding a forum, with members asking a variety of questions

Neil(an employee of Blandford Computers) went through the Progess made to date linking the Model 3 with Plastics extrusion machines with Leo Knaggs finishing on a DOS forum

Over 70 members attended the day with several families enjoying the area's facilities. Our thanks are due to Mrs House for the catering and the use of her home and garden, and many will have the lovely memory of discussing their current Problem(s) under a warm sun, with a Plateful of salad followed with a Plate(s) of icecream

BRIAN PAIN

LUTON MAILBOX

1) Stock Exchange game this will be set up in the next few weeks and members can do their buying & selling over the 'phone.
2) ROBOT a separate account will be opened for our routines to be stored, allowing members to access without having to wait for this newsletter.
Brian Pain

LOCAL GROUPS

BARROW-IN-FURNESS

Contact: Jack Lowther
131 South Row
Roose
Barrow-in-Furness
Cumbria
Tel: (0229) 34953 (Home)
(0229) 26214 (Work)

BIRMINGHAM

Contact: Mike Gibbons
1 New Street
Castle Bromwich
Birmingham
Tel: (021) 747 2260

BRIGHTON

Contact: John Bedford
19B Rose Walk
Goring-by-Sea
West Sussex
Tel: (0903) 501818 (home
01-930 4041 (work)

CHELMSFORD

Contact: R. Hamlett
Pine Lodge
Desden Road
Loughton
Essex

GLASGOW

Contact: Jim McPherson
Tel: Uddingston 813717
or 812797

MERSEYSIDE-Southport

CHRIS DRIVER
7 CHAMBRES ROAD
SOUTHPORT
MERSEYSIDE
0704-40822

BRISTOL

Contact: Roger Bampkin
19 Wood Street
Eastville
Bristol

BLANDFORD FORUM

Contact: Os House
Blandford Computers
Higher Shaftesbury Road
Dorset
Tel: (0258) 53737

BRIDGEND

Contact: Peter Chapman
36 Park Court Road
Bridgend
Mid. Glam.
(0656) 3484

COLCHESTER

Contact: Roy Smith
8 Mallard Close
Layer-de-la-Haye
Colchester
Essex

EDUCATIONAL SUB-GROUP

Contact: Dave Futcher
Beaconsfield First and
Middle School
Beaconsfield Road
Southall
Middx.
Tel: 01-574 3506 (School)
01-743 5310 (Home)

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10 The Pramleys
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Gloucester
GL17 0QP
(0452) 830141 (Evening)

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Contact: John Lawrence
Tel: Hull 497150 (Day)
Hull 493856 (Evening)

ISLE-OF-WIGHT

Contact: M. Collins
3 Altofts Gardens
Ventnor
I.o.W
Tel: 85 2008

LEEDS

Contact: John Jowitt
39 King Edward Crescent
Horsforth
Leeds
Tel: (0532) 581734

LONDON (NORTH)

Contact: John Wellsman
292 Caledonian Road
London N1
Tel: 01-607 0157

LONDON (WEST)

Contact: Dr. Nick Robinson
The Residencies
Northwick Park Hospital
Warford Road
Harrow
Middx. HA1 3UJ
Tel: 01-864 5311

LONDON (SOUTH WEST)

Contact: Ron Everitt
2A Longdown Lane North
Ewell
Surrey
Tel: 01-394 2123

MEDICAL SUB-GROUP

Contact: Dr. Nick Robinson
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Northwick Park Hospital
Watford Road
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MERSEYSIDE

Merseyside TRS-80 and
Video Genie Users Group
Contact: Peter Tootill
Tel: (051) 9227260 (Work)
(051) 2209733 (Home)

MIDLANDS (EAST)

Contact: Brian Chiplin
33 Hurts Croft
Chilwell
Notts. NG9 5DE
Tel: (0602) 252015

NORTH WEST GROUP

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40 Comlees
Westhoughton
Bolton BL5 3EG
Tel: (0942) 812843

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40 Whoberly Avenue
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OXFORDSHIRE

Contact: Steve Bird
139 The Moors
Kidlington
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Contact: R. Hamlett
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Desden Road
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136 Ringwood Road
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NORTH EAST LONDON '80' USERS GROUP

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Essex IG10 2NY
Tel: 01-508 0062

ROCHDALE

Contact: Melvyn Palmer
28 Rooley Moor Road
Rochdale
Lancs.
Tel: (0706) 54681

FAREHAM (HANTS.)

Contact: Brian Shepherd
The Security Centre
203 West Street
Fareham
Hants.
Tel: Fareham 289114

BELFAST

Contact: Jim Erskine
94 Trossach Drive
Upper Malone
Belfast BT10 0HU
Tel: Belfast 626626 (Home)
48259 (Work)

CLASSIFIEDS

Until December 1982, send in very short ads. which will be free. This will be of service to those coming into the group looking for s/h items & old members(!) upgrading.....Brian Pain

NEW PRODUCTS-DEALERS

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Contact: John Kidd
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TRS80 MAGAZINES
80 MICROCOMPUTING
3 LINE COMPUTING-HULL
80-US May'81-Apr'81
MKSS 0908-564271

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Contact: Neil Griffiths
Tel: MH 65718 (Work)

IPSWICH

Contact: Robert Berg
Hurts Hall
Saxmundham
Suffolk
Tel: 2577

SOUTH COAST

Contact: D. Washford
1 Alexandra Road
Bournemouth
Tel: (0202) 423064

LEICESTER

Contact: David Blaker-Hedges
Tel: (0533) 884474

I have recently been trying to run a Texas Instruments Omni 820 RO serial printer from my TRS 80 model I 48K micro.

The RS-232-C interface manual indicates a BASIC driver program which does not work.

Tandy and a local computer shop have all had a 'go' from both the software and hardware angles but have not succeeded.

I wonder if any of your members have solved this problem and if so could provide me with the solution.

Eric L. Greenwood

16, Sherbourne Close,
Cheadle Hulme,
Cheshire,
SK8 7QN.

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LINENAMEPUT (or GET) A$
Gets or writes the disk name/date.

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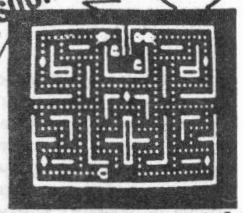
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National TRS-80 Users Group

Newsletter

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9hrs on DOS's
3hrs on W/P.
Short reviews on Utilities

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OCTOBER 1982

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EDITORIAL

Yet another bumper issue! I have had to hold some material over for the next issue, you sent so much!

My apologies for the shortness of the editorial this month (does anyone read it?), I am dashing it off in a great hurry before handing it to Brian at the local computer club meeting, so that we have some chance of getting the Newsletter out before the end of the month. I've had one or two extremely urgent jobs to do, so I am afraid the publication date has slipped a little, once again.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.

2. Ensure your ribbon is in reasonable condition if using a printer.

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

4. If you send in handwritten material, write legibly.

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

Leon Heller

ADVERTISEMENT

Using the MDBS data base management system I have developed a couple of packages that might be of interest to some Model II users:-

An employment agency system that provides great flexibility in the way information can be stored and retrieved. Information retrieval is done using a non-procedural English -like query language, allowing arbitrarily complex ad-hoc queries.

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MEMBERS' LETTERS

From Bill Cowhig

Many thanks for your program 'Wordcount' as described in the TRS Users Newsletter. I tried it out on a typical chapter of my thesis, about 10 pages or so of close type. It worked first time and gave a word-count of 4317, and took about 29 seconds to do it. It was exactly repeatable. I found it quite helpful to make a little modification by making the program jump back to line 3300 instead of returning to DOS in line 8800. By doing this, it is immediately ready to tackle the counting of words in a succession of other recorded programs. Incidentally, entering the change provided good practice in using EDIT, MACRO-80, and LINK-80 (EDIT, M80, L80). As you know, I am accustomed to using EDTASM, but am keen on exploring the adantages of using MACROS. It was surprising how many little mistakes in programming one could make in switching from the one to the other, so it was useful to do this to get my hand in.

I tried out Laurie Shields' alternative neat little program in BASIC given on page 4 of the August issue on the same Chapter. It gave almost precisely the same number of words - 4321 (four more) - an excellent agreement. Just to check, I entered precisely 250 words (using the valuable Block Repeat in Scripsit to save time), and I obtained exactly 250 with your program, and 251 with Laurie's.

As you remarked on page 9, Laurie's BASIC program naturally takes much longer, and I timed it to be 14 minutes 52 seconds - about 30 times longer. My CPU runs at the original unaltered speed, so a faster machine would reduce both times. I imagine that Laurie's program would be quite useful for occasional use on a few pages of text, but yours is fully worth while the extra time involved initially, and is the only one worth considering for the serious user.

I returned yesterday from my trip to Canada, and enjoyed occasional visits to computor shops in Ottawa and Toronto, but gained the impression that prices in Canada are much the same, but USA journals much higher in cost than in the U.K.

Bill Cowhig.

** USING LED TO WRITE PATCH FILES **

The text file editor from LSI, LED which is designed to run under LDOS can be used for writing patch files. One of the problems with LED is that it has to have a filespec to work on otherwise it comes back with a "Filespec required" error. This problem can be overcome by creating a dummy ASCII file on a disk, call up the file with LED and proceed to 'amend' the file. Save the 'amended' file onto the disk with whatever file name you wish. I use a dummy file called FIL/LED created with Scripsit and saved with the 'A' option.

Ken Grey

The final word

The recent article by Leon on a routine to count words in a disk file, sparked of the idea to incorporate such a routine directly into Scripsit, after all this is the most logical place to have it. Tandy in their infinite wisdom included a ?L command in Scripsit which returns the total number of characters in the current file. In my opinion this is a particularly useless value since it includes all formatting values, 'invisible blanks' etc. The modification I'm going to describe patches in a new word count routine into the ?L command. Although some of you may be clever enough to make these changes directly on the disc, I would advise doing it in memory using a suitable monitor. I personally use TASMON, the Alternate Source monitor, from SystemSoft, which for just over £17 must be one of the best value for money pieces of software presently available. However, MON4 or DEBUG + DUMP will also do the job. The new routine will require approx 80 bytes of program space. With the old Model 1 Scripsit this is no real problem since Tandy left a 0.4K 'hole' between the end of the program at 7AA4H and the begining of the program work area at 7C29H. We can therefore stick our routine in this area and jump to it from ?L and back again when we've finished. I'm not sure of the situation for Model 3 user's, Laurie Shields tells me that Tandy have removed the 'hole' in more recent versions. One possibility is to optimise the code - I think you could shorten it by about 10 bytes if you tried - and then put it in the space where the copyright notice is normally hidden. If you are really stuck then give me a ring.

I've tightened up the code of Leon's routine a little by using the fact that once the control codes have been AND'd with 7FH they will all be below 20H and therefore we can use a single comparison and jump if the carry flag is set. This saves all the multiple tests in Leons routine. Both Leon and Laurie in his little Basic program do not include tests for FORMAT characters in text. Since the extensive formatting capabilities are one of the major reasons for using Scripsit, this really should be included if your word counting is going to be meaningful. We can test for this by looking for '>' and then checking to see if the previous character was a text delimiter. If it was,then '>' indicates a format line and we can ignore all text up to the next delimter. The rest of the program logic is quite easy to follow from the comments in the source code given below. This particular routine was assembled and tested using Laurie's ZEN, and then treated as a library file for incorporation on re-assembly into my highly modified version of Scripsit. By the way this patch took approx. 0.7sec to count the 1015 words in this article, Laurie's basic program took 3min 20sec!.

Source code for word counting routine

```
?LENG:    PUSH DE              ;Save registers
          LD   BC,0            ;Initialise counter
          XOR  A
          LD   (STORE),A       ;Clear flag
          LD   HL,(ETEXT)      ;Calculate length
          LD   DE,STEXT        ;of text and put
          SBC  HL,DE           ;into DE
          EX   DE,HL
          DEC  HL
          ;
AGIN:     LD   A,D             ;Test for end
          OR   E
          JR   Z,DONE
          INC  HL              ;Point to next character
          DEC  DE              ;Decr. counter
          LD   A,(HL)          ;Load A with character
          CP   '>'             ;Could it be Format
          JR   NZ,NTFORM
          DEC  HL              ;It could - test previous
          BIT  7,(HL)          ;character for new line etc.
          INC  HL
          JR   Z,NTFORM
INFORM:   INC  HL              ;Its a FORMAT instruction
          DEC  DE              ;therefore work along line
          BIT  7,(HL)          ;til you get to a delimiter
          JR   Z,INFORM
          LD   A,(HL)
NTFORM:   AND  7FH             ;Strip BIT 7
          CP   21H             ;See if space or Delimiter
          JR   C,NTWRD         ;If C set then not in word
          LD   A,(STORE)       ;See if we were previously
          OR   A               ;in a word
          JR   Z,WRD
          JR   AGIN
          ;
 WRD:     LD   A,1             ;Set word flag
          LD   (STORE),A
          INC  BC              ;Incr. counter
          JR   AGIN            ;Next character
          ;
NTWRD:    XOR  A               ;It's not a word
          LD   (STORE),A       ;Clear word flag
          JR   AGIN            ;Next character
          ;
DONE:     LD   (STORE),BC      ;Give count to Scripsit
          POP  DE              ;Restore regs
          POP  BC
          JP   69BDH           ;Jump back to Scripsit

STORE:    EQU  7C45H
ETEXT:    EQU  7C2BH
STEXT:    EQU  7F62H
```

Patching procedure.

Load SCRIPSIT/LC into memory. Then enter DEBUG or load your monitor. If you use a monitor make sure it resides above 7B00H. The make the following modifications in memory.

Address	Machine Code in HEX	
69B0H	C3 B0 7A	;Jump to new routine
	Actual code for word counting	
7AB0H	D5 01 00 00 AF 32 45 7C 2A 2B 7C 11 62 7F ED 52	
7AC0H	EB 2B 7A B3 28 30 23 1B 7E FE 3E 20 0D 2B CB 7E	
7AD0H	23 28 07 23 1B CB 7E 28 FA 7E E6 7F FE 21 38 10	
7AE0H	3A 45 7C B7 28 02 18 DA 3E 01 32 45 7C 03 18 D2	
7AF0H	AF 32 45 7C 18 CC ED 43 45 7C D1 C1 C3 BD 69	
	Change of message to 'Number of words'	
69FCH	4E 75 6D 62 65 72 20 6F 66 20 77 6F 72 64 73	

The modification is now complete and you can now make a new executable scripsit file with DUMP or similar using the addresses 5200H, 7AFEH, 5200H as BEGIN, END, and START. If you feel this modification is beyond you, I can offer a Scripsit patch including this mod +DOSCMD, printer control etc for £15.00 for both Model 1 & 3. If you want further details or help with this mod. then give me a ring on 01-560-0754 after 6.00pm. One further tip, if you are fed up with the slow scrolling speed of Scripsit try altering the 2 bytes at 617BH/617CH in memory or FRS 15, bytes BBH/BCH on disc from AC0D to 0D02 or if you can read very quickly try 0100!!.

Happy zapping Geoff Smith.

FOR SALE

Aculab Floppy Tape, recently serviced at Aculab.
Complete with 10 tapes including XBAS, PENCIL, @ZEN, FTMENU and many others:- £130.
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West Midlands.

UK VERSION OF DY MAIL/LABEL PROGRAM.

For those users who have bought the Tandy Mailing program they will have found the usual US formats (zip code, etc.). I was asked to revise the programs to UK format and expand the field sizes to something reasonable. A couple of hours turned into a couple of weeks and the end result is as follows:-

1. Max of 6 fields - Name, Company, 4 lines of address - all 30 characters maximum and a Select code (10 characters)

If a comma is used in any field all data following the comma will be printed first (as in the current program) but there is no limit on words up to 30 maximum characters. The line delimiter is 2 consecutive spaces. eg. 'Friends, The best of'.

3. The programs are currently in Model III format in Newdos80.2 or TRSDOS using the CMD"O" sort facility instead of the Tandy sort. For TRSDOS users the sort is slightly slower due to the less sophisticated sort facilities available but is still a lot quicker than Tandy's.

4. The use of the Select code is different in that each character can be used independently or combinations of characters can be used for access. Each character can be alphanumeric or blank. You decide what the categories in each column mean.

Example - Select code = **1*3*GZ
Column 1 may be used as County, Col 2 as type of Company, etc.

If you use the select code you can print Name, etc. for any required combination of these 10 characters. At print stage enter an asterisk for any columns not specified. eg. ****2*7

The usual search facilities are unchanged but have been speeded up.

5. Printing - one to eight labels (for those with 255 possible characters per line) can now be printed across the page with flexible tab settings. No. of labels per line and tab settings are requested at print time. This is saved and displayed on future prints to be used or changed as required.

6. Any users wishing to use this version may purchase it for the paltry sum of 7.50 pounds inc. p & p. You MUST provide a disk with a copy of the Tandy Mail program already on it to prevent infringement of any Tandy copyrights. The revised version will be copied over the Tandy versions. Please do not send your only copy !!

Please send your lolly to me at 3 Glen Rd, Parkstone, Poole, Dorset. BH14 OHF.

If anyone wishes to ring me about the program they can get me after 6pm most evenings on Parkstone(0202) 740750.

Jon Quick.

PS. Can I use this opportunity to thank Oz for his hospitality at the User Group meeting at Blandford on Sunday Aug.15th. (especially the food).

USING DEFFN

I would refer to my previous date routine, which like the one sent by Bob Sparling (August issue) employs rather wasteful routines, arrays, comparisons and such like.

However, after taking to heart Leon's recent suggestion that members should make more use of the DEFFN function, I went mad and DEFFN'd everything in sight - I might have overdone it in some cases but in the following subroutine I think it at least, will serve as a demonstration of the varied applications of the function.

Future users should be aware that it is only necessary to DEFFN a function once (hence it is demonstrated as an initialization subroutine). Anytime a new value is set to any of the variables, in the previously definied function, then the result is automatically calculated - see line 15.

A more efficient error checking routine might be devised but is it worth it?

```
5 '**********DATE DISPLAY USING DEFFN FUNCTIONS**********
6 '******************CHARLES H. DAVIES**********************
7 '******************          3/9/82      **********************
10 CLS:CLEAR 1000:DEFINT E,D,M,Y
12 GOSUB60000
13 F=0:IF(PEEK(16453)=0)OR(PEEK(16454)=0)OR(PEEK(16452)=0) THEN F=-1:GOTO17
15 CLS:DTE$=FNDAY$(E)+FND$(D,M,YR):
    'TRANSFER DEFFN'S TO VARIABLE'
16 PRINT@320,DTE$
17 PRINT@448,;:INPUT"TYPE IN ANOTHER DATE DDMMYY";Y$
18 IF(Y$="")OR(VAL(LEFT$(Y$,2))=0)OR(VAL(MID$(Y$,3,2))=0)OR(VAL(RIGHT$(Y$,2))=0)
OR(LEN(Y$)<>6)THEN PRINT@448,CHR$(30):GOTO17
   ELSE GOSUB60005
19 GOTO15
20 END
60000 DEFFNS$(X$)=LEFT$(X$+" ",INSTR(X$+" "," ")-1):'ELIMINATE TRAILING SPACES -
 USED IN LINE 60003'
60001 DEFFND$(D,M,YR)=STR$(D)+MID$(" STNDRDTHTHTHTHTHTHTHTHTHTHTHTHTHTHTHTHTHSTN
DRDTHTHTHTHTHTHTHTHST",D*2,2)+" "+MID$("  JANFEBMARAPLMAYJUNJULAUGSEPOCTNOVDEC",M*
3,3)+" 19"+RIGHT$(STR$(YR),2):'GET DATE SUFFIX AND MONTH'
60002 DEFFNE(D,M,YR)=INT((YR-73-(M)2))*365.25)+INT((M-3-12*(M(3))*30.6+.4)+D-305
:'GET NO. OF DAYS - SEE MY PREVIOUS PROGRAM'
60003 DEFFN MOD(X,Y)=X-Y*INT(X/Y)+1:
   DEFFNDAY$(E)=FNS$(MID$("          SATURDAY SUNDAY   MONDAY   TUESDAY  WEDNESDAY
THURSDAY FRIDAY  ",FNMOD(FNE(D,M,YR),7)*9,9))+",":'DEFFNMOD RETURNS WEEKDAY NUMB
ER
60004 M=VAL(LEFT$(TIME$,2)):D=VAL(MID$(TIME$,4,2)):YR=VAL(MID$(TIME$,7,2)):RETUR
N
60005 D=VAL(LEFT$(Y$,2)):M=VAL(MID$(Y$,3,2)):
      YR=VAL(RIGHT$(Y$,2)):
      IF F THEN POKE 16453,D:POKE16454,M:POKE16452,YR:
      GOTO60004
60006 RETURN
```

Have fun -

Charles H. Davies - Tel:01 393 9255

PRINTER PAGING

Re our converation on the 1st Sept.As you do not seem to be recievin9 much from be9inners like myself here is a simple Procedure to make ones Printer PAGE.

If you have a loop desi9ned to LPrint out a lon9 list of lines insert in it a 9osub statement in a similar manner to the followin9.

```
50 FOR I=1 TO N :LPRINT T$(I);TAB(20)T:GOSUB1000:NEXTI
```

```
1000ZZ=PEEK(16425):IFZZ<>60 RETURN ELSE FOR ZI = 1 TO
6:LPRINT:NEXT ZI:POKE16425:RETURN
```

A the very end of your LPRINT statements that follow the loop,such as totals etc also add the GOSUB 1000 but on the very last statement add GOSUB 2000.The followin9 line then runs the Paper out to the end of the Pa9e.

```
2000 FOR I = PEEK(16425)TO 59:LPRINT:NEXTI:RETURN
```

I found it very satifyin9 to watch my Printer execute its function like a well behaved automaton.

Another device I worked out for myself concerned underlinin9 variable len9th headin9s.This Problem I overcame usin9 the followin9.Say the last word of the headin9 is B$ and is 7 characters in len9th and the first word is A$ and is of variable len9th.The headin9 line reads

```
50 LPRINT TAB(15)A$;"";B$
```

Then the Underline statement will read.

```
60 LPRINT TAB(15)STRING$((LEN A$ )+8),"-")
```

Hope the above contribution is of some use to others like myself.

Harvey Bruish

A NEW PRINTER

A new printer for the Video Genie / TRS80 and other computers, the EG3085 has just been announced. It has a print speed of 100 characters per second, bi-directional, with 80 or 136 characters per line. There are three different type styles available, inculding one which is proportionally spaced. Double width, bold and underline are available with every style. There is a 96 item graphic character set augmented with 64 graphics patterns and bit image graphics of up to 1,275 dots per line. The lower case has true descenders and with 6 European character sets including the £ it offers a wide variety of print styles / sizes.

The printer uses from 4.5 to 9.5 inch tractor or plain paper with forward / reverse paper feed. The price should be competative with the Epson.

Ken Grey

'PAGE' SWAPPING ROUTINE

AT THE RECENT MEETING IN LUTON YOU VOLUNTEERED ME TO GIVE A LITTLE EXPOSITION ON 'NEWS80' - MY NEWSAGENT'S PROGRAM. ONE OF THE ASPECTS I COVERED WAS THE 'PAGE' SWAPPING ROUTINE WHICH IS USED TO INTRODUCE A FRESH PAGE OF DATA (OF 10 PUBLICATIONS) INTO MEMORY AS & WHEN REQUIRED. THE PROBLEM, OF COURSE, IS TO DECIDE WHICH OF THE CURRENTLY RESIDENT PAGES SHOULD BE REPLACED. THE ALGORITHM USED WORKS THIS WAY. EACH TIME A PUBLICATION IS ACCESSED THE 'POPULARITY' FACTOR FOR EACH PAGE SLOT IS HALVED. WHEN A NON-RESIDENT PAGE IS REQUIRED THE FIRST PAGE SLOT FOUND WITH A SCORE OF -1, OR THE PAGE SLOT WITH A SCORE NEAREST -1, IS OVERWRITTEN WITH THE NEW PAGE. THE SLOT IS THEN GIVEN THE MAXIMUM 'POPULARITY' MARK OF -32768. IF, HOWEVER, THE REQUIRED PAGE IS IN MEMORY THEN -16384 IS ADDED TO THE SLOT'S SCORE.

NOTE THAT WORKING WITH NEGATIVE NUMBERS ALLOWS:-

A) THE MAXIMUM POSSIBLE INTEGER RANGE IN POPULARITY SCORES.

B) THE SCORES NEVER REACH ZERO WHICH INDICATES AN AS YET UNUSED PAGE SLOT (USUALLY THERE ARE 5 SLOTS).

C) THE SCORE FOR A SUPER-POPULAR ITEM NEVER GETS OUT OF BOUNDS.

FINALLY NOTE THAT, AS THERE ARE 10 PUBLICATIONS/PAGE, IN ORDER TO MINIMISE PAGE SWAPPING THE POPULAR ITEMS SHOULD BE GROUPED TOGETHER.

THE ACTUAL CODE FOR THIS ROUTINE IS GIVEN BELOW; THE IMPORTANT PART, LINES 800-814, ARE MACHINE COPIED FROM THE PROGRAM (WITH ADDED SPACES) BUT THE OTHER LINES HAVE BEEN RE-TYPED SO THERE MAY BE TYPING ERRORS IN THEM. ALL DISC ACCESSES IN THE PROGRAM ARE DONE VIA ONE LINE WHICH IS PRECEEDED BY VARIOUS LINES THAT CHECK THE VALIDITY OF THE INTENDED ACTION; LINES CIRCA 900 (NOT USUALLY REMS) ARE PART OF THAT ACCESSING ROUTINE.

THE PROGRAM LINES NORMALLY HAVE NO REDUNDANT SPACES IN THEM; THEY ARE HERE IN ORDER TO LOAD THE FILE UNDER 'PENCIL'.

```
6 DEFINTA-Q,S-Y:DEFSNGR:DEFDBLZ:P=0: U=1:I=P:A=I:J=I:K=I:X=I:B=I:D=U+U:C=I:VN=I:
E=I:V=I:Y=I: WT=&HC000:P4=D+D:P5=P4+U:PA=P5+P5
8 W2=D*WT:WM=NOTW2:WL=NOTWT:WN=-WT: KK=8224:FL=I:P3=D+U:PF=P5+P3:P6=P3+P3: P8=P4
+P4:P9=P4+P5:PC=P6+P6:HT=I:TR=I
9 CC=I:PP=PC+PC:HC=I:HJ=I:PG=P8+P8: PT=P8*PA:Z1=1D0:PY=51:PZ=P5*PY:PD=PP+D:P7=P3
+P4: PK=PA+PA:PS=PA*PA:PW=D*PG
10 PV=PW-U:PX=44:PL=P3*P9:PN=127:PO=P8*P8: PM=PO-U:PE=P7*D:PJ=P9*D
15 K=30:SI=K/PA-U:DIMC(SI),D(SI), WR(SI),CH(PT),TJ(P9),DL$(P9),C$(PF), HS$(PM),F
D$(PM),CU$(PE),JN$(K),KO(K), T$(K),NC(K),BC(PT),L(PF,U)
20 Y$="Y":S$=" ":A$=X$:X$=S$:SS$=" ":G$=" ":B4$=G$+S$:B8$=B4$+B4$:V$="VIDEO":
H$=" *** ":R$="/":KK$=MKI$(KK):E$="X
22 TP$="DWSFMOYEXNZRC- ": MT$="JANFEBMARAPRMAYJUNJULAUGSEPOCTNOVDEC": DT$="00003
10590901201511812122432733043343 65": CT$="033614625035": K$="CUSTOMER":U$=CHR$(2
9):D$="ACCOUNT
23 C$(P)="END":C$(U)="PAYMENTS": C$(D)="BILLS":C$(P3)=D$+"S":C$(P4)=K$: C$(P5)="
JOURNAL":C$(P6)="YEAR": C$(P7)="MANAGEMENT"
24 C$(P8)="STATISTICS":C$(P9)=V$: C$(PA)="ROUND":DE$="DELETED ":P$= PUBLICATION
": Q$=" AMOUNT ":J$="WITHHOLD": N$="INPUT ":L$="CHOICE
25 REM
```



```
REM
790 REM PAGE-SWAP ROUTINE STARTS HERE
800 Y=P:VN=Y:E=WT:V=S2:TR=TR+U: FORB=YTOSI:C(B)=C(B)/D:IFH2=D(B)THENC(B)=C(B)+WT
: Y=PA+BELSEIFC(B)=)ETHENE=C(B):VN=B
804 NEXTB:IFY:VN=Y-PA:HT=HT+U:GOTO810
806 GOSUB812:PRINT,,H$"FILE"H2"--)"D(VN)HT;TR:U$;: GOSUB920:FORS2=PTOP9:A=E+S2:
JN$(A)=TT$(S2):T$(A)=TY$(S2):A$=KO$(S2): GOSUB814:KO(A)=B:A$=NC$(S2): GOSUB814:N
C(A)=B:IFTB$="L": PRINTJ+S2;TT$(S2)U$;:Z=Z+KO(A)*NC(A)*Z1:NJ=NJ+NC(A)
808 NEXTS2:D(VN)=H2:C(VN)=-KK
810 E=VN*PA+V:S2=V:RETURN
812 E=VN*PA:IFWR(VN)=PRETURNELSEB=H2: H2=D(VN):GOSUB920:FORS2=PTOP9:A=E+S2: LSET
TT$(S2)=JN$(A):LSETTY$(S2)=T$(A): LSETKO$(S2)=MKI$(KO(A)):LSETNC$(S2)=MKI$(NC(A)
): NEXT:GOSUB925:H2=B:WR(VN)=P:RETURN
814 IFLEN(A$)=PORA$=SS$THENB=P:RETURNELSEB=CVI(A$):RETURN
920 REM
925 REM
```

Norman Baust

DECIMAL TO HEX CONVERSION FOR 16K LII

The following short program, which can be entered using Tbug will convert decimal to hex. It is accessed by <SHIFT> H . The decimal number is typed in and the hex equivalent is shown on screen.

```
7FA9  2A1640    *@    LD    HL,(4016H)
7FAC  22BF7F    "     LD    (7FBFH),HL
7FAF  21BE7F    !     LD    HL,7FBEH
7FB2  221640    "@    LD    (4016H),HL
7FB5  21BE7F    !     LD    HL,7FBEH
7FB8  22B140    "1@   LD    (40B1H),HL
7FBB  C3191A    C     JP    1A19H
7FBE  CD0000    M     CALL  0000H
7FC1  FE68      ~h    CP    68H
7FC3  C0        @     RET   NZ
7FC4  21A97F    !     LD    HL,7FA9H
7FC7  060F      .     LD    B,0FH
7FC9  CD4000    M@    CALL  0040H
7FCC  CD4F1E    MO    CALL  1E4FH
7FCF  D5        U     PUSH  DE
7FD0  C1        A     POP   BC
7FD1  3E3D      >=    LD    A,3DH
7FD3  CD3300    M3    CALL  0033H
7FD6  78        x     LD    A,B
7FD7  CDE97F    M     CALL  7FE9H
7FDA  79        y     LD    A,C
7FDB  CDE97F    M     CALL  7FE9H
7FDE  3E48      >H    LD    A,48H
7FE0  CD3300    M3    CALL  0033H
7FE3  3E0D      >     LD    A,0DH
7FE5  CD3300    M3    CALL  0033H
7FE8  C9        I     RET
7FE9  F5        u     PUSH  AF
7FEA  0F              RRCA
7FEB  0F              RRCA
7FEC  0F              RRCA
7FED  0F              RRCA
7FEE  CDF27F    M     CALL  7FF2H
7FF1  F1        q     POP   AF
7FF2  E60F      f     AND   0FH
7FF4  FE0A      ~     CP    0AH
7FF6  3802      8     JR    C,7FFAH
7FF8  C607      F     ADD   A,07H
7FFA  C630      F0    ADD   A,30H
7FFC  CD3300    M3    CALL  0033H
7FFF  C9        I     RET
```

Ken Grey

VARIDISK PROGRAM - A CORRECTION

With reference to my Varidisk program, I have found that under certain conditions two bugs can appear. The first results in a word or letters being extracted from the middle of a string and declared as a variable in the list, the second results in a trailing variable, particularly one appearing at the end of a string, being omitted from the list or from the count.

Two quite small modifications cure the problem and I enclose a print of the appropriate lines.

My apologies for this which did not appear at all on quite a number of programs on which I have run Varidisk.

I thoroughly enjoyed the day at Blandford and am looking forward to next year.

```
60190 IFP=350RP=360RP=370RP=40THENP$=P$+CHR$(P):J=J+1:
      IFJ=32768 THENJ=-32768:P=PEEK(J):GOTO60190:
      ELSEP=PEEK(J):GOTO6190

60380 IFPEEK(J)<>34ANDPEEK(J)<>0THEN60370ELSEELSE
      IFPEEK(J)=0THENRETURNELSEIFPEEK(J)=34THENJ=J+1:
      IFJ=32768THENJ=-32768
```

M. C. Matthews

WHY NOT TRY FORTRAN?

I am currently doing a lot of work on a very sophisticated high resolution colour graphics system (VIP), which we have interfaced to a 64K Z80 system with an 8Mb Winchester hard disk running under CP/M. This of course has nothing to do with the TRS-80, although the VIP could be easily interfaced to any of the Tandy range (if you have about £3000 to spend!), but for the fact that I have been very impressed with the speed and efficiency of the Microsoft FORTRAN compiler. Virtually the same compiler is available from Tandy for the TRS-80. We were able to run a large graphics package (512K of source code, compiling to 128K of object code!) written for a Prime mini-computer almost "as is". Although FORTRAN is much harder to use than BASIC, it has several advantages. It runs extremely fast, and has much better sub-program facilities than BASIC, in that subroutines and functions can be called by name. Variables can be local to a sub-program, so you do not have to worry about overwriting variables when calling a subroutine.

It is quite easy to use assembler routines with FORTRAN code, and link everything together to produce a single run-time module (you have to use Macro-80, of course, those assemblers some of our members use are no good, I'm afraid). One large deficiency is the lack of string handling, but this can be overcome by the use of integer arrays to store string data.

Provided you make your programs nice and modular, FORTRAN is not that difficult to use, and is worth co dering as an alternative to the BASIC compiler.

Leon Heller

THE PCW SHOW

Thanks to the Amateur Computer Club, we had a stand again at the PCW show, held this year at the Barbican Exhibition Centre. Vince Moore, of Tandy Corp., kindly arranged for me to borrow a Model III system from the Tandy Store at Swiss Cottage.

I held the fort on Thursday, ably assisted by Colin Ashford. Brian looked after things on the Friday, and, with some assistance from Chris Cain and Laurie Shields, I was present on the Saturday, while Brian organised a "hospitality suite" a few minutes away. This enabled mmembers to have a rest and enjoy a cup of coffee in rather more peaceful surroundings than the show. On the Saturday, John Carne and John Newgas looked after things, giving me a chance to see the show.

Tandy had a few interesting things on their stand. The Model 16 was there in all its glory. Unfortunately, there was no software for the 16-bit processor, so it was merely running a standard BASIC program in Model II mode, although it was linked to a new low-cost terminal enabling remote operation. The Model 16 has two slim-line disk drives replacing the Model II standard width drive. They also had a couple of interesting printers and an XY plotter.

Although we did quite well for new members on the first two days, the response on Saturday and Sunday was rather disappointing. However, it was nice to see those of you who made it to our stand, and actually meet some of you who we only knew via letters and the telephone.

Leon Heller

IMPROVEMENTS TO DATE ROUTINE

I too, like Bob Sparling in Vol. 4 Issue 2, have always been impressed by LDOS's date manipulation but I'm sure that the authors of this fine DOS system would shudder at the prospects of someone writing a routine to do the same date display format but omitting to embed error traps to prevent the user inputting 02/30/82 or 04/31/82 or even testing whether 02/29/80 is permissable or not. Bob has given Laurie credit for writing the routine but he couldn't have tested it before submitting it to the Newsletter. As it stands the routine will accept any day number less than 31 and greater than 1 and convert it!!! Thus SAT,31 FEB,1982 is possible???

Although I am a relatively new subscriber to the Newsletter, I have had my computer for two and a half years and in that time have written quite a selection of programs. During this time I have worked with children and have, on occasions, allowed them to 'debug' my programs. The children are guarenteed to find any none-trapped errors (and even some trapped but not so tame ones) and because of this I have always forced myself to consider that my programs will often be used by people who don't appreciate that without error traps precision is essential and will almost certainly try to input invalid data 'Just to see what will happen'. How many times do we all try this to measure the programmer's capabilities.

With this fact in mind I will add that I don't intend this letter to be a criticism of Laurie's routine merely that I consider it to be incomplete. Never the less, I agree with Bob the concept is very good as a subroutine so I have taken the liberty of completing it by inserting the appropriate error traps. The modified routine uses a little less than 1K without the REM's and is as follows.

```
10 CLS:CLEAR100           'ROOM TO MANOEUVRE
20 DIMF$(7),M$(13),I$(2),DA$(18)
30 FORK=1TO12
40 READM$(K)              'READ IN MONTHS FROM DATA
50 NEXT
60 FORJ=0TO6
70 READF$(J)              'READ IN DAYS FROM DATA
80 NEXT
90 PRINT@465,"Date  (MM/DD/YY)";
100 INPUTC$
110 IFLEN(C$)<>8THENCLS:GOTO90  'CHECK INPUT FORMAT
120 O$=LEFT$(C$,2)              'EXTRACT MONTH
130 M=VAL(O$)
140 IFM>12ORM<1THENCLS:GOTO90
150 P$=MID$(C$,4,2)             'EXTRACT DAY
160 E=VAL(P$)
170 IF(M=4ORM=6ORM=9ORM=11)ANDE=31THENCLS:GOTO90 '30 DAY MONTHS
180 IFE>31ORE<1THENCLS:GOTO90
190 IFMID$(C$,4,1)="1"THEN230              'COMPUTE
200 IFMID$(C$,5,1)="1"THENI$="st":GOTO240  'EXTENSION
210 IFMID$(C$,5,1)="2"THENI$="nd":GOTO240     'TO
220 IFMID$(C$,5,1)="3"THENI$="rd":GOTO240       'DAY
230 I$="th"                                       'NUMBER
240 Q$=RIGHT$(C$,2)             'EXTRACT YEAR
250 Y=VAL(Q$)
260 Y=Y+1900                    'COMPLETE YEAR No.
270 IFY/4=INT(Y/4)THENF=1ELSEF=0      'SET FLAG FOR LEAP YEAR
280 IFF=0ANDM=2ANDE>28THENCLS:GOTO90 'MAX DAYS FEB NO LEAP YEAR
290 IFF=1ANDM=2ANDE>29THENCLS:GOTO90 'MAX DAYS FEB - LEAP YEAR
300 X=Y
310 IFM<3THENY=Y-1
320 IFM<3THENFM=M+13
330 IFM>=3THENFM=M+1
340 N=FIX((365.25*Y))+FIX((30.6*FM))+E-621049  'ZELLER'S
    CONGRUENCE. GIVES No. OF DAYS FROM MARCH TO DATE ENTERED.
350 BN=(N/7-FIX(N/7))*7
360 BN=FIX(BN+.1)       'MODULO 7 OF No. OF DAYS
370 CLS
380 DA$=F$(BN)+",+STR$(E)+I$+" "+M$(M)+",+STR$(X)
390 PRINT@470,DA$
400 IFF=1THENPRINT@540,"Leap Year"
410 DATAJan,Feb,Mar,Apr,May,Jun,Jul,Aug,Sep,Oct,Nov,Dec
420 DATASun,Mon,Tue,Wed,Thu,Fri,Sat
```

As can be seen the program is a little longer and I have incorporated day extension and leap year so the date printout is clearer.

Finally, may I say that I enjoy reading the Newsletter and compliment you on a good varied selection of information.

Paul A. Webster

PERSONALISING DISKS

Now that I have had even a little sleep, may I thank Brian for another momentous weekend! Thanks are also gratefully given to all those who stood up and freely gave of their hard-earned knowledge - their tips and hints amply repay the cost of attendance!

I was asked, both at Luton, and in three phone calls since, how I managed to 'personalise' my Newdos disks, so for all those who still haven't yet ventured into Superzap - here goes. I have zapped my disks so that, 1. the banner incorporates the latest Zap(patch) number that has been applied, 2. so that the disk titles and the Dos Ready signs are personalised.

First of all, make a backup copy! Put it in drive 0, and take the disks out of any other drives that you have. This isn't really necessary, but if you don't know how to put your name on a disk, then it follows that you don't yet know how to be sure that you don't wipe out a good disk! Load Superzap, press <enter>, and type in 0,17 (the comma IS important!). The screen is now filled with the HEX and ASCII detail of sector 17; down the bottom on the right you will see the name APPARAT,.INC..
Type in M 0(alpha) D F2 and the cursor is rapidly winking at you over a number 41. 41 is the hex code for letter A, and using hex codes you can now type in what you like in those 12 spaces - and if you only want to use 6 letters then follow them with 20 (the hex code for space), six times. As you type in new numbers you will see the name change, if you make a mistake it is OK to use the backspace arrow to retype the correct entry. When you are satisfied with your efforts, press <enter> and you will see the message 'Press Y if OK to write to disk' - make sure you haven't got a write-protect tab on the disk before pressing Y!

The screen now shows the previous picture of hex and ascii codes; press X and you will return to the Superzap menu. Press <enter>, followed by 0,18 <enter> and you will see a similar picture. On the right you will see the messages 'VERSION 2.0', and, lower down (spread over two lines) 'MODEL.1'. I changed my messages to read 'MOD 1 VN2.0' and 'ZAP 079' respectively; to change the first one you type in MOD33 and the cursor will now be over the 56. Enter up to eleven hex codes, using 20(space) where necessary. If you are confident enough you can now use the arrows to move the cursor down to the seventh row, over the 4 of the last entry on the row (4D) and change these seven letters. If you are not sure of this, then just press enter, and Y again to put the first change to disk, and when the screen comes back type in MOD6E - this will put

the cursor over that 4.

When these are done, press X to return to Superzap menu. Press <enter> and type in 0,164 <enter>. By now you should know what to look for! Down on the right you can see the letters LTO.MINI-NEWDOS/80.READY. This NEWDOS/80 READY is THE message that appears when you reboot, so if you want to see 'GET A MOVE ON' or 'JOHNNY IS READY' then this is the bit to change. (I must say that I was impressed by someone's machine at Luton - his message simply, but usefully, said 'You are in DOS'). So type in MODC9 and the cursor will jump to over the 4 of 4E. Now type in the phrase of your choice, taking care not to go any further than the Y in READY. Press <enter>, enter Y, press X and you are back again at the Superzap menu.

So far we have changed screen messages. The last two alterations are for disk names. Press <enter>, type in 0,170 <enter> and you will see an almost empty right hand side of the screen. Down the bottom is NEWDOS80mm/dd/yy, and whilst the date is that of the disk creation, the name is that of the disk. To change it type in MODD0 and enter up to eight hex codes for the name you want.<enter>, Y, X back to the menu. <enter>, 0,217 <enter> will show us the name used when formatting disks: on the fourth line and continuing into the fifth is the legend 'BNOTNAMED2:/4:/::. Again type MOD, followed by 3D, and the cursor is over the 4 of 4E - NOT the 4 of 42, you don't change the B! Type in eight hexcodes for whatever you want your data disks to be called, press <enter>,Y. Press X to return to menu, type EXIT to return to DOS, and it's all done!

Now that you can see how easy - and how dangerous - zapping can be, get yourself a good book and learn about sectors, tracks, hex, and things that go bump in the night!

David Washford

USING THE VOTRAX SC-01 SPEECH SYNTHESIS CHIP

Using the Votrax SC-01 voice synthesis chip I have built an intelligent speech synthesiser, which will be interfaced to my Model I when I can find the time. I merely built a little four chip microcomputer with a Z80 CPU, 2K EPROM, 2K RAM, and 8255 PPI for I/O. The SC-01 was interfaced via the PPI, and arranged so that it generated interrupts at the end of each phoneme. By placing appropriate combinations of phonemes in the EPROM, together with a simple driver program, I was able to output speech to a small amplifier and loudspeaker. My intention is to write some software for the synthesiser and my Model I which will enable me to run a text to phoneme translation program on the Model I, and download the phoneme sequences to the synthesiser via an RS-232 interface.

Leon Heller

Colour Computer Work-alike ... The Dragon 32

I have had the opportunity to try out a new British made computer, the Dragon 32. What has surprised me is it's degree of compatibility with the TRS80 colour computer and it's ablility to run software / firmware for that machine.

The computer itself is mechanically well made, along the designs of a lot of desk-top computers. The case is buff coloured, quite light, but very strong. The keyboard is of the standard QWERTY type and has the feel of a not very expensive typewriter. On the computer I had for trial the space bar felt 'heavy' but another machine's space bar I tried was ok.

The power supply is external, to keep the heat inside the cabinet to a minimum, and it is in a sturdy plastic case. There are sockets provided for cassette, printer, joysticks and ROM packs / expansion. A fairly straight forward manual comes with the machine, plus a twelve months warranty.

I tried some of the examples of programs given in the book and the resultant screen displays were very good, particularly in the hi-res graphics mode. I followed this up with some programs designed for the TRS80 colour computer, including those with lots of peeks and pokes, and they ran absolutely perfectly. Then came a very interesting test, I plugged in a TRS80 ROM cartridge, and it worked ! I could only test one cartridge, but it operated one hundred percent ok and confirmed that the two computers were compatible as far as I could tell. I was not able to test the cassette system between machines but I suspect that they are also compatible.

Comparing prices the Dragon certainly has the edge over the TRS80 colour, plus it has 32K as standard. For £199 it takes some beating, and there is quite an amount of software available for it. I would have liked to have been able to test the compatibility as far as the cassette was concerned but I did not have a tape produced by the TRS80 to try. My impressions of the machine are based on comparing it with the TRS80 colour and for details of that system you should read the recent review in the news letter.

My grateful thanks to General Northern Microcomputers Ltd. for the loan of the Dragon, giving me the opportunity to write this brief review.

Ken Grey

(* The TRS-80 Colour computer and the Dragon were both based on an application note published by Motorola, who make most of the chips in the two systems. The Dragon uses the same Microsoft BASIC as the TRS-80 which is not in fact a copy of the TRS-80 BASIC; both were purchased from Microsoft.
The Dragon certainly looks like a better buy. LFH *)

LDOS & smalLDOS SUPPORT THE GENIE PRINTER

In the new 5.1.3 version of LDOS there is an undocumented command for the Printer Filter. Typing FILTER *PR USING PR/FLT (PAGE=xx,LINES=xx,PORT=X'FD') will set not only the page length and number of lines on the page, but will also set the printer to the Video Genie port ØFDH. The command is documented and supported in smalLDOS.

Ken Grey

PS. For anyone with earlier versions of LDOS (5.1.1 / 5.1.2) I have the patches for PR/FLT to use the Genie port. They will appear in a future news letter.

BRIDGE PROBLEM

In a recent issue there was a request for help with a problem with bridge, here is a possible solution. Assume there are N scores in an array S(0) - S(N-1) then the following BASIC program will award the points in array P(0) - P(N-1)

```
10 M=N-1
20 FOR I=0 TO M
30 J=I
40 IF J=N THEN 60
50 IF S(I)=S(J) THEN J=J+1:GOTO 40
60 P=(N-(I+1)) + (N-J)
70 J=J-1
80 P(I) = P
90 IF I<J THEN I=I+1:GOTO 80
100 NEXT
```

It may not be the most elegant solution with it's proliferation of GOTO's, but it seems to work on the data given.

John Bacon

GOLD PLATED EDGE CONNECTORS

I have recently cured all manner of problems on my machine and that of a friend by fitting gold plated connectors to the CPU and expansion interface boards. Their fitting involves opening both cases and soldering the connectors to the pcb's. The connectors were obtained from Farnell Electronic Co. Ltd., Canal Rd., Leeds LS 122TY. and the part nos. and prices are as below

2 of 145-022 @ £2.223 each	4.45
2 of 145-006 @ £1.77 each	3.54
postage and packing	1.75
	9.74
VAT 15%	1.46
TOTAL	11.20

This has cured such faults as processor lock-up, text corruption in Scripsit whilst I'm having tea and no-one is near the machine etc.

John Bacon

AN INGENIEOUS AID FOR A HANDICAPPED PERSON

Received on the 1st of August the latest newsletter - no complaints but I did smile when I read the first paragraph of the editorial.

I have been prompted to write by your short article on programming for the handicapped, a subject that I have been interested in for some time now but a lack of interest on the part of the "helpers" of some of the handicapped has almost destroyed my motivation. However, shortly before the end of the last school term I became involved with a local special school who had just been given 3 Genies by their P.T.A. but didn't know what to do with them.

I had written a rather crude but effective communication program some time ago and I pulled this out and updated it a bit and we got it into use just before the end of the term with a spastic boy of about thirteen. He is unable to speak and has very poor control of hands and feet and previously had been using a Possum with a three position joystick. We have now got him using the Genie instead of the Possum and he is controlling it with a four position joystick. By the end of the first week he was able to produce text on the printer as fast or faster than using the Possum but it had become apparent that a joystick was not the best input device for him. This term we will fit him up with some push switches. Tandy sell some nice footswitches for under three quid which for them is exceptional value! These switches can be given a softer action by removeing some of the springs.

The program (also on this tape) at present can be used for communication, recreation or as a simple calculator as follows:-

CLOAD and RUN in the normal manner the enter the response speed when prompted. This alters the repeat rate and speed of response to inhibit inadvertent entries.

Using the four cursor control keys (we have parallled switches with thes) move the cursor left, right or down to the appropriate character. You will note that the character over the cursor will also be shown on the screen at the bottom of the control area. Selecting the "up" key will select the character an display it in the text area after any previous characters. A space may be generated by selecting one of the spaces at the end of the line or in the middle.

Selecting a character on the second line will generate a whole word and one on the third line will generate a whole phrase. These can of course be added to the text.

Selecting a < character will erase the previous character and the one below that gives a line feed.

Selecting the X on the far left will erase the text area whilst the P below it will give a screen print of the text area then erase it.

Selecting the left hand $ symbols switches the top line between upper and lower case.

If the word DRAW (no spaces or other characters) is put in the text area and then the left hand E is selected, the program will escape to a simple drawing routine. The four corner characters will erase the line, draw a line, erase the screen or return to the main program. Simple, crude but for a child who can't hold a pencil wonderfull.

Escaping to MOUSETRAP takes you into a game from Computing Today with a way out back tho the main program.

If a simple calculation is built up in the text area and then the left hand C is selected the Calculator mode will give the result. Again, simple and crude but if your fingers won't work ---------

You will note that I have used four input switches rather than two as Possum usually use. This is because if a severely handicapped person can operate two switches they can usually manage four - they could of course be a mixture of foot, hand, head or mouth controls. By using four controls the potential speed of operation is exponentially faster than one, two or three.

This program is in a fairly early stage of development and was started before I knew how to use arrays but has been modified somewhat. As a result of this it is rough, unstructured but it works!

I hope that you find this of interest - include any of this letter in the newsletter if you wish. Please let me know how you get on.

Next time I write I'll do a bit for the Newsletter on my 48k double density disc system with printer and Floppy Tape but no Expansion Interface.

John H Taylor

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TALKING TO THE BEEB

The Model B BBC microcomputer has as standard an RS423 port. This is compatible with RS232-C. Consequently communication between the TRS and BEEB is easily arranged.

The connections should be as follows.

TRS RS232	RTS (36)	CTS (32)	RD (22)	SGND (20)	TD (18)
BEEB RS423	CTS	RTS	data out	SGND	data in

The numbers in brackets are the TRS-80 edge connections on the RS232 port. The BEEB connections are to be found on page 406 of the manual.

With a terminal program in each computer and the configurations of each set to, 300 baud, 8 bit words, no parity and 1 stop bit, communication is straight forward. Page 24 of Acorn User no. 1, has a suitable dumb terminal program.

Rather more interesting is the small loader program on the same page. This intercepts the BEEB's keyboard routine and replaces it with characters from the RS423 port. With a smart terminal program in the TRS, program transfer is easily arranged and control is entirely from the TRS keyboard.

The routine interested me sufficiently to write an equivalent routine for the TRS.

Enter the following code at address FF00H onwards and then dump to disc (or tape) as BEEBCMD/CMD from FF00H to FF12H with start address at FF00H.

```
FF00   21 06 FF 22 16 40 DB EA CB 7F 20 02 AF C9 DB E8
FF10   E6 7F C9
```

Running this program will pass control to RS423 issuing from the BEEB. This may be from the terminal program, but very much better is to arrange for all video output from the BEEB, to go to the RS423. No special program is then required. The following BEEB commands arrange this.

```
*FX 5,2              (enable serial port)
*FX 8,3              (300 baud output)
```

Control B now enables output of video to RS243. Control C deactivates the routine.

To set up this system, first make sure the TRS RS232 port is properly configured. My program will not set it. It may be done by the port switch settings or by running any program which allows software setting and then taking an exit to DOS. The port will not be reset.

Now run BEEBCMD.

Enter the BEEB commands above, hit Control B, and start typing. Remember that you now have simultaneous control of both computers.

To issue a command to just one computer requires skill. The BEEB delete key will work on its video but does not transmit. Watch out for the cursor character appearing on the TRS screen, this must be deleted. To delete on the TRS, hit Control H on the BEEB. Use Control C to write to the BEEB only. It sounds complicated but is not as bad as it sounds. Just ensure the command you want is on the right computer before hitting RETURN.

To transfer a BASIC program from the BEEB to the TRS. Make sure there is no cursor from the BEEB on the TRS and with Control B active, use the BEEB to enter BASIC protected at 65000. Hit Control C to isolate the BEEB. Do whatever is necessary to get the program loaded into the BEEB. Type LIST with a Control B before the RETURN.

The listing which appears on the TRS will be accepted as keyboard input and will have been transferred to memory. Save this program by issuing the save instruction from the BEEB. Now reboot the TRS and the directory shows the new program. There may be some alteration needed due to the different use of ASCII codes. For example ?, which is an indirection operator on the BEEB, will be translated to PRINT. It still saves hours of typing.

If corruption occurs due to lost characters, slow down the baud rate to 150. Some BASIC character input routines have a lot to do.

Getting somewhat carried away with the process, I tried reversing the situation to give the TRS control of the BEEB using video output.

Setting up video output to the serial port is not quite so simple on the TRS. A small program to intercept the video driver is required. The following code does the job.

```
FF00   E5 2A 1E 40 22 27 FF 21 11 FF 22 1E 40 E1 C3 2D
FF10   40 DB EA CB 77 28 FA 79 FE 08 28 09 FE 5B 20 03
FF20   3E 7F 4F D3 EB AF C3 FF FF
```

Dump this to disc as CMDBEEB/CMD start FF00H, end FF28H and transfer address FF00H. This routine could be of interest by itself, to those who use a serial printer and would like a video print routine.

To set up this system. Reset the BEEB and run the Acorn User loader program previously mentioned. Configure the TRS RS232 port to the parameters given above. Run CMDBEEB. Hit user key 9 on the BEEB to enable RS423 input and away you go on the TRS with control of both.

The transfer of extraneous information is increased under this set up; the TRS prompt READY is taken by the BEEB to mean READ Y. Being unable to do this it will give an out of data error. Take no notice. (PET users will feel at home).

To give a delete arrangement similar to the one for the previous system, I have arranged in the driver intercept routine that the TRS delete character (backspace), is not passed to the BEEB. The up arrow will now delete on the BEEB but also prints an extraneous character on the TRS. The character could be removed but it would mean interrupting the keyboard driver as well as the video and I could not be bothered. It is deletable with backspace.

To transfer a Basic program from the TRS to the BEEB. BREAK the BEEB to stop RS423 input and make ready for program input. With CMDBEEB operative on the TRS, go into BASIC protected at 65010, and load the program for transmission. It doesn't have to be ASCII. Type LIST on the TRS and hit key 9 on the BEEB before ENTER. When listing is completed, hit BREAK and give command OLD on the BEEB to recover the program.

Andrew Donald

USING PRINTUSING

Re-reading the Newsletters for the umpteenth time, I came across John Rutherford's reminder (July 81) that the Level II book gave a very good Inkey routine. I decided that it might be also worthwhile re-reading the Level II manual as well, and, lo and behold, Print Using took on a new meaning ! I thought that I understood this quite well, but I certainly was not aware of all the possibilities - honestly now, did YOU know that 'print using' could, for example, take two full Christian names and a Surname and print them out as initials and the surname ?

OK, you can do this with LEFT$, but this seems far easier to me, which is probably why I had forgotten it !

Here is the simple program :

```
10 A$="JACK":B$="ROBERT":C$="JONES"
20 PRINT USING"!! !!";A$;".";B$;".";" ";
30 PRINT C$
```

'RUN' will give : J. R. JONES, naturally it also works with LPRINT statements. The beauty is, for me at anyrate, that 'Jack' and 'Robert' are left intact for full use elsewhere in the program.

One other tip for those who haven't read the details of "FASTER", do put an early line in your programs which consists of DIM followed by all the variables that the program will use. The manual implies that DIM statements are only used with arrays, whereas it should be used in every Basic program for optimum speed of operation.

I also read that Brian uses Infinite Basic to great advantage; since Brian always asks other people to write user based articles, and since Racet's instructions are on a par with the Newdos manual, how about a 'User Guide to IB', Brian ?

David Washford.

HOW MEM WORKS

In answer to R. Robson's query about how MEM works, the computer does indeed put something in every location and then tests to see if it has been stored. In practice it only does this once, as part of the initialising, and then puts the answer into 40B1/2H. The slight delay after entering a memory size before "Radio Shack etc." appears is mostly the time taken for this test. The relevant code starts in ROM at 00C7H.

Strings are stored below this area (size set by CLEAR command), and below this goes Basic's stack. A Basic program starts from a point low in memory (just where depends on whether you have disks or not) and the variables for the program go above this. MEM is actually the amount of room left between this and the stack.

Don Bannister.

LPRINTING CHR$ (0) , (11) & (12)

This note is in response to the article "TRS80 & The Epson MX80 F/T III Printer". I am not quite sure of the originator's name but his comments sounded all too familiar. I too have an Epson and went through the same trauma, but never fear - a solution is readily available.

The problem, I think, is that the TRS80 came along before intelligent printers were readily available, and Tandy put some code into their printer driver to simulate form feeds, and allow variable length pages (remember POKE 16424,X). The driver traps CHR$(N) where N=0,11,12. In the case of 0, it simply does nothing, and how 11 & 12 are dealt with depends on the current line count & lines/page setting.

The print driver resides in ROM at 058DH, and disassembling it shows that the character to be printed is put in the C register. If the character is 11 or 12, the printer DCB (at 4025H) is examined to see how many line feeds have to be sent to simulate a form feed. In this case or with any other non null character, if the printer is free the relevant character(s) are transmitted.

To bypass this part, all that is necessary is to load the accumulator with the value in the C register (this replaces the first instruction in the original) and JUMP to 05B4H, omitting the tests for 0,11,12. This new routine can be put anywhere in memory, and the address in the DCB (4026/7H) amended to point at it.

The only problem is to find somewhere to put the

necessary four bytes. In non-disk Level II, some bytes which I believe are unused are those which keep the time and date in disk systems. 4043H (16451 dec) seems a suitable place, one adavantage being that there is no need to protect these locations (as with high memory). For machine code programmers the necessary (rather trivial) code is shown later, but the relevant POKEs are as follows.

This is the new code :
POKE 16451,121:POKE16452,195:POKE16453,180:POKE16454,5

This redirects the DCB to the new driver :
POKE 16422,67:POKE 16423,64

If the code is put somewhere else, the last two pokes are worked out in the same way as is mentioned in the Level II manual for working out the entry address to a USR routine.

Incidentally, to revert to normal, only these last two need altered thus :
POKE 16422,141:POKE 16423,5

For disk users, there are more options. I am not so sure of such 'safe locations', but it could well be just as easy to set HIMEM, and load the code at the top of memory. Probably a more elegant solution,(and the one I use myself) is to use NEWDOS80's ROUTE command. This has the other adavantage that the routing can be quickly changed or dissolved at any time. Another routine using this technique is one to paginate program listings.

```
00100 ;**********************************
00110 ; FIX FOR LPRINT CHR$ 0,11,12
00120 ;**********************************
00130 ;
00140 ;
00150           ORG         4026H   ;IN PRINTER DCB
00160           DEFW        ENTRY   ;SET DCB POINTER TO NEW
DRIVER
00170 ;
00180 ;
00190           ORG         NNNNH   ;ANY SUITABLE FREE SPACE
00200 ENTRY     LD          A,C     ;REPLACE INSTRUCTION IN
                                    ;ROM
00210           JP          05B4H   ;BACK TO ROM DRIVER
00220 ;
00230 ;
00240           END
```

Don Bannister

EDUCATIONAL USERS GROUP

T R S - 8 0 E D U C A T I O N A L
U S E R S G R O U P

NEWSLETTER SEVEN

21st. August 1982

I must apologise to Users about the long gap between this Newsletter and the last, but the pressures of the end of term were not really relieved by the holidays and thus I am only writing this as the holidays are coming to an end, when I really should have been Producing this copy for the August edition and not the September one.

GAPEVINE.

I wonder how many educational users have come accross the excellent newsletter Produced by GAPE, a Geography Association Project. It is a forum for the exchange of information about the use of computers in Geography at all educational levels. It also Publishes computer Programs relevant to geography teaching. The Spring edition arrived on my desk some months ago and is well Produced and worth getting a copy of. All correspondence concerning GAPE should be sent to David Walker, The Department of Geography, University of Technology, LOUGHBOROUGH LE11 3TU.

PROJECTS OF TONY HUGHES.

Users will remember Tony, and the work that he was carrying out with a SPEAKEASY on his TRS-80. Further Projects that Tony is involved in might be of interest. He has recently had a multiway cable made up for him, by MICROFIRM COMPUTING of 57, Queen Chalotte Street, Bristol. This enables him to connect up to three Periferials to the expansion Port.

This enables Tony to Produce a version of his SPELLING BEE with speech from the Speakeasy and hardcopy from the Printer.

I understand that Microfirm charge #20 for this cable.

Tony as usual has some other Projects in mind. One of these is to Produce a menu-driven Program to help children whoses spelling is Poor to write stories. Obviously this would only be worth doing if a Printer is connected. The Problem as far as Tony is concerned is whether enough schools have a Printer who might be interested in such a Program. If you are interested why not drop Tony a line.

I know Tony has completed recently a short Program that Puts the endings on to words. This has been designed for a teacher and a

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small 9rouP of children workin9 to9ether. A short word is shown for the children to read, after which a further letter or 9rouP of letters 9ets added. The children read the new word and so on. The intention bein9 to demonstrate how lon9 wordsa are built uP from smaller words. This Pro9ram would not be interactive excePt that the teacher would control the sPeed by Pressin9 a key when the children are ready for the next Part of the word, or the next word.

Do connact Tony Hu9hes, at The Homestead, Says Lane, LANGFORD, Avon, BS18 7DZ.

TANDY COLOR COMPUTER IN PRIMARY SCHOOLS.

I was extremely interested to hear from M Pears, Headteacher, of the Wellacre Junior School, Irlam Street, FLIXTON, Manchester, M31 3NA. about his Plans back in June to be9in to develoP Primary software for this excellent machine. I had on for three months earlier in the year to review for EDUCATIONAL COMPUTING and I certainly found the COLOR COMPUTER to be on of Tandy's best Products.

Well, Mr Pears has been very busy and has Produced a suite of ten educational Pro9rams that will soon find there way into the EUG library. This means the be9inin9 of a Color Section!

There is a 9rowin9 band of Educational Color ComPuter users out there, so do let us know what and how you are develoPin9. Do consider sharin9 it with the rest of the users. Some of the US TRS-80 ma9azines are increasin9ly carryin9 listin9s of Pro9rams that have some educational value. So it all looks hoPeful.

WRITING A LESSON SCENARIO

I've had some very useful corresPondence in the last three months with Harvey Fruish, of 20 Freehold Street, NORTHAMPTON, NN2 6EW. about writin9 Pro9rams for schools.

He believes that not all teachers are favourably inclined towards the use comPuters in schools because of many,many reasons. In the classroom this may be due PrinciPally to the "fear of old do9s" learnin9 new tricks. Harvey thinks that this reluctance can be easily overcome, if a comPuter is looked at as another bit of kit, like say a taPe recorder, or a back Projector, demandin9 very little skill on the Part of the oPerator. Then it would mean that the rate ac9isition would sPeed uP considerably. To this end Harvey Puts forward a su99estion that instead of 9ettin9 teachers to learn Basic instead we encoura9e them to write a scenario of a lesson from which sixth formers could write Pro9rams as Part of their ComPuter Studies courses. If a teacher of En9lish is not able to write a scenario of his re9uirements then he is hardly likely to be fitted to teach at all. The same must aPPly to any

other of the disciplines.

To illustrate the point Harvey sat down and wrote out a script of an imaginary lesson based on the requirements of an imaginary child. Here is the lesson scenario

Pupil Limitations.

Low reading ability, able to count but still unable to link counting with numbers, Digital dexterity limited, unable to use a pencil. Pupil age 4-6.

Outline.

The lesson should limit the count to a maximun of 10 with the greater emphasis on the numbers up to 5. The screen should display countable forms arranged in such a way as to be easily countable. Whatever is displayed should be familar to the pupil. The pupil will receive verbal instructions in order to function with the program. If the response to the screen is correct he should be told so as also an incorrect response. The teacher should be able to control the number of examples worked by the pupil. He should be also be able to determine the pupils score.

Harvey went on and wrote the program to go with his scenario, and it is now in the EUG library.

I know that this method that Harvey is putting forward is something that he feels very strongly about. Harvey believes that this is the way the greatest progress will be made. The teacher designer and the Sixth former will both benefit.

Do write to Harvey about his idea.

ESM EDUCATIONAL SOFTWARE FOR MICROCOMPUTERS.

ESM are offering an updated catalogue of their large educational software range. It does contain a range of programs for the TRS-80 but most are for the Primary range. As yet I have not seen any of the programs, but I expecting copies shortly. You can contact them at Duke Street , WISBECH, Cambs. PE13 2AE.

ADDING SOUND TO EDUCATIONAL PROGRAMS.

There are now many sound routines that could be added, and are increasingly being, to educational programs. Tony Stainer, of 18 Sheen Park, RICHMOND, Surrey has been developing a very interesting routine that he uses increasingly in the programs that he writes for the Middle School that he works at in Surrey. Tony's technique is to add a few lines of Basic code at the beginning of each program, and when using sound in the program calling the sound with a USR command. In the next newsletter I'll

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9ive more details of the techni9ue, meanwhile Tony's Pro9rams are in the EUG library.

SOUTH CUMBRIA SCHOOLS COMPUTING GROUP.

Some valueable work is bein9 carried out in Cumbria by a 9rouP of four schools with TRS-80 comPuters. They are Particularly involved in attemPtin9 to introduce comPuters to their non-comPutin9 collea9ues. This is done by runnin9 evenin9 classes each ni9ht of the week on different asPects of comPuter use. In addition courses for school secretaries have been or9anized.

June Williams who wrote to me about the work that they have been develoPin9, would certainly like to here from other Secondary schools workin9 individually or in 9rouPs. She comPlains that, they have no shorta9e of software bein9 develoPed for maths and science but if only there could be similar stePs taken in the curriculum areas of En9lish and Humanities. Do contact June and the South Cumbria Schools ComPutin9 GrouP, at the Alfred Barrow School, Duke Street, BARROW IN FURNESS, Cumbria.

SOFTWARE FOR ENGLISH LANGUAGE LEARNING.

Chris Harrison, of the British Council Central Information Unit - En9lish Lan9ua9e Division has Produced some elementary software incorPatin9 9raPhics, for trainin9 En9lish Lan9ua9e resource librarians. Chris would welcome hearin9 from anyone else involved in similar work. His Pro9rams have recently been added to our library.

MUSE REPORT ONE.

Have you seen the first of a series of rePorts that MUSE are brin9in9 out with the British ComPuter Society, it is called "School microcomPuters: uses and mana9ement. The rePort is devoted to the Problems of startim9 microcomPuter use in school. It is written by teachers for teachers. It is available from MUSE, FreePost, Broms9rove.

LEVEL ONE PROGRAMS.

Not everyone has converted to Level 2, and a new member of our 9rouP is after Educational Pro9rams still in Level One format. Contact me with details of what you have available.

ALTERING PROGRAMS TO SUIT YOU.

Many of our users carry out some very 9ood alterations to Pro9rams in our library. They Particularly do this to solve a

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particular need in their school. For instance there is an excellent program in the library called Saucer Shoot Percentage. Many new versions have been created some that add, or deal with multiplication. There is even a Saucer Shoot Binary Maths. But I've just receive a word recognition, spelling game based on the original idea. So all those who complain about the lack of language programs, here is a maths programs that has been converted for language work. Some months ago we received an excellent public domain program called the INVASION OF EARTH. Originally it was based on measures and the matching of equivlants. A whole series of Language Programs have been evolved out of this original idea. There are homonyms, synonyms, and mothers and babies versions now in the library.

If you develop any programs out of others that you obtains from the library do let us have copies. It may save someone else re-inventing the wheel.

Dave Futcher,
Beaconsfield Combined School,
Beaconsfield Road,
SOUTHALL,
Middx.

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This is all genuine material —no rip-offs but being sold in orginal packaging as supplied by various retailers.

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Invaders; Sea-Wolf(U-Boat Strike); Scramble;Missile Command(hard);Galactic Firebird(ace).

5 good games retailing @ £9.50 —£20 the lot

Kansas Master Monitor:

(quite good —Alan Pound of Aculab) Retails @ £17

with full manual: £12

from Tandy:

T-Bug (a basic monitor) £5

Scriptsit (cassette version)

perfect, hardly used from £44.95 to £30

(ideal for Aculab with L.Shield's patch)

From Premier Publications:

Maths Games Pack: an excellent maths teaching program that'll beat many adults. £5

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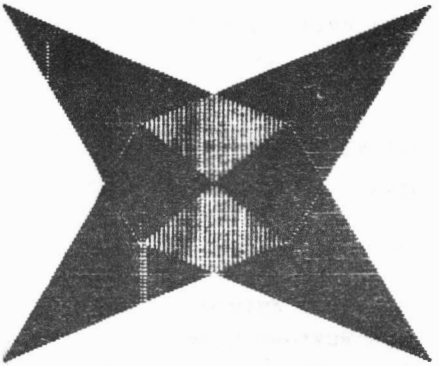
NEXT MEETING AT: BRANCH TAVERN
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SUNDAY 12 SEPTEMBER AT 12.00 PM.

OPEN DISCUSSION ON SOFTWARE PROBLEMS

DETAILS: PETER HALL BRIGHTON 684285
JOHN BEDFORD WORTHING 501818

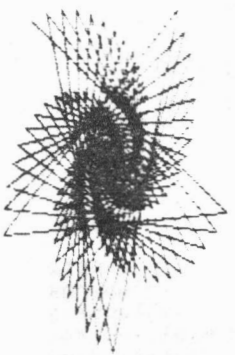
JOHN BEDFORD WORTHING 501818



HI-RES FOR THE VIDEO GENIE

Enclosed is a cheque for £10, will you please renew my subscription to the National TRS-80 Users Group for Volume 4, and also send me Assembler Notes I & II by Laurie Shields.

Having so far missed the July edition by reason of my late renewal, I don't know if anyone has had anything to say about the Video Genie Hi-Res Unit that Lowes have brought out at last.

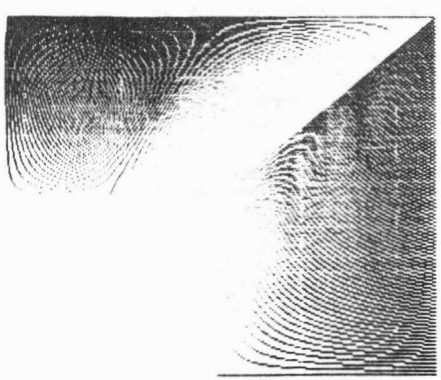


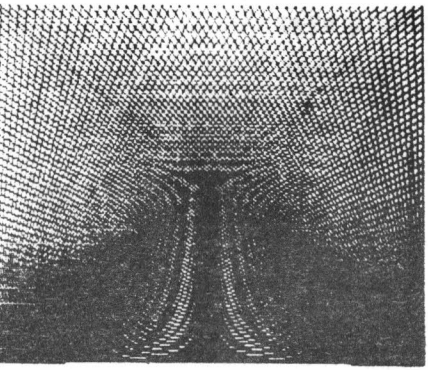
For £86 plus v.a.t. you get a black box some 6.5" x 4.5"x 2" with couple of ribbon cables, on which is wired into the unit and plugs into the Genie I/O ports, the other is a 9 cable ribbon that has to be wired into the Genie and plugs into the Hi-Res unit. The only other connection being a socket on the unit for the cable to the monitor, the unit draws its power from the Genie.

The resolution is 384 x 192, the same as Tandys, the driver can be Eprom, cassette or disc, the cassette version being included in the price.

There are ten Basic commands included in the software :-

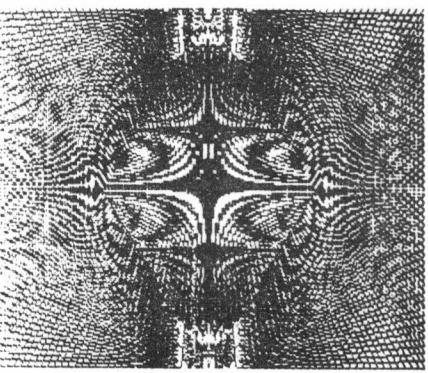
HREN (Hi-res enable or on)
HROFF (Hi-re off)
CLR(S) (clears screen to black,white,or reverses resident image)
PLOT(X,Y,S) (Hi-res version of set, b, w or r)
VECT(X,Y,S) (Draws straight line from last plotted position to new position, b, w or r)
FILL(X,Y,S)to(X,Y,S) (Fills a block or draws a border where the co-ordinate pairs x,y are diagonaly opposite)
HOLD(P,B) (saves a 6 x 12 block from screen where P is no of PRIN @ position)
DISP(P,B,S) (displays the held block w[illegible] specified in w or r)
VIEW(X,Y,V) (similar to point, reads screen)



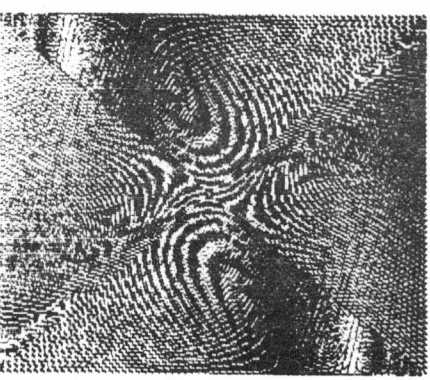


I have not seen the Tandy version so can not compare them, but think that £104 including v.a.t. and fitting by Kram Electronics is likely to be good value against the £179 Tandy version.

The unit has its own 16k RAM, 12k for the 73,728 pixels in 6 bit bytes, and 4K for use by the HOLD command. The software driver occupies about 1.5K.

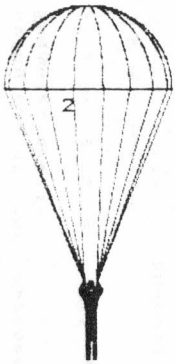


I'm guite pleased with the unit, it allows a great step forward im my main programming interest which is parachute design. Some faults have been found, the first being that every time the VIEW command was used inside a FOR/NEXT loop, it gave an NF error. After much trial and as much error Keith Bedford at Lowe Electronics was contacted and he readily admitted making a mistake in the software driver. A new tape was sent to me with a newly modified programme that eliminates that fault. I just think there might be another bug somewhere because I did get some unexpected BS errors which made me realise the way I was doing things was Bloody Silly (BS ?) anyway, and when the programme was modified it ran well, that is if you think 36 minutes to lprint a single full screen of Hi-res graphics is running well !



Another fault is corruption of the Hi-res display frequently caused by the printer. When the Hi-res is turned off by the Genie, switching the printer on sometimes turns on the Hi-res as well. Perhaps some sort of mains filter would prevent the printer causing interference, but I don't know anything about the subject.

My printer is an Epson MX-80/FT type II, one of the last before the type III. This is the version without italics. I had a type I for about three months and then bought the chips to convert it to type II and it just wouldn't work with them. Kram electronics promised to sort it out in three days and failed, but to my delight gave me a brand ney type II in exchange. One difference noted is that the type II did not ever sound the alarm such as when out of paper, indeed I thought perhaps it hadn't got one until trying to load a system tape on top of the Hi-res driver I forgot to clear, made the printer use its vocal cords for the first time.



Finaly, I would like to appeal to any member who has written or knows of a machine code programme for transfering Hi-res graphics from screen to printer to let me know, I would like to buy it so long as it doesn't take 36 minutes to do it.

Dick Gaye

PROTECTED SOFTWARE, HELP OR HINDERANCE ?

I was asked by a friend to transfer some cassette games programs onto his newly acquired disk system. One program went out of it's way to prevent the owner from doing this. It made a couple of naughty calls to the DOS vectors in low RAM to make sure you were not operating under DOS then part way through the game it proceeded to place the DOS clock display on screen. All this to ensure the un-enlightened purchaser would buy the disk version. Twenty minutes from disassembling the program a disk compatible version was produced. This idea of pressurising the program purchaser into buying a whole new set of software just because he is upgrading to disk is, in my opinion, not conducive to good customer relations. I could write a book on transferring cassette programs onto disk, having done so many when I upgraded. A quick calculation before I sat down to write this article produced a figure of £150 to replace my tape software, which I saved with a few hours work.

Programs with loaders try to prevent the purchaser from making even one back up of his program. Tricks like this may reduce (it can't stop) piracy, but it is not fair on the legitimate purchaser of the program. In my experience all that this type of software protection does is to deter the purchaser from buying any more software from the company who sold him the program. It also spurs the enthusiast on to find ways of getting round the protection system, educational maybe, time wasting certainly.

I would have purchased Super Utility Plus were it not for the fact it was more than a little difficult to back up. How many other people have said the same thing and avoided the program, missing out on what is reckoned to be a superb piece of software ?

"Things" hanging from the cassette port (will they work with the Genie ?) that ensure only the original purchaser can use the program may be all well and good if you are operating only one machine at a time but the multi-machine user is up the for-next loop without a goto.

Where will it all end ? Perhaps programs will be trained to recognise the owners voice, or maybe a video scan of his fingerprints. It must surely lead to more expensive programs and reduced sales. I will personally persist in trying to thwart the attempts to prevent me from transferring my cassette programs onto disk or from backing up an expensive disk program and I will certainly avoid those companies who sell "things" that hang from the cassette port.

Ken Grey

Newscript

Newscript is my latest purchase in an attempt to get a better performance out of my RS Line Printer V. I have had little chance to become fully acquainted with the program, but what little time I have had has confirmed my thoughts that I am able to access the full character set of the printer with consummate ease.

Very briefly, Newscript can best be regarded as two programs, one for writing the text & the other for printing it. It also comes with its own operating system, a tiny version of "DOSPLUS", although it can be transferred to other DOS's. As such it can easily be appreciated that a great many functions can be provided beyond that of a single program such as Scripsit. However I must say that the penalty for the multiple functions is bought by the complexity, & here I perhaps mean a complexity borne out of experiencing something new & contrary to an already understood system.

The Word-processor performs all the expected functions such as insert, delete, search, replace plus the print formatting commands of line length, page length, margin, justify, etc, etc. However these facilities can be applied & varied in a number of ways, all of which add considerable power to the objectives sought. It will be impossible to cover all the points of the system - the manual is some 173 pages for version 6.1 & although I had this version for 7 days I have already upgraded to version 7.0 with a further 12 pages. I will therefore confine myself to cover only some of what I consider to be the better points.

1. The general print facilities will cater for a length of up to 255 characters, but the capability depends on the printer used. The screen however will show a maximum of 60 characters wide (adjustable down by the user) & 15 lines deep. I have found that using the established 60 characters wide the screen is easily used, letting

the printing instructions perform the desired width.

2. The commands & format instructions come in a reasonable mnemonic format such that with usage they should become second nature! Examples are :-
   .PA is new page
   .JU is justify left & right margins
   .AD is adjust width of left margin
   .SKn is skip n lines
   .BR is break to new print line
   .LL is set the line length
   .PL is set the page length
   & believe me there are many more, & most of be further controlled by parameters.

3. Screen scrolling includes line by line backwards or forwards plus direct to top of file & to bottom of file. However a nice feature is the whole screen scrolling backwards or forwards.

4. The facilities of editing namely deleting, inserting & identifying are enhanced by the use of a left-hand margin (called LIMA), which is not part of the text area. With practice this command column will rapidly perform the desired functions of line deletions etc but only after an <enter> has been performed.

5. Print font changes can be performed **mid-line** (my second example) & the justify is not adversely affected. This is attributed to the print format instructions being established in inches & tenths of an inch. Strange at first but soon accepted.

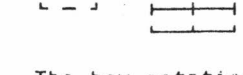
6. The hanging indent, also known as a bullet, is the delayed indent such that the first line of a paragraph is not indented because it is delayed until the second line. This produces the numbers to protrude in the left hand margin, while the rest of the text is properly left justified at a slight indent. (see these numbered paragraphs)

7. There is an append facility so that very long documents can be created & stored on different

files & disks. A feature that could be needed if one was to fully describe the facilities & capabilities of NEWSCRIPT.

8. The ability to use the printers full character set is only dependant upon the user knowing either the HEX or ASCII code for the character required & using one of the appropriate text instructions. Examples are :-

£ ½ ½ § ¥ Φ entered by hex notation


entered by ascii transfer

The hex notation above was achieved by entering the TRS-80 screen graphic code, which on printing is translated to the other symbol or character. Any character is available, even those normally accessible on the keyboard. (e.g. A Z f -these were achieved by entering 41 5A & 66).

The ASCII transfer is achieved above by the following:-

```
.tr 34,47,206                    We thus see that
.br                              all ASCII codes
  . - /      "##%###$            between 34 & 47
.br                              have 206 added to
  ( # )      &##,##+             them, thereby giving
.br                              a new ASCII value &
             (#####)             character, before
.tr 34,47,0                      finally cancelling.
```

It is this feature that gives me my graphic print capability, but as I set up the codes for MY printer it thus renders any script as being largely non-transportable.

9. In order to save paper there is also an option that the line printer functions will be routed to the screen, & thus one is given an early opportunity to view the print format instructions before committing the writing to paper. Obviously the printing is then limited to the TRS-80 screen

printing capabilities.

These are a few of the niceties that I have found, & I am sure that when I understand the capabilities of imbedding standard text from another file, reading progressive text (i.e. names & addresses) from another file, creating an index & table of contents, recalling &/or repeating the last command by a single keystroke, etc, I am sure they will be added to my list of favourites.

In summary this is a powerful word-processor & needs a lot of practice & perseverence to gain the most out of it. It is surely a test of ones own capabilities more than a limitation of the program. I have typed all of this on **Newscript** & I am quite proficient in performing the real bulk of the work (typing), & a lot of the new functions of LIMA usage, **elongated**, insert lines & characters etc, have stuck, & I am certainly looking forward to writing a lot more articles.

R.J.Bullard Southern TRS-80 Club

MONITORING BASIC VARIABLE USAGE

```
10 'This program will count the number of times a variable is referenced
during the execution of a selected part of a Basic program.Each USR call
to turn-on the counter also resets the counter table.
20 'To turn on and off repeatedly without reset a Turn-on USR call to FE04H
should be used.The program was developed under Model 3 Disc Basic.
30 'In order to keep the size of data statements to a minimum the program
is not relocatable but will protect itself in high store and allows a maximu
of 83 discrete variables.

40 POKE&H40B1,255:POKE&H40B2,253:CLEAR50'  SET HIGH MEM.

50 DATA175,50,95,254,33,16,254,24,3,33,120,29,34,4,64,
201,227,213,17,87,38,223,209,227,32,32,229,33,95,254,126,183,40,27,
184,35,32,51,126,185,35,32,47,126,186,35,32,43,213
60 DATA94,35,86,19,114,43,115,209,225,195,120,29,213,17,250,255,183
,235,237,82,235,209,56,240,112,35,113,35,114,35,54,
1,35,54,0,35,54,0,24,224,35,35,35,35,24,191,0
70 FORX=&HFE00TO&HFE5F:READY:POKEX,Y:NEXT ' MOVE MACH CODE RTN.

80 DEFUSR0=&HFE00:DEFUSR1=&HFE09:DEFUSR2=&HFE04
90 X=USR0(0)     'TURN ON
100 FORX=1TO100:DIMA,B,C,D,E,F,G:NEXT' demonstrate
110 X=USR1(0)     'TURN 0FF

120 X=USR2(0)'   TURN ON FOR NO RESET
130 FORX=1TO50:DIMA,B,C,D:NEXT
140 X=USR1(0)
150 'The print out lists variables 4 to a line,showing the variable name and
the variable type.Simple variables and Array variables of the same name and
type are not differentiated and will produce one total access count.
160 'Special variables (e.g.DEFFN) are identified by . / + - forstring.
integer,single and double precision functions respectively.

170 'Print results
180 TA=&HFE5F'  VAR TAB START
190 FORX=1TO4:Z=PEEK(TA):IFZ<>0THENY=PEEK(TA+2):
PRINTTAB(1+16*(X-1))CHR$(ZAND127);CHR$(PEEK(TA+1));
CHR$(32-4*(Y=3)-(Y=4)-3*(Y=8)-10*(Z>127));
(PEEK(TA+3)+256*PEEK(TA+4));:
TA=TA+5:NEXT:PRINT:GOTO190
ELSEX=5:NEXT:PRINT:INPUTX'

200 '    Mike Seaford
      49,Balmoral Drive
      Borehamwood
      Herts          01-953 8642


  1                       ORG  0FE00H
  2
  3               ;INTERCEPT VECTOR TO RST 10H
  4
  5 FE00 AF       TURNON: XOR  A       ;RESET TABLE END MARKER
  6 FE01 325FFE           LD   (TABLE),A
  7 FE04 2110FE           LD   HL,START; NEW CODE ADDRESS
  8 FE07 1803             JR   EXIT1
  9
 10               ; TURN COUNT OFF
 11
 12 FE09 21781D   TURNOF: LD   HL,1D78H;RESET VECTOR TO ROM.
 13 FE0C 220440   EXIT1:  LD   (4004H),HL
 14 FE0F C9               RET
 15
```

```
16                ;CHK FOR CALLER TO RST 10
17
18 FE10 E3        START:  EX    (SP),HL;GET CALLERS ADDRESS
19 FE11 D5                PUSH DE
20 FE12 115726            LD    DE,2657H;WAS IT FROM VAR CHK ?
21 FE15 DF                RST   18H
22 FE16 D1                POP   DE
23 FE17 E3                EX    (SP),HL;RESTORE ADDRESS
24 FE18 2020              JR    NZ,NORMAL;NOT CALL FROM VAR
25 FE1A E5                PUSH HL
26
27                ; SEARCH TABLE TO END MARKER FOR A MATCH ON VARIABLE
28                ; NAME AND VARIABLE TYPE.IF NOT FOUND THEN ADD NEW ENTRY.
29                ; ON CALL FROM ROM BC=VARIABLE NAME
30                ;                     D=VARIABLE TYPE
31
32 FE1B 215FFE            LD    HL,TABLE
33 FE1E 7E        CNT1:   LD    A,(HL) ;END OF TABLE ?
34 FE1F B7                OR    A
35 FE20 281B              JR    Z,EOT  ;YES -
36 FE22 B8                CP    B      ;CHK 1ST CHAR
37 FE23 23                INC   HL
38 FE24 2033              JR    NZ,INC4; NO MATCH
39 FE26 7E                LD    A,(HL)
40 FE27 B9                CP    C      ;CHK 2ND CHAR
41 FE28 23                INC   HL
42 FE29 202F              JR    NZ,INC3; NO MATCH
43 FE2B 7E                LD    A,(HL)
44 FE2C BA                CP    D      ;CHK TYPE
45 FE2D 23                INC   HL
46 FE2E 202B              JR    NZ,INC2; NO MATCH
47
48                ;MATCHING ENTRY FOUND-BUMP COUNT
49 FE30 D5                PUSH DE
50 FE31 5E                LD    E,(HL)
51 FE32 23                INC   HL
52 FE33 56                LD    D,(HL)
53 FE34 13                INC   DE
54 FE35 72                LD    (HL),D
55 FE36 2B                DEC   HL
56 FE37 73                LD    (HL),E
57 FE38 D1                POP   DE
58 FE39 E1        EXIT:   POP   HL
59 FE3A C3781D    NORMAL: JP    1D78H  ; EXECUTE ROM CALL
60
61                ;ADD NEW ENTRY TO TABLE
62 FE3D D5        EOT:    PUSH DE
63 FE3E 11FAFF            LD    DE,0FFFAH; CHK IF ROOM FOR
64 FE41 B7                OR    A      ; THIS ENTRY AND EOT MARKER.
65 FE42 EB                EX    DE,HL  ;I.E. >5 BYTES FROM END
66 FE43 ED52              SBC   HL,DE
67 FE45 EB                EX    DE,HL
68 FE46 D1                POP   DE
69 FE47 38F0              JR    C,EXIT
70 FE49 70                LD    (HL),B ; SAVE 1st CHAR.
71 FE4A 23                INC   HL
72 FE4B 71                LD    (HL),C ; SAVE 2nd CHAR
73 FE4C 23                INC   HL
74 FE4D 72                LD    (HL),D ; SAVE TYPE
75 FE4E 23                INC   HL
76 FE4F 3601              LD    (HL),1 ; INITIALISE ACCESS COUNT
77 FE51 23                INC   HL
78 FE52 3600              LD    (HL),0
79 FE54 23                INC   HL
80 FE55 3600              LD    (HL),0 ;SET END OF TAB
```

```
82
83                      ;STEP TO NEXT ENTRY
84 FE59 23              INC4:   INC   HL
85 FE5A 23              INC3:   INC   HL
86 FE5B 23              INC2:   INC   HL
87 FE5C 23                      INC   HL
88 FE5D 18BF                    JR    CNT1
89
90 FE5F 00              TABLE:  DB    0
91                              END
```

Mike Seaford

THE BETTER SCRIPSIT

For some time I have been searching for a word processor to suit my needs and I have tried Pencil, Ajedit and standard Scripsit. It wasn't until I purchased LDOS that I discovered 'better' Scripsit.

LDOS provide a patch with 5.1.x called LSCRIPT/FIX, which makes improvements and gives extra facilities to Scripsit. Apart from being able to issue printer control codes, the patched program uses the LDOS keyboard driver and you just can't drop a character no matter how fast you type. If the version of LDOS is 5.1.3 then you can set the key repeat rate and at the fastest rate the text in Scripsit fairly zips by. A directory read is available and it supports double density.

The control keys have been re-allocated and some pratice is necessary to become familiar with the new keys. Compared to the original Scripsit, the patched version is more than just 'better' it is superb.

Ken Grey.

IDENTIFYING L II ROMS

There have been a number of versions of the Level II ROM and the following program should identify which version you have.

```
10 FOR I=11264 TO 12287 : VS=PEEK(I) : T=T+VS : NEXT : X=T/16
20 A=(X-FIX(X))*16 : Y=FIX(X)/16 : B=(Y-FIX(Y))*256
30 IF A+B=176THEN PRINT"V 1.0" ELSE IF A+B=142THEN PRINT"V
1.1" ELSE IF A+B=10 THEN PRINT"V 1.2" ELSE IF A+B=162 THEN PRINT"V
1.3" ELSE PRINT"THIS VERSION CAN NOT BE IDENTIFIED"
```

Ken Grey

EXCHANGE

I would like to exchange a TRS80 grey, Cumana, 40/80 track, single drive cover, as new for a Video Genie ivory coloured cover. Carriage paid both ways.

Ken Grey
(0632) 561761 After 6PM

```
10 CLEAR 1000:N=100 'N=POTENTIAL DEPTH OF ARRAY/FILE
20 DIM DE(N),T(N)
30 FOR C = 1 TO N
40 CLS:INPUT"ACCOUNT NUMBER( 99 TO EXIT ) :-";DE(C)
50 IF DE(C)=99THENDE(C)=0:GOTO90
60 INPUT"TOTAL  :-";T(C)
70 DE=DE+1 'DEPTH OF ARRAY/FILE
80 NEXT
90 OPEN"O",1,"TEST"
100 FOR C = 1 TO DE:'DE = DEPTH OF ARRAY
110 DA$=STR$(DE(C)):DB$=STR$(T(C))
120 PRINT#1,DA$;CHR$(13);DB$:'---DA$ & DB$ ARE JUST TEMPORARY
130 NEXT
140 CLOSE
150 DA$="":DB$="":'------RESTORE STRINGS TO NULL
160 INPUT"ON DISK, USE ENTER TO CONTINUE ";X
170
180 OPEN"I",1,"TEST"
190 FOR C = 1 TO 100:'THIS IS JUST FOR TESTING PURPOSES
200 LINEINPUT#1,DA$:LINEINPUT#1,DB$
210 DE(C)=VAL(DA$):T(C)=VAL(DB$)
220 DE=DE+1:'DEPTH OF ARRAY
230 IF EOF(1) THEN 250:'----EOF END OF FILE FOUND, SO EXIT
240 NEXT
250 CLOSE
260 DA$="":DB$="":'------RESTORE STRINGS TO NULL
270 INPUT"NOW READ FROM DISK, USE ENTER TO CONTINUE ";X
280 CLS
290 Z1$="###":Z2$="#######.##":'-SET UP TO FORMAT THE FIGURES.
300 FOR C = 1 TO DE:'--SET DE  EITHER ON INPUT OR READ FROM DISK
310 PRINTUSINGZ1$;DE(C);:PRINTTAB(15);USINGZ2$;T(C)
320 TT=TT+T(C)
330 NEXT
340 PRINTTAB(20);"------"
350 PRINTTAB(15);USINGZ2$;TT
360 PRINTTAB(20);"======"
370 INPUT"TO SORT THE ABOVE INTO ORDER, LOWEST FIRST, USE ENTER KEY :-";X
380 DEFUSR=&HE6C3:PRINTUSR(1):'----PAGE 47 IN MANUAL
390 '&HEC3 IS THE ENTRY POINT IN THE SORTING ROUTINE I ALWAYS USE
400 'THE USER CONSTRUCTS THEIR OWN ROUTINE, FROM THE ORIGINAL DISK OF ROUTINES.
410 'I ONLY USE ONE ROUTINE AT A TIME TO SAVE PROTECTING TOO MUCH MEMORY.
420 ' THE PRINT USR(1) IS TO INITIALISE FOR LATER USE.
430 ' FROM DOS READY, THE M/C CODE ROUTINE IS LOADED IN HIGH MEM.
440 ' BASIC IS LOADED EG. BASIC 55000, AND THEN THIS EXAMPLE
450 'IN DOSPLUS 'BASIC FILE/F4-F:3-M:55000'
460 'IF YOU TYPE 'PRINT&HE6C3' YOU WILL SEE THE DECIMAL EQUIV.
470 S$="+DE,+T":'--------------DEFINITION OF SORT
480 '------THIS COULD HAVE BEEN "-DE,+T" OR "+T,+DE" OR "+DE,T"
490 IR=&SRTV(S$,1,DE):'-CONTROL HANDED OVER TO THE MACHINE CODE
500 'S$ HAS BEEN DEFINED, THE FIRST ITEM TO THE LAST ITEM IS TO BE SORTED
510 ' PART OF THE FILE COULD HAVE BEN SORTED EG FROM THE HALF WAY TO THE END   EG $,5,10
520 ' OR FROM THE START TO THE MIDDLE                                          EG $,1,5
530 PRINT"THE SORT IS SUCCESSFUL IF IR = 0 :-";IR
540 INPUT"CHECK FOR THE VALUE OF 'IR' BEFORE CONTINUING:-";X
550 FOR C = 1 TO DE+2:'THE MANUAL STIPULATES ADD TWO TO SIZE OF THE ARRAY
560 IF C=DE THEN 590 :'EXIT FROM THE PRINT ROUTINE ELSE DE+1 WILL= 0
570 PRINTUSINGZ1$;DE(C);:PRINTTAB(15)USINGZ2$;T(C)
580 NEXT
590 PRINT"THIS EXAMPLE OF INFINITE BASIC - SRTV - WAS BROUGHT TO YOU BY COURTESY OF BRIAN & JACKIE
600 PRINT"WELL DAVE DID THE ABOVE HELP?"      → DAVE WASHBROOK.                    PAIN
```

CAMEL MICROS

33A COMMERCIAL ROAD, WEYMOUTH, DORSET

SOFTWARE

MATCAL

Matrix calculator (see July Newsletter)

32K Disc version	£ 12.50
16K Cassette	£ 10.50
Manual	£ 2.50 (not included in above)

Prices include VAT & postage

MEMTEST - Model 1 memory tester

Price £5.60 inclusive

DISCOPT

Adds 10 extra BASIC commands for disc access (see August ad).
Price £9.90

FILEMASTER

For disc users, this program can map almost any disc file format (fixed record size, variable record size, part fixed part variable, or serial files) into any other. Data on two input files can be merged to the output file, and arithmetic relationships can be set up. Ideal for linking data across programs, or producing listing files.
Price £11.90

FUEL COSTS CALCULATOR

For investigating improvements to heating/insulation, hot water, and cooking systems.
Price £3.50 (16K L2 Cassette)

HARDWARE

OKI M80A PRINTERS	£255
SMITH/CORONA DAISYWHEEL	£505
PRINCE HIGH-RES (24MHZ) MONITORS	£100
VERBATIM DATALIFE DISKS (PER BOX OF 10)	
SINGLE OR DOUBLE DENS. 40 TRACK	£22.50
" " " " 77 "	£32.00
(SINGLE SIDED)	

ALL PRICES INCLUDE V.A.T. AND UK CARRIAGE.

TRS-80 Equipment for sale.

(not all items will necessarily be available individually.)

1.) Level II keyboard with 48Kb total memory and Tandy lower case modification. £220.00

2.) Level II keyboard with 16Kb memory and Tandy lower case modification. £190.00

3.) Level II keyboard with 32Kb total memory and Electric Pencil lower case modification. Separate Control key and lower case/graphics switch.
This will work on Scripsit. This is a US standard keyboard which in the UK produces a very slightly less steady display than one with the appropriate modification. £200.00

4.) Green Tandy monitor. £65.00

5.) Black and White Tandy monitor, originally 110V but modified internally to 230V. £45.00

6.) TRS-80 bus to centronics interface. Attaches to keyboard. 2 available. £15.00 each

7.) Acculab floppy tape unit with internal Centronics interface. Scipsit and Electric Pencil modified for floppy tape. £145.00

8.) Expansion interface with 32Kb memory and internally fitted power supply. £190.00

9.) Micropolis/Tandy 35 track disk drives. 2 available. Inclusive of cable. £100.00 each

10.) Omikron Mapper I board. This when fitted inside the keyboard will allow CP/M 2.2 to be run as well as TRS-DOS or Newdos 80. Comes complete with licenced CP/M ,CBASIC and MBASIC. Note some CP/M programs require a 24x80 screen (i.e. Cardbox) these will not run on a Tandy system. However Wordstar 3.0 works perfectly if patched for a 64x16 terminal (ADM3A emulation). £190.00

11.)Omikron Mapper II board to fit inside expansion interface. This enables a mixture of 5" and 8" drives to be used including double-sided drives. If not used with CP/M it allows 8" drives to be used under NewDos 80. With ribbon cable for 5" and 8" drives. £75.00

12.) Percom data separator for expansion interface. This increases the reliability of disk operations. The function is included in the Mapper II. £15.00

13.) Seioshka GP 80 unihammer printer with centronics interface. This requires paper slightly narrower than standard but it is easily available. £140.00

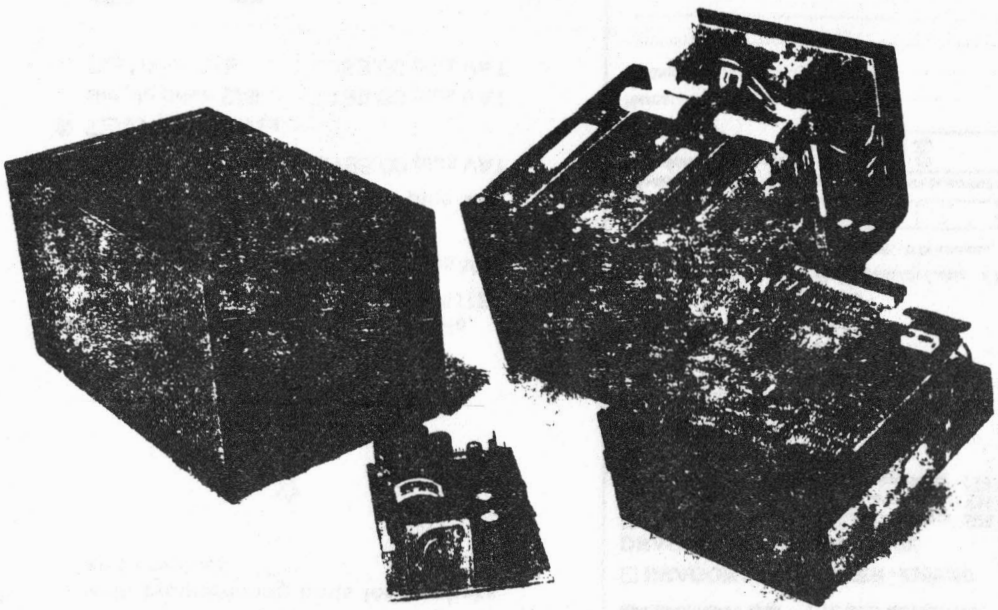
14.) RS232 interface board for expansion interface. If this is to be used in conjunction with the Mapper II, the board should use an external 5V supply. £55.00

Wherever applicable the original manuals are available.
Try offers for complete systems!

Please direct enquiries to H.S.Wolff, Bioengineering Division, Clinical Research Centre, Watford Rd. Harrow. Middlesex. Telephone 864-5311 Extn. 2351.

Microware (London) Ltd.,
637a Holloway Road, London N19 5SS.
Telephone [illegible]2 6398/6237

MICROWARE ANNOUNCE THE Z/L RANGE OF FLOPPY DISC SUB SYSTEMS



The Control Data Family of Flexible Disk Drive is a single- or double-sided, random-access, low-cost storage device. Maximum storage capacity 1 megabyte on a 133.4-millimetre (5.25-inch) interchangeable disk. This disk drive is interchangeable with comparable products, providing industry compatibility in size, mechanical mountings, electrical interface, power requirements and physical appearance. CDC® FDD operates in single- or double-density formats. Single-density operation is achieved by using Frequency Modulation (FM) encoding, and in double-density operation uses Modified Frequency Modulation (MFM).

OPERATIONAL CHARACTERISTICS

Capacity	9408	9409	9409T
Unformatted			
Per disk	250.0 kbytes	500.0 kbytes	1 megabyte
Per track	3.1 kbytes	6.2 kbytes	6.2 kbytes
Formatted (16 sectors, 128/256 bytes)			
Per disk	163.84 kbytes	327.68 kbytes	655.36 kbytes
Per track	2.1 kbytes	4.1 kbytes	4.1 kbytes
Code	MFM	MFM	MFM
Transfer Rate	125 kbits/s	250 kbits/s	250 kbits/s
Average latency	less than 100 ms	less than 100 ms	less than 100 ms
Seek Time			
Track to track	less than 5 ms	less than 5 ms	less than 5 ms
Average Access	less than 80 ms	less than 80 ms	less than 132 ms
Setting time	less than 15 ms	less than 15 ms	less than 15 ms
Head Load Time (OPT)	less than 50 ms	less than 50 ms	less than 50 ms
Media	hard/soft sector	hard/soft sector	hard/soft sector
Rotational Speed	300 r/min		300 r/min
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National TRS-80 Users Group

Newsletter

VOLUME 4 ISSUE 4 OCTOBER 1982

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EXPERTISE IN THE TRS-80 GROUP

0	80-NET	STEPHEN BIRD
1	AJEDIT	DEREK TRAYLER
2	APL	PHIL QUARTERMAIN
3	B17 LOADING	PETER KNAGGS
4	C/PM	CHARLES DAVIES
5	COMPILERS	JOHN NEWGAS
6	COPYART	ARIELA TAYLOR
8	CP/M	COLIN ASHFORD
9	DAISY WHEEL	BILL COWHIG
10	DATABASE MANAGER	COLIN ASHFORD
11	DATABASE MANAGER	DERRICK ROWE
12	DATABASE MANAGERS	LEON HELLER
13	DISK REPAIR	AUTO WORLD
14	DISK REPAIR	KEN THOMAS
15	BASIC LEVEL II	DUSTY MILLER
16	DOSPLUS 3.4	DAVE SAMPSON
17	DOSPLUS 3.4	JIM RODEN
18	DOSPLUS 3.4	PETER TOOTILL
19	E/PENCIL	JOHN CARNE
20	E/PENCIL	LAURIE SHIELDS
21	EPROMS	ANDREW DONALD
22	EPROMS	DAVID HEMINGWAY
23	EPROMS	DUNCAN SPENCER
24	EPROMS	LEON HELLER
25	FASTER	LAURIE SHIELDS
26	FASTER	NIGEL HYDE
27	FLOPPY TAPE	ADRIAN HANCOCK
28	FLOPPY TAPE	GRAHAM WICKENS
29	FLOPPY TAPE	JOHN TAYLOR
30	FORTH	JOHN NEWGAS
31	FORTH	ROD SOUTER
32	FORTRAN	LEON HELLER
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36	INFINITE BASIC	BRIAN PAIN
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38	JOYSTICKS	BILL CUTLER
39	JOYSTICKS	JOHN NEWGAS
40	LAZYWRITER	JOHN NEWGAS
41	LDOS	ALAN REDHOUSE
42	LDOS	JOHN RUTHERFORD
43	LDOS	NIGEL DIBBEN
44	LNW DOUBLER	JIM RODEN
45	LNW DOUBLER	RON EVERITT
46	MAXI MANAGER	ERIC ERIKSON
47	MAXI MANAGER	ERIC FRANKLAND
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56	MODEM DIY	MICHAEL CLAY
57	MULTIDOS	MARK LEDUC
58	MULTIDOS	JOHN RUTHERFORD
59	ND80-CHAIN	JEREMY SAN
60	ND802.0	DAVE HOBBS
61	ND802.0	LAURIE SHIELDS
62	ND802.0	LEO KNAGGS
63	NEWSCRIPT	IAN WRIGHT
64	NEWSCRIPT	ROD BULLARD
65	OMIKRON MAPPER	CHARLES DAVIES
66	ORCH80	CLIVE KEECH
67	ORCH80	NICK CLAY
68	PASCAL(MOLIMERX)	HENRY H. SHEPHERD
69	PASCAL	MARK LEDUC
70	PAYROLL	LAURIE SHIELDS
71	POCKET COMPUTER	ANDY CAMMACK
72	POCKET COMPUTER	DERRICK ROWE
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81	SARGON V MICROCHESS	SAM MAKEHAM
82	SCRIPSIT	GEOFF SMITH
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84	SPEED UP	ALAN REDHOUSE
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90	SUPERUTILITY	JEREMY SAN
91	TANDY PLOTTER	RIK HOUSE
92	TASMON	LAURIE SHIELDS
93	TASMON	MARK LEDUC
94	TRIDATA PACKAGES	TREVOR GROVER
95	TRSDOS 2.3B	ROBERT RAY
96	VISICALC	NIGEL HYDE
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98	VOICE SYNTHESIS	LEON HELLER

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3 HOURS ON COMPILERS WITH JOHN NEWGAS, AND ANOTHER-DAVE WASHFORD?
THE LATEST UTILITIES AND MEMBERS PURCHASES OF LATEST BOOKS IN AN OPEN SESSION CHAIRED BY BRIAN PAIN.
OPERATING A HARD DISK SYSTEM LEON HELLER AND DERRICK ROWE
AND MUCH,MUCH MORE !

CONTACT BRIAN PAIN ON 0908-564271 FOR ALL THE UPTODATEINFO-OOPS!

EDITORIAL

Brian tells me that a lot of members have not renewed their subscriptions. Several of these members have obtained BBC machines, and I suppose the current economic climate is also to blame.

It has been a long time since I got a letter complaining that the Newsletter is too advanced. I must be doing something wrong! Several members have told me that what was at first completely incomprehensible, after a few month's experience, starts to make sense. They then go back and re-read the earlier issues and get a lot of useful information out of them.

Lowes have brought out a lot of interesting bits and pieces for the Genie, most of which could, with a little difficulty, be interfaced to the Model I. If anyone is thinking of splashing out on their high resolution colour add-on, I would very much appreciate a review for the Newsletter. Another interesting high resolution colour graphics sub-system is the Pluto. Has anyone got one? Again, a review article would be appreciated.

I have now taken over the editorship of ACCumulator, the Amateur Computer Club newsletter. Interestingly, most of the articles I have been sent for that publication are hardware oriented, whereas this newsletter is predominantly about software topics.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.

2. Ensure your ribbon is in reasonable condition if using a printer.

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

4. If you send in handwritten material, write legibly.

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

Leon Heller

EDITOR:- LEON HELLER, 8 MORRIS WALK, NEWPORT PAGNELL, MILTON KEYNES. 0908-613804.
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MODEL THREE NICK CLAY, 6 RECTORY LANE, BYFLEET, SURREY, KT14 7LL. 09323-42348.

MODEL 16 - LATEST INFORMATION FROM TANDY

Tandy have just released some information on the new Model 16 system.

The 68000 16-bit processor runs at 6Mhz. They could have put the 8MHz version in while they were about it!

The new slim-line disk drives are double-sided, giving over 1 Mb per drive.

A basic 128K of RAM is supplied. This can be expanded to a maximum of 512K.

A green monitor is fitted. I hope the display is better than the Model II.

TRSDOS 16 is similar to the Model II TRSDOS, and comes with an Editor, Macro-assembler, linking loader, cross reference utility, library and debugger/monitor. COBOL is available for those who like that sort of thing, and there will be a COBOL generator package which will write COBOL programs for you. I can't imagine anyone wanting to write their own COBOL programs, so if it works it will be very useful! If you want BASIC you will have to use it in Z80 mode. The UNIX operating system would run very nicely on the Model 16, and users could then program in C, one of the nicest languages there is.

As a twin processor Z-80/68000 system the Model 16 is good value at £3599 for 128K of RAM and a single drive, especially as one or two remote terminals can be added to produce a multi-user system.

Leon Heller

Counting Words in Scripsit File

I reported in the last issue that it took nearly 30 seconds using Leon Heller's machine code program to count the words in a lengthy Scriptist file of 4317 words (ten pages or so), as opposed to 15 minutes for Laurie Shield's BASIC program. Leon's program reads the Scripsit file from disk, and it occurred to me that it would be quicker to read the program from memory. Thus I altered Leon's program to pick up the Scripsit file directly from 7F62H in memory. Sure enough, it turned out to be extremely quick - under 7 seconds. Thus the machine code program strictly comparable to Laurie Shield's BASIC one is 120 times quicker!! The word count was exactly the same as Leon's original program - 4317 words.

Bill Cowhig, 21 Priory Road, Sale, M33 2BS. Tel 061 973 3604.

TELETYPES FOR SALE

A departmental manager at my place of employment has asked me to pass on the information that if anyone is interested in buying second-hand but usable KSR/ASR/OSR 33s with or without paper-tape punch and /or readers, he has them available but cannot supply manuals. I do however have volumes one and two that anyone can have photo-copies of if they can arrange copying facilities. As an example of prices for these 33s, mine cost £35, having been electrically modified to run with a TRS-80/VG. I did not require paper tape or a stand. I consider this very reasonable when these machines are currently being advertised at about £125. With regard to any enquiries, I can be contacted on (0908) 315117 Ext. 342 and will pass on details to my friend who will in turn contact the enquirer direct. I also have the relevant wiring schedules.

R. Osborne

PROBLEM SECTION

I have noticed in several newsletters assembly language listings that contain "ASEG" on a line of its own. Is it something peculiar to ZEN?

R. Osborne.

(* ASEG is a pseudo op. used by the MACRO-80 assembler, indicating that the following code is to be assembled to load into an absolute memory segment. CSEG, on the other hand, produces relocatable code modules, with an execution address decided upon when an executable load module is prepared using L-80, the Microsoft Linking Loader utility. CSEG is most often used when writing assembly language modules for linking to a FORTRAN, COBOL or compiled BASIC program. LFH *)

Please explain the use of "AND" in the following line from a "draw with the cursor routine"*-

```
IF Z AND 8 Y=Y-1 ELSE IF Z AND 16 Y=Y+1 ELSE IF Z AND 32
X=X-1 ELSE IF Z AND 64 X=X+1
```

Presumably it hinges on AND as a logical operator as explained in the Level II Reference Manual 8/15. It might explain it there, but it remains incomprehensible to me!

C.L. Lovell.

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B. DOWNTON.

MICRO NOVICE NOTES

Here comes one more new Tandy user responding to the call to share his experiences with other novices while he still knows he's one of them.

My system is still the bare bones -- TRS-80 Model 1 Level 2, with 16 thousand characters of memory and Tandy screen and CTR-80A recorder, and without expansion interface; cassette Scripsit word-processing program; Tandy printer cable; Epson MX-80 F/T Type 2 printer without the special Graftrax chips; and the Molimerx Epson patch enabling the user to have any of the 12 Epson print modes and any of the 85 Epson line-feeds on call at any line within Scripsit.

I aimed at getting the cheapest system that would minimally serve as a tool of my scribbler's trade. It took the equivalent of 3 months of my time to learn enough to choose a package costing altogether just under £1,000. After 6 months of the printer, 9 months of the rest of the system, and a couple of thousand pages of word-processing, I now feel safe in saying that, though it was my biggest single outlay ever, I got my money's worth.

Here are a few things I learned, which I'd have assumed everyone else knew already, were it not that in some cases I had evidence to the contrary. Here also are some of the questions I still wish I knew the answer to.

1. ABOUT LOWERCASE

When you get lowercase installed, a program to drive it with comes as part of the package. For a couple of months I religiously loaded it every time before loading Scripsit, until I learned quite by accident that Scripsit made it superfluous. Could anyone else do such a goofy thing? Yes! No less than 3 separate Tandy men in 2 Tandy shops had originally helped me with the double loading operation, apparently without any of them realizing that Scripsit has its own lowercase driver.

2. ABOUT PARAGRAPH DELETION

I consulted another Tandy expert on the problem that the Scripsit "Delete Para." command didn't seem to work. (Catastrophically, it had the same effect as "Delete to End of Text".) He had noticed the same thing, and he too thought it was a bug in Scripsit. The truth, as it dawned on me later, is that it works perfectly well, but presupposes the pre-positioning of boundary markers for new paragraphs, not merely those for forced ends of lines, even when accompanied by blank lines between paragraphs and indentation of first lines of new paragraphs. (I have preferred the latter method of paragraphing because it works more easily with touch-typing. I wonder how much thought the Scripsit men gave to touch-typing needs when positioning their control keys.)

3. ABOUT MAKING BACK-UP COPIES

Computer literature is full of dire warnings about the absolute necessity of making back-up copies of everything. Maybe this makes sense with disk, where copying takes little time, and with computer programs, which take more user labour than word-processing for less computer time and space. But for my cassette system, with some hundreds of pages of recording involved, I decided to ignore it. Afterwards I calculated that the time it would have taken to make back-ups would in fact have been vastly greater than the time it actually took to retype the few pages that failed to reload from the original recording.

4. ABOUT VERIFYING COPIES

I have usually not similarly dispensed with the "Verify" facility, but my experience there is rather similar. To verify that a page is accurately recorded doubles the time of recording. The number of times this has saved me from leaving myself with a bad recording would not seem to add up to anything like full compensation for that doubled recording time.

5. UNDERLINING WITH JUSTIFICATION

It is commonly said that when (pseudo-)underlining with a Scripsit patch for Epson Type 1 or 2, you have to sacrifice right-margin justification. But that's only if you don't want extra trouble. Anyone fanatical enough to take the trouble it takes in the first place to contrive Epson underlining may well be willing to take the extra trouble to anticipate the correct position for the underlining (as here) so that it begins and ends exactly where it ought to when Scripsit right-justification takes its normal course.

6. ABOUT "DOUBLE" PRINTING

Still speaking of Epson Type 2, I have never figured out why the control codes in my manual (1981) ignore the existence of the "double" printing mode, both on page 65 and on page 100. Luckily for all users, the lacuna is only in the manual and not in the printer -- at least not in mine. Without the combination of "emphasized" and "double" print, Epson would not be capable of producing that extra-bold and extra-solid type of character which has hitherto been an Epson specialty.

7. ABOUT TANDY-EPSON MATING

Tandy men will warn you sadly and sombrely that they can't be responsible for the possible awful consequences of mating Tandy with a non-Tandy printer. But a dealer already familiar with both Tandy and Epson will pre-adjust the Epson to run with the regular Tandy cable and saddle. In my

experience they fall into each other's arms, so to speak, like lovers whose union is written in the stars. Just one little mystery, which for all I know may have nothing to do with the Tandy-Epson mating: about once in a million characters what Epson prints will stubbornly lack one character or blank from what the Tandy screen shows. When that happens, retyping the character or the string of characters, or even reloading the tape, fails to eliminate the discrepancy. How can this be? Is it possible to have touched off some sort of back-space command invisibly and inadvertently?

8. ABOUT THE TANDY WARRANTY

I have verified from experience what Leon Heller wrote in May 1982 about the Tandy warranty question. Go to the shop with a problem after Tandy's 90 days, and the kindest of them will throw the Tandy book at you. I can only suppose it's standard operating procedure. Then go to Tandy's UK HQ via a polite letter referring to the Sale of Goods Act, with the Heller elucidation attached to it, and if your experience is like mine you'll get a polite letter back authorizing free repair c/o any Tandy shop in the name of "full customer satisfaction". (My problem was simply failure of the catch for the recorder play and record buttons. The Tandy letter saved me about £9. More to the point, it showed that having a national users' group makes the puny customer not quite so puny before the mighty multinational.)

9. ABOUT SCRIPSIT EPSON PATCHES

9. The Molimerx Epson patch is about the only item in my system so far that goes beyond what most users would recognize as the bare essentials for word-processing. To my way of thinking it too is part of the bare essentials. People told me I could never manage without disk or at least stringy floppy, or without internal memory upgrade beyond 16K, or without one thing or another. No one seemed to think of a printer patch as more than an extra. Well, the fact is that I have now printed 3 drafts of a good-sized book with page-by-page recording on cassette, and still feel too thrilled with the improvement on my old Baby Hermes to be in any hurry to go further; while I could never imagine how anyone serious about word-processing could do without underlining, or some non-standard characters, or print mode changes within the word-processing program -- all unavailable with Scripsit unpatched.

For me the only question is: when can we have a still more versatile and comprehensive patch? Where and when can I find a cassette Scripsit patch (a) for mid-line print changes, (b) for easier underlining procedures (any help there from Epson 3 with its auto-underline?), (c) for accessing Graftrax italics, (d) for non-standard characters? Since switching between international character sets is nearly useless with a Model 1 keyboard, which has only a fraction of one set, and since at the same time the duplicate numeric keypad on my Level 2 is lying idle, would a hardware fix using its keys for French characters, etc., be an economic and ergonomic option?

10. SCRIPSIT LOADING PROBLEMS

I do hope, of course, eventually to take the further plunge into expansion via memory boards and/or stringy floppy or disk or Tandy-compatible Microdrive. It's just that, after all the new learning I have had to do already, I haven't so far been ready for all the further new learning I'll have to do then.

Meanwhile, there is no question but that my present program-and-patch gave me more headaches than everything else combined. Before I got them working right together, I had nearly driven both myself and the patch author round the bend. Even still my anxiety level peaks during the patched Scripsit loading phase. It's the one and only loading operation I ever have problems with. All in all, the one handicap I most immediately want to overcome is the slow, cumbersome, and precarious start-up process. I have read in the Newsletter of various modules, programs, and what-nots for making cassette loading faster and surer. I wish I knew which of them is the practical one for me.

11. A COUPLE OF INCIDENTAL PROBLEMS

(1) Can anyone tell me why the "Hot Zone" for hyphenation can occasionally make my screen go all shimmery, losing everything? 3 times it has happened when I pressed the "2" key. It also happened once when I was doing a "Global Replace" operation. Otherwise my Tandy screen has been rock-steady.

(2) How important is it to turn on the printer before turning on the computer? It means keeping the printer powered for hours when it isn't in actual use. My system has never objected when the order is reversed.

12. ACKNOWLEDGEMENTS &C

I conclude with THE P. DIGAN HONOUR ROLL (more or less in historical order) of people who have especially helped me, with or without knowing it: Alistair Campion; David Cutts; Nick Robinson; Geoff Smith; A. J. Harding; John Phelan; Leon Heller; Laurie Shields. May their memories never fail them, nor their display screens ever grow dim; may they live to see their programs multiplied unto the hundredth megabyte. Some day I may be able to extract the further pearls of wisdom still hidden from me in the oyster of Newsletter technicalities.

And speaking of the Newsletter, now that Leon is going to edit the ACCumulator also, may I suggest that the layout of the latter be extended to the former? That way it would be a lot easier on computerese-weary eyes.

Parig Digan, London House, Mecklenburgh Square, London WC1

80-NET NEWS

Steve Bird has had some problems in maintaining a satisfactory service for users of 80-NET, our computerised bulletin board system. I am now running the system, which, because I have to use my own telephone, will be available from 9 p.m. to midnight most evenings. I can put it on at other times by arrangement.

The number is (0908) 613004, and you will need a serial interface, some communications software, and a suitable modem to use the system. Please ring me (before 9 p.m., of course) for further details of equipment and software.

80-NET is available for use by anyone with any make of microcomputer, users do not have to belong to the National TRS-80 Users Group.

Frederick Brown is sending me some software which allows file transfer between systems (via a modem or using direct connection with an RS-232 link) with full error correction. This software, modified from a program produced by the US CP/M Users Group, in conjunction with the CP/M software (both will be available to anyone who wants a copy) will also allow file transfer between TRS-80s and CP/M systems.

Leon Heller

CP/M USERS GROUP

If you use CP/M, you will find membership of the CP/M Users Group (UK) very worthwhile. They publish an excellent bi-monthly journal and have a very comprehensive software library which is free to members. The annual subscription is £6, and just one tip about the Microsoft FORTRAN compiler in the latest newsletter was worth more than the subscription cost to me!

An application form can be obtained from:-

CP/M Users Group (UK),
11 Sun Street,
Finsbury Square,
London EC2M 2QD.
Tel: 01-247 0691.

Leon Heller

PRINTER FOR SALE

Olliveti TE300 solid font upper case ASCII printer with paper tape punch. (Also has keyboard & P/T reader but these have an intermittant fault). 110 baud RS232-C interface. Also special current loop interface allowing it to run at several hundred feet from the keyboard (eg in the garage) direct from the cassette port over twisted pair flex. Supplied with self-relocating driver routine on tape or disk. £65 ono collected. Al Redhouse, The Villa, East Cottingwith, York: tel 07593-502.

ADVANCED VIDEO BOARD

I recently purchased the Advanced Video Board 'AV-1' from R.H.A. (MINISYSTEMS) LTD.
The board came with a 9 page manual and a 2102 RAM chip to give lower case for £23.00 + VAT.
Apart from giving you lower case the board enables full screen reversal to give black writing on a green background, and much more usefully enables single character reversal independantly of the state of the whole screen. I find this feature very good for highlighting areas of the screen e.g. to indicate a field in error or to show the characters to be used in a menu selection.
Installation of the board is relatively easy if the instructions in the manual are followed, and involves cutting four tracks on the pcb and soldering eighteen connections from the AV-1 to the CPU board. The kit includes helpful diagrams of the chip and track locations and double-sided sticky pads to fix the AV-1 to the CPU board. I installed mine in about 1 hour and it worked first time. The board, if fitted as per the instruction manual uses port 254 bits 0 and 1 to activate its functions, this unfortunately clashes with the use of bit 0 by some CPU speedup mods, however it is a simple matter to switch the board connections to operate from bits 1 and 2. I fitted the Alan Redhouse speedup mod at the same time and picked up the decoded port address and write signal from a track on the AV-1, I can supply details on request.
The manual falls down however in its method for displaying reversed characters from BASIC this involves setting up a string of normal characters and then peeking from the string and poking into video memory which I found rather tedious, so I wrote a video driver. I've included the source for the driver on the disk, it's probably too long to print in the newsletter but may be put in the library.
The source has three assembler conditionals which control the type of driver generated as follows :-
1) NEWDOS - if set TRUE then a driver is generated which expects to run with NEWDOS80 Version 2. It will move itself to the current top of memory and protect itself; if set FALSE then a driver is generated which runs with stanard cassette level 2 BASIC it will move itself to the bottom of BASIC memory and protect itself, it is auto-start so just type / after it is loaded and it will setup and return to BASIC.
2) LOWDRV - if NEWDOS set FALSE LOWDRV will generate a lower case driver as per Jerry Ozaniec Vol. 2 Issue 3 when set TRUE, if LOWDRV set FALSE then no lower case driver is generated you must use your own.
3) SPEDUP - if set FALSE then code is generated to use bit 0 and 1 for the AV-1 board, if set TRUE then code is generated to use bit 0 for a speedup mod and bits 1 and 2 for the AV-1.
The driver functions are controlled by PRINTCHR$(I) where I

```
can take the following values :-
17 - set screen to normal video, switch off AV-1 board
18 - set screen to normal video
19 - set screen to inverted video
20 - invert next character only, e.g. ?CHR$(20);"ABCDEF"
would give A reversed and BCDEF normal
21 - invert all characters up to and including first space
character ie. word inversion
22 - invert all characters up to the next CHR$(22)

The CLEAR key is also intercepted and performs the same
function as CHR$(17) as well as its normal functions.
When NEWDOS is set true the following extra functions are
generated and can be called from DOS Ready or via CMD from
BASIC :- *FAST sets on speedup mod, *SLOW sets off speedup
mod, *VIDREV inverts entire screen

   ********** ADVANCED VIDEO BOARD DRIVER *********
        NAME    ('VIDEO')
        .LIST
        .SALL
TRUE    EQU     1
FALSE   EQU     0
NEWDOS  EQU     TRUE    ;TRUE GENERATES FOR DISK SYSTEM
FALSE FOR CASSETTE
LOWDVR  EQU     FALSE   ;TRUE INCLUDES LOWER CASE DRIVER
FOR CASSETTE SYSTEMS
SPEDUP  EQU     TRUE    ;TRUE GENERATES FOR SYSTEM WITH
SPEEDUP MOD ON BIT 0 PORT 254
                        ;FALSE FOR NO SPEEDUP AND AV-1
BOARD FITTED AS SUPPLIED
;
        .XLIST
      IFT       NEWDOS
        .LIST
        SUBTTL  ***** NEWDOS 80
        .XLIST
      ELSE
        .LIST
        SUBTTL  ***** CASSETE SYSTEM
        .XLIST
      ENDIF
      IFT       SPEDUP
        .LIST
        SUBTTL  WITH SPEEDUP MOD ON PORT 254 BIT 0 AND AV-1
BOARD BITS 1 AND 2
        .XLIST
      ELSE
        .LIST
        SUBTTL  ***** NEWDOS 80 WITH AV-1 BOARD ON PORT 254
BITS 0 AND 1
        .XLIST
      ENDIF
        .LIST
```

SMALL ADS FROM MEMBERS FREE.
MUST BE PRIVATE AND SHORT!
JUST RING THEM THROUGH.
IF PAYING AROUND 2-4 POUNDS
STAMPS PLEASE, IT REALLY
HELPS. A TRADE DIRECTORY
IS THE NEXT "SPECIAL"
PLEASE RING IN ANY
USEFUL SUPPLIER.

BRIAN PAIN 0908-564271

```
VIDDRV  EQU     401EH   ;POINTER TO STANDARD VIDEO DRIVER
KBDDRV  EQU     4016H   ;POINTER TO STANDARD KEYBOARD
DRIVER
        .XLIST
        IFT     NEWDOS
        .LIST
HIMEM   EQU     4049H   ;NEWDOS80 VSN2 TOP OF MEMORY
DOS     EQU     402DH   ;RETURN CONTROL TO DOS
        .XLIST
        ELSE
        .LIST
LOMEM   EQU     40A4H   ;BOTTOM BASIC MEMORY
BASIC   EQU     06CCH   ;RETURN CONTROL TO BASIC
        ENDIF
        .LIST
WHERE   EQU     13E5H   ;WHERE AM I ROUTINE
; ******** SCREEN CONTROL CHARACTERS
INIT    EQU     17      ;INITIALIZE SCREEN TO NORMAL VIDEO
AV-1 OFF
FSN     EQU     18      ;FULL SCREEN NORMAL VIDEO
FSI     EQU     19      ;FULL SCREEN INVERTED VIDEO
ONENEG  EQU     20      ;INVERT NEXT CHARACTER ONLY
WRDNEG  EQU     21      ;INVERT UP TO AND INCLUDING NEXT
SPACE CHARACTER
INVERT  EQU     22      ;INVERT ALL CHARACTERS UNTIL NEXT
INVERT CHARACTER
;
VIDBRD  EQU     254     ;VIDEO BOARD PORT
;   DEFINES FOR PORT BIT SETTINGS
        .XLIST
        IFT     SPEDUP
        .LIST
SPEED   EQU     01H     ;SPEED BIT
ADVID   EQU     02H     ;ADVANCED VIDEO BOARD BIT
REVERS  EQU     04H     ;REVERSE SCREEN BIT
        .XLIST
        ELSE
        .LIST
ADVID   EQU     01H
REVERS  EQU     02H
        ENDIF
        .LIST
;
INVOKE  MACRO   SUBRT   ;INVOKE RELOCATABLE SUBROUTINE
        CALL    WHERE
        JR      SUBRT
        ENDM
BEGSUB  MACRO       ;INITIALIZATION FOR A RELOCATABLE
SUBROUTINE
        INC     HL      ;BUMP PAST RELATIVE JUMP IN INVOKE
        INC     HL
        EX      (SP),HL ;PUT RETURN LOCATION ON STACK AND
RESTORE HL
        ENDM
```

```
;
START::
        LD      HL,(VIDDRV)     ;GET ADDRES OF STANDARD
VIDEO DRIVER
        LD      (OLDVID),HL     ;PATCH JUMP
        LD      HL,(KBDDRV)     ;GET ADDRES STANARD
KEYBOARD DRIVER
        LD      (OLDKBD),HL     ;PATCH JUMP
        .XLIST
        IFT     NEWDOS
        .LIST
        LD      HL,(HIMEM)
        LD      BC,PLEN         ;PROG LENGTH
        XOR     A
        SBC     HL,BC
        PUSH    HL
        PUSH    HL
        DEC     HL      ;BACK OFF 1 BYTE
        LD      (HIMEM),HL      ;STUFF BACK NEW HIGH MEM
        .XLIST
        ELSE
        .LIST
        LD      HL,(LOMEM)
        LD      BC,PLEN
        PUSH    HL
        PUSH    HL
        ADD     HL,BC
        INC     HL
        XOR     A
        LD      (HL),A
        INC     HL
        LD      (HL),A
        LD      (LOMEM),HL
        INC     HL
        LD      (HL),A
        INC     HL
        LD      (40F9H),HL
        LD      (40FBH),HL
        LD      (40FDH),HL
        ENDIF
        .LIST
        POP     DE              ;NEW LOCATION FOR DRIVER
        LD      HL,ROUTS        ;CURRENT ADDRESS OF
ROUTINES
        LDIR                    ;SHOVE DRIVER TO NEW
LOCATION
        POP     BC
        LD      HL,NEWVID-ROUTS
        ADD     HL,BC
        LD      (VIDDRV),HL     ;FIX DCB POINTER TO NEW
DRIVER
        LD      HL,NEWKBD-ROUTS
        ADD     HL,BC
        LD      (KBDDRV),HL     ;FIX DCB POINTER TO NEW KBD
DRIVER
```

```
          .XLIST
          IFT     NEWDOS
          IFT     SPEDUP
          .LIST
          LD      HL,FAST-ROUTS
          CALL    STUFIT
          LD      HL,SLOW-ROUTS
          CALL    STUFIT
          ENDIF   ;IFT SPEDUP
          .LIST
          LD      HL,VIDREV-ROUTS
          CALL    STUFIT
          JP      DOS
          .XLIST
          ELSE
          .LIST
          JP      BASIC
          ENDIF   ;IFT NEWDOS
          .LIST
;
          .XLIST
          IFT     NEWDOS
          .LIST
STUFIT:   PUSH    BC
          ADD     HL,BC
          CALL    4461H    ;PUT ROUTINE IN NEWDOS80 NAME CHAIN
          POP     BC
          RET
          ENDIF   ;IFT NEWDOS
          .LIST
;
;
ROUTS:
NEWKBD:   LD      A,(3840H)
          CP      02H      ;IS IT CLEAR KEY
          JR      NZ,KXIT
          PUSH    IY
          PUSH    HL
          INVOKE  FNDVAR
          INVOKE  CLRVID   ;INITIALIZE VIDEO DRIVER
          POP     HL
          POP     IY
KXIT:     JP      0H
OLDKBD    EQU     $-2
;
;
          .XLIST
          IFT     NEWDOS
          IFT     SPEDUP
          .LIST
FAST:     DEFW    0000
          DEFW    0000
          DEFM    'FAST
          INVOKE  FNDVAR  ;FIND LOCAL VARIABLES
          LD      A,SPEED
```

```
        INVOKE  TURNON
        JP      DOS
SLOW:   DEFW    0000
        DEFW    0000
        DEFM    'SLOW
        INVOKE  FNDVAR
        LD      A,SPEED
        INVOKE  TURNOF
        JP      DOS
        ENDIF   ;IFT SPEDUP
        .LIST
VIDREV: DEFW    0000
        DEFW    0000
        DEFM    'VIDREV
        INVOKE  FNDVAR
        LD      A,REVERS
        INVOKE  TURNON
        JP      DOS
        ENDIF   ;IFT NEWDOS
        .LIST
;
FNDVAR:         ;FINDS ADDRESS OF STARD OF LOCAL VARIABLES
AND STORES ANSWER IN IY
        BEGSUB
        CALL    WHERE   ;FIND WHERE WE ARE
BASE:   JR      BEGIN   ;JUMP ROUND LOCAL VARIABLES
REVM:   DEFB    00H     ;REVERSE OR NORMAL FLAG
ONES:   DEFB    00H     ;IF 2 THEN INVERT NEXT CHAR ONLY IF
4 INVERT UP TO AND INCLUDING NEXT SPACE
PRT:    DEFB    00H     ;CURRENT PORT 254 SETTING
PORT    EQU     PRT-BASE
ONESHT  EQU     ONES-BASE
REVMOD  EQU     REVM-BASE       ;GIVES ADDRESS OF REVMOD
RELATIVE TO BASE
BEGIN:  EX      (SP),HL ;RESTORE HL AND PUT ADDRESS OF X ON
STACK
        POP     IY
        RET
;
CLRVID: BEGSUB          ;SWITCH OFF AV-1 BOARD SET NORMAL
VIDEO AND CLEAR VIDEO FLAGS
        LD      A,ADVID
        OR      REVERS
        INVOKE  TURNOF
        XOR     A
        LD      (IY+ONESHT),A
        LD      (IY+REVMOD),A
        RET
;***** TURNON AND TURNOF SET AND RESET RESPECTIVELY THE
APPROPRIATE BIT AT THE AV-1 PORT
;***** ON ENTRY A MUST CONTAIN A VALUE TO BE SET/RESET AT
THE PORT
TURNON: BEGSUB
        OR      (IY+PORT)       ;MERGE CURRENT PORT
SETTINGS WITH A
```

```
        JR      REST
TURNOF: BEGSUB
        CPL     ; INVERT A
        AND     (IY+PORT)       ;MERGE WITH CURRENT PORT
SETTINGS
REST:   OUT     (VIDBRD),A      ;SETUP PORT
        LD      (IY+PORT),A     ;REMEMBER NEW PORT SETTING
        RET
;
SETINV: LD      A,(IY+REVMOD)
        CPL                             ;FLIP INDICATOR
        LD      (IY+REVMOD),A
        LD      A,ADVID   ;SWITCH ON AV-1 BOARD
        INVOKE  TURNON
        JR      CTLXIT
;
NEWVID: PUSH    AF      ;VIDEO DRIVER
        PUSH    HL
        PUSH    IY
        INVOKE  FNDVAR  ;FIND LOCAL VARIABLES
        LD      A,C     ;GET CHAR TO DISPLAY
        .XLIST
        .LIST
NOTSLW: CP      INIT    ;SCREEN INITIALIZE
        JR      NZ,NOTINI
        INVOKE  CLRVID
        JR      CTLXIT
NOTINI: CP      FSN     ;IS IT FULL SCREEN NORMAL
        JR      NZ,NOTFSN
        LD      A,REVERS
        INVOKE  TURNOF
        JR      CTLXIT
NOTFSN: CP      FSI     ;IS IT FULL SCREEN INVERT
        JR      NZ,NOTFSI       ;NO
        LD      A,REVERS
        INVOKE  TURNON
        JR      CTLXIT
NOTFSI: CP      ONENEG  ;IS IT ONE SHOT
        JR      NZ,NOTONE
        LD      A,2
        JR      SETONE
NOTONE: CP      WRDNEG  ;WORD INVERT ?
        JR      NZ,NOTWRD
        LD      A,4
SETONE: OR      (IY+ONESHT)
        LD      (IY+ONESHT),A
        JR      SETINV  ;SET INVERT FLAG
NOTWRD: CP      INVERT  ;IS IT VIDEO REVERSE
        JR      NZ,NOTREV       ;NO
        JR      SETINV          ;YES
CTLXIT: XOR     A
        LD      C,A
        JR      ONEDNE
NOTREV:                 ;NOT VID REVERSE FLAG SO SEE WOT
ELSE IT COULD BE
```

```
        CP      080H    ;IS IT GRAPHICS CHAR
        JR      C,NOTGRF        ;NO
        CP      0C0H    ;SPACE COMPRESSION CODES ?
        JR      NC,XIT   ;YUP SO PASS TO STANDARD DRIVER
        SET     6,A
        JR      DISP    ;DISPLAY IT
NOTGRF:
        CP      20H     ;IS IT SCREEN CONTROL CHAR
        JR      C,XIT   ;YES SO PASS UNCHANGED TO STANDARD
DRIVER
        BIT     0,(IY+REVMOD)       ;SEE IF NEG VIDEO REQD
        JR      Z,NORM  ;NO ITS NOT
        CP      20H
        JR      C,XIT
        CP      40H
        JR      NC,NOTDIG
        SET     7,A
        JR      XIT
NOTDIG: CP      60H
        JR      NC,NOTUP
        RES     6,A
DISP:   LD      HL,(4020H)      ;CURSOR LOCATION
        CALL    0541H           ;DISPLAY A AND SCROLL IF
NECESSARY
        LD      (4020H),HL      ;STUFF BACK NEW CURSOR LOC
        XOR     A
        JR      XIT
NOTUP:  CP      80H
        JR      NC,NOTLOW
        OR      80H
        AND     9FH
        JR      XIT
NOTLOW:
NORM:
XIT:
        LD      C,A
        BIT     1,(IY+ONESHT)
        JR      Z,TRYWRD
        RES     1,(IY+ONESHT)
        JR      FLPREV
TRYWRD: BIT     2,(IY+ONESHT)
        JR      Z,ONEDNE
        CP      20H
        JR      Z,RESWRD
        CP      0A0H    ;INVERTED SPACE
        JR      NZ,ONEDNE
RESWRD: RES     2,(IY+ONESHT)
FLPREV: LD      A,(IY+REVMOD)
        CPL
        LD      (IY+REVMOD),A
ONEDNE: POP     IY
        POP     HL
        POP     AF
        .XLIST
        IFF     NEWDOS  ;IF GENERATING FOR CASSETTE
```

```
          IFT     LOWDVR  ;AND LOWER CASE DRIVER REQUIRED
          .LIST
          LD      L,(IX+3)        ;CURSOR ADDRESS
          LD      H,(IX+4)
          JP      C,49AH
          LD      A,(IX+5)
          OR      A
          JR      Z,$+3
          LD      (HL),A
          LD      A,C
          CP      32
          JP      C,506H
          CP      128
          JP      NC,4A6H
          JP      47DH
          ENDIF
          ENDIF
          .LIST
          JP      0H
OLDVID    EQU     $-2
;
;
PLEN      EQU     $-ROUTS         ;SIZE OF PROGRAM IN BYTES
          .XLIST
          IFF     NEWDOS
          .LIST
          ASEG
          ORG     41E2H           ;AUTO START FOR CASSETTE
SYSTEM
          JP      START
          ENDIF
          .LIST
          END     START
```

John Bacon

(* I have published John's program in full, as I feel that it illustrates many of the advanced features of Macro-80. LFH *)

NEW MODEL I/III HARDWARE

The latest Tandy catalogue contains information on a hard disk for the Model I/III. It uses a 5 Mb mini-Winchester, and costs £1949 for the first drive. Up to three secondary drives can be fitted at £1499 each. A modified TRSDOS is included in the price.

A true high-resolution graphics modification is available for the Model III, giving 640 X 240 resolution. It contains its own 32K of RAM. The cost is £259.

Leon Heller

Communication from John Juckes.

********** The Magic of Mic os **********
**** Can't afford disks? ****
**** Can't afford an interface? ****

Are you tired of all the cassette loading problems, tired of watching those blinking asterisks. Do you lose valuable time saving and verifying programmes?

All this and much more is a thing of the past when a Micos chip has been fitted into the C.P.U. For well under 100 pounds at present, it is possible to load programmes, basic and system at 7.5 times normal speed. Yes, 7.5 times as fast. Saving and verifying can also be done at the same rate, with a much greater degree of reliability than with the normal loading procedure. All thanks to Micos.

On fitting Micos all programmes have to be transferred to tape at the Micos speed. This is done by cloading the basic prog. and then 'saving' on Micos. With lots of programmes this is a bit of a chore, but it does allow for a 'springclean' of all the programmes one has, and of course the amount of tape used is 7.5 times less than before so the saving in cassettes is also very noticeable.

For system tapes it is necessary to know the start, end and entry address for each tape, but a short Micos programme which is provided will do all this.

The whole system is contained in an EPROM and there is much more software built in. This includes the facility to load data files at 20 times normal speed. Dual speed is another feature of the system. By a simple Basic instruction it is possible to run programmes up to 50% faster. More valuable time saved. Other goodies include a flashing cursor, which is easy to switch on and off since such things are not everyone's cup of tea. There is also a whole host of single key commands, i.e. Q=LPRINT, E=EDIT, etc. all obtained by typing with a control key in operation. Last but not least for those who have lower case, a toggle which will switch to lower case in an instant. No need now to load a special programme to use lowercase. The shift/spacebar is in fact the command which changes the type format.

I regret that my knowledge of electronics is far too limited to help anyone interested in that side of the system, but I am sure the company who fitted it for me would supply all the necessary details, and be only too pleased to discuss ideas, development, and problems. Naturally this article can only be written from my very limited experience, but for me Micos has lived up to all I had hoped of it -- fast loading, saving, verifying, reliability, and all without too much expense. The only problem that I have encountered has been that Micos seems to need the Tandy tape recorder, CTR-80A, and I had to buy one of these to perfect the system. When on offer the recorder cost approx. 29 pounds, little to pay for such ease of loading and the time saved.

I shall be pleased to demonstrate the system to anyone interested, perhaps at a club meeting, when housemaster duties allow me to get away on a Sunday. I'm also available for a chat in the evenings on Checkendon 681557.

John Juckes,
Southern TRS-80 Club

Trapping Disk Errors

Following my writing of the BUDGET program for cassette, I had a very important request to convert the program for DISK operation. This in itself was an easy task, except that if an error is made by the user in summoning the data file then the Disk Operating System forces the program to break.

This would have disastrous consequences if this happened after a lengthy input session, when say an attempt to save to a Write Protected Disk causes the abort, & all data is then lost & has to be re-input.

An error trapping routine is thus compulsory, & after many unsuccessful attempts to create one using the error codes in the manual, I finally gained success & a example program follows. The success lay in not using the IF ERR/2+1 = <error code> as in the Level II manual, with the error codes out of the TRSDOS manual, but in using IF ERR = <2 * error code>. (see lines 2000 onwards)

The program does eliminate wrong filespecs such as too long filenames, extensions, etc but by removing the N = LEN(A$) & the test, (lines 210, 225, 240), then all error codes can be tested.

```
10 CLEAR500:DEFINTA-Z:DIMA$(49)
20 ONERRORGOTO2000
30 GOTO1000
100 FORT=1TO1500:NEXT:RETURN
110 Q$=INKEY$:IFQ$=""GOTO110
115 RETURN
197 REM
198 REM   FILESPEC SELECTION SUBROUTINE
199 REM
200 PRINT@128,"INPUT FILENAME <ENTER>  EXTENSION <ENTER>  DRIVE
<ENTER>
205 PRINT@256,"INPUT FILENAME  MAX 8 LETTERS ";:INPUTA$
210 N=LEN(A$):IFN>8THENPRINT@256,"          ":GOTO205
215 F$=F$+A$+"/"
220 PRINT@320,"INPUT EXTENSION  MAX 3 LETTERS ";:INPUTA$
225 N=LEN(A$):IFN>3PRINT@320,"     ":GOTO220
230 F$=F$+A$+":"
235 PRINT@384,"INPUT DRIVE NO.  MAX 1 NUMBER ";:INPUTA$
240 N=LEN(A$):IFN>1PRINT@384,"    ":GOTO235
245 N=VAL(A$):IFN<0ORN>3GOTO235
250 F$=F$+A$:PRINT@512,"FILE SELECTED IS ";F$
255 PRINT@576,"CORRECT  Y OR N":GOSUB110
260 IFQ$="Y"THENRETURN
265 IFQ$<>"N"GOTO255
270 F$="":PRINT@128,CHR$(31):GOTO200
997 REM
998 REM              MENU
999 REM
1000 CLS:A$="":F$=""
1010 PRINT@27,"SELECTIONS
1020 PRINT@138,"<1>        SAVE TO DISK
1030 PRINT@202,"<2>        LOAD FROM DISK
1040 PRINT@266,"<3>        CREATE DUMMY DATA
1050 PRINT@330,"<4>        PRINT DATA
1060 PRINT@394,"<5>        FINISH
```

```
1070 PRINT@586,"YOUR SELECTION
1080 Q$=INKEY$:IFQ$=""GOTO1080
1090 Q=VAL(Q$):IFQ<1ORQ>5GOTO1080
1095 ONQGOTO1100,1200,1300,1350,1400
1097 REM
1098 REM          SAVING
1099 REM
1100 CLS:PRINT@25,"SAVING TO DISK":GOSUB200
1110 PRINT@128,CHR$(31)
1120 PRINT@153,"SAVING "F$" TO DISK
1130 OPEN"O",1,F$
1140 FORX=0TO49
1150 PRINT#1,A$(X)
1160 NEXT:CLOSE
1170 GOTO1000
1197 REM
1198 REM         LOADING
1199 REM
1200 CLS:PRINT@25,"LOADING FROM DISK":GOSUB200
1210 PRINT@128,CHR$(31)
1220 PRINT@153,"LOADING "F$" FROM DISK
1230 OPEN"I",1,F$
1240 FORX=0TO49
1250 INPUT#1,A$(X)
1260 NEXT:CLOSE
1270 GOTO1000
1297 REM
1298 REM           MISC PROGRAMMING
1299 REM
1300 CLS:PRINT@25,"CREATING DUMMY DATA
1310 FORX=0TO49
1320 A=RND(899)+100:A$=STR$(A)
1330 A$(X)=A$
1340 NEXT:GOTO1000
1350 CLS:PRINT@25,"PRINTING DATA
1360 FORX=0TO49
1370 PRINTA$(X);"    ";
1380 NEXT:PRINT@576,"PRESS ANY KEY TO CONTINUE":GOSUB110
1390 GOTO1000
1400 CLS:PRINT@25,"FINISH
1410 PRINT@153,"SURE  Y OR N":GOSUB110
1420 IFQ$="Y"THENEND
1430 IFQ$<>"N"GOTO1410
1440 GOTO1000
1997 REM
1998 REM       ERROR TRAPPING ROUTINE
1999 REM
2000 CLS
2010 IFERR=106PRINT@409,"FILE NOT FOUND":GOTO2060
2020 IFERR=122PRINT@409,"DISK FULL":GOTO2060
2030 IFERR=128PRINT@409,"BAD FILENAME":GOTO2060
2040 IFERR=136PRINT@409,"DISK WRITE PROTECTED":GOTO2060
2050 PRINT@409,"DEVICE NOT AVAILABLE"
2060 GOSUB100
2070 RESUME1000
```

Rod Bullard
Southern Computer Club

SMALL ADS FROM MEMBERS FREE.
MUST BE PRIVATE AND SHORT!
JUST RING THEM THROUGH
IF PAYING AROUND 2-4 POUNDS
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USEFUL SUPPLIER.

BRIAN PAIN 0908-564271

THE AEROCOMP DOUBLER

Members may recall my dismay after fitting a Data Separator a few months ago; I have now fitted instead a Aerocomp Doubler - and I'm delighted!

Running mainly under Newdos80 2.0 at 40 tracks, I had around 100 disks, and although many of these were devoid of any System files, I still needed more; now even my dozen or so 'games' disks are on a full system disk, and I have plenty to spare!

Fitting the doubler really was so easy; take six screws from the base of the interface, which then comes off to reveal the PCB. There is only one large IC on the board, which is gently prised out of it's socket and fitted into the empty socket on the doubler - which is then pressed into the now-vacant socket on the main board. To be honest, I did go a little further than the instructions required; I took out the three screws holding the PCB to the upper half of the case - this allowed me to put one hand behind the board whilst I firmly pushed the doubler assembly in with the other hand. So, having put the PCB back, (three screws), put the base back on (six screws), and plugged the leads in again, I booted up very apprehensively! My apprehension was totally unnecessary - there was the familiar Newdos banner.

Now to create DD disks. With Newdos80 this was simplicity itself : PDRIVE 0,1=6 is the simple instruction, followed by a reboot to confirm this new setting (each ND80 disk carries ten drive settings, although it only uses the ones for which you have drives available - in my case 0 & 1 - and the set given for a fictitious drive 6 is that used for 40track DD. The command above tells my drive 0 to now regard drive 1 as being double density - 18 sectors per track, other than on track 0 which must, for a Model I, remain single density). The next commands were to format a disk in drive 1, and then copy the disk in drive 0.

Anxiously I exchanged the disks (at this stage I did not know for sure that my Tandy drives would run DD), and called for a DIR - I'm not gloating, honestly, but to see a full Newdos80 2.0 disk with 103 free granules suddenly made me a very happy man! The next few hours were spent in copying my disks over to this new media, but first I had a quick read through the ND manual to see if any other changes were necessary. All I found was a Zap referring to the 'stress' used in formatting a blank disk - apparently there are three specifications for formatting, and everyday Model I single density uses the weakest! There was the inference that the highest spec. could result in 30% failure, and the operator should experiment to find out which suited his system the best. Spurred on by the comment

that disks formatted to the hardest specification would be those least likely to fail in service, I duly zapped Sys3. The earlier feelings of trepidation returned as I started to format my spare disks, but again I was worrying for nothing - I have not yet had one disk (Tandy, Verbatim, or Wabash) fail to format at this severe (?) test.

So far, only one program has failed to work on DD. Sadly, it is one that I relied upon, and used different copies of for different applications - it is the Disk Directory program! So, if anyone has a version that is alleged to run under double density, and they would like it tested.....!

Scripsit doesn't return to DOS following an END, but just hangs; until the next newsletter when someone will give a patch (please!), I am content to press reset. Incidentally, for anyone who is as vague as I was a week ago about DD, this letter is being composed by Scripsit from a DD disk on drive 0, but put to a SD disk in drive 1 as I don't know if Leon can read DD disks - and it shows how both formats remain compatible.

My next additions will be Gold Plug connectors from Os (fiver each), and a Graftrax chip for the Epson, possibly followed by an Epson spooler board - can any member comment on either of the last two items?

One other accessory acquired last month was a Microdeal Joystick, which, I am delighted to say, works with quite a few of the games programs that I have - I was beginning to worry about how much longer the keyboard could survive!

Thanks for the mention last month, Brian - it was quite undeserved and totally unnecessary! And before we upset too many other local Groups, please note that I am the Secretary for 'TOPIC', which covers Dorset - not the whole South Coast! And nice to see you, Leon, at the PCW - even if our Group was omitted from your banner! (Did anyone else ever get the feeling that you can't win with some people ?!).

Finally, I've been re-reading the Newsletters again just lately - and conspicous absences in recent issues are complaints about articles being too advanced. Have we lost a lot of Members, or have the gang achieved their ambition of educating us newcomers beyond the primary stage?

Cheers,
David Washford

P.S. I've just heard that Microdeal are introducing an interface board, with 32k expansion, and an Olivetti 40track disk drive, c/w cable, for £299.95 inc. VAT. Their (→24

tel. no. is 0726 850821.

CHANGING AN ITEM IN AN ARRAY & DEFINING A SORT IN INFINITE BASIC

```
582 '--------CHANGE ONE ITEM
583 '
600 CLS:QQ=0
610 PRINT"WHAT ITEM NUMBER IS TO BE CHANGED :-";
620 INPUT Q$
621 Q=VAL(Q$)
630 CLS:PRINT"THE ITEM TO BE CHANGED IS :-"
640 PRINT @132,"1:-";
642 IF QQ=1 THEN PRINTCHR$(30);:LINEINPUTNM$(Q):GOTO 710
644 PRINTNM$(Q)
650 PRINT @260,"2:-";
652 IF QQ = 2 THEN PRINTCHR$(30);: LINEINPUT PA$(Q):GOTO710
654 PRINT PA$(Q)
660 PRINT @388,"3:-";
662 IF QQ = 3 THEN PRINT CHR$(30);:LINEINPUT CO$:CO(Q)=VAL(CO$):GOTO710
664 PRINT CO(Q)
670 PRINT @516,"4:-";
672 IF QQ = 4 THEN PRINT CHR$(30);:LINEINPUT AM$:AM(Q)=VAL(AM$):GOTO710
674 PRINT AM(Q)
675 '
700 '
710 PRINT @644,"WHICH LINE REQUIRES CHANGING,<5> TO EXIT"
720 PRINT @708,"ENTER NUMBER, THEN USE THE ENTER KEY:-";
730 LINEINPUTQ$:QQ=VAL(Q$)
735 IF Q$=CHR$(0)THEN 750
740 IF QQ=1THEN640
741 IF QQ=2THEN650
742 IF QQ=3THEN660
743 IF QQ = 4 THEN 670 ELSE 750



3090 '-----DEFINITION OF SORT REQUIRED ROUTINE
3100 '
3110 '
3120 CLS
3130 PRINT"1. BY LECTURER, THEN BY DAY & TIME"
3140 PRINT"2. BY DAY & TIME, THEN LECTURER"
3150 PRINT"3. BY ROOM, THEN BY TIME"
3160 PRINT"4. BY COURSE, THEN BY TIME"
3170 PRINT
3180 PRINT"SELECT SORT REQUIRED:-";
3190 LINEINPUTQ$
3200 IF VAL(Q$)=1 THEN S$="+NM$,+CO,PA$,AM" RG S$ SOR P35, LANG 35
3210 IF VAL(Q$)=2 THEN S$="+CO,+NM$,PA$,AM"
3220 IF VAL(Q$)=3 THEN S$="+AM,+CO,NM$,PA$"
3230 IF VAL(Q$)=4 THEN S$="+PA$,+CO,AM,NM$"
3240 RETURN
```

BRIAN PAIN 0900-564271

CORRECTIONS TO 80-US CHEQUE BOOK BALANCING PROGRAM

Following is a list of all known errors in the listings published with the series of articles published from June through August 1982 in 80 U.S. Journal under the title "CHECKBOOK ... Space Saving With NEWDOS80":

(MENU), Line 600: Should have a comma following the quote mark after "BUILDALL" and before the V. The line should read:

```
600 CLS:PRINT"LOADING FILE TO CREATE FILE CONTAINING ALL
ITEMS IN ALL FILES.":RUN"BUILDALL",V
```

(DATEOUT): Line 10190: The variable AC should be ZD.

(DATETEST): Line 10: Needs a Y after the FOR statement.

(BUILDALL), Line 4010: insert X=0 at start of line.

(BUILDALL): line 4120: near the end the IF...THEN statement should be IF A="Y" and not IF A="N" as printed.

(BUILDALL): Line 4050: Needs a colon (:) before the GOTO 4100.

(BUILDALL): line 4430: insert USR0(just before VARPTR(A)).

(FIXSERCH): add line 5031 as follows:

```
5031 PRINT"MERGING FILES": MERGE"FILES"
```

(FIXSERCH): Line 5910: Delete the right (closing) parenthesis just before THENCLS.

(FIXSERCH): Line 5950: Put the word AND between F1 and CSNG.

(FIXSERCH): Line 6380: Reverse the positions of the quote mark and semi-colon following the variable name AF.

(FIXSERCH): Line 5080, change "DELETE6080-6230" to"DELETE 6080-6250".

(FIXSERCH): Line 5190, add the following statement to the beginning of the line: IF X=0 THEN GOTO 5150 ELSE

That goes right in front of the FOR statement that will be there if this fix has not been applied.

(CANCELS) Line 3370 should read as follows:

```
3370 LPRINT"CANCELLED:": LPRINT"ITEM";TAB(10)"DATE";TAB(25)
"DESCRIPTION";TAB(40);"";: LPRINT"AMOUNT": LPRINT
```

(CANCELS) Line 3350, the word "ENTE" in the prompt should be "ENTER".

(PRINTCK) Line 11010 should read as follows:

```
11010 IF (PEEK(&H37E8) AND &HF0)= &H30 THEN RETURN
```

This ends the list of known errors as of 05 August 1982. Any other errors found or suspected should be reported directly to the author (Jerry Latham 1409 Evergreen Circle Midwest City, OK 73110). Support is given only for NEWDOS80 2.0.

Jerry L. Latham

DATE CONVERSION ROUTINES

With the current rumblings about date routines in the Newsletter, these might be of interest. They will both convert a date into number of days (since 1/3/1901 in this version), or do the inverse (i.e. convert number of days since 1/3/1901 into day,month, and year. Also, the day of the week can be got. The routines are:-

41000 Sets DD= no. of days, from inputs of day, month, and year

41100 Calculates day of the week from inputs of day, month, year

41200 Calculates day, month, year from input of no. of days since 1/3/1901

41300 Inputs and checks date.

41400 Sets up day and month name arrays.

If anyone wants a copy on cassette (free), send cassette + postage to Camel Micros (see ad.)

```
41000 'INPUT YR=YEAR,MT=MONTH,DY=DAY
41001 'OUTPUT DD=NO. OF DAYS SINCE 1/3/1901
41010 A1=INT(365.25*1901)+INT(30.6*4)+1
41020
A2=INT(365.25*(YR+(MT<3)))+INT(30.6*(MT+1-(MT<3)*12))+DY
41030 DD=ABS(A2-A1):RETURN
41100 'DAY OF WEEK TO DD (MONDAY = 1),AND TO D1$
41101 'ASSUMES ARRAY DY$ SET UP WITH DAY NAMES
41110 GOSUB41010:DD=DD-1
41120 DD=DD-7*INT((DD+5)/7)+6
41130 D1$=DY$(DD):RETURN
41131 '
41200 'INVERSE DATE FROM DT%,WHERE DT% IS NO. OF
41201 'DAYS SINCE 1/3/1901
41202 'OUTPUT IS DY,MT,YR
41210 DD=DT%
41220
YR=INT((DD+365.75)/365.25):M1=INT(DD-(INT(YR*365.25)-365))
41225 MT=INT((M1+0.4)/30.6)
41230 DY=INT(M1-INT((MT-1)*30.6)-30)
41240 MT=MT+3:YR=YR-1-(MT>12)+1901
41250 MT=MT+(MT>12)*12
41260 RETURN
41298 '
41299 'INPUT AND CHECK DATE
41300 LINEINPUTAD$:FORI%=1TO8:IFMID$(AD$,I%,1)="/"THEN41330
41310 NEXT
41320 PRINT"INCORRECT FORMAT-PLEASE TRY AGAIN":GOTO41300
```


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```
41330 ... JX=IX+1TO8:IFMID$(AD$,JX,1)="/"THEN41350
41340 NEXT:GOTO41320
41350
YR=VAL(RIGHT$(AD$,LEN(AD$)-JX)):MT=VAL(MID$(AD$,IX+1,JX-IX-1
))
41360 IFYR<100THENYR=YR+1900
41370 DY=VAL(LEFT$(AD$,IX-1)):GOSUB41010:RETURN
41371 '
41399 'SET-UP DY$ ARRAY ETC.
41400
DY$(1)="MON":DY$(2)="TUES":DY$(3)="WEDNES":DY$(4)="THURS":DY
$(5)="FRI":DY$(6)="SATUR":DY$(7)="SUN"
41410
MN$(1)="JAN":MN$(2)="FEB":MN$(3)="MAR":MN$(4)="APR":MN$(5)="
MAY":MN$(6)="JUN":MN$(7)="JUL":MN$(8)="AUG":MN$(9)="SEP":MN$
(10)="OCT":MN$(11)="NOV":MN$(12)="DEC"
41420 RETURN
```

J.R.KENEALLY

P.S. Would any disc user like to try to explain the following effect, using the program below under TRSDOS.

```
10 DEFDBL A-B: OPEN"O",1,"TEST"
20 PRINT#1,"0.15": CLOSE
30 OPEN"I",1,"TEST": INPUT#1, A: CLOSE
40 INPUT"TYPE IN THE STRING 0.15 ";B
50 PRINT A,B
60 STOP
```

On my system, the values printed are :-

```
0.1500000059604645        0.15
```

Why does the INPUT£1 statement with a double precision variable give trash digits in the lower decimal places, while the keyboard INPUT is O.K. Could it be that Disc Basic only handles these as single precision?

J.R.K.

FOR PRIVATE SALE

ORIGINAL CASSETTE-BASED PROGRAMS FOR MODEL I LEVEL II

One of each	£
Scripsit + manual (Tandy catalogue 26-1505)	38
Molimerx Scripsit patch for Epson	10
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Contact : R.E.Wiggins
Hassocks (07918) - 3430
'Dilkhush', North Bank, Hassocks, W. Sussex BN6 8JG

MORE BASIC MEANDERINGS

More BASIC meanderings. This routine grew out of a need to be able to input an expression such as :-
4.5 + 6*5.4 - 2
in a Basic program which required numeric keyboard input. The routine handles operator priority correctly, and avoids the need to use machine code calls to the ROM routine which handles expressions. The result is held in variable C1£.

```
50000 LINEINPUTY4$: Y1%=1: CA£(1)=0£: Y1$="": IFY4$="" THEN
C1£=0£: RETURN
50010 Y4%=0

50014 REM This user seems to know how to type
50015 REM Y1%=level, Y4%=pointer to preceding operator
50016 REM Now find the terminating operator (Y3$), and the
number (C2£)
50020 C2£=VAL(RIGHT$(Y4$,LEN(Y4$)-Y4%)): FOR Y5%=Y4%+1 TO
LEN(Y4$): Y3$=MID$(Y4$,Y5%,1)
50030 IF INSTR("+-*/",Y3$) <> 0 THEN Y6%=Y5%: Y5%=500:
NEXT: GOTO50050
50040 NEXT: Y3$="+": Y6%=Y5%
50045 REM Set Y2$= preceding operator
50050 IF Y4%=0 THEN Y2$="+" ELSE Y2$=MID$(Y4$,Y4%,1)
50055 REM Y2%=priority of preceding op. (1 for +-,2 for */)
50060 Y2%=(INSTR("*/",Y2$)=0) + 2
50065 REM Ditto for Y3% (terminator op.)
50070 Y3%=(INSTR("*/",Y3$)=0) + 2
50075 REM If Y2%=Y3%, OK to do operation (50200)
50080 IF Y2%=Y3% THEN GOSUB50200: GOTO50110
50085 REM If Y2%<Y3% must save current result, and operator
50090 IF Y2%<Y3% THEN Y1%=2:CA£(Y1%)=C2£:Y1$=Y2$:GOTO50110
50095 REM Else, do the op., restore saved result & op, and
do that too. What a lot we got
50100 GOSUB50200:Y1%=1:Y2$=Y1$:C2£=CA£(2):GOSUB50200
50105 REM Update Y4% so that term. op. now becomes preceder
op. for next number
50110 Y4%=Y6%:IF Y4%<LEN(Y4$) THEN 50020

50115 REM $$ All good strings come to an end !! $$
50120 C1£=CA£(1):RETURN

50195 REM This poor sucker does all the work. Y1%=current
priority level
50200 IF Y2$="+" THEN CA£(Y1%)=CA£(Y1%)+C2£:RETURN
50210 IF Y2$="-" THEN CA£(Y1%)=CA£(Y1%)-C2£:RETURN
50220 IF Y2$="*" THEN CA£(Y1%)=CA£(Y1%)*C2£:RETURN
50230 CA£(Y1%)=CA£(Y1%)/C2£:RETURN
```

J. KENEALLY

HORNCHURCH SUB - GROUP

After several phone calls of late I wondered if there was enough interest to have a small group meeting in the Hornchurch Area. If those interested would like to contact me at Hornchurch 47661 I will try and arrange a get together.

Derek Trayler

A REVIEW NEWSCRIPT

A WORDPROCESSING PACKAGE WITH POWER

NEWSCRIPT BY PROSOFT

by Dave Futcher

NEWSCRIPT is a Word Processing Program for the TANDY TRS-80 Model One and Model Three. It is new on the market in the United Kingdom. There are now an increasing number of Packages available for the major micro-computers that allow the user many of the capabilities available on dedicated Word Processors.

Word Processing on micro-computers is a comparatively recent phenomenon; it is an area where great advances are taking Place. This review is a look at one of the most recent word Processing Packages for the TRS-80, what it offers, I think is typical of the great strides that are being made in this area of software. It is an area that will surely influence educational computing more as time passes. Already schools are using word processors in there administration and some advances are being made in their use for children writing with them.

A couple of months ago WORDSWORTH of Banchory in Kincardinshire in Scotland, who handle the U.K. distribution of the software from the growing U.S.A. company PROSOFT of Hollywood, California, asked me to field test and then review NEWSCRIPT.

Since I caught the micro-bug some three years ago I've worked with a number of word Processing Packages.

ELECTRIC PENCIL	from Michael Shrayer
WORD 4 WORD	from Premier Publications
SCRIPSIT	from Tandy Corporation

What great Programs they all were, each of them in their own way gave me a freedom to be creative without being bogged down with the concern of Producing an error free copy. I felt they made me a better writer as the rewrites were so easy, and it was far

easier to evaluate my written work throughly and more critically.

At first they have all Presented some Problems in the learning the commands, that control the Power, that they all had. And as one, has become familar with a Program and what it has to offer one comes to value the feel of what that Particular Program has to offer you. The last six months has seen SCRIPSIT constantly in use when ever I Power uP my machine for word Processing. So it was a hard wrench, to Pack that away and work with something completely new. This review has to comment on that exPerience and to hoPefully outline the immense scoPe that NEWSCRIPT from PROSOFT has to offer.

Newscript has some excellent features and has great Potential. I found it could many things that other word Processing were just not caPable of. As well as this NewscriPt could do most things that other Programs could do better.

But lets start at the beginning, NewscriPt was written by Chuck Tesler, who so the story goes was determined to write for the TRS-80 MicrocomPuter a version of the IBM Elgar Text Editor and Print Formater.

NewscriPt is a very comPrehensive word Processing system. It consists of a several Programs that work together to Provide text maniPulation caPabilities in an easy-to-use manner.

When using NewscriPt most of your time is sPent using the "Editor". This is a Program thta lets you tyPe in your material, make corrections, save the results to disc, and to subsequently revise saved documents until they are satisfactory. The other major Part of NewscriPt is the "ScriPt" Program that formats and Prints the documents created by "Edit".

NewscriPt is a soPhisticated machine language Program with some 4000 Z80 machine language instructions. In addition there is some Basic code which do the Disc InPut and OutPut routines and set uP the Programs for the different Printers that the Programs suPPort.

The Program has a 128 character tyPeahead buffer, so that you can continue tyPing while disc access or string comPression is taking Place. There is a rePeating keyboard, Which can easily be toggled on and off. Lower case is built in and an excellent screen Print routine.

The editor is a full screen tyPe. You are able to move the cursor in any direction and to any Position on the screen. You can then simPly "insert", "delete", or "rePlace" text at that Point. But the Full Screen Editor in NewscriPt is somewhat different to

those available in other word Processin9 Packa9es. This is because it seParate the screen into three seParate areas

a command line at the toP of the screen.

a data area which is most of the rest of the screen.

a line maniPulation area (LIMA) which is down the ri9ht of the screen

In the command line, you control the editin9 --- you can chan9e characters words or sentences, you can search throu9h for data, make 9lobal chan9es, see the text, and save text.

The data area is where you comPose and uPdate your document.

The line maniPulation area is down the left hand side of the screen. By usin9 LIMA commands you can insert, delete, duPlicate, and mark lines for various PurPoses.

In NewscriPt Printin9 is controlled by a set of control words, these tell the text Processor Part of the Pro9ram how it should format the document. In NewscriPt control words are be9un with a full stoP and the first one on each line must be Placed in the extreme left Position. You can with some excePtions Place more than one control word on a line seParatin9 each of them with a semi colan. I found these control words easy to remember esPecially with the small card that comes with the Pro9ram summarizin9 instructions by my side. Some examPles my helP to 9ive an idea of control words, but I'll start off with some of the simPle ones. To 9et rid of the nicely ri9ht justified mar9in that word Processors are 9reat at Providin9 you use .Jo off

SuPPose you want to start a new Pa9e at a certain Point in your document you use .Pa

Quickly, here are some more simPle ones:

to indent a listin9 use .in10 where 10 is sPaces

to centre text use .ce on

to Put blank lines in the text use .sP 3 where 3 is number of lines.

But most word Processors can do all these thin9s, what has NewscriPt really 9ot to offer. Well it features easily used controls for the followin9 (and more)

double with exPanded characters

A REVIEW NEWSCRIPT

sub and suPer scriPts

overstrikin9 for darkness

double or triPle sPacin9

underlinin9

chan9in9 between the fonts suPPorted by the Printer

However NewscriPt is only as 9ood as your Printer. Most of the modern dot matrix Printers can Produce double width characters but only certain Printers are able to coPe with the full ran9e of NewscriPt's features. But the very common machines are usually able to coPe with the full ran9e. Such Printers are

CENTONICS 737/739

EPSON MX-80 FT/G

TANDY LP IV

There are some editin9 functions within NewscriPt that really make it stand out. I Particularly like the "AUTOSAVE" command that automatically saves text to disc after a Preset number of lines. A 9reat boon to all those who suffer from Power sPikes which result in a loss of text. Another command I found Particularly useful was "WHOOPS", this cancels out all the chan9es that you have made in the current edit se9uence. The Packa9e has 9ood scrollin9 commands like "BOTTOM", "TOP", "FORWARD", "BACKPAGE". Another boon is "DIRECTORY" which calls uP the disc directory without loss of the Pro9ram or the text file. There are commands to helP move text, delete text, save text, rePlace text, Join text, and to chan9e text. In fact the commands of the editor can be divided into six cate9ories --- screen, files, chan9es, searches,status, and indirect. Alto9ether there are forty five edit commands, all of which can be abbreviated to one or two letters, and they will work in uPPer or lower case. To use them, they have to Placed in th9e command line at the very toP of the screen and only take effect after <ENTER> has been Pressed.

There are some thin9s that NewscriPt can do that few other word Processin9 Pro9rams can.

PerhaPs one of the most remarkable, is to 9enerate automatically tables of contents and indexes. Of course you have to select and

A REVIEW NEWSCRIPT

mark the words and phrases to be indexed but then by running a sub-program called INDEX these markers are sorted alphabetically and the index printed. There is also a mailing list insertion of text into form letters. Tremendous capabilities here, allow you to print with no intervention, once set up, say 200 letters, each one with a personalized name address and greeting, plus other text inserted into the text of the letter. With NewscriPt it is possible to have documents of unlimited length. You are able to do this by chaining each part of a document. Each part calling the next part. It is even possible to store on a whole set of discs. Incidentally a Model III disc can hold about 50 to 70 pages of single spaced text, and a Model I disc can hold 30 to 40 pages, if there is nothing else on the disc. But my particular favourite is IMBED which allows you to imbed one file within another. I use this frequently for calling an address logo into an actual letter file.

NewsriPt has one of the best manuals of any program that I have had the fortune to use. The documentation is second to none. It comes in a loose leaf binder packed with 160 pages of user instructions. The manual has a table of contents and an extremely good index. As I have said the documentation is super, but there are some outstanding sections. Ideal for beginners is Section Two, called "EZEDIT" and EZSCRIPT. The section is intended to help you learn enough about EDIT and SCRIPT to meet most of the users common needs. Also well done is Section Six, called " HOW TO ..." In this section hints, references, and examples are given which include more details on aspects like tabbing, standard set ups, form letters, titles and many other items. One must mention too the two sections which take the user through all the commands and control words alphabetically. There are lots of cross references throughout this section and plenty of actual examples.

Despite my general good feeling about the program, there were a few things that I did not like. As you come to the end of say typing in a section of your text, and you press enter to go to the next line ready to add in some control codes, the flashing cursor disappears and the program appears to hang up for just a moment. Its a bit disconcerting. Although because of the type ahead buffer you can carry on without the cursor being on screen. I also did not like the ways the Edit mode works when it pushes down the old text on to a new line. There is no easy way to rejoin these on the screen, although everything works perfectly when printed. It can be overcome by running a program that comes with the package called "FITLINE".

A REVIEW NEWSCRIPT

Newscript certainly works, I believe PROSOFT have brought to the market place an outstanding piece of Word Processing software. Its capabilities far out perform any other package that I have used previously. For sale in the United Kingdom for £69.95 it is well worth the money. The Program is constantly being upgraded and WORDSWORTH in Kincardineshire assure me that all purchasers are kept informed of revisions and updated discs are prepared at a nominal charge. Positive support is just what software purchasers require.

This review is based on the the Model Three version of the Newscript package and the version used was 6.2 dated January 1982. Just as I was finishing I received a version for the Model One which basically has all what the Model Three version has to offer, however it was Version 7.0 which has a number of further enhancements.

The requirements to use NEWSCRIPT are a 48K TRS-80 Model I or Model III with at least one disc drive. Lower case hardware is required on the Model I, if you require lower case printing. Newscript is supplied on disc with a version of the DOSPLUS operating system. Although the Program should work with other operating systems such as TRSDOS, NEWDOS and LDOS

Version 4.7
12 August 1982
Model III with NEWSCRIPT 6.2

ADVERTISEMENT

I have developed an extremely flexible stock control package using the MDBS data base management system. Like the employment agency and trade directory packages, this runs on the Model II under CP/M. I have also designed a system to handle journal subscriptions, which is integrated with a sales ledger and which also handles payments to agents. I am waiting for a firm order from a prospective client before I actually do any coding, but can provide anyone interested with full details.

Like all the software I am developing with MDBS, these packages will be tailored exactly to clients' requirements, and you will be able to try them out before parting with any money.

Leon Heller

WORKSHOP REPORT

YORK

This was held at the Enterprise Club again, where we saw the continuing fall in numbers. As a result of the latter there will be fewer meetings in late '82 and throughout 1983.

The sessions were of an unusual nature as we did not have a system between us, and with Leon, Laurie and Marc Leduc being the visitors with John Rutherford from the home team the discussions were of a very high standard.

Leon gave an update on the uses of the MBDS., with some background on the progress with the speech synthesis chip being developeed for a local handicapped girl. Since this session I am now spending every Monday with a 90% blind student, where speech synthesis would help.

Laurie went over the utility FASTER and explained the manner of its use and the results obtained to date. What followed was one of his unstructured sessions with everybody joining in, similar to Blandford the previous weekend.

Marc and Leon did a session on their experiences with PASCAL, even if the notice was rather short, BUT those there will agree that the input was lucid and of tremendous use in listening to other's views, before committing pounds to a purchase.

Many thanks to Ian Wright coming down from Stirling, and delivering the V31-12 Index.

BIRMINGHAM

This was at the Birmingham Poly, and was the first held jointly with BASUG(Apple) (to save work) The idea was to have a series of short talks by one or two new folk.
Maxi Manager was covered by Eric Frankland, who thought he was going to listen! Anyway as I suspected he gave some background on his uses of the program.

SuperUtility was covered with Carl Rabe starting with his own uses, followed by others pitching in with their own or just questions.

After lunch Henry Shepherd very kindly went through the new PASCAL offering from Molimerx, and assisted others consider this before perhaps buying themselves.

Finally Laurie did FASTER again, followed by explaining the use of a monitor(TASMON), but never really got on to compilers(?=!)
BRIAN PAIN 0908-564271

```
1 CLEAR 15000:N=700:DIM A$(N),B$(N),C$(N),D$(N)
4 INPUT"SIZE OF FILE :- ";Q:'THIS WILL ALLOW THE USER TO EXPERIMENT
10 DEFUSR=&HE6C3:PRINTUSR(1):'THIS THE ENTRY POINT & INITIALISE ROUTINE
21 OPEN"I",1,"WISE/DAT":'THIS FILE CONTAINS OVER 700 4 ELEMENT ITEMS
23 FORC=1TOQ:LINEINPUT#1,A$(C):LINEINPUT#1,B$(C):LINEINPUT#1,C$(C):LINEINPUT#1,D$(C):NEXT
26 CLOSE:INPUT"ALL READ, USE ENTER TO CONTINUE :-";X
35 S$="+A$,B$,C$,D$":IR=&SRTV(S$,1,Q):'DEFINE THE SORT & THEN HANDOVER TO INFINITE BASIC
36 PRINT"THE SORT SHOULD READ 0 :-";IR:INPUT"USE ENTER TO CONTINUE:-";X
40 FORC=1TOQ+2:PRINTA$(C),B$(C),C$(C),D$(C):NEXT:'LOOP MUST BE 2 LARGER
100 '--FOR TONY WISE & DAVE WASHFORD FRED BOYDON D/DISK OCT '82
101 'ANOTHER NOTE ON INFINITE BASIC BY BRIAN PAIN 0908-564271
102 'THE ABOVE WILL READ 690 RECORDS FROM DISK & SORT IN 13 SECONDS
103 'THE READ TAKES AROUND 45 SECONDS
104 'NEXT MONTH I WILL SHOW HOW TO READ JUST PROFIT & LOSS
105 '& SORT THOSE TO DISK, FOLLOWED BY THE B/SHEET & WRITE THOSE
106 'TO DISK.
107 'IN THE ABOVE FILE A$=PAYEE,B$=CHQ NO ,C$=DATE,D$=AMOUNT
108 ' TO WRITE THE SORTED FILE TO DISK:-
109 ' NEW LINE 39 OPEN"O",1,"WISESORT/ED"
110 'AMEND LINE 40 PRINT TO PRINT#1,A$(C);CHR$(13);B$(C);CHR$(13); ETC
```

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SOFTWARE

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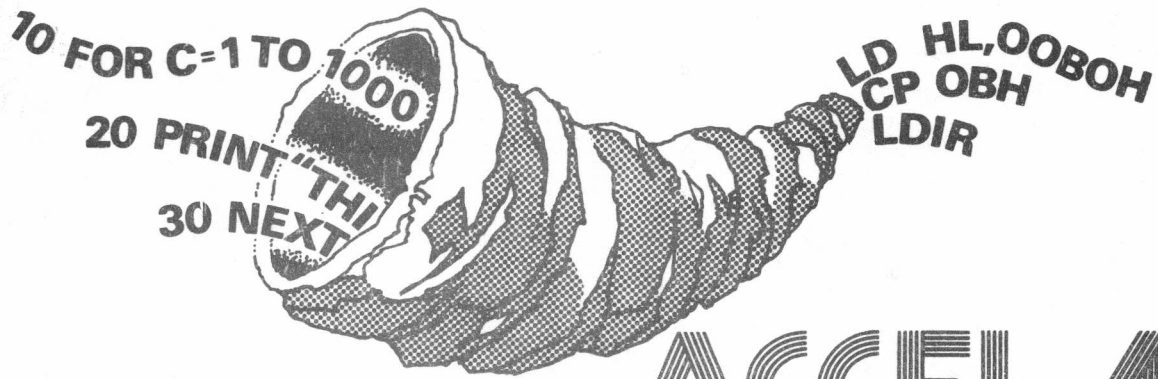
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ACCEL 4

Another ACCEL to continue the evolutionary trend of these unique basic compilers! The first ACCEL a tape orientated compiler, was first introduced by Chris Paradine at the end of 1979. Since then it has gone through a number of enhancements, chiefly in speed and the number of basic statements which it will compile.

ACCEL 4 continues this trend, but its principle feature is its ability to leave memory untouched, except for about 127 bytes, at run time. In other words essentially all user memory is available for the compiled program. So far as is known this is the first time that such a claim can be made for a basic compiler available for the Tandy and Genie machines. It is indeed, therefore, ''A Horn of Plenty''.

Furthermore by reason of some very clever programming, ACCEL 4 approaches the other ultimate aim of a compiler, namely that the compiled program should be the same or less length as the original. It is inherent in compilers that the Object code is longer in length than the Source code. It is difficult to see how this cannot be so, but in one or two programs ACCEL 4 even achieves this aim.

It is impossible to give performance figures for a compiler in respect to speed of execution. This would vary with some programs to a quite startling factor of may be 20 or 30 times faster than the original and at the other end of the spectrum some software is not worth compiling. The criterion is, of course, the amount of time the program spends in accessing the peripherals. No compiler can change the length of time it takes a printer to print, nor the time a disk drive takes to read or write. In the worst case with a program whose sole object is to read or write to disk, and assuming that this is being done by the program continuously in its uncompiled form, then little or no speed increase will be achieved. A program, however, that spends its time doing calculations, manipulating strings or other work that is a function of the CPU, will benefit greatly.

Like its forefathers, ACCEL 4 supports Microsoft Basic and compared to its antecedents has very few restrictions. When ACCEL meets a Basic statement that it does not wish to compile or is unable to compile, it merely leaves it as it is and when such a statement is met at run time, ACCEL passes control back to the machine's interpreter for that line. One finishes up therefore with a rather unique combination of machine code with a sprinkling of Basic. ACCEL 4, however, supports pretty well all of the important Basic statements and commands.

ACCEL 4 is compatible with TRSDOS, LDOS and smal-LDOS on Model I and Model III Tandy machines, together with the original Video Genie, the Genie I and Genie II.

ACCEL 4 ... ... **£59.95** inc. V.A.T.
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National TRS-80 Users Group

Newsletter

VOLUME 4 ISSUE 5 NOVEMBER 1982

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INFORMATION ON THE GROUP

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

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

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

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

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

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers (not just TRS-80s or Video Genies).

The Group maintains two software libraries (Model I and Model II) which are free to members. Library lists are obtainable from the Secretary (price £1). The medical and educational sub-groups maintain their own libraries.

A membership list is available from the Secretary (price £1): on disc.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

Once again I have had to hold over several contributions for the next issue.

I have just acquired a Honeywell 5 + 5 Mb hard disk drive. Has anyone got any technical information on this monstrous (it takes two people to lift it!) piece of hardware? I intend to either interface it to my TRS-80 or to my 16-bit CP/M system which I should shortly have working.

Please write to BT if you are remotely interested in 300 baud Prestel operation, as described in my article. The more people who express an interest in such a service, the more likely BT are to provide it.

The AGM takes place in January, at the forthcoming Milton Keynes workshop. Please try to come along. Although both Brian and I run the Group as a "benevolent dictatorship", we try to take account of suggestions made by members at such occasions. We will be putting ourselves up for re-election as usual, although that does not preclude anyone else from nomination, of course. The next issue will contain the agenda for the AGM.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.
2. Ensure your ribbon is in reasonable condition if using a printer.
3. Printer output should be on A4 paper if possible.
4. If you send in handwritten material, write legibly.
5. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

************DIARY***************

DECEMBER 11 Saturday
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Disk operating Systems
CP/M -
Hands on using a Hard Disk
Date & Details from Brian Pain
0908-564271

MEMBERS' LETTERS

From Jim Hutton

What an excellent newsletter again ! Keep up the good work, but please indicate if possible which TRS-80 is involved (Model 1, or 2, or 3, or 16 (!)) especially re SCRIPSIT, and please can we have more for Model 2. I was very sorry to miss the Gloucester workshop.

I have just upgraded to SCRIPSIT 2.0 on my Model 2, and I am very confused by the awful aggro. that Model 1 users seem to have with it. To me it is superb, and yes, I have seen Wordstar. Added to which, I have supplied it to users like a design studio who use it day-in day-out for the commercial production of books and catalogues, and they love it !

I have included 4 short pieces for the newsletter. I am sorry that some sound a bit like advertising, but I speak as I find.

Jim Hutton

From Marshall Barry.

One would think that with all the brains and experience in designing a mathematical and electronic board that the manufacturers would have the sense and good business to have the product professionally documented - after all, that is one of the most important rules of computing.

Having purchased a RS232 circuit board, diagram and assembly notes, I was absolutely horrified at what was sent. The notes were like a 'faded doctor's prescription' who, I might concede, have some justification for being so arrogant. I can assure you, members, that Mr. X the inventor will be approached during the assembly, which would be completely unnecessary if a little care was taken in the first place. There is a tendency for these inventors to think that the punter is clairvoyant and as experienced in hardware and software as they are. They will tell you they do not get many comebacks - Well, gentle people, believe you me, many a board or program is discarded on the shelves of would be and disappointed enthusiasts purely because they feel some sort of shyness or pride which prevents them from writing and getting the darned expensive thing working.

Dig it out and get to it !!

Help make them upgrade the standard !

Marshall Barry

PLYMOUTH CONTACT
MIKE MAYHEW
PLYMOUTH 43146

* * * * * * * * * * * * * * *

MARCH '83 BUSINESS WEEKEND
by SOUTHERN TRS80 GROUP
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Bob Sparling 0793-740762

MARCH 18 19 20 1983

* * * * * * * * * * * * * * *

From David Washford

Three things that I have learnt this month and which may be of use to other beginners:

I have just run a test program to find out for myself whether 'defining' variables provided a faster operation than 'declaring' them (putting the symbol after each variable as it is typed in). I found that it made absolutely no difference if the program accessed only strings, but found, to my great surprise, that there IS an improvement, albeit small, when mathematical functions are performed. Try this simple program:

```
10 CLEAR100:DEFINTA:DEFSTRB
15 B="FRED":A1=25:A2=35:A3=45
20 LPRINT TIME$
25 FOR A=1TO30000
30     PRINT B;
35     A4=A1+A2+A3:A4=A4-A1:A4=A4-A2:A4=A4-A3
40 NEXT
50 LPRINT TIME$
```

Now change line 10 to read only CLEAR100, put the '$' and '%' signs into lines 15,25,30,35, and run it again. My system took just over 17 minutes to run each time, but saved 21 seconds the second run! Not much of a saving here, but how about on a long, real-life, program?

Next I learnt a little about modular program development with Newdos80. Write the first part of the program and test it as per normal practice before saving as , say, 'PROG1/BAS'. Write and save the next stage as 'PROG2/BAS', using higher line numbers than in PROG1. When you are ready to implement the added stage, add a line to PROG1 which reads : RUN "PROG2/BAS, V" - the 'V' retains the variable values from the original program for use by the later module (so take care with using the variables). This routine can be used with umpteen modules which can, when you are ready, be appended together to make the final program.

The third 'discovery' came after I had witnessed a touch-typist totally and blissfully unaware of all the clever error messages that my wonderful program kept displaying on the screen! Me, being a one-finger merchant, had no problem, but there she was typing away and the data going nowhere! As soon as she went home that night, I re-wrote the program so that the initialisation sequence now demands that the printer be switched on, and all the pretty error messages now included the instruction LPRINT CHR$(7). It was such fun to watch her jump the next day!

David Washford

ADS

SHORT ADS ARE FREE TO MEMBERS
JUST RING THEM IN & DO ANOTHER
A FAVOUR & RELI[illegible] SOME CASH

BRIAN PAIN 0908-564271

PROBLEM SECTION

MX-80 printer

I have an MX-80 dot matrix printer with which, by the way, I am well pleased. However, I have recently acquired the disk-based "Superscripsit" word processing package for use on my Tandy Model I and am having problems interfacing it with the Epson.

The cassette-based "Scripsit" with which this letter is written interfaces well with the word processing software and, together with an Epson patch from Molimerx, enables me to produce quite presentable typescript as you see.

"Superscripsit" is delivered to be compatible with printers other than Epson, although a printer driver can be written for it. Can you please provide any guidance on how to effect such compatability. In particular I would like full details of available control codes for the Epson. For example, the patch I referred to produces a pseudo underline. What control codes are available to effect this?

If anyone has available a suitable driver on disk would they please contact me.

On another point, is it possible to upgrade the MX-80 to, for example a Type III with graphics capability?

R.E.Wiggins
"Dilkhush", North Bank, Hassocks, West Sussex, BN6 8JG.

ROBOT CONTROL

I was fascinated by an article in "Hobby Electronics" about a computer controlled robot to build. Has anyone any useful hints on interfacing such a robot to a Model 2 ? Do I use the RS232c port, or the printer port ? And if so, how ?

MODEL 2 Communications

I should appreciate an article on a step-by-step approach to communications, especially so that if possible I can use the bulletin boards. I have managed to set up a link hard-wired between my two Model 2's, but modems are a mystery.

Jim Hutton

SUNDAYS

S U N D A Y S A R E B A C K

You can now come and see us every sunday morning from 10.00 -1.00 Coffee, tapes, disks and the odd goody. Everybody welcomed, so just pick up your micro and boogie along. Brian Pain and the MK gang.

DISK FORMATTING

I wonder if someone could help me with a problem I seem to have developed on my recently purchased disk drive for my TRS-80 which uses TRSDOS.

The problem is that I tried to format a disk that already had data on it. When asked for the master password I gave the provided one; i.e. PASSWORD and yet when I use this formatted disk for BACKUP I get an error. The disk is not accepted because the disks have different Pack IDs. Does anyone know of any way of correcting this. I only have the one drive. Is the master password correct?

David Climie.

(* As you have found, TRSDOS will not allow you to format a disk containing data. The various incarnations of Newdos and LDOS will allow such re-formatting, however. You could always get a bulk eraser and simply erase the whole disk. This is a good practise to adopt, anyway. Has anyone else got any bright ideas? LFH *)

TRIDATA SOFTWARE

I am starting a new business and will want an integrated Stock Control/Sales Ledger/Invoicing suite. Has anyone got any experience of the Tridata software. I don't want to spend £500 on programs that don't really work.

John Newgas,
1 Philip Court,
Hornsey Lane,
London N6.

(* For £25 a time you can buy evaluation copies of the Tridata software. I have sold a couple of systems to clients who are using the Tridata sales ledger, and they seemed very happy with it. LFH *)

I have just purchased a Microline 80 printer which I have interfaced directly to my CPU. I have tried using the control codes given in the printer manual and also those given in the Level I instruction manual, but ot no avail. Could anyone help with information on how to:-

1. control the number of characters per line
2. Control the number of lines per page
3. how to dump the screen to the printer

Now that I have a printer I would like to have more memory available without an expansion interface. Could anyone tell me the best and cheapest on-board memory expansion, and if it is possible to carry this out myself. I have also heard of a high resolution graphics mod. for the Model I Level II; again, can anyone help with inforamtion?

Thanks for a great newsletter and keep up the good work. It is at a time like this that one realises its value.

J.T. Lowther,
131 South Row,
Barrow-in-Furness,
Cumbria.

M O D E M R E V I E W (Version 1.1 11/81)

OVERVIEW

MODEM/CMD is a program which will perform fast, error free transmission of disk files between two TRS-80 Model I or Model III disk systems. Both machines must be running MODEM/CMD.

The program is available at no charge as a download file on Forum 80 (HULL) or Mailbox-80 (LIVERPOOL) computer bulletin boards in order to establish a standard method of file transfer via tele-communications links. MODEM/CMD is based on Ward Christensen's program MODEM.COM for the CP/M Operating System but it has been rewritten by Stan Misel to operate under the TRSDOS family of operating systems.

It is NOT compatible with the CP/M version. (XMODEM is available for transfering from Trs-80 to CP/M systems).

Unlike some proprietary adaptations of the Christensen program that maintain compatibility with CP/M, MODEM/CMD creates an exactly duplicated directory entry for the file at the receiving end. It is entirely practical to append data files, for example, if the files were transmitted via MODEM/CMD. This ability was gained at the modest cost of CP/M compatibility.

The current release of MODEM/CMD is for the Model I or III with RS-232. It is completely compatible with version 1.0 used on the Model I with a suitable DOS.

OPERATING INSTRUCTIONS

Getting started

MODEM Version 1.1 may be entered by typing MODEM from the DOS READY prompt and following the directions in the menu. Alternatively, you may enter the program with a command string. Use of the command string permits more options to be selected than are available from the menu. For instructions for command string entry, ask for the HELP or EXAMPLES section of the program from the menu. Command string program entry permits users to enter MODEM from another program such as BASIC (if DOS functions are permitted in your particular Disk BASIC). This means that auto dialer programs are supported as well as tele-communications equipment that requires special initialization procedures (such as the D.C. Hayes Smart Modem and the Auto-Connection).

File transfer

To transfer a file via MODEM 1.1, all that has to be done is to type "MODEM". The menu will come up and ask if you want to send or receive a file. After you enter the proper response, you will be prompted for a baud rate and a filespec. The program assumes a standard Bell 103 data set is being used for 300 Baud and a Bell 212A data set for 1200 Baud. If your data set (modem) requires special initialization, see the Technical Info section of this document. The filespec may include an optional password and drivespec in standard TRSDOS format. If a switch of disks is necessary, you may do so at this time, otherwise just hit enter in response to the "Hit ENTER to Continue" prompt.

When the two data sets are able to communicate (full duplex, one in answer mode; the other in originate with matching baud rates), the file transfer will automatically be performed and the data written on the disk at the receiving end. If for some reason the transfer takes more than a couple of minutes to begin, MODEM will return you to DOS and you will have to reenter MODEM. If any data has been garbled during transmission, it will be resent automatically.

Quitting MODEM

If you should ever wish to abort and exit MODEM, just hold down the clear key (shift clear in LDOS/VTOS). Be patient! All files will be closed and you will return to DOS READY.

If you have an amplifier and loudspeaker connected to the cassette output, the program will give an audible prompt when it wants your attention.

TECHNICAL INFORMATION

MODEM 1.1 has adopted single byte disk I/O to maintain compatibility with all Model I and Model III Disk Operating Systems. This makes its disk operations slightly slower than version 1.0 which used sector I/O. Version 1.1 is completely compatible with Version 1.0 if the latter program is used on a Model I with a suitable DOS. Version 1.1 has some internal checks to identify the DOS environment it is working in.

If a DOS that uses Relative Byte Addressing (RBA) such as NEWDOS or DOSPLUS 3.3 is detected, the opening banner message will be preceded by '*N*'. If this signal appears and the DOS definitely does not use RBA, then the file transmission will still be accurate, but the number of

sectors displayed when a file is opened for transmittal could be off by one. Conversely, a DOS that uses RBA such as TRSDOS 1.3 will cause similar, minor misinterpretations if not identified as an RBA DOS. Repeat: The file will be transferred with the proper number of sectors although the opening size message may be in error!

MODEM uses the resident DOS driver routines. This means that Lower case will be displayed if the driver and hardware support it and that chain files are a valid means of affording mass file transfers. If MODEM is invoked via a chain command in NEWDOS/80, system parameter AT must be set to AT=N. A program named MODEMCHN/BAS is included to easily create send and receive /JCL files for multiple file transfers. MODEM will properly parse lower case keyboard entries and convert them to Upper Case except where program prompts indicate otherwise.

It is sometimes desirable to have no status messages displayed during file transfer. This is achieved by using the "Q" command string suboption. This is usually done when MODEM is working in a Bulletin Board environment or when a printer is linked to the display.

It is also possible to view a text file during transfer using the "V" command suboption. Use of this option is discouraged at 1200 baud operation, because the CPU time used for video management may cause an unrecoverable error to occur.

The "A" command string suboption enables you to transfer multiple files without returning to DOS after each file transfer. Instead, after the first file transfer, the system will prompt you for a new filespec. To abort this mode, just press enter in response to this question.

When MODEM initializes the RS-232, it sets the following:

Baud Rate- user selected 110, 300 or 1200
Word Length- 8 bits
Parity- Off
Stop bits- 1

If your data set requires special initialization sequences, you may perform them prior to entry to MODEM and use the menu or command string suboption to prevent MODEM from resetting the established RS-232 settings. A BASIC program may be written to perform the initialization and MODEM entry if desired.

It is important to note that MODEM will transfer all valid information in a file. This does not include information past the end of file mark in the directory. If a file is transferred which has an EOF which is incorrectly set before the desired end of file, MODEM will not include data beyond the EOF in the destination file. The only way such a file may be transferred is to zap the end of file byte in

the directory to its proper value before attempting file transfer.

Frederick Brown

More Words on Counting Words

Well naturally, Leon, as any Tom knows, peeking is a slow and sometimes frustrating process, but to be able to enjoy a cup of coffee at the same time is surely one of the delights of this modern age. Now I hadn't previously associated speed and elegance with M80, and there I suspect neither do a lot of other people, but if we want to combine the speed of machine code with the elegant simplicity of Basic then it must be SuperZen to the rescue.

How about using a USR for the counting and then letting Basic print the answer ?. Of course we will have the 'hassle' of powering up Basic but I imagine that most readers who haven't lost their soul to CP/M and don't think that Newdos80 is a treatment for dandruff can put up with that. The output from Zen looks like this:

```
   1                ;WORDS
   2
   3                ; Basic program:
   4                ; 1 DE = &H7F62: B = 0: HL = 0
   5                ; 2 A = PEEK(DE) AND 127: DE = DE + 1
   6                ; 3 IF A < 33 THEN B = 0 ELSE
   7                ;     IF B = 0 THEN B = 1: HL = HL + 1
   8                ; 4 IF A <> 0 THEN 2
   9                ; 5 PRINT "Words ="; HL: END
  10
  11                        ORG   0A000H ; Whilst testing
  12                        LOAD  0A000H ; into memory
  13
  14 A000 11627F    Line1:  LD    DE,7F62H
  15 A003 AF                XOR   A
  16 A004 47                LD    B,A
  17 A005 ED62              SBC   HL,HL
  18
  19 A007 1A        Line2:  LD    A,(DE)
  20 A008 E67F              AND   127
  21 A00A 13                INC   DE
  22
  23 A00B FE21      Line3:  CP    33
  24 A00D 3004              JR    NC,Line3A
  25 A00F CB80              RES   0,B
  26 A011 1807              JR    Line4
  27 A013 CB40      Line3A: BIT   0,B
  28 A015 2003              JR    NZ,Line4
  29 A017 CBC0              SET   0,B
  30 A019 23                INC   HL
  31
  32 A01A B7        Line4:  OR    A
  33 A01B 20EA              JR    NZ,Line2
  34 A01D C39A0A            JP    0A9AH  ; Usr exit
  35                        END
Exec Addr> 0000
```

What makes the next stage so easy is due to Zen's capability of being able to load the object code direct to memory as it is being assembled (line 12). If we now go back to Dos and power up Basic we can do the following:
FOR X = &HA000 TO &HA01F : ? PEEK(X);: NEXT X
and we get:
17 98 127 175 71 237 98 26 230 127 19 254 33
48 4 203 128 24 7 203 64 32 3 203 192 35 183
32 234 195 154 10

And even more interestingly if we key a little more cleverly:
OPEN "O",1,"DATA/BAS": ?£1,"1000 DATA ";: FOR X=&HA000 TO &HA010: ?£1,PEEK(X)",": NEXT: ?£1,CHR$(13): CLOSE

and then LOAD "DATA/BAS", we get:
1000 DATA 17 , 98 , 127 , 175 , 71 , 237 , 98 , 26 , 230 , 127 , 19 , 254 , 33 , 48 , 4 , 203 , 128 , 24 , 7 , 203 , 64 , 32 , 3 , 203 , 192 , 35 , 183 , 32 , 234 , 195 , 154 , 10 ,
which is half way to writing our program and we've not had to go through the hassle of converting a load of hex to decimal.

If the next part is too complicated then refer to my latest work "Where to Use your Usr", published by the Plain Wrapper Marketing Co. and obtainable under any counter. The machine code program is 32 bytes long and an integer takes up 2 bytes of memory. Ergo we need 16 integers, so Dimension an array of J(15), as the zero element makes it up to 16. Next take each pair of values and combine them into a larger two byte value by multiplying the second by 256 and adding to the first. This can cause trouble if the second value is bigger than 127 as the resultant number will be bigger than the magical 32767 so let's prevent that happening first by subtracting 256 from the second number where necessary. Allocate the final values to the elements in the array, define the Usr entry point as the first byte in the array and that's it finished.

```
1 ' WORDS/USR
10 DEFINT A-Z:DIM J(15)
20 FOR K=0 TO 15: READ L: READ M: M=M+(M>127)*256
30 J(K)=L+256*M
40 NEXT:DEFUSR=VARPTR(J(0))
50 PRINT"Words ="USR(0)
60 CMD"S = SCRIPS"
1000 DATA 17, 98, 127, 175, 71, 237, 98, 26, 230, 127, 19,
254, 33, 48, 4, 203, 128, 24, 7, 203, 64, 32, 3, 203, 192,
35, 183, 32, 234, 195, 154, 10
```

It can be squashed down into one line but it hardly seems worth it as even allowing for the time taken for Basic to load up, this little routine does a word count of a 30k

file in no time at all. As before the changes needed to this program for cassette users are extremely minimal (alter the second and third data values to 209 and 110 respectively, and change the USR initialising in line 40 to POKE16526,VARPTR(J(0))AND255: POKE16527,VARPTR(J(0))/256). (With thanks to Keith Blount for pointings out the AND 255 method of getting the divide by 256 remainder rather neatly.) What happened about your cassette version ?

By the way Leon that Date routine, a couple of months back, was not my work at all. I think you must be getting a complex about crediting (blaming ?) me for everything. As for as being intrigued by Ldos though, nothing could be farther from the truth! About the only thing that strikes me in Ldos is that it finds sufficient unused memory to be able to include such routines, but that probably explains why it needs to go tramping all over high memory when it has to do something serious. Perhaps the date routine would be of some consequence if it was accessible from Basic for general use. Perhaps it is and when I get the latest documentation, (What are we up to now version 5.1.2.5.6.38.154?) all will be revealed.

Help !! There is a growing suspicion with a number of people that Southern Software's ENB (Electric Note Book) might be a very useful package but nobody seems to be able to understand how to use it. If anybody has cracked it yet then please write it up.

Laurie Shields

(* We have another Laurie who wrote the Date routine- Laurie King of the Southern Group! LFH *)

BUG IN NEWDOS80 ?

In my copy of NEWDOS80 there is a small bug in BASIC. If I use the shorthand LIST command e.g. L100 (LIST100) I occasionly get a SYNTAX ERROR. I have found it is because they use the '=' sign to decide whether 'L' is a variable or means LIST. They do not bother to end the string 'L100' with a hex zero in the buffer, so if a previously listed line that was in the buffer contained an '=' sign then SYNTAX ERROR results.
A small change in the code at 542BH corrects this.
(SYS18/SYS rel/sector 02, byte 37H)
It was 20F9 1823
Is now 2825 0000
I will happily do either of these mods on receipt of a disk.

John Cardiff,
14, Bolton Gdns.,
London, SW5 0AL 373 2920

Does anyone know where I can get a Ribbon Cartridge for a BASE 2 Printer Model 800 ? (My ribbon has 'TWO DAY CORP.' on it.)
John Cardiff. 14,Bolton Gdns.,London SW5 0AL. 01 373 2920

PERSONALISING YOUR DISKS.

HAVING READ DAVID WASHFORD'S ARTICLE ABOUT PERSONALISING THE HEADINGS ON, HIS NEWDOS DISKS. I TRIED A SIMILAR VENTURE MYSELF, PERHAPS MY EFFORTS WILL ALSO BE OF INTEREST TO MEMBERS.

DAVID' FIRST RULE IS THE MOST IMPORTANT OF ALL.

ONLY USE A BACKUP COPY !!

MY DISK OPPERATING SYSTEM IS NEWDOS/80 V2.Ø, AND THESE NOTES RELATE TO THIS SYSTEM.

WHEN YOU BOOT-UP THE SYSTEM, THE FIRST THING TO BE SEEN IS :-

```
NEWDOS/80   APPARAT, INC.
            V.2.Ø ZAP38
            MODEL I

00/00/00  00:00:01

NEWDOS/80 READY
```

I HAVE CHANGED THIS TO :-

```
MICROFARM.  NEWDOS/8Ø V.2.
            APPARAT, INC.
            MODEL I

00/00/00  00:00:43

MICROFARM READY
```

I HAVE CHANGED THE RATHER LARGE NEWDOS/80 TO MICROFARM. YOU WILL NOTICE THAT IT HAS THE SAME NUMBER OF LETTERS, NO COINCIDENCE !!. IF YOU TRY TO RE-FORMULATE THE NAME, YOU MUST STICK TO THE SAME NUMBER OF LETTERS AND SPACES OR ELSE !!!! CRASH !!!!.

THE LETTERS ARE MADE UP OF A SERIES OF GRAPHIC CHARACTERS. AS YOU KNOW, A GRAPHIC CHARACTER CONSISTS OF A SET OF 6 SMALL BLOCKS MADE TO FORM THE CHARACTER. I.E. GRAPHIC BLOCK 191 IS MADE UP FROM 6 SOLID BLOCKS.

ALL THE LETTERS IN NEWDOS/80 ARE MADE UP OF 2 FULL CHARACTERS PLUS THE TOP OF 1 BLOCK HIGH. THE LETTER 'N' IS 8 BLOCKS WIDE AND 7 BLOCKS DEEP. THIS SOUNDS COMPLICATED BUT IS NOT TOO BAD WHEN YOU GET THE HANG OF IT.

I SUGGEST YOU DRAW YOUR NEW HEADING ON A PIECE OF GRAPH PAPER USING THE GRAPHIC BLOCK SYSTEM BASED ON TWO AND ONE THIRD CHARACTERS HIGH. I.E. 7 BLOCKS HIGH.

TO FIND THE ALL IMPORTANT HEX AND ASCII DETAILS LOAD "SUPERZAP", PRESS <ENTER>, AND TYPE IN Ø,17 (DON'T FORGET THE COMMMA).THE SCREEN IS NOW FILLED WITH THE HEX AND ASCII DETAILS. TO FIND WHERE THE GRAPHICS BEGIN TYPE M O D C 4. YOU WILL SEE THE CURSOR FLASHING OVER THE CHARACTERS B F. THIS IS THE TOP LEFT HAND CORNER OF THE 'N' OF NEWDOS/8Ø. TRY CHANGING THE B F TO 20 (THIS IS A SPACE.). PRESS <ENTER> <Y> THEN PRESS THE RESET TO SEE THE BLANK SPACE IN THE TOP LEFT CORNER OF THE 'N'.

TO FIND THE HEX CODE FOR YOUR GRAPHICS, OPEN YO LEVEL TWO MANUAL TO PAGE C/2, THE DECIMAL/HEXADECIMAL CODES PAGE. AT THE BOTTOM OF THE PAGE YOU WILL SEE UNDER THE NOTES :- 128-191 8Ø - BF GRAPHIC CHARACTERS. TURN THE PAGES TO GRAPHICS CHARACTERS PAGE C/6 TO SEE THAT CHARACTER 191 IS 6 SMALL BLOCKS AND HAS THE HEX CODE OF BF. CHARACTER 128 HAS THE HEX CODE OF 8Ø. WORKING UP USING THE USUAL HEX SYSTEM OF Ø -9 AND A-F YOU CAN RELATE YOUR GRAPHICS TO THE HEX CODE.

USING SUPERZAP Ø,17 - MOD C4 TO GET THE FIRST CHARACTER YOU MAY MODIFY THE LETTERS UP TO E F ,THIS IS THE END OF LINE E Ø.(HEX CODE 2Ø, THIS IS A SPACE.). THIS IS THE FIRST LINE OF THE GRAPHIC DISPLAY. DON'T GO TOO FAR OR ELSE !!!!.

TO FIND THE SECOND LINE, USING SUPERZAP TYPE Ø,18 <ENTER> THEN M O D Ø 5 . TYPE IN YOUR CODE PRESS <ENTER> <Y>.

TO FIND THE THIRD LINE, MOVE THE CURSOR TO 4 Ø AND TYPE IN YOUR CODE PRESS <ENTER> <Y> THEN PRESS RESET TO SEE IF YOUR MASTERPIECE LOOKS GOOD.

THIS ALL TAKES TIME BUT IT IS VERY REWARDING TO HAVE YOUR OWN PERSONALISED HEADINGS COME UP WHEN YOU LOAD YOUR DISKS.

HAVE FUN

ROBERT HEMMANT.

USING THE MODEL II WITH A MODEM

Jim Hutton requested some information on using the Model II with a modem. This should not present any problems, provided the correct cable is used to interface the Model II to the modem or acoustic coupler. Tandy supply two cables for use with the Model II serial ports, one for transferring data and programs between a Model I and a Model II, and another for connection to a modem. You have to use the correct cable, of course, which merely plugs in to a DB-25 socket on the modem.

Appropriate software is needed, and this is included with the Model II, configuring it as a dumb terminal. If you run under the Lifeboat Associates version of CP/M, a similar program is provided. If you wish to transfer files between the Model II and a remote system using a modem, you need software like the CP/M Users Group Modem program (free to members of the CP/M Users Group), or a program called Terminex obtainable from:-

MTW Computer Services Ltd,
4 Wyvern,
Glascote,
Tamworth.
Tel: Tamworth 25106

I have no experience of this package, but it looks like a nice piece of software, according to the blurb that MTW sent me recently.

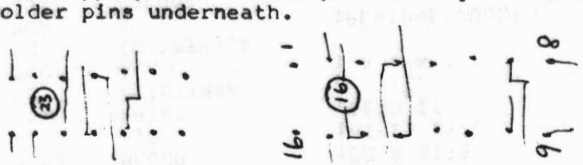
Leon Heller

LABEL YOUR CHIPS

If any member is new to the hardware side of the hobby, he might like to consider the following simple tip before embarking on his first interior adventure.

To avoid damage on the connecting ribbon between the CPU and the keyboard, by continuously waving the CPU to locate specific chip numbers, go out to a stationers and purchase a card of the smallest peel and stick numbers (1 - 100).

Hold the CPU on edge and with a pencil light behind the component side locate each chip number, with your finger stick the appropriate number permanently in the centre of its solder pins underneath.



Now, for evermore you avoid coping with the iron between your teeth and the solder wire protruding from your left nostril, trying desperately to accurately locate a particular chip number. By the way, when you look at this side of the CPU, the pin numbers start Number 1 top right and continue around the chip to top left (see Diagram).

You have to be keen, don't you ?!

Marshall Barry

GENIE LE-18 SCREEN DUMP

After seeing the article on our LE-18 Hires unit by Dick Gays, I thought that I should send a reply to him and anyone else who may be interested.

About the fault or 'bug' that was in the Hires software concerning the VIEW command.

This command was a late addition to the software, and in the source code I have two returns back to Basic, one which 'POP's BC and the other which didn't. I JumPed to the wrong one , giving the result that two bytes of memory got used up every time you used this command.

Anyway it is fixed now, and anyone who gets an HIRES with the version 1.1 software gets an addendum sheet with it which says :-

"The VIEW command has been improved since the production of the HIRES manual, so that it uses slightly less memory in operation."

Which I think adequately explains my error in the program (but don't tell anyone).

Finally here is a listing of a machine code program to dump the hires to an EG3085 printer (sorry Dick but we ain't got an EPSON to do it on, but I'm sure you'll be able to alter it to suit. At least you don't have to buy it, unless you really want to ?).

Keith Bedford.
Lowe Electronics.

```
100             ORG     7000H
110     ;
120     ;*************************************************************
130     ;*
140     ;*      LE-18 HIRES SCREEN DUMP TO AN
150     ;*
160     ;*              EG 3085  PRINTTER
170     ;*
180     ;*      BY  KEITH BEDFORD.
190     ;*
200     ;*              LOWE ELECTRONICS.
210     ;*
220     ;*************************************************************
230     ;
240     ;       LABEL ASSIGNMENTS
250     ;
260     CR      EQU     13              ;CARAGE RETURN
270     ESC     EQU     27              ;PRINTER ESCAPE CODE
280     PDATA   EQU     236             ;HIRES DATA PORT
290     PPOS    EQU     237             ;HIRES POSITION PORT
300     PLINE   EQU     238             ;HIRES LINE PORT
310     POUT    EQU     253             ;PRINTER PORT
320     ;
330     ;
340     INIT    EXX                     ;SAVE ALL REGISTERS
350             CALL    SETUP           ;SET UP EG3085 PRINTER
360             LD      A,1
370             LD      (BITMSK),A      ;SET BIT MASK TO 1ST POS
380             LD      A,0F8H
390             LD      (ROW),A         ;SET ROW TO 1 LINE BACK
400     ;*************************************************************
410     ;*
420     ;*      MAIN PROGRAM LOOP
430     ;*
440     ;*************************************************************
450     ;
460     MPLOOP  LD      A,(ROW)
470             ADD     A,8             ;SET ROW TO TOP OF SCREEN
480             LD      (ROW),A
490             CP      192
500             JR      C,MORE
510                                     ;HURRAY* WE'VE FINISHED.
520             CALL    DESET           ;RESET PRINTER
530             EXX                     ;GET ALL REG'S BACK
540             RET
550     ;
560     ;
570     MORE    CALL    SETHRS          ;SET PRINTER = HIRES MODE
580             LD      A,255
590             LD      (COL),A         ;SET TO -1
600     ;
```

```
610   ;*********************************************************
620   ;*
630   ;*              COLUMN SET UP LOOP
640   ;*
650   ;*********************************************************
660   ;
670   CLOOP   LD      A,(COL)
680           INC     A
690           CP      64
700           LD      (COL),A
710           JR      NZ,DOROW        ;NOT LAST ROW, CARRY ON
720           LD      A,CR
730           CALL    PRINT           ;PRINT CARRIGE RETURN
740           JR      MPLOOP          ;DO NEXT 8 LINES
750   ;
760   DOROW   OUT     (PPOS),A        ;SET ROW IN HIRES
770           LD      B,6             ;6 BITS WIDE
780   R6LOOP  PUSH    BC              ;SAVE IT
790   ;
800           LD      D,0             ;FORM HIRES BYTE
810           LD      A,(ROW)
820           LD      C,A
830           LD      B,8
840   BLOOP   LD      A,C
850           ADD     A,B
860           DEC     A
870           OUT     (PLINE),A
880           OR      A
890           RL      D               ;SHIFT BIT LEFT
900           LD      A,(BITMSK)
910           LD      E,A
920           IN      A,(PDATA)       ;GET 6 BITS FROM SCREEN
930           AND     E
940           JR      Z,SKIP          ;CHANGE TO NZ IF YOU WISH
950                                   ;TO REVERSE PRINTOUT.
960           INC     D               ;MAKE IT A DOT
970   SKIP    DJNZ    BLOOP           ;DO 8 BITS
980           LD      A,D             ;HIRES BYTE
990           CALL    PRINT           ;SEND IT
1000          LD      A,(BITMSK)
1010          ADD     A,A             ; A = A * 2
1020          LD      (BITMSK),A
1030          POP     BC              ;RESTORE COUNT
1040          DJNZ    R6LOOP
1050          LD      A,1
1060          LD      (BITMSK),A
1070          JP      CLOOP
1080  ;
```

* * * * * * * * * * * * * * *

6 5 0 2 **M/Code**
BASUG COURSE
in London December 198 2.
Held in the City Sat/Sun.
We can hold the same-
Z80 of course(ugh) at the
same premises, at a cost
of £15.00. Just deluge me
with cheques and it will be
done. Brian Pain.

* * * * * * * * * * * * * * *

```
1090    ;*************************************************************
1100    ;*
1110    ;*       PRINTER OUTPUT ROUTINE
1120    ;*
1130    ;*************************************************************
1140    ;
1150    PRINT   PUSH    AF              ;SAVE DATA
1160    PSTAT   IN      A,(POUT)        ;GET PRINTER STATUS
1170            XOR     3FH             ;INVERT MAIN BITS
1180            JR      NZ,PSTAT        ;0 = OK
1190            POP     AF
1200            OUT     (POUT),A        ;SEND IT
1210            RET
1220    ;
1230    ;*************************************************************
1240    ;*
1250    ;*       ROUTINE TO SET UP EG 3085 PRINTER
1260    ;*
1270    ;*               SO THAT IT LOOKS NICE
1280    ;*
1290    ;*************************************************************
1300    ;
1310    SETUP   LD      HL,SUMES        ;SETUP MESSAGE
1320    SELP    LD      A,(HL)
1330            OR      A
1340            RET     Z               ;END OF MESSAGE
1350            CALL    PRINT
1360            INC     HL
1370            JR      SELP
1380    ;
1390    ;*************************************************************
1400    ;*
1410    ;*       ROUTINE TO SET UP EG3085 PRINTER
1420    ;*
1430    ;*               INTO HIRES MODE
1440    ;*
1450    ;*************************************************************
1460    ;
1470    SETHRS  LD      HL,SHMES
1480    SHLP    LD      A,(HL)
1490            OR      A
1500            RET     Z               ;END OF MESSAGE
1510            CALL    PRINT
1520            INC     HL
1530            JR      SHLP
1540    ;
1550    ;*************************************************************
1560    ;*
1570    ;*       SET PRINTER BACK TO NORMAL
1580    ;*
1590    ;*               BEFORE GOING BACK
1600    ;*
1610    ;*************************************************************
1620    ;
1630    DESET   LD      HL,DSMES
1640    DSLP    LD      A,(HL)
1650            OR      A
1660            RET     Z
1670            CALL    PRINT
1680            INC     HL
1690            JR      DSLP
1700    ;
```

```
1710    ;*************************************************************
1720    ;*
1730    ;*       PRINTER OUTPUTS FOR EG3085
1740    ;*
1750    ;*************************************************************
1760    ;
1770    SUMES   DEFB    ESC
1780            DEFM    'T17'           ;SET VERTICAL SPACING
1790            DEFB    ESC
1800            DEFM    'N'             ;10 CPI
1810            DEFB    ESC
1820            DEFM    '>'             ;UNIDIRECTIONAL
1830                                    ;MAKE SURE ITS IN LINE
1840            DEFB    13
1850            DEFB    0
1860    ;
1870    SHMES   DEFM    '               ' ;A MARGIN
1880            DEFB    ESC
1890            DEFM    'S0384'         ;WE ARE GOING TO SEND
1900                                    ;384 BYTES OF HIRES.
1910            DEFB    0
1920    ;
1930    DSMES   DEFB    ESC
1940            DEFM    '<'
1950            DEFB    ESC
1960            DEFM    'A'
1970            DEFB    ESC
1980            DEFB    'E'
1990            DEFB    CR
2000            DEFB    CR
2010            DEFB    CR
2020            DEFB    CR
2030            DEFB    0
2040    ;
2050    ;*************************************************************
2060    ;*
2070    ;*       STORAGE AREA
2080    ;*
2090    ;*************************************************************
2100    ;
2110    COL     DEFB    0               ;STORE COLUMN NUMBER
2120    ROW     DEFB    0               ;STORE ROW NUMBER
2130    BITMSK  DEFB    0               ;STORE  BIT MASK
2140    ;
2150    ;
2160    ;
2170            END     INIT
```

PRINT USING

Further to David Washford's example on PRINT USING, his example could have given an even stronger indication of the immense power of this statement especially for the business user. Firstly, the string to use can be pre-defined. eg.

```
  10 F$="####  !. !. \          \.......#####.##".
```

This might then be used in a PRINT USING to display a list of club members and their balances as follows.

```
100 LR%=62  'record number
110 A$="JACK":B$="ROBERT":C$="JONES"
120 B!=125.20   'balance in members account
130' the above usually got from a disc file with GET
140'
150 PRINTUSING F$;LR%,A$,B$,C$,B!
160'
170' back for another member
```

```
result -   62  J. R. JONES          .......  125.20
          175  F. P. PATTERSON      .......    0.00
         2062  J. W. HUTTON         ....... 1234.50
```

The distance between the back-slashes (including them) is the length of string used. And note that the dots etc in between are simply printed as given. Any character except the pre-defined ones (eg ##) can be used in this way.

A TINY BIT OF FELT

For Model 2 users I offer a little tip. If you suddenly find that the drive is making a slight scraping noise, and the directory is slow to read or inaccessible, and FORMAT has problems or gives up, then what may have happened is that the tiny piece of red felt on the tip of the pressure arm which presses the disc onto the read head has come off. I have had this on both a drive #0 and an expansion drive, and the cure is simple.

First remove the case top (not in the first 90 days !) and see if the felt pad is missing from the arm. If you know where to look, you can even see it without removing the case, through the drive door with a torch.

If you can find the tiny pad (2 mm diameter) in the bottom of the case, then carefully press out the pad carrier (a black plastic insert in the tip of the pressure arm), glue the felt back with YU-HU or similar, and press the insert back into the tip of the arm so that the felt is towards the disc. If you can't find the felt, cut a new piece from a felt hat or similar.

EXTENDED BASIC by Snapp Inc

How about the following program ?

```
50  F$="\        \ AGE ##     D.O.B.  ##.##.##"
100 A$="FRED":A%="42":B$="AGE":D%=12:M%=3:Y%=45
110 D$=FN FMT$(F$;A$,B$,A%,D%,M%,Y%)
```

D$ will now be "FRED AGE 42 D.O.B. 12. 3.45" and can be used like any other string. Not in your BASIC ? No, you need BUILT-IN FUNCTIONS by SNAPP Inc (and a Model 2 or 3).

I wish I had discovered the Extended BASIC family sooner. It includes a function to allow you to design a screen like a form for the user to fill with data (which is checked for validity before acceptance against the criteria you have decided (eg a field can be defined as only numeric, with only positive numbers with 2 places after the decimal point, and that is all that will be allowed).

It includes a file mapping function (to allow very simple transfer of data to a file . Total syntax is (to get variables from a record) - SCMD GET F$,1,LR. NO more FIELD or CVI or MKS$ needed. A 1-byte field for an integer less then 256 is provided. Arrays can be put on file or retreived en-masse. No need to convert numbers to strings.

With these 2 functions to help, I wrote a useful stock control program in an evening !

Built-in functions include FMT$ as mentioned before, PDAT to convert a date to an integer (and UDAT$ to get it back), a very fast sort (syntax is FN SRT("+A$") which even I can manage, and a whole stack of other useful goodies.

When you include an improved RENUM, a program compression utility, a variable cross-reference utility, single key commands (eg a comma to 'edit current line'), a RESCUE for accidentally lost programs, a PACK to save 1/4 of your file space, etc etc, and then find that this takes NO user memory or disc space, the mind boggles !!

I have no connection with Snapp, except as a satisfied user.

FASTBACK Model 2

To BACKUP a full 8" disc used to take 7.5 minutes. Now it takes me 54 secs. Thanks to.... "FASTBACK" from RACET. Full error checking etc. In use 3 months so far, so good. Great with my SCRIPSIT discs.

Jim Hutton

```
00100 ;************** PRINTER/CMD by K.D.Horton **************
00111 ;==========================================  ==========
00120 ;Those who own an Epson MX-80 printer will k.  w that
00130 ;there are 'Standard' and 'TRS-80' modes that are
00140 ;selectable via an internal DIP switch (S2). To obtain
00150 ;the full benefits of the various character sizes and
00160 ;line spacings etc the 'Standard' setting is often used
00170 ;in preference to the 'TRS-80' mode.In the standard mode
00180 ;however,the printer graphics no longer coincide with the
00190 ;screen graphics as the codes are in fact 20 Hex higher
00200 ;than the video codes. As a result, the 'JKL' facility in
00210 ;Newdos-80 cannot be used to print out graphics from the
00220 ;screen without opening the printer and resetting the DIP
00230 ;switch.
00240 ;This program is basically a copy of the ROM printer
00250 ;driver with a patch to add the necessary 20H offset
00260 ;whenever a graphic character is encountered. Graphics
00270 ;can then be printed by 'JKL' and Disk Basic or any other
00280 ;program that uses the printer routine at 003BH.
00290 ;The new driver protects itself from Basic by adjusting
00300 ;the memory size address and remains intact till the disk
00310 ;is rebooted.
00320 ;
00330 ;************************************************************
00340 ;
00360 ;
00370          ORG     4026H    ;Printer D.C.B
00380          DEFW    OFFAEH   ;Somewhere to put program.
00390          ORG     4370H    ;Store for upper limit to
00400          DEFB    0FFH     ;JKL character output.
00410          ORG     40B1H    ;Memory size address.
00420          DEFW    OFFADH   ;Set memsize to below program.
00430          ORG     4049H    ;Mem size used by D.O.S.
00440          DEFW    OFFADH   ;Set this also.
00450          ORG     OFFAEH
00460          LD      A,C      ;Save byte in 'C' register
00470          OR      A        ;Check for a null.
00480          JR      Z,GTSTAT ;If so get status and return.
00490          CP      0BH      ;Skip to top of form code.
00500          JR      Z,FEED
00510          CP      0CH      ;Full form feed code.
00520          JR      NZ,PRINT
00530          XOR     A        ;'A' reg. now has a zero (null)
00540          OR      (IX+03H);Check lines per page.
00550          JR      Z,PRINT;If set to zero "print" a null.
00560 FEED     LD      A,(IX+03H)
00570          SUB     (IX+04H);Subtract number of lines printed
00580          LD      B,A      ;Store in 'B'the number of lines
00590                           ;left to print.
00600 CHEKST   CALL    GTSTAT   ;Wait till printer ready.
00610          JR      NZ,CHEKST.
00620          LD      A,0AH      ;A line feed character
00630          LD      (37E8H),A ;Loop and output line feeds
00640          DJNZ    CHEKST
00650          JR      STLINE
00660 PRINT    PUSH    AF       ;Save byte to be printed
00670          CALL    GTSTAT
00680          JR      NZ,PRINT+1
00690          POP     AF       ;Restore byte
00700 ;** Now comes the Epson graphics modification **
00710 ;
00720          CP      80H      ;Is it a graphic ?
00730          JR      C,SKIP   ;If less than 80H then skip.
00740          ADD     A,20H    ;Add Epson MX-80 offset.
```

```
00750 ;
00760 ;** E  of Modification **
00770 SKIP    LD      (37E8H),A       ;Output a byte to printer
00780         CP      0DH             ;Is it a carriage return?
00790         RET     NZ              ;Finished if it isn't.
00800         INC     (IX+04H)        ;Inc line counter if CR.
00810         LD      A,(IX+04H)      ;Get number of lines
00820                                 ;printed so far.
00830         CP      (IX+03H)        ;Are we at end of page?
00840         LD      A,C
00850         RET     NZ              ;Done if not
00860 STLINE  LD      (IX+04H),00H    ;Zero line counter.
00870         RET                     ;Return at last !.
00880 GTSTAT  LD      A,(37E8H)       ;Read printer address.
00890         AND     0F0H            ;Mask off useless bits.
00900         CP      30H       ;Bit 7=busy, Bit 6=paper out,
00910                           ;Bit 5=selected, Bit 4=error,
00920                           ;30H means all these OK
00930                           ;ie printer is ready.
00940         RET
00950         END     402DH     ;Jump back to D.O.S.
```

K.D.Horton,
'Lorien' 81 Slepe Crescent,
Brooklands Park,
Poole. BH12.4DJ.

DON'T BE AFRAID IT WON'T BYTE

So, you are afraid of assembly language programming. You think it was invented by a grade one sadist who was frightened by a computer when he was little. You have decided to stick with Basic because it is more friendly. Well, join the majority of computer hobbyists who steer clear of anything that looks even remotely like a machine language program. I too was a computer owner who trembled at the thoughts of having to struggle with something new, having had enough problems with good old Basic. Learning to program in assembly language is rather akin to learning to swim, if you don't go in the water you will never know if you can or not. So, why not get your feet wet ?

Have you ever heard two die hard assembly language programmers talking to each other ? "Well, I anded it with seven F and called the subroutine where I load I X with the offset". "Very clever, I always clear the port by xoring A and outing to FF". Sounds like gibberish to the uninitiated, more like Chinese than a computer language. It is the nature of the assembly language programming beast that leads him to give the impression to the Basic programmer that this secret World he lives in is taboo to all but the expert few. You avoid his World and by doing so miss the chance to make your computer really sing and dance for it's living. How can you obtain the knowledge to write assembly language programs ?

Let us look at what the requirements are. Assuming you have a LII machine with a minimum of 16K your first requirement is an editor-assembler. There are a number of these on the market, both for tape and disk, the popular ones being the Tandy Edtasm for cassette and the disk enhanced version supplied with Newdos. There are others such as Edas, Zen and Edtasm Plus, but I don't intend to get into the argument as to which is the best. Decide on the assembler which suits you and your system. Next on the list is a debugging aid. This could range from Tbug up to those monitors with single step operation and full mnemonic dissasembly, such as Step80 or Tasmon. Last but not least are the reference books. Top of the list (in my opinion) should go "Programming the Z80" by Rodnay Zaks which is your 'bible'. To help you learn to program, "TRS80 Assembly Language Programming" by W Barden and "TRS80 Assembly Language Made Simple" by McCaul are worth the money. As is "Notes on Assembler" by Laurie Shields (I will collect my 10% later), available from the group. You are now armed with the tools to unravel the mysteries of assembly language.

Why an editor assembler ? Why can't I work out what I want to do, look it up in the instruction set for the Z80 and type it in using hex or decimal ? No reason at all, but when the program is more than a dozen bytes long the time and effort spent in working out the hex for each operation, and then checking that you have actually picked the right one anyway, will soon put you off. The editor assembler will allow you to create your assembly language program in a structured, orderly way, using line numbers, labels and the mnemonics as shown in the Z80 instruction set. It then becomes much easier to follow and understand, with editing facilities as easy as Basic. The program, once written, can the be saved to cassette / disk in this and it's assembled format.

Machine code programs have a nasty habit of going wrong without apparent reason. You are sure that you have entered everything in the editor asembler exactly as it should be, it has assembled ok, yet the program dies on you leaving a screen full of garbage or the mem size message. Unlike Basic, there are no error messages when things go wrong with a machine code program. You can't list the program or trace it's operations without the aid of a monitor or de-bugging program. The monitor is a machine code program which can allow you to step through your machine code program, checking such things as the register contents at each step. Monitors such as Step80 will show you the program disassembled in a format similar to that produced in the editor assembler. This will allow you to debug your program and carry out any necessary modifications in memory.

So, now we have discovered what we require and why, where is the best place to start ? Assembly language programming requires the use of logic throughout all it's stages. As with most programs you normally start with the idea, WRITE IT DOWN. The next step should be defining what the program will do, WRITE IT DOWN. Next comes the actual program. Plan out the steps with notes and if possible flow charts, WRITE IT DOWN. Go over the various stages a few times until you feel happy that it is correct. You can now go ahead and start typing the program into the assembler. As the editor assembler allows for a comment field, make use of it, enter any notes regarding what each operation is doing. Later de-bugging is much easier on a well documented and commented program. Once entered and de-bugged the program should be saved in it's source format. Follow this with the assembled program, if all is well you will have an error free machine code program. If not, go back to the paperwork to see if you have made an error in logic, sent the program into an endless loop or some other such fault. Work your way through the various stages until the only way out is to use the de-bugging program. It is at that stage you will say to yourself, "Why the heck did I let that Ken Grey talk me into trying assembly language ?". When your first program is up and running without serious errors, the sense of achievement makes the effort worth while and you will no longer be baffled by the wizzards of the bits bytes and nibbles.

To summarise, acquire an editor assembler, a good monitor/ debugger (with single step if possible), the better of the available books (Zaks for one) and (because I hear he is a nice guy) Laurie Shields' assembler notes. The most important thing to have is lots of patience and don't give up if you feel as though the going is getting tough. It will be more difficult to grasp than Basic but the rewards are worth the effort.

Ken Grey

STRING SORTING USING POINTERS.

The technique here described was devised for the sorting into alphabetic order of string arrays used as a register of members of an association and in the preparation of mailing labels. The data for each member are recorded as :- code ;title and initials ;surname ;qualifications ;centre ;hospital ;road ;town ;post town and postcode. The array is dimensioned D(N,8). My own need is to sort by the surname D(N,3) but in the program line 160 allows the key element to be defined, if a constant key is used the line can easily be amended.

The data from 100 individuals occupy almost 20,000 bytes of string storage and allow little room for the shuffling of data from one place to another in a conventional sort. I have tested this with an array which fills the string store and had no difficulty.

Data are taken from a Model III disc and returned to the disc under a suitably amended filename. The sort of 100 sets
of data takes under a minute.

David Ashley

```
10 REM PROGRAM FOR SORTING STRINGS IN A MULTIDIMENSIONAL ARRAY
20 REM TO AVOID OVERUSE OF STRING SPACE AND CONSEQUENT HOLDUP
30 REM THE FILE IS FIRST RECOVERED FROM THE DISC
40 REM THE FIRST ENTRY IS THE FILESPEC
50 REM THE NEXT TWO ARE THE VALUES OF N AND M FOR THE DIMENSIONS
60 REM NOT USING 0 IN THE ARRAYS
70 REM
80 REM SORTING IS CARRIED OUT USING POINTERS IN AN INTEGER ARRAY
90 REM
100 REM NO USE IS MADE OF THE STRING STORAGE SPACE DURING THE SORT
110 REM
120 CLEAR20000:DEFSTRA-H:DEFINT I-Z:CLS:INPUT"FILESPEC  ";F
130 OPEN "I",1,F
140 INPUT£1,DT,N,M
150 DIMD(N,M):DIMP(N):FORI=0TON:P(I)=I:NEXTI
160 INPUT" NUMBER OF COLUMN OR ARRAY TO BE USED IN SORT  ";NF
170 FORI=1TON:FOR J=1TOM
180 IF EOF (1) GOTO 200
190 INPUT£1,D(I,J):NEXTJ:NEXTI
200 CLOSE:CLS:PRINT"NOW SORTING":K=N
210 K=INT((K+1)/2):S=N-K:FOR I=1TOS:J=I
220 V=P(J):W=P(J+K)
230 IF D(V,NF)<=D(W,NF) THEN 270
240 R=P(J):P(J)=P(J+K):P(J+K)=R
250 IF (J-K)<1 THEN 270
260 J=J-K:GOTO220
270 NEXTI
280 IF K<>1 THEN 210
290 PRINT"PASSING TO DISC
300 INPUT"FILESPEC FOR SORTED ARRAY  ";F1
310 OPEN"O",1,F1
320 PRINT£1,F1;",";N;",";M;",";
330 FORI=1TON:J=P(I):FOR K=1TOM
340 PRINT£1,D(J,K);",";
350 NEXTK:NEXTI:CLOSE:PRINT"END"
360 REM
370 REM  BY D.J.B.ASHLEY   12:11:1982
```

Amendments to "JUMBO"

Lovers of flight simulation programs will no doubt find it irritating that in Jumbo one has to call up "Maps" to find out the relative bearing of the destination airport, and that while one is in the time-skip mode it is not possible to see how this bearing is affected.

The following amendments are offered to improve (hopefully) what I think is an excellent program. A constant display of the relative bearing of the destination airport and of the runway on which to land is now provided, which will only print out on a practice landing or after the route has been chosen. This bearing will be updated together with the distance to go and the fuel remaining during a time-skip. There was also a small error in line 196.

```
150.....PRINT@184,RIGHT$(STR$(INT(1000+Q)),3);:IF ZZ=0 THEN
RETURN ELSE PRINT@306,N(XT,0);:RETURN

196.....IF K<=0 PRINT@256,"*Out of fuel";:EN=0:K=0

214.....PRINT@6,USINGF1;DG;:GOSUB292:IF ZZ=0 RETURN ELSE
PRINT@51,RIGHT$(STR$(1000+BE),3);:RETURN

270....."Land on runway";N(XT,0);:ZZ=1:P3=CX:P4=CY

316.....PW=40:EN=4:AT=3:ZZ=1:RESTORE:GOSU344:GOSUB356

410.....K=100:UD=2:AD=.017533:ZZ=0
```

N.B. * = 1 space

Paul Taylor
LONDON

DATECHECK

This subroutine checks a date (DD.MM.YY format) for validity.

```
20010 'CHECK DATE FOR VALIDITY
20020 INPUT"DATE";D$
20030 D1$=LEFT$(D$,2):D2$=MID$(D$,4,2):D3$=RIGHT$(D$,2)
20040 IF LEN(D$)<>8 THEN 20160
20050 D1=VAL(D1$):D2=VAL(D2$):D3=VAL(D3$)
20060 IF D2>12 THEN 20160
20070 IF D3<1 THEN 20160
20080 IF D2=2 AND D1>29 THEN 20160 ELSE 20130
20090 IF D1>31 THEN 20160
20100 IF D2=4 OR D2=6 OR D2=9 OR D2=11 THEN 20120 ELSE 20140
20110 IF D1>30 THEN 20160
20120 IF D1>30 THEN 20160
20130 IF D1>28 AND (D3/4)-INT(D3/4)>0 THEN 20160
20140 T$(9)=D$
20150 RETURN
20160 PRINT "INVALID DATE":GOTO 20020
```

D. Hirschowitz

SRTV TO FIT B LOSS.

Comments on the Programs/modules shown below:-

a) WRITE.
This will write 21 account codes and 21 amounts to 12 files called JAN ..... DEC

b) READ.
This opens the above 12 files and displays to the screen, 252 x 21 items

c)SORTPLBS.
This will read the above files and select either Profit & Loss or Balance Sheet entries, sort them using the Infinite Basic routine SRTV, and write them back to Disk in account code number order- File name PLSORT or BSSORT.

d)PRINT
This will read the above PLSORT file, display the sub-totals arising from the PLSORT file, and Print out a Profit & Loss account Fig 1.

Brian Pain.

```
10 'write module Nov 1982
20 CLEAR 1000:'string handling space
30 N=21:'depth of the array/file-for Pam Marr
40 DIM DE(N),AM(N),FL$(12)
50 'DE=DESCRIPTION,AM=AMOUNT,FL=FILE NAME
60 FOR I%=1TO12:READ FL$(I%):NEXT
70 DATA JAN,FEB,MAR,APR,MAY,JUN,JUL,AUG,SEP,OCT,NOV,DEC
80 'THE ABOVE FILE NAMES ARE GOING TO BE WRITTEN TO DISK
90 FORI%=1TO21:READDE(I%):NEXT
100 ' the account codes follow next
110 DATA 1,2,31,78,118,13,21,22,24,25,34,33,42,45,49,51,52,53,23,36,26
120 '1 = SALES, 2 = PURCHASES, 31 = M/EXPENSES, 78 = VAT, 118 = DRAWINGS
130 FORI%=1TO21:READAM(I%):NEXT
140 DATA -10000,8000,500,1000,500,200.01
150 DATA145.02,115.02,135.24,157.25,152.34,168.33,178.42,211.45,45.49,208.51
160 DATA 43.52,22.12,5.23,36.36,12.26
170 '-the above are the amounts for each account
180 FOR CC = 1 TO 12:'the 12 files to be written to the disk
190 OPEN"O",1,FL$(CC):'fl$ was set in the earlier line
200 FOR I%=1 TO 21:'there are 21 items to written to disk
210 DA$=STR$(DE(I%)):DB$=STR$(AM(I%)):'convert numeric to string
220 'da$ & db$ are dummy strings to be reused, through the loop steps
230 PRINT#1,DA$;CHR$(13);DB$:'now write to disk - sequentially
240 'use chr$(13) to separate the strings, see TRSDOS manual
250 NEXT I%
260 CLOSE:'see manual, close at the earliest opportunity
270 NEXT CC:'next file name, for writing to disk the same 21 items
280 END:'there will be 12 files on the disk, and the number of postings will be 12 x 21
```

```
10 ' read a file on disk module
20 CLEAR 1000 ' string handling space
30 N=252 ' the files contain 12 x 21 postings
40 DIM DE(N),AM(N),FL$(12)
50 DATA JAN,FEB,MAR,APR,MAY,JUN,JUL,AUG,SEP,OCT,NOV,DEC
60 'the above are the file names
70 FOR N = 1 TO 12 : READ FL$(N) : NEXT N:'set the file name array up
80 C =1:'INITIALISE THE ARRAY'S DEPTH
90 FOR CC = 1 TO 12 'this controls the file name array - 12 deep
100 OPEN"I",1,FL$(CC):'fl$ set up in earlier line
110 PRINT"FILE NOW OPEN & BEING READ :-";FL$(CC)
120 ' a friendly message to the user
130 FOR CA = 1 TO 21 'these are entries in the file
140 LINEINPUT#1,DA$
150 LINEINPUT#1,DB$
160 'remember that da$ & db$ are dummy variables for reuse in the loop
170 DE(C)=VAL(DA$):AM(C)=VAL(DB$):'convert back to numeric
180 C = C + 1 'INCREMENT THE ARRAY'S COUNTER
190 PRINT"THE ARRAY IS NOW ";C;" DEEP"
200 NEXT CA:'ONCE READ, EXIT OUT FOR THE NEXT PART OF THE ROUTINE
210 CLOSE :'-good practice
220 NEXT CC:'OPEN ANOTHER FILE & READ THE CONTENTS
230 CLS
240 CLS:PRINT"ALL ITEMS READ FROM THE YEAR'S FILES & USE 'C' ";
250 LINEINPUT Q$ IF Q$="C"THEN 260 ELSE 240
260 Z$="###,###,### ##" 'for formatting amounts to the screen
270 Z1$="####" 'for formatting codes to the screen
280 FOR CA = 1 TO 252 'there are 252 items to be read from the disk
290 'now display whole file to the screen
300 PRINTTAB(5);USINGZ1$;DE(CA);:PRINTTAB(30);USINGZ$;AM(CA)
310 NEXT
320 END:'this proves the items are written to disk, and are displayable to the screen
```

PRINT

```
10 CLEAR 1000 'STRING HANDLING SPACE
20 N=260 'POTENTIAL DEPTH OF ARRAY
30 DIM CO(N),AM(N),DE(N),T(40)
40 Z1$="###,###,### ##":Z2$="####":'for formatting codes and amounts
50 CLS
60 PRINT"WHAT FILE IS TO BE READ:-";
70 LINEINPUT FL$:'EG PLSORT SEE SORTPLBS
80 OPEN"I",1,FL$
90 CD=1 CC=0 'INITIALISE FOR GETTING DE & T RIGHT LATER
100 FOR C = 1 TO 260
110 IF EOF(1)THEN 210
120 LINEINPUT#1,DA$:LINEINPUT#1,DB$
130 CO(C)=VAL(DA$):AM(C)=VAL(DB$)
140 IFCO(C)>CO(C-1)THENDE(CD)=CO(C):CD=CD+1
150 IFCO(C)>CO(C-1)THENCC=CC+1:EE=CC
160 T(CC)=T(CC)+AM(C)
170 E = E +1:'NOTE E IS USED NOT EE
180 PRINT @55,E; 'LIKE VISICALC
190 NEXT C
200 '
210 CLOSE
220 CLS
230 PRINT"THE FILE IS NOW READ & USE 'C' TO CONTINUE :-";
240 LINEINPUT Q$ IF Q$="C" THEN 250 ELSE 220 'ERROR TRAPPED
250 CLS
260 PRINT"ENSURE THE PRINTER IS ON ":'REQUIRES PEEK NO.
270 PRINT"USE 'P' & ENTER KEY TO CONTINUE :-";
280 LINEINPUT Q$ IF Q$="P"THEN285ELSE250
285 INPUT"TRIAL BALANCE OR PROFIT & LOSS ACCOUNT 'T' OR 'P':-";Q$
286 IF Q$="T"THEN290ELSE350
290 LPRINT"TRIAL BALANCE"    :' see Pg2.
```

```
300 LPRINT" ":LPRINT" "
310 FOR C = 1 TO EE :'EE IS SET IN LINE 150
320 LPRINT,C; :LPRINTTAB(10);USINGZ2$;DE(C); :LPRINTTAB(25);USINGZ1$;T(C)
330 NEXT:'NOTE DE(?) GOES WITH T(?)
340 LPRINT" ":LPRINT" ":LPRINT" "
350 LPRINT"Profit & Loss Account for the Year ended 31st December 1982"
360 LPRINT" ":LPRINT" "          :' see Fig 1.
380 LPRINTTAB(5);"SALES";TAB(45);USINGZ1$;-T(1)
390 LPRINT" "
400 LPRINTTAB(5);"PURCHASES";TAB(30);USINGZ1$;T(2)
410 LPRINTTAB(5);"RENT";TAB(30);USINGZ1$;T(17)
420 LPRINTTAB(5);"RATES";TAB(30);USINGZ1$;T(18)
430 LPRINTTAB(5);"LIGHT & HEAT";TAB(30);USINGZ1$;T(4)
440 LPRINTTAB(5);"TELEPHONE";TAB(30);USINGZ1$;T(7)
450 LPRINTTAB(5);"WAGES";TAB(30);USINGZ1$;T(3)
460 LPRINTTAB(5);"STATIONERY";TAB(30);USINGZ1$;T(5)
470 LPRINTTAB(5);"ADVERTISING";TAB(30);USINGZ1$;T(12)
480 LPRINTTAB(5);"POSTAGES";TAB(30);USINGZ1$;T(6)
490 LPRINTTAB(5);"MOTOR EXPENSES";TAB(30);USINGZ1$;T(10)
500 LPRINTTAB(5);"TRAVELLING EXPENSES";TAB(30);USINGZ1$;T(13)
510 LPRINTTAB(5);"INSURANCE";TAB(30);USINGZ1$;T(8)
520 LPRINTTAB(5);"ACCOUNTANCY";TAB(30);USINGZ1$;T(16)
530 LPRINTTAB(5);"BANK CHARGES";TAB(30);USINGZ1$;T(14)
540 LPRINTTAB(5);"HIRE PURCHASE INTEREST";TAB(30);USINGZ1$;T(15)
550 LPRINTTAB(5);"TOOLS";TAB(30);USINGZ1$;T(17)
560 LPRINTTAB(5);"PROTECTIVE CLOTHING";TAB(30);USINGZ1$;T(20)
570 LPRINTTAB(5);"CANTEEN";TAB(30);USINGZ1$;T(9)
580 LPRINTTAB(5);"DEPRECIATION";TAB(30);USINGZ1$;T(11)
590 LPRINTTAB(34);"----------"
600 FORC=2TO40:ST=ST+T(C):NEXTC
610 LPRINTTAB(45);USINGZ1$;ST
620 LPRINTTAB(49);"----------"
630 GT=T(1)+ST:'T(1)=SALES,ST=EXPENSES TOTALLED
640 LPRINTTAB(5);"NET PROFIT ";TAB(45);USINGZ1$;GT
650 LPRINTTAB(49);"=========="
660 CLS
670 PRINT"USE '0' TO RETURN TO OPTIONS:-";
680 LINEINPUT Q$
690 IF Q$="0"THEN RUN"OPTIONS" ELSE 660
```

SORT/L 65.

```
10 'read from disk, Print to the screen, and write the sorted file back to disk in PL or BS orde
20 CLEAR 1000:'strins handlins space
30 GOSUB 590:'decide whether P/l codes or b/s codes are to read from disk
40 N=254:'the maximum depth of the array read from disk, Plus the two for SRTV
50 DIMDE(N),AM(N),FL$(12)
60 ' file names defined
70 DATA JAN,FEB,MAR,APR,MAY,JUN,JUL,AUG,SEP,OCT,NOV,DEC
80 FOR N = 1 TO 12 :READ FL$(N) : NEXT:'read into a 12 deep array
90 C = 1:'this is the array depth counter
100 FOR CC = 1 TO 12:'this the file depth counter
110 OPEN"I",1,FL$(CC):'defined in an earlier line
120 PRINT"FILE NOW OPEN & BEING READ :-";FL$(CC):'a message for the user
130 FOR CA = 1 TO 21:'the file will not be larser than this, see write module
140 'EOF is the disk BASIC for end of file, to detect an end of file situation
150 IF EOF(1) THEN 240:'for use later, with files of varyins sizes
160 LINEINPUT#1,DA$:LINEINPUT#1,DB$:'da$ & db$ are dummy variables
170 IF Q$="PL"THEN180ELSE190:'PL is an abbreviation for PROFIT & LOSS
180 IF VAL(DA$)>60THEN230ELSE200:'PL codes are those up to 60
190 IFVAL(DA$)<61THEN230ELSE200:' B/Sheet codes are those over 60
200 DE(C)=VAL(DA$):AM(C)=VAL(DB$):'convert the strings back to numeric
210 C=C+1:'the array depth counter
220 PRINT"THE ARRA  ILE IS NOW ";C;" DEEP":'a message to the user
230 NEXT CA      :'  next item from data.
```

```
240 CLOSE
250 NEXT CC      :' OPEN NEXT FILE
260 CLS
270 PRINT"ALL ITEMS READ FROM THE YEARS FILE & USE 'C'
280 LINEINPUT     QQ$
290 IFQQ$ = "C" THEN 300 ELSE 260
300 Z1$="####":Z2$="###,###.##":'for formatting codes & amounts
310 FOR CA = 1 TO 252 'the maximum depth of the file
320 PRINTTAB(5);USINGZ1$;DE(CA);:PRINTTAB(30);USINGZ2$;AM(CA)
330 NEXT
340 CLS
350 PRINT"THE FILE WILL NOW BE SORTED & WRITTEN TO DISK"
360 PRINT"USE 'O' FOR MAIN OPTIONS"
370 PRINT"USE THE 'C' KEY TO CONTINUE:-";
380 LINEINPUT QQ$:'Q$ is used for the PL or the BS !
390 IF QQ$="C" THEN400ELSE RUN"OPTIONS"
400 DEFUSR=&HE6C3:'the entry point of the sorting routine SRTV, from INFINITE BASIC
410 'next month using this with CMD"O"
420 PRINT USR(1):CLS:'initialise & clear the screen
430 S$="+DE,+AM"
440 IR=&SRTV(S$,1,C):'transfer the Program to the machine code routine
450 PRINT"A SUCCESSFUL SORT WILL GIVE 0 :-";IR
460 IF Q$="PL"THENFL$="PLSORT"ELSEIFQ$="BS"THENFL$="BSSORT"
470 OPEN"O",1,FL$:'defined in the subroutine
480 FOR CA=1TOC:'c is holding the depth of the array
490 DA$=STR$(DE(CA)):DB$=STR$(AM(CA)):'convert numeric to string
500 PRINT#1,DA$;CHR$(13);DB$:'write to disk sequentially
510 IF DE(CA+1)=0 THEN 530:'to detect an  end  of array condition
520 NEXT CA
530 CLOSE:' once written close the file
540 CLS
550 PRINT"ALL ITEMS NOW ON THE DISK"
560 PRINT"USE 'O' KEY TO RETURN TO THE MAIN OPTIONS:-";
570 LINEINPUT Q$
580 IF Q$ ="O" THEN RUN"OPTIONS" ELSE 540
590 '
600 CLS:'-------------obtain from the user PL or BS
610 PRINT"1. TO EXTRACT JUST THE PROFIT & LOSS CODES -'PL'"
620 PRINT"2. TO EXTRACT JUST THE BALANCE SHEET CODES -'BS'"
630 PRINT"3. ENTER 'PL' OR 'BS' KEYS "
640 PRINT"4. THEN THE ENTER KEY "
650 PRINT"5. OR THE 'O' KEY FOR MAIN OPTIONS:-";
660 LINEINPUT Q$
670 IF Q$ ="PL" THEN 700 ELSE 680
680 IF Q$="BS" THEN 700 ELSE 690
690 IF Q$ = "O" THEN RUN"OPTIONS" ELSE 600
700 RETURN
```

300 BAUD PRESTEL INTERFACE

John Newgas has talked British Telecom into providing an experimental 300 baud interface to the Hogarth Prestel computer. This means that many potential Prestel users who already have a 300 baud modem/acoustic coupler, do not need to purchase an additional Tantel or similar adaptor to access Prestel. John demonstrated Prestel at the recent Southall workshop using a standard Model I with a serial interface connected to my 300 baud acoustice coupler.

BT will only make this facility generally available if they can be convinced that there is a need for it. Could all members who would like such a facility send letters expressing interest in this project to Andy Anderson, Prestel Headquarters, Telephone House, Temple Avenue, London EC4Y 0HL.

Leon Heller

g.1.

Profit & Loss Account for the Year ended 31st December 1982

SALES		120,000 00
PURCHASES	96,000.00	
RENT	2,502.12	
RATES	522.24	
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Fig 2.

TRIAL BALANCE

1	1	-120,000.00
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3	13	2,400.12
4	21	1,740.24
5	22	1,380.24
6	23	62.76
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10	31	6,000.00
11	33	2,019.96
12	34	1,828.08
13	36	436.32
14	42	2,141.04
15	45	2,537.40
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COMING SHORTLY NOV 1982

****

For those who want constructional aids from their micros.

Various Programs will be donated to the library that will when Printed out allow the user to construct simple objects like cubes and coffin shaped objects.

The Program will contain the instructions, and the shapes required. All that has to be done is to load the tape/disc and then Printout as many shapes as required. It is anticipated the kits will be attractive to 5-7 year olds, but obviously other shapes and kits can then be drawn and dumped in the library.

The first objects will be :-

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b) coffin
c) Horse & cart

The materials will be :-

a) thin card
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Modtech MODEM including PCR 81 RS232 interface suitable for accessing all Forum 80's. Plugs into expansion port and is therefore suitable for 16k systems. Also enables use of serial printers. Both for £100 ono. Tel. Andrew Sefton 07596 224

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OPTRONICS - Price List

VCFORMAT	- Enhances Visicalc reports	£35	M1 & M3 - ND80V2 M2
DMS80	- Data management system	£125 Apply	M1 & M3 - ND80V2 M2
DMS80	- Restricted facilities	£70	M1 Any DOS M3 ND80V2
DMS80	- Manual only	£8	
ZDIR	- NEWDOS80 file utility Sorted directory, interactive file copy, delete or rename.	£5	M1 & M3 - ND80

Note M1 = Model 1, M2 = Model 2 & M3 = Model 3
ND80 = NEWDOS (C) Apparat, V2=Version 2

Most of this software is in machine code except some modules in DMS80 which make use of the BASIC interpreter. VCFORMAT/DMS80 uses the Microsoft compiler while ZDIR uses Simutek's ZBASIC compiler.

VCFORMAT

Uses the Visicalc 'DIF' file to provide variable column widths, consolidation and access to two non-keyboard characters e.g. the pound sign on some daisywheel printers. This is now version 3.0 and is availble for all the TRS-80 range.

DMS80

If you are using an interpreted data management system for mailing lists or record keeping you will find that our compiled systems will perform many times faster. If you also use NEWDOS80 V 2.0 you will also gain very significantly on disc access times.

Features:-

Restricted	Full
Data file design/creation	Data base restructuring
Input/Modify	Inter m/c transfer (e.g. M1 to M3)
Reports Vertical/Horizontal	Visicalc/Scripsit link
including automatic sub-totals	Label print
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Enquiries	Arithmetic

Both systems will run om M1/M3/VG/LNW & M2
Will support any VDU & 80 column width subject to DOS support.

Preferred DOS - NEWDOS 80 V2. Restricted version will run on any DOS which supports Microsofts BRUN.

Special Offer

* If you mention the TRS-80 user group, for the next month all orders will receive a free copy of SOFTSIDE/CLOAD.

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All software supplied on high quality discettes - provide choice of density/tracks. All prices include VAT but are subject to P&P.

Microsoft Compiler is (c) Microsoft, ZBASIC compiler is (C) Simutek, Visicalc is (C) Visicorp and NEWDOS80 V2.0 is (C) Apparat. DMS80, VCFORMAT & ZDIR are all (C) SOFTDOR.

EPSON RIBBON REFILLS

After a most undeserved jibe from Laurie, at Southall and concerning my alleged rip-off activities, I thought that I would let members know about my latest 'rip-off'.

Probably because I write so often to the Newsletter, a ribbon only lasts about ten weeks in my Epson. I was therefore quite intrigued by the recent advertisement from Workforce for Epson refills, and sent off for a trial pack of six ribbons. It didn't occur to me to specify a colour and I received 3 blue and 3 black; they were accompanied by an instruction sheet which was easy to comprehend, but not so easy to read, being wholly typed in Epson extended double size print. However, I prised open the old cassette and discarded the old ribbon - although it took me about 30 minutes to wind in the new tape, I was delighted with the result. That was nearly three months ago, and today I decided that it was time to change the ribbon again. This time I decided to close the cassette immediately after feeding in the initial loop of tape, before commencing to wind in the refill, and it was so much easier that I have just reloaded FOUR cassettes in less than 30 minutes! (I had four old cassettes because I never throw anything away - that's why my disks contain so many programs that don't work!).

That's my new ripoff - to anyone with an Epson, my advice is to write to Workforce - four refills for the price of one cassette!

Now for someone else's rip-off, on the same subject. One of the cassettes that I reloaded was not a genuine Epson, it came from a 'typewriter ribbon specialist', in a green box, and cost 7.48 about a year ago - I suppose that that is just a little cheaper than the genuine article. When I opened it up I could see quite fully why it should have been much, much cheaper still - no spring at either end, coarse feeder teeth, and generally cheaper in construction all round, and unlikely to take anywhere near as many refills as the Epson. You are advised, if you don't want to play with refills, to buy only Genuine Epson cassettes!

David Washford

NATIONAL TRS-80 USERS GROUP NEWSLETTER

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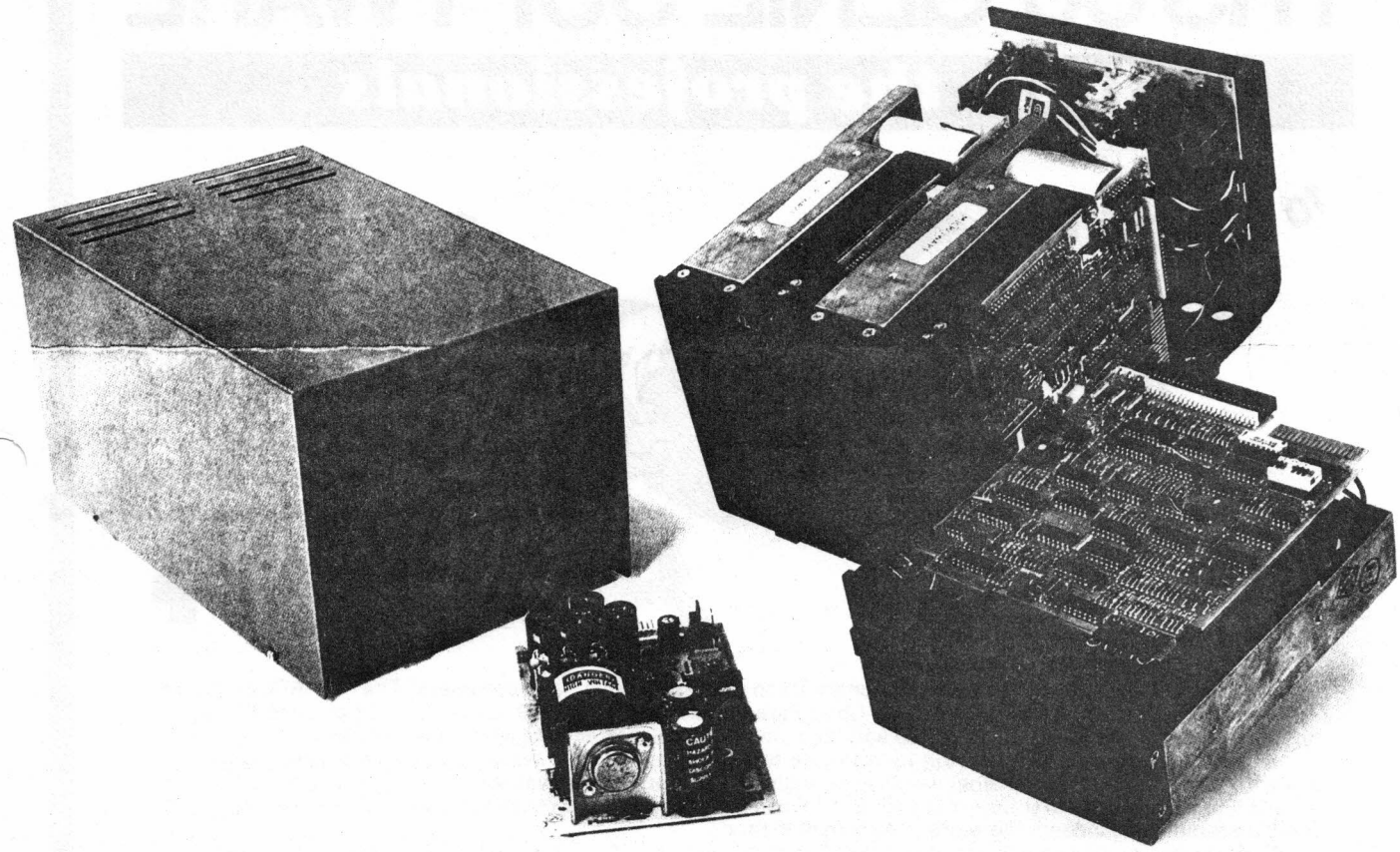
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ACCEL 4

Another ACCEL to continue the evolutionary trend of these unique basic compilers! The first ACCEL a tape orientated compiler, was first introduced by Chris Paradine at the end of 1979. Since then it has gone through a number of enhancements, chiefly in speed and the number of basic statements which it will compile.

ACCEL 4 continues this trend, but its principle feature is its ability to leave memory untouched, except for about 127 bytes, at run time. In other words essentially all user memory is available for the compiled program. So far as is known this is the first time that such a claim can be made for a basic compiler available for the Tandy and Genie machines. It is indeed, therefore, ''A Horn of Plenty''.

Furthermore by reason of some very clever programming, ACCEL 4 approaches the other ultimate aim of a compiler, namely that the compiled program should be the same or less length as the original. It is inherent in compilers that the Object code is longer in length than the Source code. It is difficult to see how this cannot be so, but in one or two programs ACCEL 4 even achieves this aim.

It is impossible to give performance figures for a compiler in respect to speed of execution. This would vary with some programs to a quite startling factor of may be 20 or 30 times faster than the original and at the other end of the spectrum some software is not worth compiling. The criterion is, of course, the amount of time the program spends in accessing the peripherals. No compiler can change the length of time it takes a printer to print, nor the time a disk drive takes to read or write. In the worst case with a program whose sole object is to read or write to disk, and assuming that this is being done by the program continuously in its uncompiled form, then little or no speed increase will be achieved. A program, however, that spends its time doing calculations, manipulating strings or other work that is a function of the CPU, will benefit greatly.

Like its forefathers, ACCEL 4 supports Microsoft Basic and compared to its antecedents has very few restrictions. When ACCEL meets a Basic statement that it does not wish to compile or is unable to compile, it merely leaves it as it is and when such a statement is met at run time, ACCEL passes control back to the machine's interpreter for that line. One finishes up therefore with a rather unique combination of machine code with a sprinkling of Basic. ACCEL 4, however, supports pretty well all of the important Basic statements and commands.

ACCEL 4 is compatible with TRSDOS, LDOS and smal-LDOS on Model I and Model III Tandy machines, together with the original Video Genie, the Genie I and Genie II.

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National TRS-80 Users Group

Newsletter

VOLUME 4 ISSUE 6 DECEMBER 1982

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INFORMATION ON THE GROUP

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

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

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

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

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

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

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

A membership list is available from the Secretary on disk.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

Please try to make it to the January workshop and AGM. A copy of the AGM agenda should be enclosed with this issue, together with a subscription reminder (yes, it's renewal time again!) and a workshop booking form.

I can't think of anything else so I'll just wish you all a happy Christmas and a bug-free and prosperous New Year.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. Send material in machine-readable form (Scripsit or Pencil disk/cassette) if possible.
2. ensure your ribbon is in reasonable condition if using a printer.
3. Printer output should be on A4 paper if possible.
4. If you send in handwritten material, write legibly.
5. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

SUNDAYS * SUNDAYS * SUNDAYS

I AM VERY SORRY FOR ANY INCONVENIENCE CAUSED TO ANY MEMBERS, BUT THEY ARE NOT ON. THE EXPLANATION IS VERY VERY PLAUSIBLE OF COURSE !

Brian Pain

WORKSHOPS - THE FUTURE

Icould do with some feedback on the above. 1983 is going to be very interesting, as we might have to accept being a minority micro at organised dos, to ensure a regular meeting of members and the airing of common problems.

Brian Pain.

BASIC FOR BEGINNERS PART 1

It has been suggested we hold another course in London. I have suggested a 2 day, like last time, with the content as the same as that used with some students at my college. There is a structure to the BASIC covered, and also some informal cassette tapes discussing what is "going on" in the program. Calls or letters would help in deciding where & when.

Brian Pain.

MEMBERS' LETTERS

From J. Keneally

It's probably been mentioned many times in the newsletter, but perhaps worth a mention anyway. BASIC programs generally run much faster when variables are declared in the correct order at the start of a program, rather than just leaving it to chance. Variables which are used most frequently (e.g. within inner loops) should be declared first, and the number of variables used kept to a minimum. The speed-up can be quite dramatic in some cases - over 2 to 1. Even simple programs can benefit, for example David Washfords' program to check the use of DEFINT or % timing (page 5 of the last newsletter) can be speeded up by around 10 percent simply by using:-

```
15 A4=0:B="FRED":A1=25:A2=35:A3=45
```

in place of line 15. This is because A4 is the one used most frequently in the loop.

Having become annoyed with the continual need to type in long DOS commands (DIR, FREE, LOAD, etc.), I wrote the following program to modify TRSDOS discs to accept short forms for the names as follows:-

DIR	becomes	D
FREE	"	F
KILL	"	K
LIB	"	LB
LIST	"	LI
LOAD	"	LD
PRINT	"	P
BASIC2	"	B2
DEBUG	"	DB

The BASIC program below will do the job. You will see some strange commands in it such as LINEPUT etc. For those who do not have DISCOP from Camel Micros (i.e. me), hard luck!

```
10 TK%=16:SC%=1
20 READ BY%,A$:A$=A$+STRING$(6-LEN(A$),32)
30 IF BY%<0THEN LINECLOSE:STOP
40 LINEPUT TK%,SC%,BY%,A$:GOTO20
50 DATA 192,"F",200,"K",208,"LB",216,"LI",172,"D"
60 DATA 224,"LD",232,"P",91,"B2",99,"DB",-1,"A"
```

J. R. KENEALLY

BUSINESS SUB-GROUP

SALES, PURCHASES & GENERAL LEDGER

It has been proposed a day/afternoon & evening is devoted to the above. The numbers need to be around 15 - 20 to make it worthwhile. I would prefer Milton Keynes but as Nigel Hyde is at Chesterfield, it could be held in that sort of area. The ideal is to make a weekend, using the Swindon facility. Feedback please ! Brian Pain.

PROBLEM SECTION

I am writing in regard to NEWDOS 80 V2. I have a problem with storage of files on my system , which is a Tandy TRS80 Model 1 Level II 48K with 2x40 track & 2x80 track disc drives. I have a time sheet system which creates a file for each Client on the 80 track drives. I have some 110 files on the discs which now have zero FDES but some 108 grans left. Is it possible to amend through Pdrive the available space on the Directory Track, as this would appear to be the problem.I enclose a print out of the directory of one of the discs which shows this.

I also have another problem which is in regard to the new DMP400 printer. I would like to know if it is possible to software force the printer to only produce 80 cols instead of the normal 132 cols . This is for producing listings of programs and therefor cannot be written in the program in memory. I have tried the 16.7CPI funtion but even this hits the platten on some lines , rather than going to the next line for printing .

I R MARTIN FCA
8 Bovingdon Road
Fulham
London
SW6 2EN
ENGLAND

(* A better solution might be to put all the client records into one large direct access file, with a second file acting as an index into the main file. The index file can be maintained in sorted order, enabling a rapid binary search technique to be employed, and would be small enough to reside in memory. You would need a linked list approach in the main file to get over the problem of each client's records requiring different amount of space. LFH *)

I've just bought a 32K expansion interface from O.J. House.

When I try the following commands I get the replies listed.

CLOAD£1,filename	syntax error
CLOAD£2,filename	syntax error
CLOAD£1,?filename	syntax error
CLOAD£2,?filename	syntax error
PRINT£1,data	works correctly
PRINT£2,data	works correctly
INPUT£1,variable(s)	illegal direct
INPUT£2,variable(s)	illegal direct

£≡##

I've changed the CPU, but its still the same. Can any member help me - is it the EI or me?

A. Robinson,
11 S.U.,
R.A.F. Hehn,
B.F.P.O. 40.

(* I have a feeling that this is due to the 'new ROM' keyboard. I think that these commands work with the old keyboards. Can anyone help? LFH *)

GARBAGE COLLECTION

Some time ago, some notes on the subject of Garbage Collection by Henry H. Shepherd appeared in the National TRS 80 Newsletter and may be of interest to members.

Garbage collection only becomes noticeable when a great deal of string allocation is being done, and then gives an unexpected pause in the program execution. An easy way to demonstrate the cause is to run the following sequence in the command mode (i.e. direct from the keyboard without using line numbers)

```
A$="AAAAAAAAAAAA
A$="BBBBBBBBBBBB
A$="AAAAAAAAAAAA
```

Now, using the DEBUG utility available on Disc Operating Systems or using a monitor such as Mon's 3 or 4 or Imon, find where the A$ is by looking at the top of memory. Surprisingly they are ALL there, one after the other. The two values first typed in are not replaced when new values are given, but left there. They occupy part of the reserved string space but are not accesible to BASIC, and are simply garbage.

Microsoft Basic does not allocate fixed addresses to strings, but uses the first empty space in the reserved string area, and then makes a note of it. If there is no reserved space left, it goes of on a garbage hunt and shuffles all the still valid strings up in memory so as to release space for reuse. If there isn't any, you get an 'Out of string space' error.

This garbage collection can take quite a time if there is a large amount of string space in use and can give some queer results. I came across it in a program reading a lot of disk data into an array, displaying on the screen a page at a time. After several passes, everything stopped in the middle of a line: 20 seconds later it started again leaving me scratching my head.

One thing that can be done is to reserve more string space than the program will ever need in one run - next time RUN is typed, it will be cleared and reserved all over again. The only other remedy is to force the program to collect its garbage at a convenient time rather than mess up a display. This can be done by writing the statement X=FRE(A$) into the program at a place where a delay will not be noticed, such as at the bottom of a page before diplaying "Press.... for next page". In order to work out how much free space there is, Basic must first sort out the garbage, and this has the desired effect. Bear in mind that during the garbage collection, everything goes dead including the BREAK key - It can be very disconcerting.

Henry H. Shepherd.

NOTE: 'literal' strings such as A$="THIS IS A TEST" are pointed to in the program and do NOT use reserved space. Strings such as A$=STRING$(10,"*"), inputted strings, and A$="THIS IS A TEST" + " " are stored at the top of memory in reserved space.

Laurie King
Editor.
Southern Computer Club

Use your CPU Keyboard & Lineprinter like a Typewriter.

This simple program allows you to type directly onto paper in your Lineprinter. Using the 'down arrow' key moves the cursor down on the screen (it does not move the paper feed), then you can backspace the cursor using the 'left arrow' key to the position you want to start underlining. Underlining is carried out using the 'up arrow' key, this is displayed under the text on the VDU as a broad 'graphics' line. The Tandy Daisy Wheel Printer works O.K some Printers may not backspace correctly.

David.Chattaway. 26 Dam Street, Lichfield, Staffs.
(05432) 51511

```
00050 ;************************************************
00060 ;'TYPELP' PROG TO USE KEYBOARD AND LINEPRINTER  *
00070 ;AS A TYPEWRITER. UNDERLINING FACILITY ALSO.    *
00080 ;************************************************
00090 ;
00100 ;
00110         ORG     0FD00H
00120 BEGIN   CALL    01C9H    ;CLS
00130         LD      A,0EH    ;CURSOR ON
00140         CALL    0033H    ;TO VDU
00150         LD      HL,MSG   ;PRINT TITLE ON VDU
00160 PMSG    LD      A,(HL)
00170         CALL    0033H    ;PRINT IT
00180         INC     HL       ;GET NEXT CHARACTER
00190         CP      '.'      ;DID WE PRINT LAST CHARA ?
00200         JR      NZ,PMSG          ;IF NOT KEEP GOING
00210         LD      A,13     ;CR
00220         CALL    0033H    ;PRINT IT ON VDU
00230 ;
00240 START   NOP              ;*********************************
00250         CALL    002BH    ;INKEY ROUTINE                   *
00260 ;                                                        M
00270         CP      5BH      ;IS IT UP ARROW KEY              A
00280         JP      Z,UNLINT         ;U/L ON IF YES          I
00290         CP      0AH        ;IS IT DOWN ARROW KEY         N
00300         JP      Z,SCROLL   ;IF YES  SCROLL VDU ONLY      *
00310 ;                                                        *
00320 DISP    CALL    0033H    ;DISPLAY                        L
00330 ;                                                        O
00340 LPRINT  CALL    003BH    ;LINEPRINTER ROUTINE            O
00350 ;                                                        P
00360         JR      START    ;LOOP TO BEGINNING **************
00370 ;
00380 MSG     DEFB    13       ;PRINT CR BEFORE ....
00390         DEFM    'TYPEWRITER PROGRAM FOR LINEPRINTER '
00400         DEFB    13       ;CR
00410         DEFB    13       ;CR
00420         DEFM    'TO UNDERLINE :-'
00430         DEFB    13       ;CR
00440         DEFM    '      DOWN ARROW TO MOVE CURSOR DOWN'
00450         DEFB    13       ;CR
00460         DEFM    '      BACKSPACE CURSOR TO BEGINNING OF TEXT TO BE UNDERLINED'
00470         DEFB    13       ;CR
00480         DEFM    '      USE UP ARROW TO UNDERLINE TEXT REQUIRED'
00490         DEFB    13       ;CR
00500         DEFM    '-------------------------------------------------------------------------------.
```

```
00510 ;
00520 UNLI.   LD      A,83H    ;U/L GRAPHIC CHARA
00530         CALL    0033H    ;DISPLAY IT
00540         LD      A,5FH    ;U/L CHARA
00550         JP      LPRINT   ;LPRINT IT
00560 ;
00570 SCROLL  LD      DE,(04020H)     ;LOAD CURSOR POS.
00580         LD      B,40H    ;64 PLACES
00590 MOVE    INC     DE       ;MOVE CURSOR FWD ONE PLACE
00600         DJNZ    MOVE     ;LOOP HERE 64 TIMES
00610         LD      (04020H),DE     ;MOVE CURSOR
00620         JP      START            ;RETURN TO MAIN LOOP
00630 ;
00640         END     BEGIN
```

MICROLINE TIPS

I have just read J.T. Lowther's plea for help with the Microline 80 printer and so, having recently aquired one of these much underestimated machines myself, I offer the following advice:

1) To control the number of characters per line (CPL) use the following statements from BASIC (either in immediate mode or from within a program):

```
LPRINTCHR$(29)     Changes to small print (16.5 CPI)
LPRINTCHR$(30)     Changes to "normal size" print (10 CPI)
LPRINTCHR$(31)     Changes to large print (5 CPI)
```

The exact number of CPL depends on the combination of number of characters per inch (CPI) set using the above codes, and the line length selected using the codes below:

```
LPRINTCHR$(27);CHR$(65)   Sets to "Long" line length
LPRINTCHR$(27);CHR$(66)   Sets to "Short" line length
```

The actual CPL for each combination is given in the table below:

Line Length	No. of CPI	No. of CPL
Long (Normal)	16.5 (Small)	132
Long (Normal)	10 (Normal)	80
Long (Normal)	5 (Large)	40
Short	16.5 (Small)	105
Short	10 (Normal)	64
Short	5 (Large)	32

2) The number of lines per page depends on the number of lines per inch (LPI) and on the number of lines per page (LPP) set before printing.

Line spacing is set using the codes:

```
LPRINTCHR$(27);CHR$(54)        Sets normal spacing (6 LPI)
LPRINTCHR$(27);CHR$(56)        Sets small spacing (8 LPI)
```

The actual LPI depends on the print size (CPI) used and the values given are for 10 CPI.

The number of lines per page are set by POKEing the required number +1 into 16424:

E.G. POKE 16424,40 Sets 39 LPP

on power-up the page length is set to 66 LPP which is right for A4 paper assuming 6 LPI.

The number of lines already printed is stored in location 16425 and this must be POKEd to ZERO before printing commences. The printer will only advance to the next page when it encounters an LPRINTCHR$(11) or (12) and so these must be included in the statements controlling the printing if this facility is to be used. Once a CHR$(11) or (12) has been executed the line counter at 16425 will be automatically ZEROed. There appears to be no difference in function between CHR$(11) and CHR$(12), I usually use (11) without any problems.

If you are using a Word Processing Program then this will usually have its own codes for selecting the number of LPP.

3) To dump the screen to the printer you need a JKL type program. One or two versions of this type of program have appeared in various magazines and in the Newsletter from time to time and it would worth looking through back issues to find the one which best suits your requirements.

I hope that these comments help you to realise the full potential of your new printer but don't hesitate to contact me if I can be of further assistance.

Adrian C. Hancock

68000 ON THE MODEL I!

Having successfully designed and built an 8088 evaluation system that uses the Model I for I/O, via the RS-232 interface, I have designed a 68000 (the chip in the new Model 16) system that can be used in a similar fashion. By the time you receive this issue I should have it up and running.

The 68000 is a very interesting device. It is really a 32-bit processor, with a 16-bit data bus. 24 address lines mean that 16 Mb of memory can be addressed directly! The chip looks very impressive, having 64 pins in a .9" wide package. They cost about £60 each for the 4 MHz version, by the way.

The system comprises a 68000 processor, 8 MHz clock, 4K EPROM, 4K CMOS RAM and serial I/O via a software UART using a 6522 VIA device. The EPROM will contain a simple monitor based on my 8088 monitor (translated into 68000 code, of course). All data, address and control lines will be buffered. The system is being constructed on a double eurocard using wire-wrap techniques. When the basic system is working, I shall use a 6850 ACIA for serial I/O, deriving the baud rate clock from the system clock using one of the counters in the VIA. I shall then construct two more cards, one containing 128K of RAM, expandable to 256K, and the other containing a disk controller and DMA circuitry. Ultimately a second processor (probably a Z80) will be used to interface a keyboard and display circuitry to the main system; I'll then be able to dispense with the TRS-80.

I am investigating the possibility of using a 68000 cross-assembler on my Model I under the UCSD Pascal system for software development.

Leon Heller

T.R.S.80 Interfacing

Technology Teaching Ltd. have introduced a range of equipments that enable the TRS-80 computer to be interfaced to Engineering and Scientific based experiments and to be applied to the Teaching of Engineering and Science subjects in Schools, Colleges, Polytechnics and Universities.

The units that make up the range are :-

1. Buffer Board for Accumulator I/O.
2. 8255 PPI Board for port operation.
3. AID-1 unit to demonstrate A to D and D to A converters and their applications to simple experiments. 'Basic' as a means of control.
4. Breadboarding unit for Interface building.(5.0 volt 1.0 amp power supply built in).
5. Power supply to provide the needs of the smaller units and the AID-1
6. Power supply for bench use giving +5.0volts at 2.0amps,either +/- 15 volts or +/- 12volts at 500mA per rail.
7. TRS-80 Interfacing,a book for the outlines of Interfacing to the TRS-80 this should be used as a guide for the more experienced user or the class Lecturer.

The equipment is being used at the Polytechnic of Wolverhampton, and was designed in cooperation with the Department of Computing and Mathematics at the Polytechnic.

Further information and prices can be obtained from,
Technology Teaching Ltd.,
Cophall,
Downton,
Ludlow,
Shropshire.
Contact. Mr.C.A. Hill.

MUSIC 'CELESTE'

Two meetings ago, John Giles created quite a bit of interest among members by playing a tune on his machine from a program by Leo Christopherson which was published in the March issue of CREATIVE COMPUTING. The program is as follows:-

```
4 CLEAR2000
5 CLS : PRINT"CELESTIAL MUSIC DEMO
6 POKE 16553,255
10 S$="  (70 periods in this line)      "
11 S1=PEEK(VARPTR(S$)+1):S2=PEEK(VARPTR(S$)+2):S0=S1+S2*256
12 POKE16422,S1:POKE16423,S2
20 A$="  (52 periods in this line)   "
21 A1=PEEK(VARPTR(A$)+1):A2=PEEK(VARPTR(A$)+2):A0=A1+A2*256
25 GOSUB60
30 POKES0+1,A1:POKES0+2,A2:LPRINT:STOP
50 DATA 33,1,1,243,62,1,8,62,35,61,190,32,2,251
51 DATA 201,126,35,86,94,29,14,10,6,225,21,32,14,87
52 DATA 62,120,190,40,6,8,238,3,211,255,8,122,86,29
53 DATA 32,15,95,62,120,190,40,6,8,238,3,211,255,8
54 DATA 123,94,29,16,219,13,32,214,61,32,209,35,24,193
55 DATA 32,149,32,74,16,79,8,99,8,88,16,79,12,74,4,120
56 DATA 32,149,32,88,48,99,16,120,32,177,32,111,16,118
57 DATA 8,149,8,133,16,118,12,111,4,120,16,133,8,158
58 DATA 8,149,16,133,16,118,64,149
60 RESTORE: FOR N=0TO69:READD:POKES0+N,D:NEXTN
65 FOR N=0TO51:READD:POKEA0+N,D:NEXTN:RETURN
```

First type in the demonstration program above and save it before running it, as it is possible that if a typing error creeps in, the thing might go off into orbit. After running the program successfully, lines 25 and 50-65 can be deleted and then the program saved again since on the first running, lines 10 and 20 will be written to (lots of garbage), and the lines mentioned above are not required after the first run.

The data for the particular tune to be played is stored as data from line 55 and appears to be stored in the second of the dummy lines that is denoted by A$.

It is explained in the article that the word CELESTE comes from the pipe organ people. Some organs have a stop consisting of two ranks of pipes which are slightly off tune with each other giving a slow beat and the sort of sweet 'celestial' type of sound which is imitated with the above program by the same method.

Continued on next page.

For those wishing to try out their own tunes, a table of notes is given below. The music consists of a series of two byte groups. The first byte of the pair is the duration of the note and the second byte determines the pitch. A maximum of 120 pairs can be used. The quotation mark at the end of the string is used as an 'end-byte' for the music.

The tune in the program above consists of the following notes and durations.

Note#	Duration	Pitch		Note#	Duration	Pitch	
1	32	149	C	14	32	111	F
2	32	74	C	15	16	118	E
3	16	79	B	16	8	149	C
4	8	99	G	17	8	133	D
5	8	88	A	18	16	110	E
6	16	79	B	19	12	111	F
7	12	74	C	20	4	120	Rest
8	4	120	Rest	21	16	133	D
9	32	149	C	22	8	158	B
10	32	88	A	23	8	149	C
11	48	99	G	24	16	133	D
12	16	120	Rest	25	16	118	E
13	32	177	A	26	64	149	C

For those writing their own tunes, the following Celeste music sacles are provided.

Octave One			Octave Two			Octave Three		
Note	Decimal	Hex	Note	Decimal	Hex	Note	Decimal	Hex
Eb	251	FE	Eb	125	7D	Eb	62	3E
E	238	EE	E	118	76	E	59	3B
F	225	E1	F	111	6F	F	55	37
Gb	211	D3	Gb	105	69	Gb	52	34
G	119	C7	G	99	63	G	49	31
Ab	188	BC	Ab	93	5D	.....		
A	177	B1	A	88	58			
Bb	168	A8	Bb	83	53	Rest	=120	78
B	158	9E	B	79	4F			
C	149	95	C	74	4A			
Db	141	8D	Db	70	46			
D	133	85	D	66	42			
.....			.....					

L.W.King
Editor Southern Computer Club

DECIMAL TO HEX.

The following program converts decimal numbers to hex and prints the result on the screen.
There are many programs around to do this but they are usualy in BASIC. As these conversions are most useful when reading or writing a program in BASIC it is obviously better to have something that does not clash with that program.
This one replaces DEBUG (ever used it in BASIC ?) and is used by whatever you do to call DEBUG. CMD'D' (Decimal!), '123',etc.
You will be greeted with the prompt ENTER DECIMAL NUMBER ==> and any number within the range -32768 to 65535 will be printed in hex. Pressing BREAK will return you to BASIC (or DOS).
Use EDTASM or the like to assemble the code, and save it using SYS5/SYS as the file spec when asked.

```
00040 ;          ****  DECIMAL TO HEX  ****
00045 ;          ==========================
00050
00060 ;  AFTER ASSEMBLY,  WRITE TO SYS5/SYS (DEBUG)
00070 ;         ( SYS5/SYS MUST BE RESIDENT )
00090           ORG     4E00H
00100           LD      HL,PROMP1
00110           JR      CONT2
00120 CONT1     LD      HL,PROMP2
00130 CONT2     CALL    PRINT
00140           LD      HL,BUFF1
00150           LD      B,06H
00160           CALL    0040H   ;ENTER DECIMAL NUMBER.
00170           JR      C,EXIT  ;IF BREAK PRESSED.
00180           CALL    0E6CH   ;CONVERT TO BINARY.
00190           RST     20H     ;TEST THE RESULT.
00200           JP      M,HEXNUM    ;O.K.  INTEGER.
00210           JR      Z,CONT1     ;NO LETTERS PLEASE,
00220           JR      NC,ERR1     ;OR DOUBLE PRECISION.
00230           LD      BC,0000H    ;THE FOLOWING ROUTINES CHECK
00240           LD      DE,0000H        ;IF THE SINGLE PRES. NO.
00250           CALL    0A0CH           ;IS IN THE CORRECT RANGE.
00260           JP      M,MIN
00270           LD      BC,9100H
00280           LD      DE,0000H
00290           CALL    0A0CH
00300           JP      P,ERR1
00310           LD      BC,9180H
00320           LD      DE,0000H
00330           CALL    0716H
00340           CALL    0A7FH   ;CONVERT RESULT TO INTEGER.
00350 HEXNUM    LD      HL,PROMP3
00360           CALL    PRINT
00370           LD      HL,(4121H)      ;INTEGER RESULT.
00380           CALL    HTOASC          ;PRINT IT.
00390           JR      CONT1
00400 MIN       LD      BC,9080H
00410           LD      DE,0000H
00420           CALL    0A0CH
00430           JP      P,HEXNUM
00440 ERR1      LD      HL,PROMP4
00450           JR      CONT2
00460 PRINT     LD      A,(HL)
00470           OR      A
00480           RET     Z
00490           CALL    0033H
00500           INC     HL
00510           JR      PRINT
```

```
00520 HTOASC  LD      A,H
00530         OR      A
00540         CALL    NZ,HEX
00550         LD      A,L
00560         CALL    HEX
00570         LD      A,0DH
00580         JP      0033H
00590 HEX     PUSH    AF
00600         RRA
00610         RRA
00620         RRA
00630         RRA
00640         CALL    H1
00650         POP     AF
00660 H1      AND     0FH
00670         ADD     A,30H
00680         CP      3AH
00690         JR      C,H2
00700         ADD     A,07H
00710 H2      JP      0033H
00712 EXIT    LD      HL,0
00714         ADD     HL,SP
00716         LD      DE,6000H
00718         RST     18H      ;COMPARE HL/DE
00720         JP      NC,6CCH ;BASIC STACK USUALY IN HIGH MEM.
00722         JP      402DH
00730 BUFF1   NOP
00740         NOP
00750         NOP
00760         NOP
00770         NOP
00780         NOP
00790         NOP
00800 PROMP4  DEFM    'NUMBER OUT OF RANGE '
00960 PROMP1  DEFM    '(-32768 TO 65535)'
01090         DEFB    0DH
01100 PROMP2  DEFM    'ENTER DEC NUMBER ==> '
01110         DEFB    0
01280 PROMP3  DEFM    'HEX NUMBER = '
01290         DEFB    0
01390         END     4E00H
```

John Cardiff

VIDEO GENIE, EPSON, and TINY PASCAL

A couple of months ago I finally expanded my two year old basic V6 by an Epson printer, extra 16K, and lower case. The first job was then to put together some sort of word processing facility, and a few hours experimentation produced a primitive Basic program.

It became obvious, as I had expected, that the Basic interpreter is too slow to carry the project any further. For example, my moderate typing speed is still quick enough to beat the machine's reaction time when typing double leters ... oops!...letters. That's beter.

Having explored the first principles of programming the Epson, I intended to start on a more ambitious word processor in TINY PASCAL. I have not used this Tandy compiler much since getting it a year ago, but it ought to be ideal for this type of work.

It soon emerged th Tiny Pascal has no inbuilt line printer routines, so I would have to write my own. Of course, the language is well suited to constructing new functions.

Having wasted time discovering that the VG c...s to the printer via port 253 (rather than via memory location 14312 like the TRS-80), I hit a real snag. In no way could I get the Pascal instruction OUTP(A,253) to operate the Epson, even though OUT 253,A in Basic worked perfectly. In desperation I tried OUTP(253,A) ... and it worked. In fact page 9 of my Tiny Pascal manual is wrong. OUTP(a,x) does not "output a to port x" but vice versa!

```
(*Two useful procedures for Video Genie/Epson/Tiny Pascal*)

PROC LP(CH); (*sends a single chr from VG to printer*)
   BEGIN WHILE INP(253)<>63 DO; (*do nothing till printer ready*)
      OUTP(253,CH)
   END;

PROC LLIST; (*lists a Tiny Pascal program*)
   VAR LOC: INTEGER;
   BEGIN LOC:=MEMW(16768);
      REPEAT IF MEM(LOC)=9 THEN BEGIN LP(32);LP(32);LP(32) END
         ELSE IF MEM(LOC)<>10 THEN LP(MEM(LOC));
         LOC:=LOC+1
      UNTIL (LOC-1)=MEMW(16770)
   END;
```

Leaving aside the academic controversy about Basic versus the structured languages, Tiny Pascal does have some excellent features.

Beyond all the advantages of the language itself, it runs very fast compared with Basic. For example, exploiting the MEM array and the powerful MOVE instruction to push bytes around swiftly, it is easy to change complete VDU displays instantaneously - just what you need for a word processor, or animated games.

Again, it's a relief to have four whole characters for sensible identifier names, and not even have to worry about the effect on running time.

But Tiny Pascal also has some snags. I miss Basic's string functions even more than its floating point numbers. Something corresponding to PRINT@ would be very welcome. Most infuriating of all is the lack of anything like CLOAD? to check a program after saving it. A lengthy Pascal program is best saved three times over, to be pretty sure of re-loading it another day.

And I'm now convinced there is something wrong with the Tiny Pascal INKEY function. Even within the fastest loop it fails altogether to pick up one keystroke in every fifty or so, regardless of typing speed.

Does anyone out there use Tiny Pascal? How about sending in a few useful procedures for the Newsletter - like one for saving data or memory on cassette - or letting us know the answer to the INKEY problem?

John Gale Hemel Hempstead 0442-53643

TRS-80 MODEL I ADVANCED VIDEO BOARD AV-1.

For some time I have been considering the purchase of a lower case for my TRS-80. It was when I was thumbing through past issues of the newsletter, (a practice most members enjoy) that I came across an advert for the above board which would seem to do the job.

The AV-1 is built by R.H.A. (Minisystems) Ltd. of Oxford (Tel: Wheatley 3625) and promises full compatibility with standard software and scripsit. Dr. Roger Abbott, the governor of R.H.A., was really quite clever using up the full 256 codes in video RAM as he was designing the lower case board anyway. The Standard Model TRS-80 has 128 video characters i.e. 64 ASCII and 64 Graphic. The video RAM stores only 7 bits so an extra RAM chip is supplied for the eighth bit. This allows 128 new codes but only 32 are used for lower case, the remaining 96 extra codes are used to display the complete ASCII character set in inverse video (black on white characters).

I sent my order and cheque on a Monday and to my astonishment received the goods by first post on the Wednesday of the same week. By to-day's standards this was a pleasant start to the task. The package contained a small 3" board with seven chips mounted on one side, some adhesive pads and one RAM chip. Finally, a nine-page manual completed the package.

To my inexperienced eye the installation instructions were well documented and fairly easy to follow from opening the case (my first time) to locating the chips. A number of tracks needed to be cut and the 2102 RAM chip had to be piggybacked and soldered into place. Eighteen short wires (not supplied) were then soldered to the edge connector of the board and the other end to specific pins on the track side of the CPU. One or two further connections and the job was done.

I agreed with the manual which stated that a meter or similar device was essential to check for dry joint and the track cuts. I missed out on one cut and burdened Dr. Abbott's generous nature with time consuming after-sales service. I might add that he was refreshingly helpful in both the hardware and software enquiries. One or two points not covered in the notes may help readers who might like to put in the AV-1. Firstly, locate and solder 8" wires onto the specific pins as per the list in the dead centre of the CPU board. Once this is done and the rest of the wires are connected to the AV-1 board, you can stick it directly over this position keeping the cover holes free and allowing you to keep the other wires short and neat due to the permanency of the AV-1 board. Secondly, solder tip all wire ends and the edge connectors to ensure a quick and neat solder point.

Thirdly, mark off in pencil all instructions completed and when you have finished, double check. You can relocate the position of the small two-chip board which is in the way. This is attached to some CPUs as an after thought for some unknown reason. A vacuum desoldering instrument would be a good safeguard against the occasional blob. One final point, be very careful moving the CPU about, the connecting ribbon between the keyboard and the CPU is unbelievably brittle, so unless you want to spend days looking for the invisible break, be warned, be gentle.

I entered the short lower case patch as per the manual. It bypasses the unmodified video display driver, stops the convertion to upper case, and handles the codes correctly. Unfortunately my TRS-80 is over four years old and has the old 1.2 ROM, so there were no descenders, but it was lower case nevertheless. If you have the lower case modification already with a ROM that provides descenders, then the AV-1 will provide inverted video characters with descenders. The inverse video routines are in the form of subs and once you have declared the position on the video (AT= 1-1024) and the VARPTR (String) routine, you call the sub-routine to activate the facility. Briefly, full mode is created by the setting of the unused port FE (out 254,1) bit 1. If you set Bit 2 (out 254,2) you have full inverted (black on white) video. One sub-routine puts a string, character by character inverted on the screen, whilst another stores the string and can be put on the screen all at the same time.

Conclusion. Rarely to-day can you expect reliability and service at the same time. Each device is checked at a keyboard before despatch and if it doesn't work you've missed something. It is my opinion that at £23 plus VAT (total £26.45) the AV-1 is very good value and gives the user the inverse and lower case facility that we used to envy in the "Pet".

Space Invaders has never given me the satisfaction and fun I get from playing with the AV-1.

I will be sending a simple program to the library in the near future to help all newcomers to the Video Board.

From Marshall Barry.

GROUP EQUIPMENT

1) The ex-GPO modem has been sold for £25.00, at the London workshop.

2) The RS232 board from Eric Hartley is still being tested by Doug Irvine, who can answer any q's over the phone. The article will appear shortly.

3) The VOX box is w[illegible] us, but

Conversion from Model 1 to Model 3

I hope that members will forgive my pointing out what will be obvious to many, but what follows was the result of my need to know how to convert and read my Model 1 disks under Model 3 - and the information was very helpfully supplied by Laurie Shields. I promised to write it up to save his having to answer the same questions again.

It seems to be accepted generally that Newdos is a GOOD THING and having made the decision to transfer all my files to Newdos, I ran into the problem that Newdos and Trsdos are not compatible with each other. My difficulties were thus in three specific areas:

1) How to read and copy Model 1 disks under Model 3 Newdos,
2) How to read and copy Model 3 Trsdos disks under Model 3 Newdos, and
3) How to throw the Cassette latch for High/Low Baud rate under Model 3 Newdos.

The answers, as supplied, are as follows:

1) Change the Pdrive for Drive 1 by typing:

```
PDRIVE 0,1=5,A
```

This in effect turns the Model 3 into a dual machine, reading single density in Drive 1 and double density in Drive 0. In order to read the directory of the Model 1 disk, it will probably be necessary to type:

```
WRDIRP 1
```

This command accesses the directory track in the target drive, reformats it and replaces it in a form readable by Newdos. The disk is now unreadable to Trsdos, but who cares? Now it is possible to DIR 1 and copy the files across in the usual way.
To replace the Pdrive on the system disk, type:

```
PDRIVE 0,1=0,A
```

2) To read and copy Trsdos 3 disks, find out what is on the directory under Trsdos, and then type:

```
COPY,1,0,,CBF,CFWO,USR,SPDN=4
```

SPDN=4 tells Newdos that the disk is a Trsdos disk, and while it will not display the directory, it will copy from it. If you only wish to copy across a single file, then type:

```
COPY Filename:1 :0,,SPDN=4
```

3) To throw the Cassette latch, go into Disk Basic and then

```
POKE 16913,0     for Low Baud Rate
POKE 16913,1     for High Baud Rate
```

Paul Taylor
LONDON

receives no attention.

4) The group's full RS232c board has been with various members over the last year.

5) As PRESTEL is using the 300 BAUD port(?) we will buy a MAPLIN modem which will be available to members on a weekly charge basis.

6) The group could do with a £150 keyboard for the FORUM-80/80-NET system. I want mine back.

Brian Pain.

COMPILERS

Recently one of the computer rags published a review of compilers for the Apple. After great effort a speed-up in run time of 1-2 could be obtained (sometimes!). TRS-80 users are more fortunate in that the benefits of using a compiler is slightly improved:-

Consider the following benchmark:-

```
100 DEFINT A-Z
110 CLS
120 INPUT"START";A$
130 GOSUB 230
140 ST=S
150 FOR N=1 TO 10
160 FOR A=1 TO 10000
170 B=B+1:IFB=1000 THEN PRINTA:B=0
180 NEXT A
190 NEXT N
200 GOSUB 230
210 PRINT"ELAPSED TIME ";(S-ST)
220 STOP
230 '
240 S=PEEK(16449):M=PEEK(16450):H=PEEK(16451)
250 S=S+M*60:S=S+H*360
260 RETURN
270 END
```

Results are as follows:-

BASIC interpreter	147 secs
ZBASIC Compiler	1.9 *x
Microsoft compiler	1.4 *x

*- Times as above divided by 10. Interpreter did not have outer loop - not enough time! - lines 150 & 190.

The results are somewhat stunning and show that with the use of a compiler the clock speed of your CPU becomes less relevant to program running time. For example, the BBC micro will perform the above in 30secs - faster than a model 2 (under the interpreter) but without a compiler or skill with machine code it is no contest.

How useful

The benchmark was selected to provide the best example and it is no example for the typical business system although it is probably still relevant to most game programs. However the constraints not considered with the example are those of size and compatibility. The hard facts of life are that almost all interpreted software will require some conversion and for large systems the work may be impossible.

Complex systems have to be specifically 'bent' to use the compiler and this requires a good knowledge of BASIC before you start. The Microsoft compiler is much better than the ZBASIC compiler and in particular ZBASIC is greatly inferior on disc input/output. (Although the latest version of ZfASIC provides disc input/output facilities the use is very different to standard Microsoft.)

However the benefits of speed justify some perseverance. The speed gain is most noticeable with integer operations (as in the benchmark) and also with string handling. Although direct disc input/output is no faster there are usually FOR/NEXT loops and strings involved with GET's and PUT's so the speed gains are still present.

The speed up on string handling is to the extent that BASIC programming can be used for sorting large amounts of string data - tasks over which the interpreter can take all day or even due to the 'garbage collection' delay may never be able to finish. Users of the compiled DMS80 data management system will notice that the data entry screens operate as fast as any of the machine code word processors such as Scripsit or the Electric Pencil.

These machine code speed gains do require sacrifice of the flexibility provided by the friendly interpreter. Arrays have to be dimensioned as fixed values and can not be re-dimensioned after initialisation. Even worse ZBASIC requires that all strings are given a fixed length and regardless of what you actually need this space is reserved. Thus for 100 strings with 50 characters reserved you will lose 5000 bytes. Microsoft provides the flexibility of still allowing up to 255 bytes for each string and apart from array pointers no space is lost until you need it. Until 256k RAM is available, many applications will not function under the ZBASIC approach because of this limitation.

The other constraint is that of disc space. Compiled programs will occupy more disc space that the compressed code used by the interpreter. Apart from the obvious problems caused by size with standard Tandy 67 granules/disc there are also longer delays before the program starts. The interpreter may be a better solution if a number of different procedures are required without any significant processing within each, especially if you can master NEWDOS80's overlay feature.

In order to create the compiled programs there is a time requirement and this is significant for the Microsoft compiler where:-

1) The interpretive code has to be saved to an ',A' file.
2) The /REL code has to be produced by BASCOM
3) the /CHN code has to be produced by L80

Typical compilation times are upwards of five minutes.

In this respect ZBASIC is tremendous especially for small programs. The interpreter can still be used for development with ZBASIC called just by depressing 'ZXC' for an instant (1-2 secs) compilation. If there is an error the program can be corrected before another 'ZXC'. ZBASIC has a further advantage in that the compiled program operates as a normal /CMD file ie. no need for the BRUN/CMD of Microsoft.

A further gain with ZBASIC is the ability to write machine code within BASIC. ZBASIC is weak on error trapping but any DOS errors can be located by a nifty read on register A after any DOS function e.g. MERGE %32,A in ZBASIC and BASIC's variable A will have the value of the Z80 A register.

Scope

Both compilers will operate far short of that possible under the BASIC interpreter. ZBASIC would seem highly suitable for generating small DOS type routines or sub-routines which could be called from a BASIC program. The sub-routine facility could be extremely useful. Microsoft Basic interpreted and compiled is very! slow for double precision arithmetic but ZBASIC is much faster. I could envisage a ZBASIC USR even within a Microsoft compiled program ... perhaps?

ZBASIC would work well for most game type programs and for those areas where machine code is the only option ie. a ZBASIC Scripsit would be possible. However I would not recommend using ZBASIC for most business systems. Even if achieved the very fact that ZBASIC is not standard Microsoft creates the real danger of writing systems with no forward growth prospects.

Within its limits, Microsoft Basic with the BRUN module works well on the Model 1. Although the BRUN module takes up 12 granules of disc space the BRUN concept reduces compilation time and increases compile capacity. As a result the model 1 can compile larger programs than a model 2 (where each module carries its own BRUN). Remember that only one BRUN module is required for any number of compiled programs the disc space requirement is a fixed overhead. This ability to share BRUN among different procedures is usually ignored by most

reviews. In addition some software e.g. DMS80 does not require the BRUN/CMD or program file to be permanently on line which means that use of the Microsoft compiler is possible even with the standard disc drives.

Conclusions

Business applications have no real choice except Microsoft. Other routes could be the Tandy Basic compiler or even the Tandy Cobol compiler about which there have been rave reviews. But be warned all of this will require dedication to achieve useful results.

However, if you just require to use short programs or link to ROM calls then ZBASIC would be more useful. I have not used ACCEL3 but I understand from reviews that it is similar to ZBASIC but lacks the capability to create stand alone /CMD files and I fear that this could be a severe limitation.

My final warning is to give deep consideration before leaving the straight and narrow of pure standard Microsoft. The special facility of today can easily be transformed into tomorrow's conversion disaster! - Take note all you out there with NEWDOS80 FF files.

Footnote

The August newsletter contained the usual and entertaining duel between Laurie and Leon on the appropriate solution for the Scripsit word count problem. As a complete failure in m/c code it must provide devastating evidence for ZBASIC in that Laurie's BASIC code can be compiled by ZBASIC almost unchanged but provide the m/c code speed required by Leon but without half an hour of Leon's expertise (for most of us read never or close to!). Use of ZBASIC provided sufficient time to correct the deliberate (?) error of the end of text marker - CHR$(0) counting as a further word. As evidence I have sent WC/CMD to Leon for distribution to all other claimants of the fastest m/c code writer in the west award.

Scripsit Word Count code as originally written by Laurie Shields but altered (slightly) By Derrick Rowe to be compiled by ZBASIC. (Use after exit from Scripsit)

```
1 PRINT"COUNTING ":N=32610
2 CH=PEEK(N):CH=CH AND 127 :IF N=32767 THEN N=-32768
ELSE N=N+1
3 IF CH=32 OR CH=13  OR CH =0 THEN WO=0  ELSE IF WO=0
THEN WO=1:CN=CN+1:PRINT CHR$(29)CHR$(30)CN;
4 IF CH<>0 THEN 2 ELSE PRINT" WORDS IN TEXT"
5 END
```

Derrick Rowe

Accessing the Video Genie second cassette port for the loading and saving of machine code programs can be rather awkward at the best of times. This very publication has mentioned hardware mods for allowing sound output from the internal cassette. I have seen other extensive mods to permit harwdare switching between the two ports. I would like to cover two methods, one hardware the other software, to overcome the problem.

The hardware modification is for sound output to permit the connection of an external amplifier. Open the computer and locate the interface board, roughly in the centre of the machine. With the keyboard nearest to you locate a 4 way connector half way down on the right hand side of the board. Connect a 6" length of screened wire, the inner to the WHITE lead in the plug and the screen to the GREEN lead. Mount a miniature jack socket on the rear apron of the computer, just above the cable support bracket adjacent to the power supply. The socket should have a .1MF capacitor and a 100K resistor in series mounted on it, with the resistor being connected to the socket. Connect the screened lead, inner to the capacitor and outer to the skirt of the socket. Plugging an amplifier into this socket will provide sound for games etc. Using this method helps to keep hot soldering irons away from the computer pcb.

The software approach can prove to be more difficult, requiring a reasonable knowledge of assembly language. One of the main reasons, apart from sound ouput, for using cassette 2 is to allow the use of a second recorder for the loading and saving of tapes. I use a modified Philips N2233 recorder, which has an easily accessible head azimuth adjustment, for loading the occasional badly dumped tape.

My operating system is LDOS and I decided to modify CMDFILE for port select, allowing the choice between the internal / external cassette. The basis of the modification can be applied to other programs with a similar approach to tape input / ouput. Cmdfile calls the ROM routine 0212H to turn on the cassette. If, when the routine is called, the A register contains a 0 then the internal cassette will be selected and if it contains a 1 then the external one will be selected. Replacing the call to 0212H in the program to a call to another routine which first of all calls the keyboard routine at 0049H, subtracts 22H from the value returned in the A register then calls 0212H and returns to the program. The routine would appear thus ....

```
5F1E    CD 49 00        CALL    0049H
5F21    D6 22           SUB     22H
5F23    CD 12 02        CALL    0212H
5F26    C9              RET
```

CMDFILE uses a call to 0212H in two places, 1 for loading and the other for saving data to cassette. These are located at 5699H and 5879H modify both to read CD 1E 5F. I locate the above routine starting at 5F1EH, but to do this requires the modification of three other bytes in the program to move the start of the buffer. Modify bytes at locations 5805 599E and 59ED to be 27. This will then alter the start of the buffer to be 5F27, just above the added routine.

Now, when using the cassette routines, pressing 1 or 2 after the ready cassette prompt will select the internal or external cassette. You can now load from the external cassette, with a save to internal or disk. It makes the Genie far more flexible and, when you come accross a stubborn tape that refuses to load on the Genie's own cassette, you can enlist the aid of a second recorder.

I have gone to some lengths to explain the software apsect of the modifications but this is to encourage you to look at other programs you may have, that you would like to run on the second cassette. The hardware mod was my lazy way out to use a very nice sound box with the minimum of internal work on the computer. I hope both may encourage you to make use of that second cassette port.

Ken Grey

FAST BASIC

With the help of 'Fast Basic - Beyond TRS-80 Basic', Gratzer and Gratzer, John Wiley, NY 1982 and with the help of @ZEN from Laurie Shields, I have at last been able to write useful assembly language subroutines called from BASIC by the USR call.

The methods given in 'Fast Basic' only run from BASIC programs and are based on the idea of letting BASIC do those things it can do best while using Assembly subroutines do jobs that are slow in BASIC. All the routines use calls to TRS-80 ROM. Variables put in from BASIC can be located with CALL VARPTR EQU 260DH and return to BASIC can be by JP BSCPAR EQU 0A9AH. An Appendix gives over 80 of these LABEL listings to ROM, so things like arithmetic, compares and special functions are all available by calls to ROM.

I have been able to get an assembly language string sort routine to work with a USR call something I found too difficult by the standard assembly methods set out by William Barden Jr.

One thing I would like help with is a quick way to go to and fro from @ZEN to BASIC and from BASIC to @ZEN. At present I use G(ENTER) ADDR01A19H(ENTER) BRKPT(ENTER) to get from @ZEN to BASIC and @RUN"@ZEN" to get from BASIC back to @ZEN. Is there an easier way?

Eric Brandes, 46 Field Way, Chalfont St Peter, SL9 9SH.
Tel: Gerrards Cross 82982.

MODEL 16 SOFTWARE

I was in the Seacoal Lane Computer Centre recently, and a had a look at the software available for the Model 16. All they had was the operating system, a COBOL compiler and some assembly language development software. The latter looks quite interesting - a macro-assembler (not using Motorola mnemonics, but what appears to be a set of processor independent mnemonics, probably based on the proposed IEEE mnemonic system), a linking loader and a debugger. All the 68000 software, including the operating system, has been written by an American software house - Ryan-MacFarlane.

Leon Heller

For some time I have been sending to the USA for programs marketed by Misosys. These programs have all been written to make use of some of the special facilities provided by LDOS. Why buy from the USA ? Well, apart from being cheaper than buying in this country, the programs are available quite some time before they are here. I have bought a couple of the programs in the UK, but those were readily available and at a price not much above the USA price. Anyway. less of the economics and down to the programs themselves.

GRASP

This package of programs is designed to make the most of the Epson MX80 / MX100 with Graftrax 80 option. The program title stands for GRAphics Support Package and it provides a means of intercepting the output to the printer and, instead of printing the normal character set, the program prints a user defined character set using the hi-res graphics of the Graftrax roms. There are a number of programs on the disk. First there is the character generator program, which allows you to design your own character set by using an on screen grid. Moving the cursor around the grid, setting or resetting the individual blocks is quite easy and it does not take too long to design an original character set which can then be saved to disk. There are six character sets provided that can be used 'as is' or modified. There is a driver program to make use of the character sets plus two underline programs and programs to set the printer parameters. The package is very straight forward to use and certainly makes good use of the Epson. I had to modify the program for use with the Genie printer port and should anyone buy the program for use with said machine I will gladly pass along the necessary zaps.

PDS

Anything which saves disk space when you are trying to squeeze the proverbial quart into a pint pot can't be all that bad. PDS stands for Partitioned Data Sets and a simple description of how it operates would be... a collection of small programs that can be stored under one program name, called with a suffix, the main program having a directory of it's own. For example you could have 3 small utility programs stored under the name UTIL and suffixed by their own name. Typing UTIL(MON3) would load Mon3 into memory and Typing UTIL(TASMON) would load Tasmon into memory. The advantage of using PDS is that the programs only take up their 'actual' space and the PDS file then rounds of the total disk space required to the nearest granule. By putting my utility programs in a PDS file I recovered 5K of disk space, (leaving room for another PDS file ?). One tip, if you have problems getting PDS to accept some CMD files, try re-writing the program to disk using CMDFILE and then append it to the PDS file.

HELP

This utility gives you on screen syntax for the LDOS library and Lbasic commands and can be extended to show command details of any program. As LDOS's manual is some three inches thick the ability to carry about the important command syntax on a floppy disk is very handy indeed. The disk comes with the library and lbasic files already programmed. Using a word processor capable of writing out files in ASCII (for eg: Scripsit or LED) you can create a screen 'page' of instructions for any program you wish. A small basic program converts the ASCII file into a CMDfile that can be appended onto a PDS main file. To create your own 'help' files it is necessary to have PDS. If you have a 'spare' drive or enough space on the system disk, it is useful to have the files accessible at all times for those occasions when you just can't remember the correct command syntax. I hope to be able to patch Scripsit and Ajedit, plus do some mods to the help files to allow them to be called from these programs. Having used word processors with a 'help' facility I have no doubt that the idea will be appreciated. Watch a future news letter for details.

I am very pleased with the results obtained from all three programs and if Misosys continue to produce such good software I have no doubt it will find a ready market among the LDOS users.

NEXT MONTH ---- ZGRAPH From Misosys (If it arrives in time)

K. Grey

W4W

WORDWORD REVIEW & TUTORIAL

It is difficult to know in what form to write a review of a word processor, it is all very well to say it is good, 'powerful' seems to be a much used description, but on the assumption that the reader is unlikely to be interested in it as an abstraction it should convey enough information for him to be able to work out whether or not it will meet his requirements. (or hers!) A word processor has:

- an input stage, i.e. to enter text and edit,
- an output stage, i.e. format store and print text,
- it may also do a few other tricks along the way.

WORD4WORD PLUS does all of these with some style, the version I am reviewing is actually an early edition of W4W SUPER PLUS, not yet available as such, but probably the one you will get for W4W PLUS now. Prior to this I had the cassette version of the original W4W, which was so simple to use its manual covered only 8 sides of A5!, and which is still listed at £34.95 in the catalogue. The disk version of W4W+ however is well worth the extra, and sells at £43.95 including VAT but short of 85p for P&P. (The manual now extends to 44 sides of A5!) Just in case you want simply to assess, without reading further, whether to send off your cheque post haste to Premier Publications, (address at the end) instead of toddling down to Tandy for your Scripsit, let me summarise by saying that WORD4WORD PLUS is good, 'powerful' and excellent value for money.

And so to the nitty gritty, but one final introductory word - this whole article is written from caption to bottom in W4W, and has been structured to show off at least some of its capabilities when linked to an Epson MX-80 with Graftrax. Just for fun let's insert @175@m into the text and see what happens?

Just like that! - so now you know it supports Tandy graphics - OK 175 is 32 higher than the Tandy code, but I could have converted to Tandy mode by including @27@59 earlier in the text.

SO LET US BEGIN

First you will want to know how I got into italics and out again? - simple - by embedding @27@52 (on) and @27@53 (off) into the text - and double width? - easy - @14 in front of 'BEGIN'. Which shows that W4W can call control as well as character codes from text, allowing you also to lighten and **darken** the text. Note also the ubiquitous '@',..more of that later.

CURSOR CONTROL

The slow way to move the cursor around the text is to use the arrow keys, actually its not all that slow for if you keep the key depressed the 'repeat' function takes over and it will take off with a life of its own. No arrow keys? - well <N>orth, <E>ast, <W>est, and <S>outh will do the job for you. <A> takes you to the beginning of the text and <Z>?..- you'll have to guess that one! </2345> will take you from anywhere in the text to the two thousand, three hundred and forty-fifth character - <.> - yes a single keystroke 'dot' - to the

beginning of the next paragraph, and if you are))ly stuck and want to find your long lost Granny, then <A> to the beginning - <F><Granny><Enter> will soon find her, (assuming you have got one) and if you have a few, <F><Enter> will catch each of them in turn. <A> <Shift><F> <Enter> will now tell you how many grannies you have got. (or rather how many <Granny>ies, as the <F>ind function is upper/lower case sensitive.

TEXT ENTRY AND EDITING

All the above assumes that you have <I>nserted and <Enter>ed some text, especially the latter as the cursor is not likely to need moving until you are in Command mode, i.e. with the cursor block flashing, and which you achieve by pressing <Enter> after manipulating text. <I> is the normal precursor for text entry, the cursor goes solid, and subsequent keystrokes are recorded on the screen to the left of the cursor. <Q>uick Insert will also enter text, this is useful when you have a lot of it around and you don't want to have to shove it painfully out the way to make room for each letter - <Q> starts with the screen blank - <X>change lets you overtype your existing text. <Enter> is necessary to end each of them!

So now you want to correct your errors, and improve the flow of your English. <D> will delete the character under the cursor, and keeping it down will nibble steadily at the text. <H> will hack the next word, or to be precise 'delete to the next non-alphabetic character' and will also continue to do so. If you are really feeling viscious then read below for <K>ill! Suppose you don't like your Granny, well <R><Granny><Enter> <Dead Granny><Enter> will see her off before she has had time to strike you out of her will - <Y>es will do the deed, <N>o will spare her, and <G>lobally will see them all off, assuming you started at <A>! <R>eplace is a most useful feature if you want to use graphics, building your pattern up on the screen with a little used character such as <*> and then swappimg it globally for @223 or whatever - it saves a lot of miskeying.

Text blocks can be manipulated in three ways, but first their limits must be set - having <M>arked the beginning of the block - and <M>arked the end of the block (it is now bounded by two whacking great graphics) - you may proceed to <K>ill it - <M>ove it somewhere else (deleting the original) - or <C>opy it to another place leaving the original intact. <A><M><Z><M><K> defines and kills the whole text, well almost, as <Shift><1><3><1><3> etc, is likely to bring it back again either even if W4W hangs up.

FORMATTING TEXT

Most of the facilities we have discussed so far are 'Commands', i.e. they are entered when the cursor is flashing, and nearly all are single keystroke functions. The text embedded 'Instructions', to which we will come shortly, are all preceded by <@> in the text. Formatting bridges both these modes, with Instructions overriding Commands. One important point here about the format of W4W itself, a bit offputting at first, so you might as well be warned. As entered, W4W displays the text using all the available screen, it does NOT pull round the head of the word at the end of each line to join it to its tail, it just leaves it split and ignores any set line length. However several of the embedded commands (@@,@B,@H,@-,@$) cause a line feed on the unformatted display.

Offputting as this feature may be, you get used to it, and if you have tried some of other systems (Kansas WP) or (Electric Pencil) you will know that you regularly lose some of your text on quick keyboard entry

(including tha\ ith my own two fingers) as the program does an Oozlum Bird trying to to get its act together. W4W says 'forget about it, there will be plenty time for that later' and I find myself in agreement.

A typical screen dump of W4W would look like this:

```
 ◄27 ◄52TEXT ENTRY AND EDITING ◄27 ◄53 ►►
 ►►
All the above assumes that you have <I>nserted and <Enter>ed som
e text, especially the latter as the cursor is not likely to nee
d moving until you are in command mode, i.e. with the cursor blo
ck flashing, and which you achieve by pressing <Enter> after man
ipulating text.  <I> is the normal precursor for text entry, the
 cursor goes solid, and subsequent keystrokes are recorded on th
e screen to the left of the cursor. <Q>uick insert will also ent
er text, this is useful when you have a lot of it around and you
 don't want to have to shove it painfully out the way to make ro
om for each letter - <Q> starts with the screen blank - <X>chang
e lets you overtype your existing text.  <Enter> is necessary to
 end each of them!■

  CH/LN 72     LN/PG 60    PG NO 1      MEM 32756    CSR 4618    JY
```

The bottom line of display is not normally used for text, but displays a 'Status Line' indicating

a	characters per line (max is 131)
b	lines per page (0 is continuous)
c	current page number
d	memory still available
e	cursor position in text
f	text - justified or ragged

a very useful facility which is normally only to be found on the more expensive commercial WP packages.

You CAN format on the screen however, <V>ideo will give you a screenful at a time, set to your page width, with 2 lines being used where necessary. <Y> does the same thing starting at the top of the page the cursor is on. Any key continues, and a line count is displayed automatically at the end. For a rough word count, the <Shift><F> feature described above is used, using <Space> as the 'word'.

To change or specify the format, you precede by <L> in Command, and @L in text, the following appendages

Inn set para indent to 'nn'

```
J     justify text
R     ragged text
Lnn   set page length
Nnn   set page number
Wnn   set width (right margin)
D,P,Nnn - set print counters (see later)
```

in addition the Command <L> (but not @L) can be supported by:

```
Cnn   define carriage return code
K     toggle upper/lower case
S     toggle caps lock
```

THE INS AND THE OUTS

Still in Command mode, we can look now to see how to put text in and out of store, and out to the printer as hard copy. <O>ut demands a Filespec from you, and if the text space is empty proceeds to load it from disk. If it isn't it offers the following menu

```
<S>  Save to disk
<L>  Load from disk (overwrite existing)
<A>  Append the disk text to the existing
<M>  Multi-append a series in this way
```

If you find you have filled your last disk, and have hours of text in memory, all is not lost - you can also store it on <T>ape, <R>eading or <W>riting. When reading you get a full, fast, vision load.

When at last you come to <P>rint, a further choice awaits you. <N>ormal as well as <P>roportional spacing is supported (if your machine has it'). By using <Shift><N> or <P> you can squirt a text of up to around 18,000 characters (on 48K) to the Spooler, regaining control of the keyboard to load some new W4W text, exit to DOS etc. If the printer stops during some of your actions, killing a file or such, don't worry, it will take over from where it left off without loss of text. An additional printing facilty is also provided by the Command <J> which converts your printer into a typewriter, letting you key in up to a line of type and <Enter> it, which prints it directly with a line feed ready for the next one. No viewing or editing on this one though! Exit is via <Shift><←>.

THE ODDS AND THE SODS

Before leaving Command mode I will summarise the leftovers from a fully utilised alphabet - <B><Enter> is meant to take you out to Basic, but it doesn't, or at least mine doesn't. With my earlier version I found that switching off the Expansion Interface allowed it to work, but I now use too much memory to try. As all my printer commands work directly from text (the original supported only some) my need for Basic is diminished anyway. <G>o exits to DOS, and <W4W> comes back, so Basic is available anyway. - <DIR> is not available from W4W other than by DOS. If your machine is not lower case converted, press the <Space>bar in Command and W4W will remove all the lower case from the screen and leave the upper case in situ.

TEXTBORNE INSTRUCTIONS

All this, and a whole second alphabet to go, this time preceded by '@'. At this point I have to own up, it isn't actually <@> but ▪ which appears on the screen, but you obtain it from lower case @, with

the real one being available on <Shift>. I will leave you to imagine the shape this article would have taken on had I used the genuine variety in the text. Fairly quickly now through the format Instructions then, demonstrating as we go, but first let us move the left margin to 7 (@I7), and the right one in by 7 (@J7) :

'text'@R
sets it at the
right margin

@B'text'
sets it on
the far left
(useful for
outdents'

'text'@c
places it
firmly in the middle

@F'text'
dumps it back
to the current margin

Qualifying each of these (except @B) with 'nn' will execute it at the position specified, for instance @C53 will produce the following

example
of
off centre
centering

Now back to normal format via @I(nn)@J.

TABULATION

@TL5,R20,C45@H will set a table with - a LEFT justified column at position 5 - a RIGHT justified column at 20 and - a CENTRE set column on 45 - @H ends the definition which stays in force until a new tabulation is specified, the commas are optional. To implement the tabulation each item is separated by <@:>

To give you some idea of the power of this facility when combined with graphics, I have tabulated some results below:

SYSTEM	PRICE PAID	SUPPLIER
Word4Word	43.95	Premier
Scripsit	69.95	Tandy
Pencil	60.00	Shrayer
Ajedit	49.95	AJ Harding

<left set right set> <centre set>

OK, to be honest that one took a bit of working out.

SUBSTITUTION ROUTINES

An extremely useful feature of W4W is the substitution facility, which lets you set up a standard letter containing umpteen substitutions (@S marks the spot), end your letter with (@E) and then enter a DATA line, separating each of the entries with (@S) again. This can give you a mail/merge facility as the substitutions can be of any length, including line feeds, tabulations etc. Each sub is accessed sequentially, moving on to the next addressee in turn. @N@Knn will print 'nn' copies, and @N@Knn# will print them with the same substituton.

STOCK MANIPULATION

@A.....@H opens up a whole range of facilities designed particularly to save you typing time and memory. @HF.....@H defines a 'footer' such as that shown at the bottom of this page. It can contain a line feed or two (@N), stop printer (@.), centre text (@C), auto page number (@#); @@ also gives a line feed and when incorporated into a footer at the right place turns it into a 'header' (indeed you can have BOTH), and if you want to pop out for a coffee while it prints each page you can ring the Epson's bell (@7), or @7@M will ring a lineful.

@AU to Z255.....@H will let you define up to 1536 standard text blocks for the top of your text which may be called later simply by @U4 etc. Given that my American Graftrax doesn't support a pound sign I can keep (@91@8@45@) in stock for use in this way (square bracket/ backspace/hyphen/null). One I have used already is the tabulation graphic shown above, which I can call again by '@U', comme ca!

@An.....@H lets you design an executive file sequence and access it later by typing simply -n (1 to 9). (@A1oFILENAME/W4W:O@13sya@H) for instance will save the current file to disk by typing -1. 'o' is disk access, @13 is <Enter>, 's' is save, 'y' is yes, and 'a' homes the cursor. @H ends the definition.

@Q....@H allows you to put non-printing comments into the text, Filespec etc, to remind you of your intentions at the time.

FINAL ROUND UP

To round up quickly - @Dnn sets spacing at 'nn' lines (but you can also use the printer's control codes for finer work) - @G forces a new page and @Gnn will do so if there are fewer than 'nn' lines left. - x@M will print character (or control code x) for the remainder (or all) of a line, 'nn' limits it to that. - @O toggles the printer off and on where you want to print selectively from the text. - @P calls a new paragraph, and it is this which is found by <.>. - @? prints the date from TIME$, - @/text@/nn print the text 'nn' timesthe text 'nn' timesthe text 'nn' times - @#1,2, or 3 will print the three 'print counters', allowing you to number automatically - chapter - paragraph - sub-para - in addition to the normal page numbering.

WHAT DOESN'T IT DO ?

If you've stuck with me so far you will realise its 'not a lot'. W4W doesn't support the Epson's high resolution graphics - not that there is any reason why it should - but I am ever optimistic. It doesn't call DIRectory, and I haven't managed to get it to do so playing with

'exec file sequ e'. It doesn't exit to Basic as it is meant to, and sometimes (on m, achine at least) it does funny things when I <Break> in <P>rint or <V>ideo - sometimes going to DOS, sometime to LII Basic, and occasionally to a screenful of machine code - but I've never lost the text yet! Indeed I sometimes get back some thrown out many hours before through <Shift><1><3><1><3>.

Another invaluable facility that comes with W4W, or rather from Premier Publications, is a Customer Service Phone Session from 7-9 every Monday evening (cheap rate calls!). Given that I am typing at that time now I have been able to find out about two of my problems - The <Break> problem mentioned above is apparently Tandy's and not theirs', in the latest version (which sadly I find I have not got) exit from print is via <Shift><4-> instead. My second problem, having detached the keyboard via the Spooler, is how in the name do I <press any key to continue> when it stops at the end of the page? The answer it seems, and I will check shortly, is by pressing key <B> which will toggle the printer off/on and restart as above. A very useful service. Having spooled it out I have just attempted the <B> trick and it works! I am typing this therefore while the first six pages are printing themselves away.

What else would I like it to do? - I am sure it would be useful to be able to <P>rint from page 'n' or something like that, it can be done with '@0', but it would be neater to have it formalised and it exists already (almost) through <Y> in <V>ideo. Another shortcoming is its inability to distinguish between a 'printing' character or code, and a 'non-printing' control code, with each being treated equally on a line-letter count. The effect of this can be seen from the following *brief lapse into italics*, which results in a foreshortening by two characters, I get the same effect with my home made £ signs where the backspace is counted. Given the immense improvements to this program since I bought it a year ago I am sure these matters will be corrected before long.

WHAT ABOUT THE MANUAL

The original short manual was blindingly simple, and contained a useful summary chart of all the commands/instructions, and I was somewhat apprehensive to learn when I spoke to them that "the new one is 44 pages long"; this was mentioned with some pride. Given the extensions which seem continuously to take place, this is hardly surprising and a section has been included on upward compatibility. MY manual covers more than MY version, indeed it hasn't even reached my version yet! However this I can take as an indication of the problems caused by 'dynamic' designing, after all there has been little need to update the 'Scripsit' manual given how little it has progressed over the years. The evil thought occurs however that 'given a good word processing system' a company like Premier should be able to keep abreast of Manual development, but I have come across many worse than this, by far.

The manual IS well produced, easily understood, and quite acceptable. What it lacks is a simple summary card to serve as a reminder once you have got the hang of it. YOU needn't lack this however as I have produced one for myself, and if you are, or become, a genuine W4W owner I will be pleased to send you a copy for the sake of a half-crown stamp (12.5p will do). I produced this as an exercise in tabulation, it is all on one side of A4, and gives you an index to the page on which each of the commands is covered. Contact me, Dick Mackie, at - 3 Warrender Park Crescent, Edinburgh, EH9 1DX, (031-229.6032).

HOW DOES IT COMPARE

Difficulty in comparison arises mainly from a lack of familiarity with the other systems. I do have access to several, but it is problematical, unless you are willing to unlearn, to do justice to the others as familiarity is essential. SCRIPSIT is a good WP, its defaults are well chosen and give you a system more ready to run than W4W - but the commands, manual and tutorial have always put me off getting to grips with it. In addition it has failed to adapt to new events like the 'Epson' (why haven't they stuck a Shack label on it yet?) with the result that all sorts of patches like Superscript have to be added even to bring it part way to the flexibility of W4W. I see from a recent Nottingham Group Newsletter that a new add-on 'Flextext' is available which seems to bring it up to date and this is encouragng; SUPERSCRIPSIT I don't know much about other than that its price (at £129) is well beyond the bottom of my pocket, but I understand it is good.

ELECTRIC PENCIL is simple to use, well supported with screen menu, and is much preferred by some. Again it hasn't developed, suffers the Oozlum problem, and I THINK has now stopped progessing. AJEDIT shows some promise, but from my limited knowledge seems to have no advantages over W4W which justify the small price difference - one of our members had an early version, long since seperseded, which was problematical, but I know the current version is OK. Ken Grey gives a full report in the National Newsletter of July 1982. KANSAS WP, written in Basic, was my first move into the field - unless it has progressed by some light years since then I would resist the temptations of its price. NEWSCRIPT, also in Basic, but a whole world of difference in style, weighs in at around £70. I do not know it at all but I know of at least three folk who use it in preference to Scripsit. Rod Bullard's report in the National Mag for September 82 will give you some clues.

CONCLUSIONS

You will have gathered by now that I think that W4W is OK. For me it has everything I could want, and a little to spare, it takes advantage of the Epson, and it will do the same for the Centronics 737/739 with their proportional spacing fonts. One feature it lacks, which might be important to you, is the ability to edit Disk Basic programs. Scripsit can do it in ASCII I believe, I don't use it, so it bothers me not. W4W+ is well worth the money, whether it is also worth all the words I have expended on it you must be the judge. Premier Publications are open from 9.15 am to 6.00 pm Monday to Friday (half day Wed) as well as 7-9 on Monday evenings. Telephone is 01-659.7131, and their address is 208 Croydon Road, Anerley, London, SE20 7XX.

USING W4W+ WITH LDOS

Like many programs, W4W+ may with benefit be blessed with LDOS. As it has its own type-ahead arrangements the LDOS version may not be strictly necessary, but being able to call up DIRectory is certainly beneficial. Another particularly useful feature is the 'Key Stroke Multiplier' which allows you to load each key with a standard phrase like "I am in receipt of your letter of ...etc, " to be called by a <Clear> activated 'Shift'. Standard Tabulations or Headers and Footers can also be kept in stock this way. The LDOS lower case driver may also be used, although again W4W+ has its own (<L><K><Enter>) already. Its certainly worth a thought though.

Dick Mackie
Scottish TRS-80 Users' Group

```
10 'EXAMPLE OF USING CMD'O' FROM ND/80 2.0, SENT IN BY:-"
20 STEVE HALL FROM 1 MEADOW VALLEY, ALWOODLEY, LEEDS17, LS17 7RF.
40 CLS:PRINT"A Newdos 'MF' file comprising 500 strings and 500
       integers is now being loaded from disc
50 CLEAR 10000:DEFINT I
60 DIM A$(500),B%(500),S%(500) 'THE ARRAY S%(500) IS FOR USE BY    CMD"O"
70 OPEN "I",1,"MFDATA/DAT","MF",10  'THIS IS AN 'MF'FILE WITH     LRL=10
80 FOR I=1 TO 500:'I IS SET AS AN INTEGER IN LINE 40
90 PRINT@ 450,"The Record being Loaded is;"
100 PRINT@478, I:'THIS ADVISES THE USER HOW MANY ITEMS HAVE BEEN READ FROM DISC.
110 GET 1,,,A$(I),B%(I); 'A$(I),B%(I); IS AN IGEL:THE";" IS IMPORTANT
130 NEXT:'NOTICE THE ND80 JARGON - IGEL
140 CLOSE:'ONCE READ FROM DISC CLOSE BEFORE DOING ANYTHING ELSE.
150 FOR I=1 TO 500
160 PRINTA$(I);B%(I), 'THESE ARE THE ITEMS READ FROM THE DISC.
170 NEXT
180 PRINT"Press any Key to sort files (sort is made on strings)
190 Z$=INKEY$:IFZ$=""THEN 190 'GIVE A PROMPT FOR TIMING SORT
200 CMD"O",500,*S%(1),A$(1),B%(1) '*S%(1) IS DUMMY ARRAY
210 'AND VALUE WILL BE SORTED VALUE.
220 PRINT"Sort is now complete!
230 PRINT"PRESS ANY KEY TO LIST SORTED FILE"
240 PRINT"The sort took about 6 seconds.
250 Z$=INKEY$:IFZ$="" THEN 250
260 FOR I =1 TO 500
270 PRINTI;A$(S%(I));B%(S%(I)), 'THE VALUE OF S%(I) BEING USED TO "
280 'THE A$ IS OBVIOUSLY AN ALPHA ELEMENT, AND THE B% A NUMERIC ELEMENT/ITEM.
290 'ACCOUNTANTS ARE HAPPY WITH ITEMS, PROGRAMMERS WITH ELEMENTS.
300 NEXT:'PRINT OUT TO THE DISPLAY THE ITEMS NOW SUCCESSFULLY SORTED.
320 PRINT"The line with the sort command is 190
```


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Introduction to 8080/8085 Assembly Language Programming by Fernandez and Ashley.
Applications Experiments with an 8080/8085 Microprocessor/Microcontroller by Boyet and Katz.

Both books are an unwanted purchase from the Computer Book Club, and cost £15. I will sell for £5 or swap for back issues of 80-Micro or 80-US.

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WORKSHOP REPORTS

LONDON

THIS WAS THE MOST SUCCESSFUL JOINT MEETING WITH BASUG TO DATE, AND SHOWED THE WAY FOR THE FUTURE. IT WAS HELD AT DAVE FUTCHER'S SCHOOL IN SOUTHALL, WHERE THE PARKING AND TAKEAWAY FOOD ARE EXCELLENT.

TANDY MEMBERS HAD JUST ONE LECTURE ALL DAY, WHICH WAS LAURIE SHIELDS ON MACHINE CODE USING THE NOTES I & II. THE MOST IMPORTANT POINT TO COME OUT OF THIS SESSION WAS - NEXT TIME STRUCTURE IT SO THAT MEMBERS CAN SEE WHAT IS GOING TO BE COVERED, AND THE LEVEL OF DETAIL.

JOHN NEWGAS VERY KINDLY DID AN IMPROMPTU DEMONSTRATION ON PRESTEL USING 300 BAUD, WITH LEON'S RS232 AND ACCOUSTIC COUPLER IN THE BROOM CUPBOARD WHICH FOR SOME REASON HAD A TELEPHONE EXTENSION. THIS SESSION MUST HAVE LASTED AROUND AN HOUR AND ALL THOSE WHO POPPED IN ENTHUSED OVER THE IMPLICATIONS. NO LONGER DID WE HAVE TO BUY AN ADAPTER TO ENJOY THE PRESTEL FACILITIES.
OF COURSE ALL OUR THANKS GO TO LAURIE FOR HIS MARATHON, AND THE HELP HE GAVE DURING THE COFFEE BREAKS TO INDIVIDUAL MEMBERS.

LONDON - DECEMBER

THIS WAS TO BE LIGHT HEARTED MEETING IN THE WEST END FOR MEMBERS TO POP IN AND HAVE A CHAT ETC. THE TURNOUT WAS A DISAPOINTMENT IN TERMS OF NUMBERS, BUT JUST TO SEE 3 OF MY LUTON STUDENTS COME ALONG AND ENJOY THE FRIENDLY ATMOSPHERE WAS A SIGN OF THE TIMES, PLUS ONE OF THE LATTER HEARING A COMPUTER TALK TO HIM, WHERE HE IS 90% BLIND WAS WORTH THE EFFORT OF ORGANISING.
WE COULD NOT SUSTAIN THE COSTS OF THE ABOVE WITHOUT THE SUPPORT OF BASUG, AND IT IS EXPECTED THAT LEON'S COMMENTS IN ACCUMULATOR WILL BRING OTHERS IN ON THE 'ACT'.

NOTTINGHAM

WE HAD TWO MEETINGS WITHIN A FORTNIGHT OF EACH OTHER IN LATE OCTOBER AND EARLY NOVEMBER. IN THE OLD DAYS THAT WOULD NOT HAVE BEEN A PROBLEM, BUT THIS TIME IT WAS. AT THE FIRST THERE WERE OVER 60, WHEREAS AT THE SECOND THERE WERE OVER 30 NEARLY ALL BASUG.
THE TALKS AT THE FIRST MEETING WERE VERY WELL ATTENDED, WITH LEON DOING HIS HARDWARE THING - SPEECH AND SOUND SYNTHESIS LAURIE SHIELDS ON USING AN EDITOR ASSEMBLER WHICH GAVE MEMBERS MANY IDEAS. IN THE AFTERNOON MARC LEDUC GAVE A SESSION ON HOW TO PLAY ADVENTURE TYPE GAMES AND THE CONSTRUCTION OF THE VOCABULARY, FOLLOWED BY JOHN NEWGAS ON PRESTEL AS HE HAPPENED TO BE IN THE AREA WITH OS HOUSE DOING THE LONGEST SESSION ON DISCDRIVES.

BRIAN PAIN

WORKSHOPS THE FUTURE

THE GROWTH OF THE LOCAL GROUPS AND LOCAL COMPUTER CLUBS HAS IN MANY CASES SERVED THE LOCAL MEMBERS BETTER, THAN THE NATIONAL GROUP LAYING ON A ONE DAY MEETING. IN MILTON KEYNES OUR LOCAL CLUB MEETS EVERY WEEK FOR AROUND 3 HOURS AND MANY WILL NOT COME TO NATIONAL MEETING EVEN THOUGH IT IS HELD AT THE SAME PREMISES. MANY OF THE TRS80 OWNERS HAVE NOT JOINED THE NATIONAL TRS80 GROUP, AND THIS IS REPEATED AT MANY OF THE LOCAL CLUBS.
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2. LOCAL CLUBS ARE PROVIDING MANY OF OUR ORIGINAL SERVICES
3. WORKSHOPS ARE VIABLE IN THOSE AREAS NOT SERVED BY A LOCAL CLUB.
4. TOPICS TO BE COVERED SHOULD BE RECENT RELEASED SOFTWARE & IFFICULT AREAS
5. THE NUMBER OF WORKSHOPS MUST FALL TO AROUND 9-12.
6. JOINT MEETINGS ARE NOW NECESSARY AND NOT JUST OPTIONAL

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ACCEL 4 continues this trend, but its principle feature is its ability to leave memory untouched, except for about 127 bytes, at run time. In other words essentially all user memory is available for the compiled program. So far as is known this is the first time that such a claim can be made for a basic compiler available for the Tandy and Genie machines. It is indeed, therefore, "A Horn of Plenty".

Furthermore by reason of some very clever programming, ACCEL 4 approaches the other ultimate aim of a compiler, namely that the compiled program should be the same or less length as the original. It is inherent in compilers that the Object code is longer in length than the Source code. It is difficult to see how this cannot be so, but in one or two programs ACCEL 4 even achieves this aim.

It is impossible to give performance figures for a compiler in respect to speed of execution. This would vary with some programs to a quite startling factor of may be 20 or 30 times faster than the original and at the other end of the spectrum some software is not worth compiling. The criterion is, of course, the amount of time the program spends in accessing the peripherals. No compiler can change the length of time it takes a printer to print, nor the time a disk drive takes to read or write. In the worst case with a program whose sole object is to read or write to disk, and assuming that this is being done by the program continuously in its uncompiled form, then little or no speed increase will be achieved. A program, however, that spends its time doing calculations, manipulating strings or other work that is a function of the CPU, will benefit greatly.

Like its forefathers, ACCEL 4 supports Microsoft Basic and compared to its antecedents has very few restrictions. When ACCEL meets a Basic statement that it does not wish to compile or is unable to compile, it merely leaves it as it is and when such a statement is met at run time, ACCEL passes control back to the machine's interpreter for that line. One finishes up therefore with a rather unique combination of machine code with a sprinkling of Basic. ACCEL 4, however, supports pretty well all of the important Basic statements and commands.

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Short leaders for data tapes
Model I
Speed cassette storage and retrieval.

Printer primer
For all models
An evaluation of the Line Printer VII from Radio Shack.

Standard & Poor's Stockpak
Model I/III
An investment management system.

Files and foibles
For all models
Handling space problems using random files.

Real estate
Model I
An evaluation of volumes 1-5 real estate software by Radio Shack

Figuring irregular surfaces
Model I/III
Work in feet and inches, decimals or fractions.

@ Love
Model I and Stringy Floppy
Problems and solutions with the ESF.

Color cornucopia
Color Computer
Things to do with your Color Computer.

Finish line
Model I/III
A short, but fast, game.

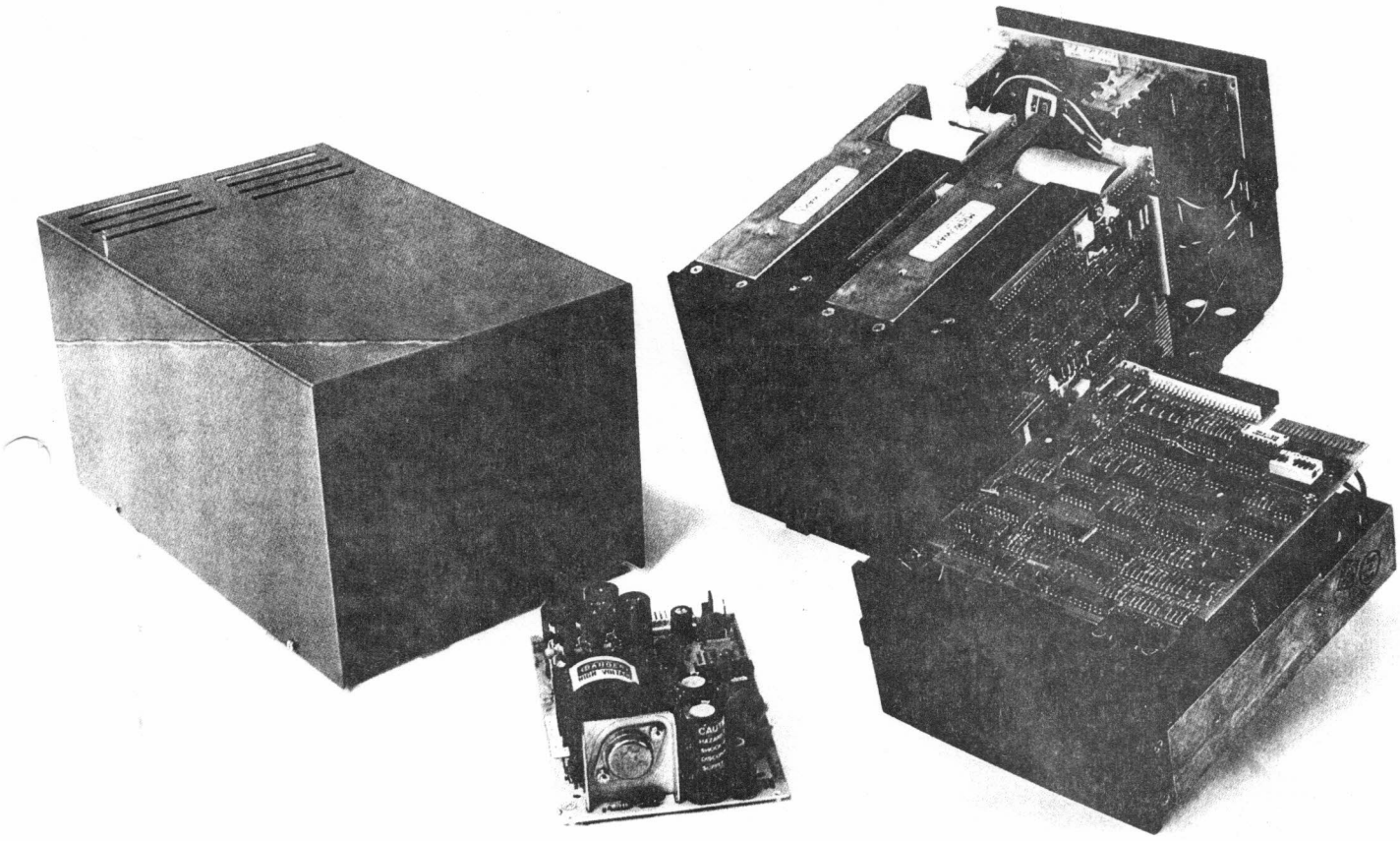
TPI-1 tape interface
Pocket Computer to Model I/III
An evaluation of a Pocket Computer to Model I/III interface.

Timer/BAS
Model I
A disk drive timing program for Model I with disk.

Three utilities from Krumholz
Model I
Free space in memory.

Microware (London) Ltd.,
637a Holloway Road, London N19 5SS.
Telephone 272 6398/6237

MICROWARE ANNOUNCE THE Z/L RANGE OF FLOPPY DISC SUB SYSTEMS



The Control Data Family of Flexible Disk Drive is a single- or double-sided, random-access, low-cost storage device. Maximum storage capacity 1 megabyte on a 133.4-millimetre (5.25-inch) interchangeable disk. This disk drive is interchangeable with comparable products, providing industry compatibility in size, mechanical mountings, electrical interface, power requirements and physical appearance. CDC® FDD operates in single- or double-density formats. Single-density operation is achieved by using Frequency Modulation (FM) encoding, and double-density operation uses Modified Frequency Modulation (MFM).

OPERATIONAL CHARACTERISTICS

Capacity	9408	9409	9409T
Unformatted			
Per disk	250.0 kbytes	500.0 kbytes	1 megabyte
Per track	3.1 kbytes	6.2 kbytes	6.2 kbytes
Formatted (16 sectors, 128/256 bytes)			
Per disk	163.84 kbytes	327.68 kbytes	655.36 kbytes
Per track	2.1 kbytes	4.1 kbytes	4.1 kbytes
Code	MFM	MFM	MFM
Transfer Rate	125 kbits/s	250 kbits/s	250 kbits/s
Average latency	less than 100 ms	less than 100 ms	less than 100 ms
Seek Time			
Track to track	less than 5 ms	less than 5 ms	less than 5 ms
Average Access	less than 80 ms	less than 80 ms	less than 132 ms
Setting time	less than 15 ms	less than 15 ms	less than 15 ms
Head Load Time (OPT)	less than 50 ms	less than 50 ms	less than 50 ms
Media	hard/soft sector	hard/soft sector	hard/soft sector

Rotational Speed	300 r/min	300 r/min
Track Density	48 TPI	96 TPI
Flux Reversal Density (track 39, side 1)	5876 FRI	5922 FRI
Number of Tracks	40	80
Inner recorded radius (side 0)	1.437 in (36.50 mm)	1.385 in (35.2 mm)
Outer recorded radius (side 0)	2.250 in (57.2 mm)	2.250 in (57.2 mm)
Inner recorded radius (side 1)	1.354 in (34.39 mm)	1.344 in (34.1 mm)
Outer recorded radius (side 1)	2.167 in (55.0 mm)	2.167 in (55.0 mm)

THE Z/L RANGE

Type	Capacity	Tracks	No. of Drives
ZL141	250 k	40	1
ZL142	500 k	40	2
ZL241	500 k	80	1
ZL242	1 Mb	80	2
ZL291	1 Mb	160	1
ZL292	2 Mb	160	2

Microware Disk Drive Subsystems are plug compatible with the following:–
TANDY, VIDEO GENIE, BBC MODEL B, NABCOM, SUPER BRAIN, IBM/PC. and many more.

Microware also supply floppy drives, Winchesters and sub systems to OEM's and the trade at very aggressive prices, offering the best price performance ratio available. Call and ask for details.

CABINETS AND PSU

Cabinets of steel, aluminium or plastic are available in a choice of colours, and each unit is fully guaranteed.

AC 8151 40 WATT SERIES

The AC 8151 Switch-Mode Power Supply has been designed for use in small terminals and other similar equipment. The AC 8151 has dual line inputs and regulated outputs of: +5V at 2.5A, +12V at 2.0A, −12V at 0.1A. This compact unit features low magnetic radiation and is built to conform to International Safety and RFI Regulations.

Name _____

Address _____

_____

YOUR LOCAL DEALER IS:–

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The current Newsletter subscription is £7.00 for Volume 4 Issues 7 to12.

Back issues, software library list and publications are available.

Chairman: Leon Heller Secretary: Brian Pain

I would like to Join/renew my subscription to the National TRS-80 Users Group (Please delete).

Surname: ..... Initials: .....
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Postcode: ..... Telephone: .....
Equipment: .....
Interests: Business: .. Scientific: .. Educational: ..
Hobbyist: .. BASIC: .. Machine code: ..
Maths.: .. Medical: .. Amateur radio: ..
Hardware DIY: .. Software DIY: ..
Others: .....

Volume 4 Issues 7-12 Jan'83 - Jun'83	£7.00 ..
Volume 4 Issues 1 - 6 July 1982 - December 1982	£7.00 ..
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Barclaycard: .....Expires: .....

Please send to:-

Brian Pain,
National TRS-80 Users Group,
24 Oxford Street,
Stony Stratford,
Milton Keynes.
Tel: (0908) 564271

MILTON KEYNES JANUARY 1983 WEEKEND WORKSHOP
PROGRAM OF TALKS & LECTURES FRIDAY 28TH JANUARY 1983

2.00 - 4.00 DERRICK ROWE DEVELOPING A DATABASE PROGRAM, ENCOUNTERING PROBLEMS AND FINALLY SOLVING THEM.
4.30 - 6.00 JIM NORRIS CASE STUDIES 1 & 2. EVALUATING BUSINESS PROBLEMS & PROVIDING THE SOLUTION.
6.30 - 7.30 JIM NORRIS CURRENT DEVELOPMENTS FOR THE BUSINESS USER - OCR, PRINTERS, HARD DISK AND OTHER EQUIPMENT.
7.30 - 8.30 LEON HELLER CP/M & HARD DISK IN A PROGRAMMING ENVIRONMENT.
8.30-9.00 COLIN ASHFORD ON THE CP/M USERS GROUP LIBRARY.
9.00 - 10.30 TANDY PRODUCT RANGE - WAS THE SHOW WORTH WAITING FOR. CHAIRED BY NIGEL HYDE.

SATURDAY 29TH JANUARY 1983 ROOM 1 10.00 - 12.00 AGM OF THE USERS GROUP.

1.30-3.30 LAURIE SHIELDS WITH SOME MORE HELP ON M/CODE ROUTINES:-A)INTEGER SORT B)STRING SORT C)CASSETTE INPUT/OUTPUT.
THE ABOVE 'FROM THE GROUND UP'
4.00 - 6.00 MARC LEDUC EXPLAINING HOW TO PRODUCE GRAPHICS AND SOUND IN M/CODE.
7.00 - 9.30 LAURIE SHIELDS WITH SOME MORE ADVANCED BASIC FOLLOWING ON FROM LAST YEAR WHERE THE SESSION WAS TOO SHORT.
ROOM 2
1.30 - 3.30 LEO KNAGGS ON NEWDOS802.0, WILL COVER THE FOLLOWING:- ATTRIB, CHAIN, DUMP, HIMEM, LIB, LMOFFSET, RUN-ONLY
4.00-6.00 LEO KNAGGS CONTINUING ON NEWDOS802.0 :- PDRIVE, DEBUG, SUPERZAP, FILEHANDLING ENHANCEMENTS.
7.00 - 9.30 CLIVE KEECH WILL CONTINUE THIS SERIES ON ORCH-80(MUSIC SYNTHESIS) AND GO THROUGH 2 SCORES VERY SLOWLY & EXPLAIN SOME VARIATIONS POSSIBLE.
SYSTEMS ROOM WILL INCLUDE ANDREW DONALD WITH HIS TANDY AND BBC WITH DISKS TALKING TO EACH OTHER

SUNDAY 30TH JANUARY 1983 ROOM 1
10.00 - 11.30 LAURIE SHIELDS ON HOW TO USE AN EDITOR/ASSEMBLER:- ENTERING CODE, EDITING CODE, ASSEMBLING, WRITING TO DISK, CASSETTE, AND THE VDU., DEGUGGING SOME ELEMENTARY STEPS.
11.30 - 1.00 LEON HELLER ON THE BENEFITS OF USING MACRO-80, WITH SOME EXAMPLES.
2.00 - 3.30 LEON HELLER HARDWARE UPDATE-HARD DISKS, MODEMS, VOICE SYNTHESIS, HIGH RES, COLOUR BOARDS, SPEED UP, MEMORY UPGRADES, OTHER EXPANSION BOARDS, D/D D/S DRIVES.
3.30 - 5.00 LEON HELLER HARDWARE FORUM. A CHANCE TO ENJOY A CHAT & FIND OUT WHERE WE ARE GOING OVER THE NEXT YEAR.

ROOM 2
10.00 - 11.30 DUSTY MILLER & CLIVE KEECH ON ELECTRIC PENCIL AND SCRIPSIT
11.30 - 1.00 JOHN NEWGAS & ANOTHER ON SUPER SCRIPSIT, NEWSCRIPT, LAZYWRITER & WORD4WORD IF POSSIBLE.
2.00 - 3.30 CHRIS PARADINE ON HIS RELATIONAL DATABASE, IN A SESSION REQUESTED BY SEVERAL MEMBERS.
3.30 - 5.00 COMPILERS HOW TO USE THEM JOHN NEWGAS & DAVE WASHFORD.

COLIN ASHFORD WILL HAVE HIS MODEL II, AND CAN TRANSFER CP/M ROUTINES ACROSS TO A MEMBER'S MODEL I OR III.
IF ANY TEACHERS WANT TO SEE THE TIMETABLING PROGRAM, THIS WILL BE AVAILABLE FOR A SHORT INFORMAL DEMONSTRATION. (BRIAN PAIN)
LEON HELLER WILL PROBABLY HAVE A SIRIUS AND HIS 68000 SYSTEM ALSO HOOKED TO A MODEL I.

****

NATIONAL TRS80 USERS GROUP WEEKEND WORKSHOP

BOOKING FORM - FOR THE WEEKEND 28/29/30TH JANUARY 1983
==========

TO BRIAN PAIN, NATIONAL TRS80 USERS GROUP, 24 OXFORD STREET,
STONY STRATFORD, MILTON KEYNES. 0908-564271

I WOULD LIKE TO BOOK IN FOR THE FOLLOWING:-

5.00 1) FRIDAY LECTURES ONLY
3.50 2) SATURDAY LECTURES ONLY
2.50 3) SUNDAY LECTURES ONLY
2.50 4) FRIDAY LUNCH - CAMPUS
2.50 5) SATURDAY LUNCH - CAMPUS
2.50 6) SUNDAY LUNCH - CAMPUS
1.50 7) FRIDAY SUPPER - HOSTEL
1.50 8) SATURDAY SUPPER - HOSTEL
1.50 9) FRIDAY SUPPER - CAMPUS
1.50 10) SATURDAY SUPPER - CAMPUS
5.00 11) FRIDAY EVENING & SATURDAY MORNING B&B - HOSTEL
5.00 12) SATURDAY EVENING & SUNDAY MORNING B&B - HOSTEL
11.50 13) FRIDAY EVENING & SATURDAY MORNING B&B STONY STRATFORD
11.50 14) SATURDAY EVENING & SUNDAY MORNING B&B STONY STRATFORD

* CAMPUS MEALS WILL BE BY MICROWAVE/CATERER DEPENDING ON NOS.
* FREE COFFEE WILL BE AVAILABLE OVER THE WEEKEND
* A MAP WILL BE SENT ON RECEIPT OF THE BOOKING FORM
* THE CAMPUS IS NEARLY 3 MILES FROM THE M1
* THE CAMPUS IS NEARLY 2 MILES FROM THE NEW CENTRAL MILTON KEYNES STATION.
* THERE IS A SWIMMING POOL AVAILABLE AND EXCELLENT SHOPPING FACILITIES FOR FAMILY MEMBERS NOT COMPUTER ENTHUSIASTS.
* IT IS POSSIBLE TO LAY ON A VISIT TO THE LOCAL THEATRE OR MUSICAL CENTRE-JOHNNIE DANKWORTH'S HOME.

THE ABOVE REPRESENTS AN ATTEMPT TO IMPROVE ON LAST YEAR'S CATERING AND ACCOMODATION, AND GIVE EVERYBODY A CHANCE OF ATTENDING THE AGM AND THE WORKSHOP. THE COST OF LECTURES ONLY HAS DROPPED AS WE ARE SHARING FACILITIES WITH OTHERS, ENABLING MEMBERS TO ENJOY LECTURES ON THEIR OWN MICRO & SEE OTHERS ALL UNDER ONE ROOF IN A RELAXED ATMOSPHERE. OS HOUSE WILL BE ABLE TO UNDERTAKE MODS AND UPDATES OVER THE WEEKEND.

****

FROM:- .....

.....

.....

.....

TELEPHONE NO. .....

PLEASE FIND ENCLOSED CHEQUE FOR:- .....

PLEASE CHARGE MY ACCESS/BARCLAYCARD ACCOUNT,

NUMBER FOR THE ABOVE. ..... EXP. .....

==========

AGENDA FOR AGM.

1. Chairman's Report
2. Secretary's report
3. Financial Report
4. Discussion on Group Activities.
5. Election of officers
6. any other business