NATGUG NEWS

Volume 6 Issue 7 January 1985

OFFICIAL JOURNAL OF THE

National TRS-80
& Genie Users
Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time.

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

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

We have decided to try to keep the NATGUG newsletter going on a monthly basis, at least until the end of the current volume, in June, even if the issues are somewhat on the slim side. In fact, only one member (letter in this issue) has complained about this. Perhaps as a result of my 'snide comments', the number of contributions seems to be increasing!

For the second year running Tandy Corp. have reported declining profits, and half way through the current fiscal year earnings are down 30% at $113.9 million, on sales of $1.48 billion. I am no financial analyst but these figures don't look very healthy. Tandy are blaming price-cutting in the personal computer business for their poor performance.

As I believe I mentioned some time ago, Tandy are going to market the ACT range of machines in the US and Europe. This seems a rather strange thing to do, as the Apricot will compete directly with the new Model 1000, which won't do the sales of either machine much good.

Tandy had a large stand at the recent Which Computer show in Birmingham. The only new thing I saw on their stand was the Model 1000, which is yet another Japanese PC clone. A competitively priced machine if you like that sort of thing.

I am sorry if my comments about Tandy and their product range are somewhat negative, but I believe that unless Tandy pull their corporate finger out and develop an original range of machines, rather than selling Japanese-made IBM PC 'look-alikes', they will continue to find their market share declining. The machine Tandy should be producing is one based on the MC68000 processor, with 512K program RAM, the new Hitachi HD63484 CRT controller (giving mind-blowing high res. colour graphics with its own 512K of RAM, which could also be used as a RAM disk, in low-res. mode), twin 3 1/2" floppies (3 1/2" Winchester option), about the same size as the Apricot, which should sell for about $1500. The operating system could be GST's 68K/OS, a multi-tasking, windowing operating system originally developed for the QL, which Motorola are supporting. Unix could be provided as an option, running under 68K/OS, and an optional 80186 processor card could make the machine IBM compatible. Unfortunately, I cannot see this happening, and Tandy's fortunes will continue to decline.

You should receive a booking form shortly for the Swindon workshop, which is on the 1/2/3 March. The AGM will be held on Sunday morning. To forestall any further criticisms of my emphasis on IQLUG, I should mention that if it wasn't for IQLUG, we probably wouldn't have any Swindon workshops at all - the limited number of NATGUG members attending would make it prohibitively expensive.

Leon Heller

MEMBERS' LETTERS

from David Washford

Breaking all rules of correspondence, I am writing this in great anger, having just received my copy of the December Natgug News. I wish to respond to the editorial (dictatorial ?) as follows:

Maybe I don't count for much, but I certainly howled about the bi-monthly suggestion. However, I was assured that this December issue went to print on the very day that I had received the November issue and made that 'phone call - so I don't see how anyone's protests could have been published anyway.

I see that we are now having ALL THREE meetings at Swindon - which is admittedly very convenient for me living here next door to Wiltshire. But, I understood that we were going to respect our Midland and Northern members by still holding one MK meeting, and on behalf of those members I now make another protest. And as I understand it, these Wiltshire Hotel meetings are all arranged by Bob Sparling and his local Group anyway, thus leaving our Officers free for other matters .....

I have the utmost regard for our Chairman and his phenomenal knowledge relating to micros and minis - but as I forecast many months ago, he is now suffering from the problems of split loyalties. At the last Swindon meeting we NATGUGgers hardly saw him until going-home time on Sunday - he seemed to spend the whole weekend with all those black boxes full of broken promises! As another member put it to me : "Leon has had that 68000 chip on his shoulder for long enough now". Contrary to his preachings, it is my personal and humble opinion that the TRS-80 is FAR from dead; it is far less popular in percentage terms as a home/ games computer, but the advent of the Model 4, in either form, with 128k and access to CP/M, has introduced a whole new ball game - a game that could offer NATGUG a pretty good role. I don't have access to membership details, but would I be far wrong in guessing that we've lost a lot of Model I's, but retained the majority of the III's and 4's ? No Sir, Tandy isn't dead - it is NATGUG that is dying, mortally wounded by all these snide comments and the continual reference to the almighty QL.

You ask for subject matter for workshops and imply that you have difficulty in finding desired topics. I just don't believe it - the last Swindon was devoted to the Model 4 and every talk was very well attended. You forced CP/M on us years ago when we were in our infancy, and when our Model I's could not handle it; now we have capable machines, running dBase II, let's have the talks. And what about the proliferation of Spreadsheet programs - last talk that I can remember was JN on Visicalc at Luton, and that was a jolly long while ago. Really good software, and its successful operation, is the backbone of any computer's popularity - I know of some TRS-80's bought purely to use Dotwriter; how many other examples are there? And we still have a Profile talk outstanding, and we need more on El Dose. Have we exhausted conversion of earlier programs for later machines ? How about a detailed explanation of how those two Zapmen, Laurie & Leo, link together Disassembler, Zen, & Scripsit ? Or other examples of JCL files ? And surely there must be at least a few good things about Wordstar, even if it is only to be used as a Basic Editor ?

At the last AGM I was voted on to the Committee - I only wish I knew for what reason. I hereby resign that position; sorry, Dusty, you just got your old job back! My membership is paid up until June, at which time I will decide whether or not I want to keep reading all this praise of another machine in a magazine that I subscribe to in order to learn how to get the

best out of what I consider to be the best.
In the meantime, I suggest that for GL you please read GG !

PROBLEM SECTION

I have recently acquired a Radio Shak TRS-80-Pocket Computer-2. I bought the computer mainly for personal use in carrying out some statistical analysis that I periodically come across in my work (agricultural research). I am only a beginner in computer use and am now only plodding along to learn how my machine works, etc. I believe I am perhaps the only person in this area who owns a TRS-80 PC-2 and therefore am unable to communicate with anyone about problems or possibilities.

I should be grateful if you could provide me the opportunity to communicate with some one who owns and is well versed with the use of PC-2 so that we can communicate about problems and availability programmes and softewore; etc.

Shenkute Tessema
c/o FAO
P.O. Box 30470,
NAIROBI. KENYA.

Could you please send me more information on your user group. I own a TRS-80 Model I 16K, but at the moment I am considering expanding to 48K.

I find myself somewhat cut off, being stationed in Germany, as there are no other TRS-80s in this area that I know of.

LCpl JW Wroughton,
4 AOTR REME Workshops,
BFPO 29.

We are a Danish TRS8o group that would like to get in contact with other TRS8o users in England.

We hope to exchange experiences and perhaps Software, becourse informations and Software you normally would get trough magazines, has been almost impossible to get, since Tandy stopped producing our computer.

We are also wery interested in exchanging informations about hardware modifications and so on.

I hope to hear from you soon, and i am looking foreward to start exchanging informations with your group.

Jorgen Christiansen,
Stenlosevej, 98,
DK-2700 Bronshoj,
Denmark.

I am having some problems with cassette loading on a Video Genie I, EG3003.

I have the later model with volume control and level meter on load, and I never have problems loading programs, basic or system. I often get FD errors on data tapes however.

Realising that the internal tape uses an unusual arrangement-ie an HF bias and DC erase, I thought the problem was the use of the external recorder. I converted my programs so that data tapes were saved and loaded (for print runs) on the internal tape. I still get data errors.

I have also checked, and as far as I can tell basic program saving and loading works well, subject to the obvious restriction of no level meter to set volume on the external tape. Different cassette recorders also seem to give similar results, so I feel it is unlikely that my problems are simply related to external recorders.

I cannot understand why there should be any difference in data tapes as opposed to program tapes. Both use the same leader and sync byte, and both use the same ROM routines. In general my program tapes are longer than data tapes and I would expect more errors rather than less.

I am now seriously considering putting the standard Genie internal cassette circuit (using an LM324 IC) into the external Fidelity TRC 5401 which I use as a data recorder.

As I have had data errors reading on the internal deck tapes written on the same deck I am worried that even this drastic change may not help. I have the booklet "modifications to the Genie", but I feel this really only upgrades earlier models to level indicating and volume control which I already have.

Before I do a lot of work has anyone experienced the same problem ? Any ideas or suggestions welcome.

Allan Fowke
28 Queensway
HWSTON
Cambs CB2 4DJ

HARDWARE FOR SALE

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Tandy Model III, twin disks, 48k, green filter for screen, printer cable (to Epson MX80), Cassette lead, grotty home-made amplifier, plastic dust cover, plus about 9 disks of games, various operating systems, and original manuals.....	**575.00**
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Paul Taylor,
12, Rylett Crescent,
Stamford Brook,
London, W12 9RL.

Home: 01-743 1035

Work: 01-353 8022

I have a Genie I with 48k Gnomic expansion, a [illegible]00 disk drive under SMAL LDOS, and a Seikosha GP-100A Mk II printer

I want to use this with a WS2000 Miracle modem to access bulletin boards, Prestel and Micronet.

I would appreciate help from anyone who has already done this, particularly interface hardware circuits and drive software information

Has anyone tried Modem 80 software for this purpose ?

Milan Fowke
[illegible] Greensway
[illegible]NSTON
[illegible] [illegible]2 4DJ

Model 4 notes from someone who is not Anon !!!

with a few other general and random points for communicators, printers etc

For some time now I have been meaning to write some notes on the Model 4 but have never really got down to it. Anon seems to hold the corner of the market at the moment and it is now time to redress the balance. His comments have been most useful to me however there are a few things that I have discovered on my own, especially in connection with the extra banks of memory.

Firstly for those of you who have not got the extra memory, I strongly recommend that you get it. However, it is not simply a job of plugging a number of chips, but a more complex task involving the addition of another chip, the purpose of which is beyond my comprehension. The cost is not as cheap as might be expected but when done by someone like Os is cheaper than if done by your local Tandy shop. It takes about half an hour to do and I had mine fitted at a Blandford workshop. Once it was in I was away, well perhaps not, first I booted up Basic typed PRINT MEM, there was no dramatic increase in available MEM. So I thought maybe not such a good idea after all. In fact as yet there seems no way that I can get the extra bank to give me memory when in Basic. I now stopped and thought about what uses I could put this bank to. My disk had MEMDISK/DCT on it so I tried using that, a fairly simple task, all I had to do was type

```
SYSTEM (DRIVE=8,DRIVER="MEMDISK")
```

A series of prompts asked me whether I wanted to use primary memory, Bank 1, Bank 2, Banks 1 & 2 or disable Memdisk. Now there's a thing, I didn't realise that I had 2 banks. In fact what happens is the the extra memory is divided into 2 x 32K banks. Mmmm food for thought. Having answered that I wanted to use both banks I was asked if I wanted single or double density, the answer was obvious as I left single density behind me a long time ago; next I was asked if I wanted to format the drive, I answered N and was promptly thrown out of Memdisk. On the second attempt I answered yes and lo and behold my RAM tracks were formatted and Memdisk was now operational. I later found a use for NOT formatting the drive and all will be revealed soon. This wonderful new drive was now installed somewhere in the depths of my machine and I regarded it as sitting somewhere above my top slimline drive. Now what could I use it for? Saving programmes to it was of little use at first as whatever was saved had to be transferred to a floppy disk if I wanted to keep it. For the time being I skipped the idea of a Memdisk and tried other things with my memory.

Spooling had always been something that interested me since it allowed my printer to get on with its job, whilst I got on with something else on the computer. I had seen many hardware 64K spoolers in operation and was most impressed. Costly devices but with a 64K buffer there was little chance of me ever filling it and therefore it seemed ideal for the large documents that I sometimes print. However the Model 4 did away with the need for all that fancy hardware after I tried the Spool command of TRSDOS 6. By entering the following I set up a 64K buffer.

```
SPOOL *PR (DISK=0,MEM=0,BANK=1,BANK=2)
```

When I have used the spooler on the Model 1 I usually spooled to disk as this gave me more space but now that is behind me. Next I tried combining both the spooler and Memdisk by setting the spooler to bank 1 and Memdisk to bank 2, no problems there and now I could see a reason for having those 2 banks. My Memdisk was small and this did not seem such a useful operation but food for thought.

I now booted up some applications programmes to see if they would use the extra memory. Visicalc did and it is amazing to see nearly 90K of free space available to you, it was in fact a little excessive so I tried setting up the spooler on bank 1 and then entering Visicalc. No problem I now had a 32K spooler and still 57K of free memory in Visicalc. That fact alone will probably interest many people who use Visicalc and do a lot of printing from it. I next booted Model 4 Scripsit: only just under 40K no matter what I did, incidently this version of Scripsit is not a patch on the LDOS patched Model 1 version (no pun intended). Come on one of you machine code buffs out there lets see what you can do. Lescript did boot up with 89.6K free and reacted to the spooler setup I described earlier, in the same way as Visicalc did. Multiplan did not boot up with an obvious 90K of free space and anyway I found a better use for the extra banks when using this programme. Multiplan has a large overlay which it calls only too frequently in from the disk, this makes the use of Multiplan very slow indeed. My problem was only too easily solved by good use of that second bank. Firstly I renamed the file MP/OVR to MP/BAK then ran this simple JCL file.

MPLAN/JCL

```
%IFSystem (Drive=2,Driver="MemDisk")
D
D
Y
Copy MP/BAK.PASSWORD:0 MP/OVR.PASSWORD:2
MPlan
```

Line 1 sets up Memdisk, the %IF at the beginning is the way to clear the screen when using JCL, the next 3 lines are the responses to the Memdisk programme. Finally the programme MP/BAK is copied to MP/OVR on drive 2 (the Memdisk) and MPlan is run.

Note the file on the MPlan drive cannot be called MP/OVR as that will be the version that MPlan will access, hence the renaming of the overlay in the first place. The resulting speed increase is quite impressive. This technique could be used in similar applications where help files or other overlays are used.

My last use for the Memdisk is probably the most attractive to those of us who want fast disk accesses and faster library commands. I decided to see if I could transfer SYSTEM files to the Memdisk and then assign the Memdisk as the SYSTEM drive. Nothing could be simpler and it worked first time, again I devised a JCL file to auto boot up for me (you cannot sysgen when Memdisk is active).

SYSTEM2/JCL

```
%IF. Do you want to:-
.
. 1 - Set up Drive 2 as the System Drive
. 2 - Re-install Drive 2 as the System Drive
. 3 - Install MemDisk and leave the System Drive as it is
. 4 - Go straight into the programmes
.
//KEYIN %IDSelect a number from 1 to 4
//1
%IFSystem (Drive=2,Driver="MemDisk")
D
D
Y
System (Drive=2,Delay=N)
Backup /SYS:0 :2 (S)
Remove SYS0/SYS.DBO:2
Backup Backup:0 :2 (I)
System (Smooth=N)
System (System=2)
//EXIT
//2
%IFSystem (Drive=2,Driver="MemDisk")
D
D
N
System (Drive=2,Delay=N)
System (Smooth=N)
System (System=2)
//EXIT
//3
%IFSystem (Drive=2,Driver="MemDisk")
D
D
Y
```

```
System (Smooth=N)
System (Drive=2,Delay=N)
//EXIT
//4
System (Smooth=N)
%1F. Do you want to run:-

. 1 - DotWriter
. 2 - LeScript
. 3 - Scripsit

//KEYIN %1DEnter your choice
//1
Dot
//STOP
//2
LeScript
//EXIT
//3
AL
//EXIT
///
System (Smooth=N)

//INPUT %1DEnter your own command
//EXIT
```

The first few lines print out the menu and then the //KEYIN allows a single key response. Note that the //KEYIN is normally displayed but the SPACE %1D sends the cursor to the start of the line thus covering it up. The section between //1 and //2 is what will occur if you select 1 from the menu. Lets look at it in detail. Firstly Memdisk is set up and the drive formatted in double density on both banks, the delay on the drive is removed by the next line and then a backup of all SYSTEM files takes place; SYS0/SYS is removed, (someone cleverer than me said it could be, the question is, can other SYS files be removed also?). Ensure that you specify drive 2 here otherwise SYS0 on your System disk is removed!!! At this point I have backed up BACKUP/CMD, simply because I use it quite a lot there is no need to do this and other files may be COPYied or backed up as necessary; one example if you are using DOTPRINT is to backup some common fonts such as PL. I have then removed the SMOOTH option of TRSDOS 6.2 simply because it stops me typing ahead during disk access (can anyone cure this?). The final command will assign Drive 2 as the system drive and at this point the JCL will abort so it has to be the last command in the section.

Option 2 is similar except that when the prompt for formatting the Memdisk drive is asked a reply of N is given. This will allow you to reboot the system totally and then providing you do not write any other files or data to the Memdisk, when you reboot the original SYSTEM files will still be intact. In fact I have even operated in the Model 3 mode for some time and returned with the Memdisk drive unchanged.

Option 3 allows you to create a Memdisk on Drive 2 and leave it blank for whatever use you want. Option 4 allows a certain amount of freedom in running applications programmes directly. Note that after the DOT section there is a //STOP command, this is to prevent the DOT/CMD programme aborting at the first prompt. For those of you somewhat more observant than the others you will see that the third programme on the menu is Scripsit but the execution name is AL. This is because I sometimes want to leave DOT/CMD to a word processor and the default is AL the name of AllWrite. My machine code is not good enough to patch in another programme so I simply renamed Scripsit to AL. I would like to have renamed LeScript, but it doesn't like being renamed, (any offers of help in either renaming LeScript or patching DOT/CMD?).

The /// means the end of the //KEYIN phase and thereafter is the portion of the JCL programme that will execute if a key other than those on the menu is pressed, in this case the option of entering your own command.

I hope that the above is as well explained as can be, if it gives you problems, please don't phone me as I am rarely at home; I can be found at most workshops and will be only to willing to help out if I can. There are of course many ways in which you can tailor the SYSTEM2/JCL to your own needs and the only constraint is that if you wish to use the %1F and %1D commands then you must initiate the JCL by typing DO SYSTEM2 and not DO=SYSTEM2. This means that a SYSTEM/JCL file must be created and therefore a non-write protected disk is needed, although not necessarily on Drive 0.

Now to some other problems and points for the Model 4. Firstly I was given a copy of TRSDOS 6.2 by the Tandy Computer Centre in Bristol, and I find that it

can cause major disasterous crashes of the directory (similar to those experienced with Model 1 TRSDOS 1). They occur if I change the SYSTEM Disk from a TRSDOS 6.2 one to a TRSDOS 6.1 one without rebooting. A bad practice I know but one that I accidently discovered one day. There is rumoured to be a patch to cure some problems with 6.2 but I have not found it yet. The crash seems to have clobbered the Data Address Marks as Super Utility 4 will not read them and gives an ID Error, trying to write new address marks is unsuccessful as the track cannot be found. can anyone suggest a cure for my i badly damaged disk? Next to DOSPLUS 4, this is a good DOS and I find it has a better BASIC, and also the Memdisk allows you to set it up repeatedly so that you could have Drive 2 on the first bank, Drive 3 on the second bank and even another drive in primary memory. As yet I can see no use for this but who knows.

In the December issue Phil Quatermain from Crawley asked if you could use dot matrix printers to cut stencils. The answer is yes as I have being doing it fairly regularly now for some 3 years. However, I clean the head with an old toothbrush after use. I use HMSO issued stencils which are wax covered and a lot of wax does fall into the base of my Epson MX 80 printer, this requires cleaning out every so often. To ensure a good clean out I place a piece of carbon paper directly under the stencil as usual and about 2 or three sheets of typing paper to push up the actual stencil. Do NOT forget to remove the ribbon before attempting to cut or nothing will happen ! ! !

I have recently bought an acoustic coupler for my machine and have called a few bulletin boards. As my Model 4 was a cassette version which was changed to disks and as the RS 232 interface does not yet come standard with either version, except the portable, I had to have one fitted before I could use my coupler. Tandy Bristol fitted it while I waited, sorry Os I would have driven down to you but I weighed up the petrol costs and decided Bristol was cheaper. The world of communications is a weird and wonderful place and there are many pitfalls, not least the heavy phone bills. Having connected up I called a number I had been given, I was using COMM/CMD and had set up all the RS 232 parameters as I thought I should. No joy. I fumed and tried switching the Half Duplex/Full Duplex switch on and off, I changed Stop bits, baud rates, parity, RI, CTS and numerous other obscure functions, all to no avail. In desperation I phoned Os and asked for help, not realising the complexities of the matter; he asked if I was serious as a discussion of what could be going wrong over the phone was virtually impossible. I was at least getting some garbage, so I pressed on with my combinations of parameters. Finally I phoned Brian Pain but he could not help much more but suggested I check my parameters and switches. This I did and when I changed my Answer/Originate switch to originate the thing worked perfectly. My logic said that if I was answering what a Bulletin Board sent to me it should be set to answer, oh dear such folly. Anyway armed with the fact that I originated the call to the BB I had some success. Unfortunately by this time most board phone numbers were it seemed permanently engaged! ! !

I will now let others benefit from my experiences in communicating to date. Firstly to call a BB you should set your coupler/modem to originate, set the baud rate as appropriate usually 300, set stop bit to 1, parity to EVEN and word to 7, in fact parity OFF and word to 8 seems to be the same thing. Now run your terminal programme: I will explain COMM for TRSDOS 6.2 which is the same as LDOS LCOMM. In COMM you should set a filename by typing CLEAR 6 - CLEAR 9 and then type in your file name at the prompt, next initialize the receive file by typing CLEAR 8 - CLEAR ; I strongly suggest that initially you route everything to disk by typing CLEAR 7 - CLEAR ; this will enable you to make up a help file with a word processor later. Dial the number and when you get the tone connect your coupler up, modems should be switched ONLINE at this point. Some systems work on a ring back that is to say ring once, hang up and ring again to get the tone. Almost immediately the screen will display a welcoming message. You are invariably asked for your First Name then Surname and where you are calling from. There is usually a pause at this point whilst the BB checks to see if you are registered and whether there are any messages for you. After this a menu of commands appears and this varies from board to board. From here on in you are on your own and the first time around you will probably select wrong options. Most boards have lists of other boards including some, god forbid, in Europe and the USA.

I personally intend to use my local board BABBS (Bath Atari Bulletin Board System Tel 0225 23275 9pm to 9am) for mailing and suggest that it might be a good idea if people received messages on their local board (if there is one) and sent messages out to their friends on their friends local board. This practice may help keep costs down as a local call after 6 and at weekends will give you 8 minutes for 4.7p. There is a temptation to register on lots of boards around the country but it will mean that you have to call up many distant boards just to check for messages.

Some boards allow downloading of programmes, often you need to register and get a password. This is very complex and I have successfully done it once although an attempt to Upload a JCL file to the Blandford Board probably resulted in that board having the equivalent of a headache (sorry Os).

My final subject is interfacing to an electric typewriter. Having got my RS 232 interface I immediately wanted to try out the "firms" electric typewriter. It is a CROWN RAINIER and on the back it says Brother EM 1. I had heard of the Brother HR 1 and assumed a similarity, in fact I think it is a better model. I connected my RS 232 lead and set 1200 baud as someone with a BBC who used the typewriter suggested. I was innocent enough to believe that this would be enough, however nothing happened either from TRSDOS DIR (P) commands or from using a WP. My friend suggested I tried reversing pins 2 and 3, this resulted in my cable being chopped up and the printer working. Well at least it printed garbage: on inspection of this garbage I found it to be part of the text I wanted with HUGE chunks missing. I went into Basic and wrote a small routine to accept a letter using INKEY$, and send it to the printer. This time there were no gaps. Partial success and I went to bed somewhat elated. The following weekend was spent trying to get it fully working. After phoning Brian who suggested Leon I finally heard about handshaking. I tried the combinations of RS 232 parameters for a day or two but with no luck. Leon suggested hardware ie wiring problems and that I should check the typewriters manual. We didn't have a manual. At last I changed the pins as follows

Pin 2 to 3
Pin 3 to 2
Pin 4 to 5
Pin 5 to 20

All other pins as normal

My cable now has a mass of Blue Tack holding it together but it works. The next weekend I found the manual for the beast which explained all.

To round off I feel like a new owner again and since having my Model 4, the Newsletter has become a lifeline for me. Just like the old days only now I feel I can contribute something to the Newsletter and I hope more of us Model 4 owners will stop what could be the demise of an extremely useful magazine by contributing a few articles, unless of course you already do, but all of you sign off as Anon.

Dave Holman,
160 London Road West,
Bath,
Avon.

BA1 7QU

GENIE MODS.

I have a copy of Ken Robinson's notes "Modifications to the Genie". The notes on improving tape facilities were aimed at the earlier models. There must be quite a lot of users who have Genie I's fitted with meter level indication and volume adjustment on loading.

With these later models the only big drawback is that the level monitoring circuit only operates on the internal recorder. If you do a lot of work with data tapes this is a bind.

It is very easy to correct this. Relay 1 which operates when the internal recorder is working routes the read signal to the appropriate recorder. By routing the monitor circuit via Relay 1 read signal change over contacts the meter works for both recorders

The c/o contact can easily be picked up on the interface board, the central PCB which carries the cassette tape and monitor sockets. Relay 1 is the relay furthest from the sockets. At the board edge right beside Relay 1 is a set of four pads in a square. The outside pad furthest from the sockets is the c/o contact. By fitting a PCB socket on this pad a flying lead can be connected

On the cassette board there is a wire link marked J2. This is close to the main operating switch in the centre of the board, on the side nearest to the R/W head connections. This link must be removed, and the other end of our flying lead connected to the end nearest to the 10 microfarad electolytic.

Rough sketches enclosed may help

Ken's mod to fit an OC28 power transistor as a switch to operate the external cassette drive is a good one. In fact it seems the internal drive is a bit much for the relay used. Recently my internal cassette intermittently failed to run. The relay used is a two pole change over electromechanical by Takamisawi. The pole used for cassette switching was badly pitted and showing high contact resistance

Switching cassette motors is heavy duty for a small relay. The load is inductive dc which is very destructive. It is surprising that the external drive did not go first. My external recorder switches the complete power supply, which means switching 6v onto a discharged 1500 microfarad electrolytic! Contacts sticking in would seem likely

As I already had a failed relay to replace, and as the relay footprint was unusual, I elected to change to beefier relays rather than use Ken's transistor circuit

Finding a suitable relay was not easy. The change overs which switch read and write do need low level switching contacts but the cassette switching is clearly a high power requirement. I ended up using two reed relays in parallel, one with a low level c/o contact and the other a normally open power reed. I used Hamlin reed relays types HE221C0650 and HE261A0650. This gave a combined coil resistance of 117R compared to 140R on the original relays

This meant assembling the two relays on Veroboard to bring the connections back to the original footprint. While doing this I put in a 560R resistor from Relay 2 and fitted an additional LED in the case. I now have sealed and hopefully more reliable signal switching, better power switching and an LED indicator to show drive 2 is running

While working on this relay fault I noticed that the '9v' cassette supply was in fact 7.978 volts. The LM324 is happy on low voltage supplies and I am not aware of any problems which could be caused by low voltage. Has anyone else found the low voltage a cause of trouble ?

Having achieved a convenient and reliable tape system I have now bought a DP2000 disk drive, so my current problem is learning smal LDOS!

Allan Fouke
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Cambs CB2 4DJ

OGGY OGGY OGGY !!

"It is amazing how the old Tandy series continues to maintain its popularity." Practical Computing January 1985

"Possibly the only redeeming feature of the outdated TRS-80 is the quality of its Basic....." Personal Computer World January 1985

Perhaps the many doom-prophets might care to notice the hint of awe contained within the above criticisms; there is a great difference between outdated and obsolete! However, in Natgug terms, our fear must be akin to that of so many industrialists today - we must not become uneconomic lest we cease to survive. YOU have renewed your subscription, haven't you? And did I hear you say that you've just posted a contribution to the Magazine ? Jolly well done !!

I had a few 'phone calls about the lack of Milton Keynes workshops, and without wishing to pre-empt anything that might be said at the AGM, feel that it should be pointed out that Natgug is a truly democratic organisation, bowing to the wishes of the MAJORITY of the TALKING membership. The view of this majority is that, just as they have grown out of changing crystals, or tape players for disk drives, so they have grown to dislike the hassle of the YHA with all the transportation that that involves, and instead they appreciate the convenience of a large hotel that can accommodate systems, lectures, beer, food, and sleep (yes, in that order !) all in the one building. If there's a car park attached then that is a bonus, and so, in majority terms, MK is dead. If anyone, and this includes those who've already voiced opinions, wishes to make their views known but can't make the AGM, then I suggest that you WRITE to Leon, or Brian, or even to me; I don't think that we are organised for 'proxy votes' but it will certainly do no harm to let us have your written views. And do take up Leon's appeal for ideas on revitalising workshop meetings - do you or don't you want talks on CP/M ?

My last contribution was fairly complimentary to various people, but now that the Season of Goodwill to All has passed, let's bring out some vitriol!

First of all, a warning to all those of you intending to purchase ALLWRITE - from what I've read and heard it is very good software, well documented and well presented. The warning concerns the publisher - Prosoft, or, as they now seem to prefer to call themselves, TTSC (The Tesler Software Corporation), and arises out of their blatant refusal to support software prevously sold. Many of you know that I am extremely enthusiastic about Dotwriter - barely a day passes without I produce at least one page prepared by that brilliant piece of software - but did you know that Prosoft took over the distributorship last year? More importantly, did you know that Prosoft, or TTSC, are flatly refusing to service the UK? You might well wonder why I am concerned if I already have the program - the answer is my interest in upgrades and support; Dotwriter 4.0 is now available, and so are many more interesting font sets, all of which are denied to me by the peculiar attitude of the Teslers, who have strengthened their stand by apparently also banning their dealers from supplying UK markets. So, would-be Allwriters, just check on how you might stand in a year or so's time when the inevitable upgrades appear - maybe you could do a lot worse than check out Dr Geoffrey Smith's enhanced Scripsit for a good WP package.

Next victim, I'm sorry to say, has to be Molimerx from which I purchased both Super Utility 4 and Nametager. I already had SU version 3.0 for my Model I, and decided that I would need the Model 4 issue to copy files across for my nice new machine - only to find that

it won't boot on my slow drives. Molimerx advised that they would have to obtain faster Copies from the States before they could offer any help - but that was three months ago. In the meantime, being an extremely trusting soul, I purchased Nametagr as described in the subscribed-to Molimerx catalogue update. This software, for an Epson to print lapel name badges, was advertised as being sold together with a supply of labels and plastic sleeves - mine arrived with EIGHT labels and NO sleeves. A telephone call, costing nearly £2, achieved no result, but a rude Christmas card did bring me some plastic sleeves, together with a note from the great man himself to say that possibly I never would get SU4 working on my machine.

Well, I don't know whether you'd agree or not but it seems to me that from those two different supplier problems we have two of the greatest anti-piracy advocates providing some pretty strong reasons why I should have saved my money and gone for rip-offs !

Finally, how about 80-Micro ? Remember when they used to print real vitriol about Tandy, never ever having a good word to say about them ? Now they not only carry official Tandy (or Radio Shack) advertisements, but they've given over the last page to a new series - Ask Tandy - which seems to another ad. page disguised as advice. Maybe another wheel has come full circle !

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

A few words in defence of TRSDOS.

Here we go again ! Having broken the ice by writing to a magazine for the first time ever last month one is now afflicted by a veritable diarhoea of words which fly from the twinkling fingers. This verbosity, it seems, is quite characteristic among we computer buffs though. Almost any computer shop is inflicted with its "regulars" who wish to rabbit strongly for hours with almost anyone who will listen and quite a few who won't. I must give a word of credit to the (remaining) staff at Tandy's Computer Centre in Reading who really did help a lot in the early days. Admittedly they do now dive under desks if I walk past the window and wave but I've convinced myself this is probably just to carry out routine checks on hard disk drives or somesuch.

Back to DOS'S however, - I bought the TRS80 just over a year ago, with Profile 3 Plus, to handle customer records for our mail order business. This, of course, came with TRSDOS 1.3 and all our learning was done with this. As an aside Profile has proved a most amazingly useful business tool, with its 144 fields, 5 screens, 5 reports, 5 labels, bags of maths and super easy search and sort capability, we've found a huge variety of applications for it, the book must rate as one of the best in the business in spite of the obvious American influence. This leads us naturally back to DOS'S and the pro's and cons therof. TRSDOS 1.3 works well and seems to be completely bug free but a little short on utilities. While in the States early this year, where Tandys reign a little more supreme (although still called "Trash 80s" after the model 1 fiasco) it was difficult not to be assailed by the presence of many DOS'S other than TRSDOS. Chats with various parties indicated that untold delights could be mine with a different DOS. Enquiries, or inquiries as they say, at the nearest Tandy Computer Store, there's one on every street corner, about anything of non Tandy origin produces a clam-like silence of stunning intensity. One salesman, after being plied with a tasteful

TRS-80 Model 4 PRESTEL Terminal

A Prestel terminal program created especially for the TRS-80 Model 4.

Taking advantage of the Model 4 display characteristics the screen is filled with each Prestel page of 24 lines by 40 characters. The program makes use of the resident TRS-80 graphics to emulate Prestel characters when required. Prestel cursor positioning commands are recognised to recreate each page as its designer intended.

Clearly, not all of the Prestel characters can be accurately translated and displayed (double height, colour etc). The program will correctly handle all valid Prestel character sequences received, including those which it cannot display either directly or by close approximation.

Pages are displayed as they are received from Prestel. Using simple commands from you any page on display can be printed immediately and/or saved to a disk file for later review and printing.

If your printer has a Tandy Block Graphic capability the pages can be printed as seen on the display, if not, the graphic characters can be filtered out and printed as asterisks amongst the text.

Use of the keyboard can be restricted to the numeric pad, simulating simple Prestel terminals. Alternatively the full alpha-numeric range can be used with special provision for typing characters for which the TRS-80 has no keys.

Automatic 'Log on' to the Prestel computer is available, and the subsequent 'Log off' can be carried out at a simple command from you. The use of either or both of the facilities is optional.

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NATGUG - SWINDON WORKSHOP

March 1,2,3 Friday, Saturday & Sunday.

Program

Friday 10.00 till late Simple m/code and the business user. Fast screens, sorting with Laurie Shields.

Saturday 10.30 - 13.00 Peter Knaggs going through his windows on the TRS80, using the recent article as a basis.

14.00 - 17.00 Programming in C with Leon Heller A little beyond whiting out the screen.

14.30 - 15.30 Prestel and using The Nottingham Building Society system Richard Creak.

15.45 - 18.00 Geoff Smith & Don Bannister on Communications in use. Geoff will be helping on the KERMIT package

21.30 - 22.30 Teaching accountancy using Laurie's screen blaster, and a BASIC version Brian Pain and Laurie Shields

*** Morning ! 11.30 - 1.00

Stock Control - Tyres & Exhausts using Model 4 and a Hard Disk with no compuber enthusiasts in sight Laurie Shields If time NDS0 2.0 file handling.

SUNDAY morning AGM. 11.00 AM.

2.00 VISICALC in use. Dave Washford and others.

3.00 MULTIPLAN in use RobertVieira and others.

4.00 LOTUS 123 in use volunteer required, free lunch ! available !

Please bring RS232 cables, odd connectors and soldering iron as we are building the PRINT BUFFER.

Brian Pain 0908-564271

NATGUG SWINDON WORKSHOP BOOKING FORM 1/2/3 March 1985

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mixture of bribes and threats finally conceeded that it was a hanging offense to even to speak the words "Super Dos" while standing on company floor space. He was, however, prepared to write it on a small piece of non-company paper, no doubt using a private pen, if I swore to deny I'd ever met him and promised to eat said paper, preferably before reading it.

Whoopee ! I thought, - Super Dos ! What greater joy could life hold in store than the possesion of the forbidden fruit. Quite a lot as it turned out, the ability to avoid password protection (the big selling point) enabled me to zap a few irreplaceable discs quite swiftly before caution crept in again. I found the other big feature (Big deal !) - the ability to copy protected discs - really useful, it wouldn't copy itself for a start and I didn't own and couldn't actually locate any copy protected discs at that time. My versions of Visicalc, Superscripsit and Profile all seem to be infinitely copy-able. Having installed it on the Profile Runtime disc I then discovered that, having got into the program, Super Zap wouldn't let me quit without rebooting and this had fatal results on the disc directory. The people were very quick with a refund on my returning the kit though, so all credit to them.

I spoke to the people producing Newdos 80, a thing about American companies is that you can aways get through on the phone and conatct someone who really knows what he is talking about, but they conceeded that 80.2 wouldn't work with Profile yet. If I wanted to write in with name and address they would advise when they had the updated version which would. Full of good intentions I promised to send in the info but haven't actually got round to it yet. Logical Systems Inc were much more positive "No problem", a much overstressed phrase, was their confident claim. I talked to Tandy here about it but with their usual head-in-the-sand "its not made by us so we've never heard of it" approach it had to be Molimerx. They were ever so sure all was well and advised that the price would be dropping soon so please hang on for a week or two. Much impressed by this approach I hung on and, sure enough, the price dropped by half. I duly purchased LDOS 5.1.4 and was advised that a "Fix disc" was needed to run Visicalc and Superscripsit while Profile was OK. The problems really started then, Superscripsit wouldn't work at all when "Fixed" and during the "Fixing" attempts I managed to truly fix my master disc leaving me without even the abilty to compose a strong letter. Tandy were splendid though and gave me a new, and much updated, version which is identical to the zapped one I'd just lost. I've never had any problem with Superscripsit either before or since so the need for the update eludes me. Visicalc was altogether different though, all the specs and issue numbers tallied and I followed the instructions to the letter and the "Fix" embedded itself (or whatever it should do) without drama of any kind. I now have two types of Visicalc, the original -un fixed- one, which runs perfectly, and the fixed one which is distinguishable only by the lack of the facility for sending printer control codes before printing. I puzzle at this one because it really is a useful facility which harms no-one and why anyone should go to such trouble to remove this from a programme has remained a mystery. Does anyone in the club know of the reason ?

So far so good, now on to Profile. Problems arose instantly, the data discs were easily "CONV" erted but of course the Creation and Runtime programs wouldn't. At about this time

an article appeared in 80 Micro on how to do the conversion by creating a 41 track disc etc which was tried, it almost worked, not quite, but almost. I did end up with a 41 track disc which turned out to be uneraseable under LDOS. This is quite fascinating, after answering the plethora of questions the operation aborts with the message "Hard Disc in drive 'n'". Must one assume from this that hard discs are distinguished from floppies by the presense of 41 tracks and by their being unformattable ? I managed to regain use of the disc only by formatting it under TRSDOS 1.3 which wasn't as convinced about the hardness. Still no Profile under LDOS however and I'm now stuck with two operating systems which slows things up no end. A later chat with Tandy provided the solution to all the problems, all one needed was the hard disc version of LDOS and Profile and away you go ! So off to Walsall clutching the original Profile Runtime and Creation Discs (and of course the hundred quid) a quick exchange and behold Profile working under LDOS. "Perfect" I thought, and it nearly was. One of the most used features of Profile with us is the use of User Menus calling up "DO" files and of course this is now widely known not to work under the LDOS JCL utility. I must say that I haven't found this JCL thing terribly useful.

(A quick three months flitted past here before I got back to the keyboard)

December 22nd
My last letter produced a couple of contacts and Jim Herron from Walsall has been amazingly helpful. Two super suggestions as to how this problem could be overcome were quickly outlined. Neither actually worked but I'm learning to be philosphical by now. Tandys were super helpful again - "Oh yes, you can't use DO files with LDOS and Profile we're well aware of the problem". Logical Systems Inc also acknowledge the siuation and suggested I purchase their latest utilities package ($49) which they "thought" would do the trick. Mollmerx sell this but weren't prepared to guarrantee that it would work as "Profile isn't one of our programmes". Being now several hundred pounds poorer and still having an unworkable situation I was cautious about buying more "solutions". Purely by chance at this stage I came into contact with the very helpfull folk at Tandy Computer Centre in Reading one of whom provided me with Radio Shack Customer Service Bulletin No 1393-01. This is issued from Fort Worth and provides the neccessy patches to, and I quote "Execute DO files from user-defined menus." Copies of this Bulletin are available on request. Please send SAE. One word of caution though before you all rush to the post - the patches don't actually work, the before and after situations are identical. I'm still at a loss as to why people have gone to all this trouble again to produce a non starter.

So I'm still where I was months ago, LDOS is quite useful in some respects but unuseable with Profile and because of this I'm stuck with two operating systems and thus cannot convert to a hard disc system. It really would have been better to stick with good old TRSDOS 1.3, it does everything it claims to without drama or difficulty, I've never had a crash or disc read error and can't really find much to complain about.

Before giving up completely though, can anyone out there help ? This problem must plainly affect many applications.

As a final query, with each piece of software I've meticulously completed and posted to software registration cards, one to Fort Worth and as a precaution one to Walsall but in eigteen months not a single word or update has been forthcoming. Is this typical ?

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ALTERING NEWDOS FOR THE VIDEO GENIE

I have recently investigated the code within Newcos80 v2.0 to see if I could alter the program so that the 'BOOT' command worked on the Video Genie 1.

I have listed the alterations below:

PROGRAM	SECTOR	BYTE	CHANGE
Newdos 80 v 2.0			
SYS0/SYS	09	25h	76h to C7h
SYS9/SYS	00	D3h	76h to C7h
TRSDOS v 2.1			
BACKUP/CMD	06	18h	76h to C7h
FORMAT/CMD	05	83h	76h to C7h
Super Utility 3.0	27	73h	76h to C7h
	8F	3Ah	76h to C7h
	90	30h	76h to C7h
Tasmon	08	4Dh	76h to C7h

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PUTTING TAPE ADVENTURE GAMES ON DISK

Having recently moved from an Aculab based system to a disk based one and my son now having got into Scott Adams adventures, I wanted to put the cassette programs on disk. Initially I combed the newsletters for the necessary proceedure but could only find the suggestion that they are moved with Lmoffset. I was not happy with this method as I wanted the programs to be self starting and not have the DOS disable proceedure to go through first. The following method solved my problems and may assist others.

It should be noted that this proceedure will not allow the game to be saved to disk. the cassette save is still in place and I can find no method of re writing that part easily.

The DOS I use is Newdos 80 v 2.0 and the method is for that DOS. I haven't compared other Lmoffset modules but would not envisage difficulties.

1 Place the adventure cassette in the recorder and press play.
2 Load Lmoffset and answer T to the tape or disk prompt.
3 The flashing asterisks alternate between 2 & 3 during good loads.
4 When loading ceases lmoffset displays the starting address of the program and the entry point with other information.
5 Reply '6100' to the new load point request.
6 Reply 'N' to suppress load offset module.
7 You are now presented with the information on load addresses, if it is correct press (enter).
8 To the next request, answer DOS is to be disabled.
9 Answer 'D' to the disk or tape prompt then specify a file name and extension.
10 The program is written to disk with an entry address of 9E00.

If at this point the program is run then it behaves as a normal lmoffset program with the prompt to go into Level II and run the program via System /.

Lmoffset places a buffer of 64 bytes infront of its self and it executes any code in the buffer before the offset module. A move routine can be placed here together with a patch for the keyboard driver routine to replace that resident in DOS.

11 Load Superzap and specify DFS then the program name and extension. To the relative file sector request specify 61.

12 Search this and subsiquent sectors for:
0000 01C1 009E 0000 0000
13 Find the address of the first byte after 9E by counting from the left starting with x0. (In the sector dump following the required address is F8.)
14 Type MODF8. A cursor appears at the zero after 9E.
15 Type in the amendments as shown:
F321 E303 2216 4021 0061 1100 4301 003D EDB0 C350 4300
16 Note that when the sector boundary is reached (the bottom right of the screen) that you must stop entering amendments and press (enter).
17 Reply Y to save to disk, then press (enter), the modified sector is displayed again. Check you have altered the sector correctly, then press + .
18 When the next sector is displayed type MOD00 and continue entering the sector modifications, pressing (enter) at the end and saving the new sector to disk as before.
19 When the sector is displayed after the disk write press X then type 'exit' and press (enter).

At this point you have a working adventure as a /CMD file, try running it. To the inital 'restore saved game' query answer 'N'. If the program doesn't perform as it should check the code entered from Superzap.

The following is the display obtained as Lmoffset is run:

```
APPARAT LOAD MODULE OFFSET PROGRAM, VERSION 2.0
SOURCE FROM DISK OR TAPE? (D OR T) t
MODULE LOADS TO 4300-7FFF
MODULE LOAD OVERLAPS DOS (4000-51FF)
ENTRY POINT 4350
NEW LOAD ADDRESS (HEX)? 6100
SHELL APPENDAGE BE SUPPRESSED? (Y OR N) n
MODULE LOADS TO 5100-9E4D
ENTRY POINT = 9E00
NEW LOAD BASE ADDRESS (HEX)?
DISABLE DOS? (Y OR N) y
DESTINATION DISK OR TAPE?  (D OR T) d
DESINATION FILESPEC ? aventure/cmd
DONE
********** ANOTHER DESINATION FILE? (Y OR N) n
ANOTHER SOURCE FILE TO PROCESS? (Y OR N) n

NEWDOS/80 READY
```

I have also attached a disassembly of the patch placed before the load offset module and a dump of the 2 sectors that require modification. I have put 7 of Scott Adams adventure on disk this way and have had no problems. You should note however that the piece of code:

0000 01C1 009E

does not always appear in the same sector nor at the same place in its sector although I've always found it after sector 50 and in the area D0 to FF.

The 4 bytes which you have searched for in sector 60 onwards have the following significance:

- 01 loader code = LOAD at the following address
- C1 Number of bytes to load
- 00 LSB of load address
- 9E MSB of load address

Ken Robinson
(0808)-75479

```
9E00  F3        s     DI
9E01  21E303    !c    LD    HL,03E3H
9E04  221540    " @   LD    (4015H),HL
9E07  210061    ! a   LD    HL,6100H
9E0A  110043      C   LD    DE,4300H
9E0D  01003D      =   LD    BC,3D00H
9E10  EDB0        n0  LDIR
9E12  C35043      CPC JP    4350H
9E15  00            NOP
```

```
DRV 00  0000 0000 0000 0000 0000 000B 0000 0000  ................
1   10  0014 0015 0000 0000 0009 0000 0000 00FA  ................
1H  20  5DFB 5D0C 5E19 5E1B 5E24 5E32 5E43 5E6D  ].].^.^.^$^2^C^m
    30  5EA4 5EE1 5EF9 5E10 5F32 5F54 5F6D 5F82  ^.^.^.^._2_T_m_.
DRS 40  5F98 5FA0 5FA9 5FC4 5FE7 5F07 602D 6061  _._._._._._.`-`a
146 50  608B 609E 60A9 6091 60BD 60C7 60D0 60E7  `.`.`.`.`.`.`.`.
92H 60  6003 6109 6116 6132 6146 61A0 61B5 61B7  `.a.a.a2aFa.a.a.
    70  61B9 61D1 61E2 61FB 610C 6211 6230 623C  a.a.a.a.a.b.b0b<
    80  626B 6288 629A 62AF 62D2 62F2 6205 6312  bkb.b.b.b.b.b.c.
    90  6338 6359 6364 6370 637C 637E 6384 63A2  c8cYcdcpc|c~c.c.
    A0  63AB 63B5 63C5 63D8 63E4 630B 6427 644F  c.c.c.c.c.c.d'dO
    B0  6466 6495 64BB 64CA 64E8 64FF 6418 6537  dfd.d.d.d.d.d.e7
FRS C0  6552 6555 656C 6582 65B9 65F6 6509 6634  eReUele.e.e.e.f4
61  D0  6600 0000 0000 0000 0000 0000 0000 0000  f...............
3DH E0  0000 0000 0000 0000 0000 0000 0000 0000  ................
    F0  0000 0000 01C1 0095 F321 E303 2216 4021  .........!..".@!
```

```
DRV 00  0061 1100 4301 00ED EDB0 C350 4300 0000  .a..C..=...PC...
1   10  0000 0000 0000 0000 0000 0000 0000 0000  ................
1H  20  0000 0000 0000 0000 0000 0000 0000 0000  ................
    30  0000 0000 0000 0000 1137 9F21 003C 0100  .........7.!.(..
DRS 40  04ED B021 5E9E 11E9 4201 0600 EDB0 2164  ...!^...B.....!@
147 50  9ECD 6744 18FE 0000 00C3 1E9F 1C1F 444F  ..gD..........DO
93H 60  2054 4845 2046 4F4C 4C4F 5749 4E47 3A0A  .THE.FOLLOWING:.
    70  0A31 2E20 484F 4C44 2044 4F57 4E20 4252  .1..HOLD.DOWN.BR
    80  4541 4B20 4B45 5920 414E 4420 5052 4553  EAK.KEY.AND.PRES
    90  5320 5245 5345 5420 5441 2041 4354 4956  S.RESET.TO.ACTIV
    A0  4154 4520 4E4F 4E2D 4449 534B 0A20 2020  ATE.NON-DISK....
    B0  4241 5349 431E 0A01 7F9F 9E32 2E20 5245  BASIC....z..2..RE
FRS C0  4C45 4153 4520 4252 4541 4B20 4B45 5920  LEASE.BREAK.KEY.
62  D0  414E 4420 5052 4553 5320 454E 5445 522E  AND.PRESS.ENTER.
3EH E0  2020 2020 2020 2020 2020 2020 2020 2020  ................
    F0  2020 2020 2020 2020 200A 331E 2045 4E54  ..........3..ENT
```

Does anyone have a copy of the patches for NEWDOS80 v 2.0 to allow Exit to work with the Video Genie. At the moment it hangs the computer as a result of the TRS-80 use of Halt. The patches were published some time ago in, I think, the Australian mag. MICRO 80, although no doubt they are also circulating within the group.

I would also be grateful for the patches for Super Utility 3.0 and any other programs which are available.

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Wanted

Copies of 80-MICRO prior to July '81 issue #19

Basic Disk I/O Faster & Better by Rosenfelder

Ken Robinson (0908)-75479

HOW IS NATGUG KEEPING - SOME OBSERVATIONS

Yes I do agree, it is a stupid title but I couldn't think of anything else. There was an interesting editorial in the November issue of NATGUG News, and it prompted some thoughts.

I think it would be a pity if the newsletter went bi-monthly, but if there isn't the material then little else can be done. I must admit to having a couple of ideas for articles - mayte this is the spur to put something on paper. I'm sure there are others who are in the same position - let's all get writing !!

I'm not sure that I would agree with Leon's comment about the Swindon workshop. If there appeared to be any lack of ecstasy it was probably for a very simple reason - shortage of sleep !! Seriously though, I personally enjoyed the weekend very much. I might have muttered mildly to someone about the joint approach with IQLUG, but it was really only voicing a tiny personal feeling that it was an IQLUG weekend with NATGUG tacked on. Inevitably, the inter-reaction between the two groups will be limited - after all, not many own both machines. That said, there was quite a lot of looking and enquiring, and Jonno's article (Issue 5, Page 10) demonstrates just what can happen.

As regards the programmes for the weekends, I do see the problem. I imagine its a thing that many NATGUG local groups are having. In an obtuse sort of a way, the Model 4 helps a little bit, in that it has introduced all sorts of puzzles and queries in the same way that the Model 1 did in its early days. It's in this sort of area that I think the group has its value - after all, why reinvent the wheel when someone else has done all the work.

CP/M is felt not to be a popular subject. I hardly ever use it as there is little that I personally want to do that CP/M does better than software running on my favourite DOS. I presume that many use CP/M either because it offers some very popular packages (eg for business) or because of the compatibility it is supposed to offer. I think that the lack of interesting utilities and the resulting difficulty in "fiddling around" with CP/M software means it has less appeal to NATGUG folk. After all, there can surely be few members who ONLY USE software, and do nothing else. Even the beginner generally wants to find things out. Well that's my theory !!

To return to the question of producing a programme for a weekend, can I make a suggestion that I'm sure some will find a heresy. One of the problems I find is that even when there is an interesting lecture on, I often get carried away working with someone else or a small group in the systems room. I feel that this is quite an important part of the proceedings, and that a slightly reduced lecture programme may not mean that the meeting is any less successful. COMMENTS PLEASE !!

Hopefully many folk will turn up at Swindon in March no matter how the programme turns out. I must say that it is an excellent venue - the Group gets great value from the hotel and the staff are very friendly and understand why people still need to be computing at 2 o'clock in the morning. If you haven't been before, there is a pleasant atmosphere and everyone, from the beginner to the hacker who is beyond hope, can learn something.

Well that's enough of me gassing for now. Perhaps just a few credits before finishing. I'm sure that I won't be alone in wanting to offer thanks to Brian, Leon and all the office-bearers for their work during 1984. Brian "you're doing a lecture in two minutes" keeps the Secretarial bit in excellent order and Leon "he who speaks Z80, 68000 and fluent C" does the thankless task of editing the mag. Best wishes to all for 1985 (07C1 hex !).

Don Bannister Tel: 0232- 668899

FINDING & FIXING A BUG - A LATE REPORT FROM SWINDON !!

Well it's probably better late than never. People often ask how you go about finding your way around in a piece of someone else's software. What I've tried to do is give a blow by blow account of an example that cropped up at the Swindon Workshop. You may not be particularly interested in the end result (although it will be useful to some), but the process may be instructive.

I suppose I'd better explain what the article is about and how the aforementioned bug made itself known. A small splinter group was attending a talk about Prestel up on the umpteenth floor near Os House's workshop. One of the wonders of the Wiltshire Hotel is a marvellous 'phone system which makes a demo of this sort of thing very easy.

Anyway, when the talk was over, word came up from the first floor that some IQLUG men wanted to do a modem link-up with us. Robert Vieira kindly volunteered his Model 4 for a little longer and Leo Knaggs lent his travelling modem (wonderful machine that it is !). A couple of us waited by the 'phone upstairs and somehow Peter Hall ended up amidst all the hardware downstairs. Actually it might be that they were using one of his modems - although it could have been a Maplin. I can't remember which, but its a nice chance to give Peter's excellent modem kit a plug !!

On with the story. As it happened to be on the system disk I was using, I loaded up LTERM on the Model 4, ready for the test. In case you were wondering, this is NOT a piece of software that works with the well known Spanish DOS (LDOS according to David Washford !!). It is actually a piece of public domain communications software, and although I haven't used it much, it looks very good. It is written for Models 1 and 3 and I was working Model 3 mode with my favourite DOS (which happens to include the figure 80 in its title !!).

Things weren't going too well downstairs (even making allowances for it being a QL !!), but word came up that 7-bit words might be used when things started to work (if you'll excuse the pun). I duly re-initialised LTERM and being suspicious of technical things decided to do a local test through the modem. Oh dear - some characters didn't echo properly. I won't go through the boring details as to how we discovered the trouble, but the outcome was that when LTERM was supposed to be doing 7-bit words it was doing 6-bit ones, and vice-versa.

At this stage we either had a look in Leo's little black book or the RS232 manual. (Incidentally the Model 1 RS232 manual is still pretty useful with the 3/4 - most of the information is the same). The serial chip is set up by loading data into one of its registers, and to condense things rather have a look at the table below.

```
x00x xxxx  =  5-bit words
x10x xxxx  =  6-bit words
x01x xxxx  =  7-bit words
x11x xxxx  =  8-bit words
```

If you examine the bit pattern a bit more closely (another pun), you would logically expect the 6 and 7 bit words to be the other way round. You would nearly think that they'd made a mistake doing the printed circuit board, and accidentally swapped the relevant data lines !!

Anyway, this is what the problem with LTERM turned out to be. They had assumed that there was a logical pattern and done some crafty bit manipulation to turn the "5,6,7,8" answer into the necessary data to initialise the serial chip. So where now ??!!

I confess that this is the black art bit, and different people do it in different ways. Basically we have to do the following :-

1. Find the present initialising code.
2. See how it actually works.
3. Cook up some new code to effect a fix.
4. If there is no room for 3, find some !
5. Install the zap into the program.
6. Test it !!
7. Do an article for the mag about it.

I generally use any or all of the following. FED2 is good because it relates the program on disk to where it will load into memory, it allows you to hop around the place easily, and has a one line disassembler so that you can get an idea of what's going on. Curiously, even though FED is written for LDOS, it does actually work with NEWDOS/80. TASMON is good if you want to see a little more disassembly - it does a page at a time and goes both backwards and forwards (clever eh). The fact that it relocates itself can be useful. On occasion SUPERZAP or DEBUG can be used.

In any event we (which included at various times Leo Knaggs, Carl Rabe and I think Peter Hall again) eventually found some code as below. We looked for the "5,6,7,8" prompt text, and then for something that referred to it. Incidentally, thanks for the use of your machine Peter, and you're not a bad barman either !!

```
6331 DD21B462          LD   IX,62B4H   ;POINT TO THE PROMPT TEXT
6335 CDA163            CALL 63A1H      ;DISPLAY MESSAGE ON SCREEN

               LAB3:   EQU  $
6338 CD2062            CALL 6220H      ;ACCEPT INPUT FROM KEYBOARD
633B FE0D              CP   0DH        ;ENTER - IE NO CHANGE ?
633D 2810              JR   Z,LAB4     ;YES - IT WAS

633F FE35              CP   '5'        ;TEST FOR OUT OF RANGE
6341 38F5              JR   C,LAB3     ;ILLEGAL - CAN'T BE < 4
6343 FE39              CP   '9'        ;ANOTHER RANGE TEST
6345 30F1              JR   NC,LAB3    ;ILLEGAL - CAN'T BE > 8

6347 CDB263            CALL 63B2H      ;DISPLAY THE CHAR ON SCREEN
634A D630              SUB  30H        ;CONVERT ASCII TO BINARY
634C 32C874            LD   (74C8H),A  ;NOTE WORD LENGTH IN MEMORY

               LAB4:   EQU  $          ;CODE CONTINUES HERE
```

Well, as you can see this is certainly a relevant bit, and indeed there are similar ones for parity, stop bits etc. However, all it does is to validate the input and then store 05, 06, 07 or 08 in memory location 74C8H. We can't be deterred by a little detail like this, so let's look for something else which also refers to that byte. There's a fair chance that it'll be what we want. And indeed another search revealed the following code near the start of the program. I've listed it in full, as it shows the complete set up of the UART control byte.

```
6135 0E00              LD   C,0        ;RESET THE UART BYTE IN C
6137 CBD9              SET  3,C        ;INHIBIT PARITY FOR NOW

6139 3AC774            LD   A,(74C7H)  ;GET THE PARITY BYTE
613C B7                OR   A          ;SET FLAGS
613D 200A              JR   NZ,LAB1    ;NO PARITY IS CONFIRMED

613F 0E00              LD   C,0        ;THIS WILL ENABLE PARITY
6141 3ACA74            LD   A,(74CAH)  ;IS IT ODD OR EVEN ?
6144 B7                OR   A          ;SET FLAGS TO FIND OUT
6145 2802              JR   Z,LAB1     ;ITS ODD - DO NOTHING
6147 CBF9              SET  7,C        ;ENABLE EVEN PARITY
               LAB1:   EQU  $
6149 3AC974            LD   A,(74C9H)  ;GET STOP BITS BYTE
614C B7                OR   A          ;SET FLAGS
614D 2802              JR   Z,LAB2     ;1 STOP BIT - DO NOTHING
614F CBE1              SET  4,C        ;SET UP FOR 2 STOP BITS

               LAB2:   EQU  $
6151 3AC874            LD   A,(74C8H)  ;GET WORD LENGTH BIT
6154 D605              SUB  05H        ;REDUCE 5,6,7,8 TO 0,1,2,3
6156 B7                OR   A

6157 07                RLCA            ;MOVE THE BIT PATTERN LEFT
6158 07                RLCA            ;INTO THE POSITION
6159 07                RLCA            ;REQUIRED TO GIVE THE WORD
615A 07                RLCA            ;LENGTH PART OF THE UART
615B 07                RLCA            ;CONTROL BYTE

615C B1                OR   C          ;INCLUDE T'OTHER UART BITS
615D F605              OR   05H        ;ENABLE RTS LINE AND O/P
```

```
615F D3EA          OUT   (0EAH),A  ;SET THE UART CONTROL REG
6161 326561        LD    (6165H),A ;AND NOTE THE CONTROL BYTE
6164 C9            RET
```

The word length business starts at 6151H. If you get a piece of paper you can fiddle around with the bits (RLCA just moves everything left one bit, and stuffs in a zero at the right hand side), you will see where the logical approach is at variance with the little table that we drew up before.

Right - we've more or less done items 1 and 2 on our shopping list. What about the fix ? There was some discussion about this, but what I ended up doing was adding a little bit which was to be executed somewhere around 6154H. You will recall that 5-bit words and 8-bit words were OK, so the first thing to do was to test for either of these. This leaves just 6-bit and 7-bit. For reference what we've got is :-

	(74C8H)	Less 05H	5*RLCAs	Required
6-bit	06H=0000 0110	0000 0001	0010 0000	0100 0000
7-bit	07H=0000 0111	0000 0010	0100 0000	0010 0000
		↑↑	↑↑	↑↑

This means that, for these lengths, we need to flip the marked bits. Doing this just after subtracting 5 will have the desired effect. And, oh goody, there just happens to be an instruction for this - its XOR. XOR is awfully useful to the machine code programmer, and it behaves thus :-

```
0  xor  0  =  0
1  xor  0  =  1
0  xor  1  =  1
1  xor  1  =  0
```

In English, if you XOR something with zero nothing happens, but if you XOR it with one you get an inversion. Great - how about XOR 0000 0011 for us - ie XOR 03H ? As the lady says, that'll do nicely sir.

So that's more or less item 3 done - we'll come back to the detail. What about number 4 ? At this stage we more or less had full scale war - I won't name names so as to protect the innocent. Someone said why not just stick the extra code on the end. It's not that I have too suspicious a mind, but this sounded too easy to me. One of LTERM's features is that of being able to store incoming data in memory, and to me this means that you need to put it somewhere - ie a buffer. It seemed that a reasonable place for this would be after the end of the program and indeed that is where it turned out to be - just the place to mess things up for us.

At this stage it was decided to look a bit closer at the program, and lo and behold when you run it you get a prompt that tells you where the software came from and the date etc. Now this isn't actually vital to the running of the prog, and seemed a possible place to hide some extra code. All that would be necessary would be to abbreviate the introductory message, and drop the new code in. I suppose I'd better come clean at this stage and say that we actually tried this. Everything seemed fine until you did a re-initialise and the

whole issue went into hyperspace. What became apparent was that the author had decided that once the initial message had been displayed there was no further use for it, and he would re-use the area for something else once the program was running. It just shows that sometimes my suspicious mind is right, and certainly explained the clobbering of our new patch.

After some more farkling about (sorry, I just wanted to see what the word looked like in print), we discovered that there was an area just BEFORE the program that was unused. Actually this was not strictly true - there were several bytes used. It turned out that these were buffer pointers which were used in some circumstances when you re-entered LTERM, and wanted to reclaim the text buffer. Clearly such information can't be contained within the program area or it would be lost when you reload. Just before this is where the patch was put.

So what about the following, where the new workings are between the marked lines ?

```
60E0 D605           SUB   05H         ;REPLACE ORIGINAL CODE

##################################################################

60E2 FE01           CP    01H         ;IS IT 5+1 = 6-BIT ?
60E4 2804           JR    Z,LABX      ;YES
60E6 FE02           CP    02H         ;IS IT 5+2 = 7-BIT ?
60E8 2002           JR    NZ,LABY     ;NO - FINISH OFF
           LABX:    EQU   $
60EA EE03           XOR   03H         ;FLIP BITS TO SWAP 6 AND 7
           LABY:    EQU   $

##################################################################

60EC B7             OR    A           ;SOME MORE ORIGINAL CODE
60ED C9             RET               ;AND BACK WHENCE WE CAME
```

One of the nice things about the way that DOSes handle machine code programs on disk, is that you can actually stick things on the end even though they have to end up somewhere else in memory. Part of the initial program message is actually lost as mentioned before, but only to simplify the installation of the patch. Although this space is used on the disk for the patch, our load address is 60E0H et seq, to avoid the nasty clobbering effect.

All that remains now is to make a call at 6154H to our new patch code. These bytes are faithfully replaced in the new bit. So in zapping terms, do the following to complete item 5 on our list :-

```
LTERM/CMD- MOD  FRS 00, 57H    (6153H)

    from    74  D605  B707
      to    74  CDE0  6007
```

LTERM/CMD- MOD FRS 43, 37H (9128H)

from				0D	446F	776E	6C6F	6164
	6564	2066	726F	6D3A	2043	464F	4E4A	2032
	3031	2D34	3836	2D32	3901	2A4A	9135	3620
	0D0D	5072	6573	7320	2842	5245	414B	2920
	666F	7220	436F	6D6D	616E	6420	4D65	6E75
	2E0D	0000	0002					
to				0D	0D50	7265	7373	203C
	4252	4541	4B3E	2066	6F72	2043	6F6D	6D61
	6E64	204D	656E	750D	0001	184A	9100	0000
	0000	0000	0000	0000	0000	0000	0000	0000
	0000	0001	10E0	60D6	05FE	0128	04FE	0220
	02EE	03B7	C902					

Item 6 calls for a test. Well I can certainly say that it seems to work. Only more extensive testing using all of LTERM's facilities will really prove the patch. As for item 7, you have just read it !! Feel free to get in touch if there is anything I have missed out.

Don Bannister Tel: 0232- 668899

ERRATA

In my article on 48K for the Model 1 in the September issue page 13 I left out one chip, one connection & have found that some computers have pins 12,13 & 14 of Z73 joined together.

Here the relevant paragraphs of the article with the changes highlighted:-

---

Here are the detailed changes necessary;-

Open up the Keyboard & locate the following chips on the 'trace' side of the board. Z21, **Z36,** Z37, Z51, Z73, Z74, I stuck small number labels on to make sure I could always read them, locate pin No 1 for each chip.

Lay the board component side down with the Keys away from you.

Cut the following traces, between pins 8 & 9 of Z37 (a solder sucker is needed here), close to pins 9 & 10 of Z73, (pin 10 on the component side) & at pin 5 of Z74.

NOTE.

Some late issue boards also have the traces of pins 12 13 & 14 of Z73 joined together so the trace both sides of pin 13 must also be cut.

Using thin insulated wire connect these pins in this order;-

From Z73 pin 11 to Z74 pin 10.
Z73 pin 12 to Z73 pin 5.
Z73 pin 10 to Z73 pin 4 & on to Z51 pin 13.
Z73 pin 13 to Z37 pin 10.
Z73 pin 9 to Z51 pin 14 & on to Z21 pin 15.
Z73 pin 8 to Z37 pin 9.
Z74 pin 5 to Z36 pin 4.
Finally Z37 pin 8 to Z37 pin 7.

Reference the article by Chris Currie in the October issue page 12 'REVIEW OF FLOYD STRUCTURED BASIC'

There was an article in COMPUTING TODAY in 1983 which gave the listing of a very similar structured basic which I copied & got running on disc subsequently giving away copies at the summer Milton Keynes meeting to anyone who was interested.

From the number of available functions quoted FSB does not appear as extensive as the one I have in which there 13 new functions but of course Chris may not have covered them all it does seem therefore a comparison should be made to prevent any copyright problems arising .

E.C.Kilpatrick,
3a Gainsborough St,
Sudbury.
SUFFOLK. CO10 6ET.
30/12/84.
Phone 0787 79504.

FOR SALE AND WANTED

Any one in HATGUG interested in buying 16K of memory for £10 ? I have 8 off 4116 dynamic memory chips for sale.

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Cambs CB2 4DJ

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(Please be patient if I am not in - I work very unsocial hours!)

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Tape-mailing (Tandy)	£1	
In-memory information (Tandy)	£1	
Cop-16 copying facility (ex Molimerx)	£4	(RRP £12.94)
Casino games pack (Tandy)	£1	
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Meteor mission (joystick/sound)	£2	
Alien defence (joystick/sound)	£2	
CLOAD Magazine Sept '83 (includes screen writer + games)	£1	

(N.B. Games should transfer to disk)

OR lot for £10

Disk software

Supertility plus (version 3.2)
(including technical manual) ex Molimerx (RRP £76) ONLY £35

Books

Programming in style by Dwyer	£3	(RRP £7.99)
TRS-80 assembly language prog'g (Tandy 62-2006)	£1	
Programming techniques for L-II by Barden	£1	
TRS-80 Basic (Wiley self teach)	£2	
More TRS-80 Basic (Wiley self teach)	£2	

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OR PURCHASE ALL ABOVE FOR £40

Contact: R.E.Wiggins evenings/we Hassocks (07918 - 3430)
'Dilkhush' North Bank
Hassocks
W.Sussex
BN6 8JG

VIDEO GENIE SEEKS GOOD HOME

All my Video Genie equipment seems to develop minor faults which I'm not clever enough to repair, so I've given up the struggle and bought a Hitachi with a 2-year guarantee. Now I want to get the following equipment off my hands, FREE to anyone who'll collect it all from central London (Kennington).

Video Genie EG3003 micro, with lower case and sound and a cassette recorder that only records when in the mood, though it plays back ok.

Expansion interface with 32K and an annoying habit of resetting the machine a few minutes after start-up.

Hi-res graphics unit which I've never been able to make work.

9" black and white monitor which develops a piercing whistle about half an hour after starting.

Centronics interface which works perfectly.

Light pen which works as well as most.

Large stock of cassette software, including Word4word, Tandy and Kansas assemblers, programmer's toolkit, etc, etc.

Anyone at all handy with hardware could no doubt fix themselves up with a properly working free system in no time. Ring John Imber 01-582 5127 (evening or weekend).

```
********** FOR SALE **********
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*                             *
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*                             *
*        £175.  Would separate        *
*                             *
* Phone Allan Fowke on (0223)832308   *
*                             *
*******************************************
```

FROM the SECRETARY (who also uses these TANDYs)

We are still meeting on the first and third Sunday mornings, 10.00am to 1.00pm here in Stony Stratford. Laurie Shields has just finished an ACCOUNTS teaching Program. Our college on seeing it decided to buy it. It is for newcomers to accounts. I hope to do a short note on hooking the M100 to the PC, and writing data files on M4 which are readable on the PC next month.
Brian Pain.

NATGUG NEWS

Volume 6 Issue 8 February 1985

OFFICIAL JOURNAL OF THE

National TRS-80
& Genie Users
Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time.

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

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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WORKSHOP CALENDAR

Cambridge - March 31
Liverpool - April early
Edinburgh - June
Leeds - Summer WE
North-East - October
Swindon - WE
Milton Keynes 1st & Third Sunday mornings

****

SOS HELP

Stolen from my car on 16th of Jan 85 a briefcase, part of the contents missing now distroyed by a bonfire deliberatly was the following.

1. INSTRUCTION BOOK FOR ZORK.
2. INSTRUCTION BOOK FOR ACS MODEM.
3. INSTRUCTION MANUAL FOR 26-1922 MUSIC SYNTHESIZER.
4. THREE DATA DISKS FOR BUSINESS GRAPHIC ANALYSIS PACK 26-1597.
   A. PIE CHART.
   B. BAR CHART.
   C. SCATTER CHART.
5. DISK AND MANUAL FOR HYPERZAP. OR OTHER ZAP MAY DO?

These contents was not INSURED, but I will pay or swap wanted books or disk data to any one who can make copys to replace my loss of the above assortment, please write stating what you have got and what you want.

Mr TURNER
51 WEYLAND RD
WITNESHAM
SUFFOLK
IP5 9ET.

EDITORIAL

I am writing this the day after the Swindon Workshop, which was probably the best one we have had. Once again, it was a joint workshop for both NATGUG and IQLUG. About 200 people turned up over the weekend, and the hotel was bursting at the seams. Interestingly, more NATGUG members booked in for the whole weekend than IQLUG members, but more IQLUGgers came for the day. At least, that was the impression I got.

The hotel fire alarm went off at about 0130 on Saturday night. Luckily, it was just a false alarm, as relatively few of us actually left the hotel. Of course, not many of our members were in bed at such an early hour, so it wasn't too inconvenient for them. To my surprise I didn't see any NATGUG members bringing their machines and software out with them, although one IQLUGger did rescue a couple of QLs, just in case. They were fitted with prototype memory expansion and disk controller modules, which would have been difficult to replace.

We held the AGM on Sunday morning. Once again, Brian and I were re-elected to our respective positions, and David Washford relented over his decision to resign from the Committee, and was also re-elected, so you are stuck with us for another year at least!

This issue is somewhat overdue, so it was decided at the AGM to send out something, even if it was only a couple of pages. Luckily, I have had several contributions in the last few days, so it isn't too thin.

Leon Heller

MEMBERS' LETTERS

I enclose a list of patches to LDOS, Superscripsit and FED. There is probably nothing new, but it is useful to have them to hand.

The FED patch is largely due to guess who? - Peter Knaggs. I was trying to implement his suggested patch to FED (News 10.84) when I discovered that my version of FED was only half as long as his. Presumably he bought his. Mine was free, with the 5.1.4 update. In about 3 nanoseconds flat he had produced the solution: a string of bytes to 'Find' and alter to make FED display graphics characters, instead of just dots. I was a bit surprised to find that Peter's suggested alteration didn't work as expected - no doubt another difference between the two versions. Well, I am no great shakes at machine code, but I pulled out Zaks and tried to see what was going on.

I finished up eliminating all the filtering, so now FED displays not just the graphics characters but the special ones as well - yes those 'funny European characters'. It makes for some spectacular effects on the screen. But, illuminations aside, it is helpful. Now when I dive for FED to zap a Superscripsit file that has received one or two free modifications from the freezer, I can quickly see the carriage returns, which come out as:

```
                  õ+M+++o
instead of:       . . M . . . .
```

[Ha! That didn't work as it should have done. The printer dropped into microfont instead of printing an o with a squiggle on the top at the end of the first string. The odd thing is that I tried two different codings, first 207, the printer's code for the character, and second 111 08 12 181, the code for o + backspace 12 dot columns + sqiggly accent. The results were identical each time, microfont. The correct code for microfont is ESC M, 27 77.
But how you get out of microfont I haven't yet discovered].

These rogue intruders represent the only major defect I have found in Superscripsit - its susceptibility to mains-borne transients, which can have disastrous results on a file. Some may disagree, but I have only had these problems in known 'noisy' environments. I may have found a makeshift cure, its still under test. It's very simple if one happens to have the object in question already: an extension lead, the longer the better. Mine's some 50 yards long and is coiled up at the source, rather than the object, of the interference. If anyone knows of a good filter, preferably in kit form, . . ? In the meantime, if anybody has any trouble with Superscripsit files, I have found that there is usually an odd byte or two, higher than E0, lurking round the scene of the accident and whose removal restores things to normality. The symptoms will be familiar - frozen blocks, the tab line haywire and occasional lines where, in scrolling, the screen goes blank.

I'm a member of a TRS 80 club over here and wonder if there would be any interest in co-operation. Their current pre-occupations include modems. One of the programs published recently in their News was multi- (or rather bi-) tasking for the Model I, and this before Tandy brought theirs out for the Model 4.

This is printed on the DMP 110. Not a bad buy for the price. It has a hammer mechanism instead of the normal matrix, whatever that means. Proportional, correspondence, normal (10 cpi) & élite (12 cpi), condensed and enlarged modes, italic, superscript, subscript, microfont, + bold + graphics. It tends to mess up the left hand edge of the paper very slightly and is not very good at friction feeding, lacking guides, though one can manage if one keeps an eye on it. It cannot cope with too thick a paper, or 2 thicknesses, or even less an envelope. And it's slow compared to say a DMP 200 or an Epson, and a bit more noisy. The print you are reading is proportional bold. It is not completely compatible with the DMP 200, giving slightly different results when using the DMP 400 printer driver. You only notice it when printing vowels with ^ and " accents, which require a backspace.

A couple of problems I've come across, to which someone has probably got the answer lying not too far away:

- a Model 4 which, with some Basic programs, though not all, and with the FED, responds to printer output commands by displaying:

(C) '80 Tandy

sometimes several or more times, and then going to sleep.

- a Model 4P, 8 of whose User Programmable keys, in Superscripsit Model III mode, do not work.

The French Mod 4 version of Superscripsit still has insects crawling around inside it, it seems. From what I have seen of it, the Model III version on LDOS 5.1.4 with SYSTEM (FAST) runs rings round it speedwise: I keep overdoing the 'delete', and the scrolling is so fast that it is unpleasant for the eyes. That is probably the price one pays for 'well-behaved', DOS compatible programs.

John Negus

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I have not written to the Newsletter before but herewith my adventures with WORD4WORD SUPERPLUS

I foolishly bought W4W on an LDOS disk (it seemed a good idea at the time as I have 'slow step' drives. I soon found that it did not work very well as follows:-

(a) IT WOULD NOT PRINT SPACES.

(b) IT (OF COURSE?) WOULD NOT SEND CHARACTER 'ZERO' TO THE PRINTER.

(c) IT WOULD NOT SEND CHARACTERS 65 TO 121 TO THE PRINTER (EVEN WITH '32' ADDED AS PER MANUAL!)

I fiddled with W4W and gave up for a few months.

I tried to contact PREMIER -no answer-where have they gone?. AS A LAST RESORT I looked in the NEWSLETTER INDEX. Oh geat W4W references were there but, as a fairly new member, I did not have the copies. No problem I sent an order to Brian (should it have been Leon?). I waited but nothing arrived. Telephoned Brian he gave me some names of users (of W4W that is). I lost the list of names and did not dare ask again

I had found that codes 161 to 255 got through to the MX80 and some codes were now activated (without character 'zero' I could only turn them off by reinitialising -rather boring). The codes 'viewed' as block graphics and some funny faces from the ROM.

LDOS using 'FILTER' let me redefine one character code, I chose character '7' to give me a 'zero' (I never did like bells). Now all the codes worked! W4W lets you 'DEFINE TEXT BLOCKS', I used this to define the print codes in a little file whch I load at the start of any text. Underline is @U1 for ON and @U0 for OFF for example.

You may have forgotten that I still did not have SPACES BETWEEN WORDS on the printer but character 160 could produce one. I checked to see if 'FILTER' could redefine '32' as '160' to the printer but it did

not, in any case I needed the filter for character 'zero'. Output via a screen print did work and spaces appeared.LDOS versus W4W?
I wrote two little procedures to activate 'REPLACE' and use them to change '32' to '160' and back again after printing,this is aBAD THING as it is very slow (the cursor gobbles up the '160' block graphics like a Pacman)
This letter was written using 'bodged' W4WSPLUS.But I am now using NEWSCRIPT for most things, a pity, but my W4W still does strange things to line lengths and indents (I assume W4W forces character '32's ' which don't get through!). I think W4W should have been the most cost effective word processor for TRS80 (perhaps it is for others)

JIM LANE (01-866-4650)

P.S. ANY ONE OUT THERE USING TURBO BY PREMIER?

Shortly after my report on the Quen Data printer was published in the newsletter, the printer ceased to work. I tried the Epson and when that also failed to print I started to look towards the computer. The printer cable looked a little suspect and this was replaced but eventually a fault was found on the LNW board. A new chip soon had it working and the Epson was working as usual. However the Quen was as not responding. The self test was functioning and the buffer appeared to accept data but the print head stayed very quiet.

As it was a new machine I did not try and find the fault and took it back to the supplier. There was a delay due to the fact that it had to be sent to the importers for repair and the Christmas holiday intervened. When it did come back the print head appeared to catch and the drive wire broke the first time I used it.

I decided to go straight to the importer and for a time toyed with the idea of asking Brian to pop round in his lunch break (Bletchly is very near Milton Keynes). However I have customers in the area so I can combine business with pleasure and puting the printer in the car, I made a personal visit.

Quen have a veritable Aladins cave of electronic goodies piled high and the very small service department is hidden away at the back. While the service department is small it appears that the number of faulty goods is even smaller. I had a hidden motive in taking the machine back personally because I had heard that they sometimes loan out machines while problems are being sorted out. I was out of luck and they positively insisted that I have a free replacement.

One of the questions we all tend to ask when making expensive purchases is "What happens if something goes wrong"? From what I saw, things do not go wrong with the Quen very often but when they do the service department responds in a helpful manner.

As a slight word of criticism; the Quen Data printer comes with packing pieces inserted to restrain the print head against damage. If the printer is used with these in position it is possible to damage the mechanism. The service department returned the machine without them perhaps because I had not sent them with the machine but also because the biggest cause of breakdowns has been the failure to remove the packing pieces. The damage that my printer had suffered was probably caused by it being unprotected while in the tender hands of the parcel post. The moral being read; the unpacking instructions before you try a new machine and retain all the packing incase it needs to be returned.

The delemour over packing affects all manufactures. The company that I work for used to sell expensive items on the basis that they would be supplied and installed. This puts the price up but guarentees that the machine will work when its handed over. Then some wholesalers started to supply at a discount on a "cash and carry basis". With many items this is a reasonable arangement but with expensive low volume items it often requires competant installation. For a time we refused to supply unless the machines were installed or checked by our own engineers but we were faced with legal action.

Now we get people saying that their brand new machine will not work and there is a dreadful smell of burning. When the service department asks if they have read the instructions they claim there weren't any. Usually it turns out that the smell of burning is the instructions frying in the melting plastic. This is the reason that they have a notice on the wall that says "nothing is fool proof because fools are very ingenious". Having once removed the lid without disconecting the power supply and taped down the safty micro switch, I lent over the machine and got my tie caught up in the feed rollers. As a powerful motor drew me closer and closer I realised why you are not supposed to work on machinery on your own. Some fools are not only foolish but also lucky to be alive.

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48K ON BOARD THE GENIE

The September '84 issue of the newsletter included an article from John Kilpatrick on putting 64K memory chips into a TRS-80. In the article he mentioned that Guy Grantham had also carried out the mod' on the Video Genie. I recently obtained a copy of Guy's circuit modifications and carried out the upgrade to my Genie. The rest of this article details that Mod.

In order to try to minimise on any possible static damage to the RAM chips I cover the working area with a piece of aluminium foil. I keep all my tools on it during the work and all the chips on it in their conductive foam.

Can I appologise for the modification of the part of the circuit diagram. I would have liked to have it in two colours but I hope the circles and the part dashed lines allow the alterations to be seen.

1 Open the case of the computer and remove the keyboard.

2 Remove the CPU board, unplug the power supply lead and the 40-way ribbon cable from the interface board, treat this cable with care DON'T BEND IT BACK.

3 Locate and remove carefully for re-use Z21.

4 Cut the track from Z21 pin 6 to Z21 pin 10, this track is under the chip location.

5 Place a 14 pin DIL socket inplace of Z21 and replace Z21 in the new socket.

6 Cut the track to Z21 pin 5 on the back of the board.

7 Join Z21 pin 6 to the far side of the cut to pin 5 (see step 6). There is a convenient plate thro' hole about 5mm from pin 5.

8 Join Z21 pins 4, 5 and 14.

9 Join Z21 pins 9 and 10.

10 Join Z24 pin 14 to Z25 pin 13.

11 Join Z24 pin 13 to Z25 pin 14.

12 Remove the 7812 regulator and R16. This disconnects 12v and -5v from the board. See fig. 1.

13 Remove C17 and C22.

14 Cut the tracks feeding +5v to pin 9 of RAM 8, Z34 and RAM 6, Z32. See fig. 2.

15 Join points A and B on fig. 1.

16 Join points C and D on fig. 2, this continues the connection of the track to RAMs 1-6 to RAMs 7 & 8.

17 Join Z24 pin 12 to track to pin 9 of RAMs, there is a plate thro' hole by RAM 1 pin 8 on this track which can be used.

18 Open X1 link pins 4-13.

19 Open X2 link pins 6-11.

20 Close X1 link pins 6-11.

21 Replace the board temporarily and check that no pins of the RAM sockets contain -5v or +12v also +5v is only on pin 8 of the RAMs. Note pin 1 is not connected internally in the RAMs.

22 Place 8 64k 4564 or 4864 RAMs in the sockets.

23 Check everything again.

24 Power up. Switch off if READY prompt does not appear and recheck.

25 In answer to ?MEM 48340 should appear.

26 Run a memory test program or the following BASIC program as a temporary check for about an hour. This program prints and decrements the mem size as return addresses are stored in top memory until a mem size of 100 when it starts over again.

```
10 CLS
20 PRINTMEM;: IF MEM ( 100 THEN RUN ELSE GOSUB 20
```

NOTE:- Only 4564 or 4864 RAMs will work with the Genie as they have a bit 7 refresh logic built onto the chip. Texas 4164 chips DO NOT have the necessary logic.

Ken Robinson
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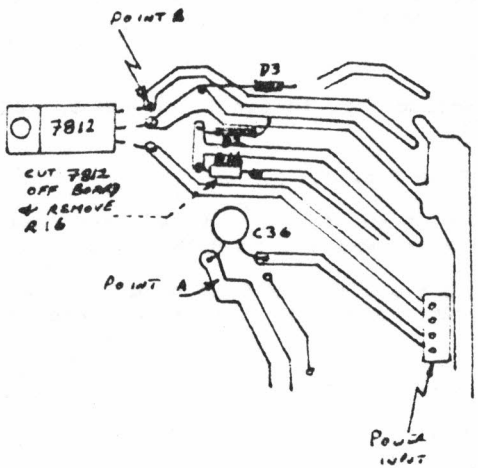


FIG 1

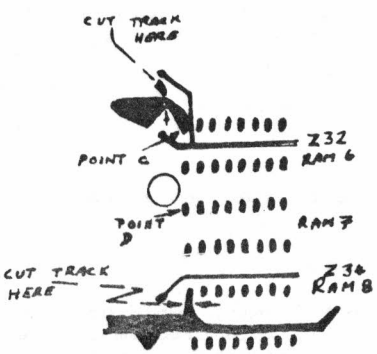
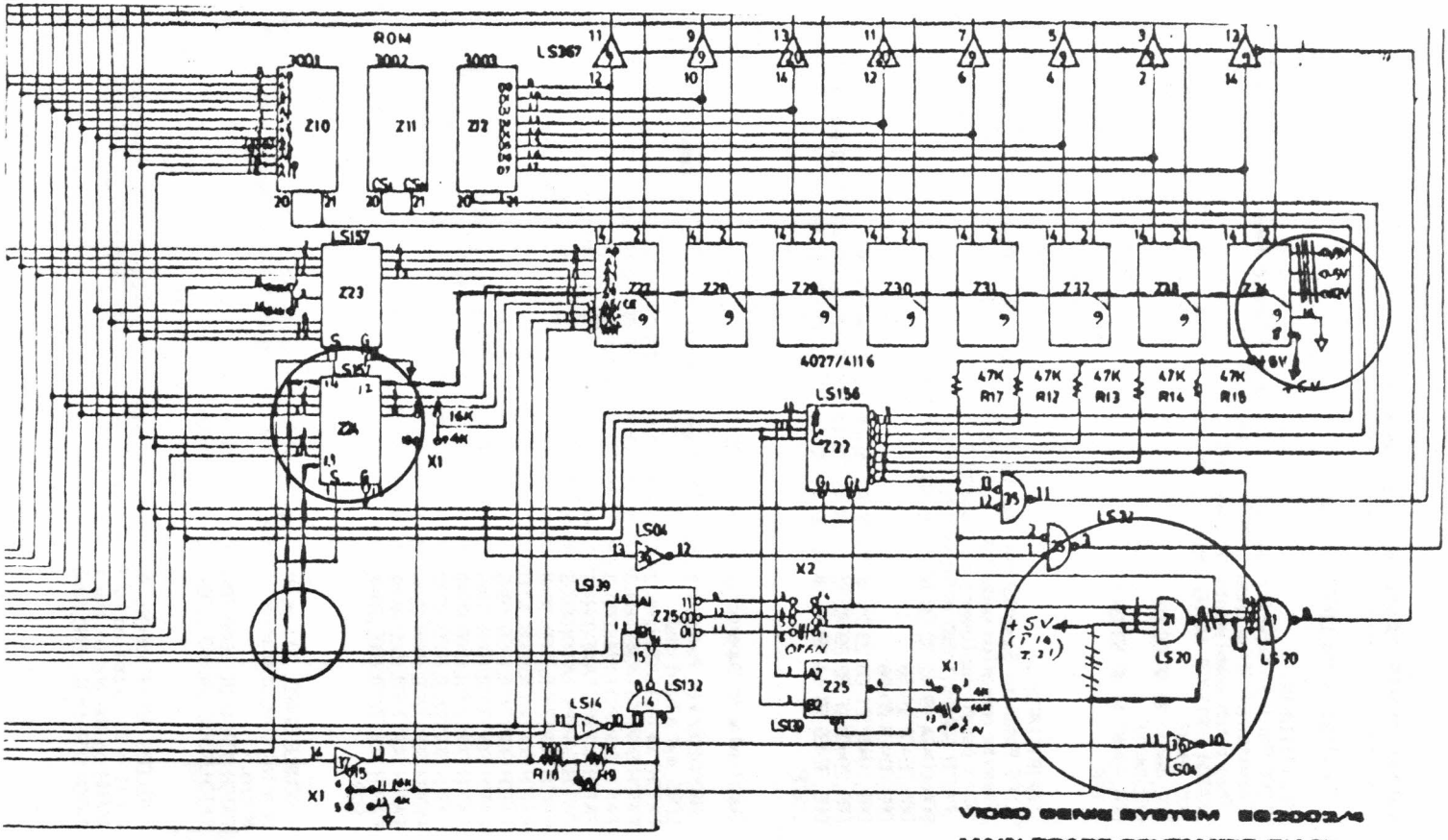


FIG 2



VIDEO GENIE SYSTEM EG3003/4

MAIN BOARD SCHEMATIC DIAGRAM

SHEET 2

PATCHES TO SUPERSCRIPSIT Model III version:

. Supplied on the LDOS Fix Disk:

```
.SCR17III/FIX
.LDOS Patch to SuperScripsit by Tom Price and Renato Reyes
.Permits operation under LDOS 5.1.3 Mod III
.This patch compliments of PowerSOFT
.PATCH SCR17/CTL USING SCR17III/FIX
D02,40=3B
D02,46=D6 30 4F 06 00
D0C,DA=37
D04,69=4C 44 4F 53 20 20
. EOP


.SCRIPIII/FIX
.LDOS Patch to SuperScripsit by Tom Price and Renato Reyes
.Permits operation under LDOS 5.1.3 Mod III
.This patch compliments of PowerSOFT
.PATCH SCRIPSIT/CMD USING SCRIPIII/FIX
D00,08=3A 89 42 32 20 5B CD 01 5B
D05,2E=C3 16 5B
D09,0D=E5 CD 90
D09,10=42 E1 00 23 23 46 23 7E B7 3E FF 20 03 00 00 78
D09,29=0B 8F 32 89 42 E5 2A 14 45 22 14 5B 3E 0A CD 40 40 E1 C9 00 00
D09,3E=ED 5B 14 5B 3E 0A CD 3D 40 3E 00 32 89 42 C3 2D 40
. EOP
```

Supplied with Superscripsit on TRSDOS 1.3:

```
.HARDDISK/JCL. Patches to apply to Superscripsit to make it compatible .with
LDOS and a hard disk.
PATCH SCRIPSIT/CMD(D09,26=E5 CD 90 42 E1 00 23 23 AF 57 E5)
PATCH SCRIPSIT/CMD(D09,31=06 AE 21 E0 7D 5E 0E 08 CB 13 38)
PATCH SCRIPSIT/CMD(D09,3C=01 14 0D 20 04 23 5E 0E 08 10 F2)
PATCH SCRIPSIT/CMD(D09,47=E1 46 23 7E B7 3E FF 20 01 78 32)
PATCH SCRIPSIT/CMD(D09,52=22 7E BA 38 04 7A 32 22 7E AF C9)
PATCH SCR17/CTL(D00,3C=E6 07 4F 06 00)
PATCH SCR17/CTL(D00,42=F0 8D)
PATCH SCR17/CTL(D00,68=5B)
PATCH SCR17/CTL(D00,AA=20 20 55 6E 69 74 DB 20 64 65 20 64)
PATCH SCR17/CTL(D00,B6=69 73 71 75 65 73 20 28 30 2D 37 29)
PATCH SCR17/CTL(D00,C2=20 3F 20 F5 CD 09 42 3E E0 C4 09 44)
PATCH SCR17/CTL(D00,CE=CC 19 44 F1 C9)
PATCH SCR17/CTL(D02,4F=4C 3E 44 4F 53 20 20)
PATCH SCR17/CTL(D02,B8=4C)
.EOP
```

- DOUBLE SPACE. Allows the display of 2 spaces on the screen, instead of the special code character. Thanks to Tony Cottingham & NATGUG News, also to 80 Micro.

```
PATCH SCR64/CTL (D00,38=18), (F00,38=20)
PATCH SCR35/CTL (D01,30=18), (F01,30=20)
```

- RECORD OUT OF RANGE: This error message is frequent during conversions ASCII - SS. Supplied by Tandy France. (LSI Journal 10.83 suggested appending 0000H to the end of the file).

```
PATCH SCP64/CTL (D0C,64=0000)
```

PATCHES to LDOS 5.1.3 for Model III

- DATE. SYS0/SYS to change the slash separating the month/day/year at boot-up; instead of entering 02/02/85 one enters 02.02.85 Patch supplied by LDOS Quarterly 7.83.
PATCH SYS0/SYS.SYSTEM (X'4EB9'=".") for the date (Model I 4EB8).
(X'4FA6'=".") for the time (Mod I 4FA5).

- LCOMM, LDOS Quarterly 1.83, for files larger than the memory buffer:
PATCH LCOMM/CMD D07, B3=12 (LCOMMB/F33, not LCOMMC/F33)
There are apparently several versions of Lcomm.

- DISK SPACE ALLOCATION:
This patch forces LDOS (pre 01.09.83) to allocate filespace starting from track 1, instead of randomly:
PATCH SYS8/SYS.SYSTEM:0 (D00,FE=2E 01 00 00 00 00)

PATCHES to TRSDOS 6

- DATE. To change the separator character used when entering the date and time at boot-up. Supplied by LSI Journal 4.84. One enters . instead of / and :
PATCH SYS0/SYS.LSIDOS
D0E,B3=2E:F0E,B3=2F for the date and:
D0F,9E=2E:F0F,9E=3A for the time.
PATCH SYS7/SYS.LSIDOS
D01,EB=2E:F01,EB=2F for the date and:
D03,05=2E:F03,05=3A for the time.

And to change the prompts from DD/MM/YY to DD.MM.YY for the date:
D10,E1=2E4D4D2E5959: F10,E1=2F4D4D2F5959
and for the time:
D10,F3=2E 4D 4D 2E 53 53: F10,F3=3A 4D 4D 3A 53 53

- SYSTEM TRACK, 5.1.4. and following, on track 0:
Patch SYS0/SYS (D04,E1=2E 01 00 00 00:F04,E1=D5 CD B8 06 D1 6C)

- CLEARING THE SCREEN BEFORE DISPLAYING THE DIRECTORY, TRSDOS 6:
PATCH SYS6/SYS.LSIDOS:0 (D07,55=0D:F07,55=1C)

PATCH to FED

A patch to FED to force it to display graphics and special characters, instead of dots, for all codes above 100. (Codes below 020H are all shown as 0FEH, ■). The addresses given below apply only to the free version that comes with LDOS 5.1.4; if you bought yours, you will have no trouble 'Finding' the appropriate addresses. If you find out how to get a similar effect on print-out, I'd be interested in hearing about it.

PATCH FED/CMD.PPW3 (D10,2A=00 00 00 00:F10,2A=CB 7F 20 04)
Also make identical changes at the two other occurrences of the string CB 7F 20 04 in records 012H (byte 63) and 013H (byte 8E).

John Negus

TRSDOS 06.02.00

Whenever I (unwillingly) become involved with *Apple* computers or other Z-80 based machines running CP/M I am amazed that the TRS-80 family were allowed to become eclipsed as they apparently were even in the US. Our familiar *TRASH-80's* are superior in so many respects that we take for granted. It is hard to escape the conclusion that Tandy's "closed shop" policy of not selling or even recognising any other software or hardware must have been the dominant factor but their unwillingness to keep their loyal supporters informed of developments must rank a good second. The Model 4 was delivered with TRSDOS 06.00.00 which was fairly rapidly followed by 06.01.00 and then 06.01.01 and 06.01.02. The current version is, I hope, 06.02.00 but there has been no information from Tandy explaining the upgrades. There are rumours that 6.0 did not support hard disks and that 6.1.2 introduced new BASIC commands but it appears that there have been considerable changes between the first release and 6.2 and no-one is really sure why or how. There are even rumours that far from removing bugs in the original version, there are now more bugs in 6.2! It also appears that Tandy have been fiddling with the Model III mode and that certain well-established ROM addresses have been changed in the latest versions of the Model 4.

There seems to be a need for NATGUG members to start a co-operative venture to analyse and report on the different versions so that Model 4 users can take full advantage of the operating system despite Tandy's reticence. I am not knowledgeable in computers but since I have upgraded from 6.0 to 6.2 I am taking the liberty of detailing some of my findings - largely theoretical - on comparing the two manuals. Hopefully, there are many people out there who are more with it and will weigh in with detailed operational differences.

As regards the **6.2 Manual** itself this is a great improvement over the original. Not only are many of the errors and omissions corrected but the manual is typeset rather than being offset printed from the typed copy and it is therefore much easier to read. Sadly, the page numbering is consequently changed and it is not possible to cross reference the two manuals. (Incidentally, if there is anyone out there still struggling with the original version, *Crest Software* have produced both a better index for the manual and a smaller version of the manual known as *"Mod 4 by Jack"* which may be worth investigating.) Another general feature is the number of specific references to the 4P which was, of course, not around when the first manual was printed. One of the omissions now corrected is the fact that <CTRL><R> will repeat the last DOS command directly so obviating the need to type the line in again.

Booting has been simplified by allowing **DATE** and **TIME** prompts to accept a wide variety of separators and not just the "/" and ":" as in the original. There was a patch provided by LSI which allowed the use of only the period "." as a separator and this was probably adequate as this is the only non-numeric key on the numeric keypad and is the obvious choice for rapid entry of dates and times. Two other facts also become obvious during booting. The first is that 6.2 is **faster** than earlier versions. (Tandy claim that it is 20% faster.) The date prompt appears before you can imagine. There is another helpful addition if you are accustomed to using configuration files since the new OS displays **** SYSGEN **** during the configuring to explain the delay. I like programmers who regard their audience as being basically simple - maybe because in the computer field I really am! As an pointer to the existence of possible incompatibilities between the old and the new systems the manual points out that CONFIG/SYS files produced under earlier versions cannot be executed or even copied to 6.2 but the entire file must be entered and SYSGENed again. There is a further utility to the booting sequence which I have not yet explored. If, after booting, you type **<#> <ENTER>** the system executes an IMMEDIATE EXECUTION PROGRAM which is stored on SYS13/SYS. This can be any executable (/CMD) file and can be your WP file or spreadsheet etc. As a /SYS file it loads faster.

I was somewhat surprised to see the addition of a **CAT** command to produce the directory normally resulting from DIR :n (A=N) but I suppose this does bring the system into line with a number of operating systems which offer the short-form directory with a little less hassle. Still, one cannot but marvel at the strength of the lobby which induced LSI to introduce a new command for such a small return. Another new DOS command is our old friend **CLS** which does just what it does under BASIC and can be included in JCL files.

The **FORMAT** command now includes a **DIR** parameter which allows the operator to select the directory track - is it possible that there is a lobby of TRSDOS 1.3 addicts who insist on having the directory on track 17? There is also a **SYSTEM** parameter to allow the re-creation of a hard disk directory file. There is also some expansion in the manual on the causes of error conditions during format together with an explanation of the error messages.

Although I am an admitted tyro at this computing game I am still unconvinced about the necessity of **HELP** files but TRSDOS 6.2 now has such a file which will list an abbreviated description of all the DOS commands at will. It is precisely because the instructions are abbreviated that I think they are less than optimally helpful and usually find myself turning to the manual if I really need help. I am sure most users will delete these files and thus give themselves an additional 24K on the diskette. The manual states that the **HELP** program will load and display help files from other application programs. I have tried it on one such program and it does not work!

A new **LOG** command allows system disks to be changed without resetting and may be designed with hard disks in mind. There is some explanation under the **MEMORY** command in the manual which provides technical information with regard to CFLAG$. The **SYSTEM** command includes new subcommands **BSTEP** to set the default bootstrap step rate, **FAST** and **SLOW** to change from 4 MHz to 2 MHz as required, **GRAPHIC** to inform the system that your printer can output TRS-80 graphics characters, **RESTORE** to enable or disable restoring of all drives to track 0 at power-up and **SMOOTH** which alters the disabling of interrupts to allow smoother disk access at the expense of some speed.

There is also a **SYSTEM** subcommand **HERTZ** which is designed to patch the system to run at 50 or 60 Hz but I have been singularly unsuccesful in installing this patch. Unlike the JCL file provided with 6.1 which established a remarkably accurate internal clock, only barely influenced by occasional disk access, the clock with 6.2 is impossibly inaccurate. I have reported the failure of this patch to Tandy but have heard nothing further. I have not felt the need for it but there are possibilities in business programs which would welcome the addition of a **TOF** command which sends an 0C to the printer from DOS.

Under the title of BASIC CONCEPTS the manual includes a discussion of **INTEGER DIVISION** and **MODULUS ARITHMETIC** under the description of the numeric operators. This information was missing from the original as was an explanation of XOR, EQV and IMP which are now fully described in the section on logical operators. There is also a description of the elusive **WIDTH** and **SOUND** commands which were not included under the BASIC commands in the earlier documentation.

There are a number of changes and additions to the **APPENDICES** at the back of the manual. Appendix **B** now includes some hardware specifications for the Model 4P and Appendix **C** provides additional information on the use of space compression and special character codes whilst **D** contains three additional BASIC error codes and messages. Appendix I is considerably expanded with information on FLOPPY/DCT and CLICK/FLT and includes a description, albeit brief, on the new capability of using **IMMEDIATE EXECUTION PROGRAMS**. APPENDIX J now splits the **MEMORY MAP** into a DOS version and a version with BASIC loaded. The Appendix K devoted to **DEVICE-RELATED COMMANDS** has been considerably expanded with the liberal use of flow diagrams. There are also addditional appendices L on how to use the **SYSTEM (HERTZ)** command - which doesn't work - and M on the use of Tandy **limited-backup diskettes**. Interestingly, these can now be moved to a hard disk system using a backup by class or a backup reconstruct but still at the expense of a 'copy-count'.

It is probable that a whole paper could be produced on the INDEX which is odd - to say the least! I can merely mention that <CL><1> - <CL><6> are listed under the heading of APPLICATION KEYS but <CL><7> - <CL><0> appear under ACTION KEYS and neither of these divisions or headings seems to be helpful. The command parameters or subcommands do not appear to have been included. Perhaps Crest Software will now produce a decent Index for TRSDOS 6.2 as well.

I am *almost* sure that this latest offering is an improvement on the original. It is certainly faster. However, I have already discovered that some Tandy applications programs which run under 6.1 just do not load or run under 6.2 which seems to point to a terrifying degree of incompatibility and I have no doubt that those members with more of a technical bent will discover more bugs as we go along. If you know of any problems or answers could you share them with us?

I hope that this discussion has been helpful to someone. At the very least it has ensured that I have at last read right through both manuals - even if I did not understand all I read!

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Herts CM22 7ES.

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MORE WINDOWS

Reading through the Dec.84. newsletter I came across the article by Peter Naggs on windows for the TRS80. I ran the programme and started to "fiddle", I played around with Peters idea of using windows and came up with the following programme.

The programme takes text from a word processor file (which must be saved in ASCII), and displays the text in two windows, one scrolling up and the other scrolling for right to left.

Try it, write your own text with a word processor, save it in ASCII and when you run the programme, enter the file name when prompted.

Funny how things develope when you start fiddling, Hope you enjoy it.

Tony Evetts.

```
5 CLEAR 1000 : CLS : PRINT@522,"FILE NAME TO READ"; :
               INPUT F$ : '       ***** Get file name
10  I2=64 : WW$=STRING$(58,32) : '       ***** Dummy string
15 FORL=0TO7 : W$(L)="" : NEXT : '
               ***** Null write strings
20 CLS : P0=799 : RE=P0 : '       ***** Set print possitions
30 PRINT@325,"DEMONSTRATION"; : PRINT@458,"OF"; :
               PRINT@ 584,"WINDOW";  : PRINT@712,"DISPLAY";
40 FOR X=5TO40 : SET(X,12) : SET(X,39) : NEXT : '
               ***** Draw window       one
45 FOR Y=12TO39 : SET(5,Y) : SET(40,Y) : NEXT : '
               *****    "       "       "    "
```

```
47 PRINT@985,"by Tony Evetts";
50 FORX=60TO127 : SET(X,12) : SET(X,39) : NEXT : '
                  ***** Draw window two
60 FOR Y=12 TO 39 : SET(60,Y) : SET(127,Y) : NEXT : '
                  *****   "          "     "
65 FORX=5TO127 : SET(X,4) : SET(X,9) : NEXT : '
                  ***** Draw window three
66 FOR Y=4 TO 9 :  SET(5,Y) : SET(127,Y) : NEXT : '
                  *****   "       "       "
70 OPEN"I",1,F$ : '      ***** Open file for reading
80 IF EOF(1)  THEN  PRINT@25,"All Finished"; : CLOSE :
                  GOTO 600 : '      ***** Test for end of file
85 LINE INPUT#1,A$ : '    ***** Get 255 charaters from file
90 ST=LEN(A$) : W=1 : '**** Check string length
95 IF ST=0  THEN  80 : '
                  ***** If string empty get some more
100 T=ASC(MID$(A$,W,1))
102 PRINT@132,WW$; : WW$=WW$+CHR$(T) : WW$=RIGHT$(WW$,58):'
                  ***** Scroll window one right to left
105 ST$=ST$+CHR$(T) : '      ***** Tempory string
110 IF T=32  THEN  GOSUB320 : '
                  ***** If space then  check line length
130 IF W=ST  THEN  80 : '
                  *****   If end of string, get some more
135 W=W+1
140 GOTO 100 : '      ***** Get next word
320 IF LEN(W$(7)+ST$)>32  THEN  GOSUB 500 : '
                  ***** If line to long, add word to next line
330 W$(7)=W$(7)+ST$ : PRINT@PO,W$(7); : '
                  ***** Print last line of window two
335 ST$="" : '      ***** Empty tempory string
340 RETURN
500 FOR L=0TO6 : W$(L)=W$(L+1) : NEXT : W$(7)="" : '
                  ***** Move strings up
510 FOR L=6TO0 STEP-1 : PRINT@PO-I2,STRING$(32,32); :
                  PRINT@PO-I2,W$(L); : I2=I2+64 : NEXT : '
                  ***** Scroll text up in window two
515 PRINT@PO,STRING$(32,32); : '
                  ***** Blank out last line
520 I2=64
530 RETURN
600 GOTO 600
```

RESTORE in BASIC

I enclose a modification to the patch to Newdos 80 V2.0 to allow Basic to use the RESTORE command to restore to a line number and not to the start of DATA.

The original patch was published in 80-Micro in June '83 but it conflicted with Zap 87 as issued by Apparat. The patch has not yet conflicted with any other function up to now that I've found. The Zaps are to BASIC/CMD relative sectors 14 & 15. The enclosed test program also gives the syntax of the command, however note that RESTORE xx will not work within an IF... THEN... ELSE construct and that after renumber the line numberr following restore will NOT have been altered. I would also suggest that a return to DOS from BASIC is made via CMD"BOOT" and not CMD"S".

Ken Robinson
(0908)-75479

```
2 REM*****************************************
3 REM**   TEST PROGRAM FOR RESTORE PATCH    **
4 REM**      see 80-MICRO    June '83       **
5 REM**      Mod'ed for Zap 87 in           **
6 REM**      NEWDOS 80  Vers 2.0            **
7 REM*****************************************
10 CLS
20 FOR I=1TO1023
30      RESTORE 90
40      READ A$
50      PRINT A$;
60 NEXT I
70 GOTO 70
80 DATA 0
90 DATA *
```

```
DRV 00  D977 BEC2 C957 7022 B140 11CE FF19 22A0 .w...Wp".@....".
0   10  4021 5C67 CD67 4421 FEFF 22A2 4021 3A64 @!\g.gD!..".@!:d
0H  20  22A7 4021 6943 CB8E 3A6C 43CB 773E C928 ".@!iC..:lC.w>.(
    30  067C 3221 643E C332 1243 215B 6711 5241 .|2!d>.2.C![g.RA
DRS 40  0193 00F3 ED80 3E03 3289 5F21 8E66 3134 .....>.2._!.f14
34  50  65FB B728 1108 ED48 C564 3600 0823 7881 e..(...H.d6..#x.
22H 60  20F8 083D 20EF 3600 2322 A440 112C 0119 ...=..6.#".@.,..
    70  EB2A B140 DFDA C957 CD4D 1B21 0000 7EFE .*.@...W.M.!..~.
    80  2A20 1701 0000 2AA4 4071 2370 2100 00CD *.....*.@q#p!...
    90  5A1B 21E9 5422 5E65 1804 FE0D 2806 2189 Z.!.T"^e....(.!.
    A0  6522 0552 C319 1AE1 2133 0022 0552 C321 e".R....!3."..R.!
    B0  AC65 CD67 44ED 5B5E 652A A740 1AFE 0D77 .e.gD.[^e*.@...w
FRS C0  1323 20F8 AFF5 2BC3 7903 1D1B 1F03 01FA .#....+.y.......
14  D0  C965 0000 0000 2A2A 237E FE3D C9C5 CDE1 .e....**#~.=....
EH  E0  6179 C1C9 ED5B C564 C9DD CB04 FEC9 C24A ay...[.d.......J
    F0  1E3A 0251 B7FD 2100 4228 04FD 2117 42E5 .:.Q..!.B(..!.B.
```

```
DRV 00  DD6E 05DD 6606 FD5E 05FD 5606 DF20 04DD .n..f..^..V.....
0   10  CB04 F611 1700 FD19 FD7E 00B9 38E8 E1C9 .........~..8...
0H  20  DDCB 0476 C032 024F C9DD 5E13 DDCB 0476 ...v.2.O..^....v
    30  C8F1 09C9 DDCB 0476 C019 10FD C9DD 740A .......v......t.
DRS 40  09EB DDCB 0476 C078 B128 042B 1BED B8AF .....v.x.(.+....
35  50  C9CD 4F66 E5C3 174E CDB7 61E1 E3E5 C3E4 ..Of...N..a.....
23H 60  4DB5 B1CA D95D 79B7 C9DD CB00 56CA D05D M....]y.....V..]
    70  C900 E37D FE5B 2003 7CFE 1DE3 C296 66CD ...}.[ .|.....f.
    80  781D FE90 2804 2BC3 9666 CD78 1D38 03C3 x...(.+..f.x.8..
    90  911D CD5A 1EE5 CDC8 1E2B 22FF 40E1 2BC3 ...Z.....+".@.+.
    A0  781D 0000 0000 0000 0000 0000 0000 0000 x...............
    B0  0000 0000 0000 0000 0000 0000 0000 0000 ................
FRS C0  0000 0000 0000 0000 0000 0104 0440 6966 ............@if
15  D0  012A C766 0000 0000 0000 0000 0000 0000 .*.f............
FH  E0  0000 0000 0000 0000 0000 0000 0000 0000 ................
    F0  0000 0000 0000 0000 0000 0000 0100 BC66 ...............f
```


```
::::::::::::::::::::::::::::::::::::::::::::
::              **  FOR SALE  **            ::
::    1.        Video Genie original        ::
::    1.        Un-used Video Genie 1       ::
::                                          ::
::  Contact:  Keith Hook                    ::
::  3 Bulcock Street, Burnley, BB10 1UH     ::
::  Tel: 0282  57427                        ::
::                                          ::
::::::::::::::::::::::::::::::::::::::::::::
```

MORE ABOUT 'SIR'

I was very interested to read Derek Trayler's letter in the December issue – I also started with ISS and went on to SIR, and have developed a Dr/Cr/Cash analysis system for my business which seems to satisfy the dreaded VATman, impress my bank manager, and deal with my auditor. It also gives me a day-to-day breakdown of sundry debtors/creditors and bank and credit card statements. It is possible I have gone a bit further with SIR than Derek Trayler, as indeed his last paragraph suggests is possible.

I use a Model 4 in III mode, with TRSDOS 1.3, but not from choice. I too would like to use the Model 4 in its proper mode. I have standardised on my sorts, which are activated by DOing an appropriate /BLD file. These /BLD files are very easy to write if you are meticulous about writing down *every* keystroke (particularly the 'ENTER'). I write them in for convenience in groups, which makes it easier to modify by way of DEBUG. Usually, but not always, extra ENTERs dont seem to matter. One trick I discovered – when it came to 'Select' or 'Exclude', it seems to work better if you 'Exclude' what you dont want rather than to 'Select' what you do. The sorts are so fast that it is only a matter of a few seconds to run through quite an elaborate sort. There is another trick I discovered, which I didn't find terribly well explained in the literature. The first sort can be followed by an 'Extended' resort, but only if the columns sorted are adjacent, which is easily arranged. This means that the first sort could be on 'Date' followed by an extended resort on 'Name', thus grouping the names alphabetically for each date in proper order.

The next problem I had to deal with was printing the various column totals. Now SIR if asked nicely will add up your column totals in a flash, but it wont print them! And it wont add them at all if the column is wider than 999.99 – a bit limiting, even for a small business. So I had to write Basic programs, much against my inclination.

The SIR sorts out a /TXT file, which I suspect is a random access file, because it has the record number as the first field. I didn't want to know about the record number, and in any event the sort had put the file into a specific order for the printout. So I argued that random access was out, and sequential files were in, and by a lot of multiple midstringery, and VALs to dig out the values, and what I have no doubt are highly unsophisticated, unorthodox and wasteful routines it worked. Quite a useful dodge was to do some midstringery on the TIME$ and get the date the way I wanted it. My own dates, by the way were written in the form 2.11 for February 11th. This make it convenient for sorting, and can always be converted back for those special occasions.

Having produced my Basic programmes – and having sorted out what happens at the end of the year by persuading January that even if its only 1, its got to act like it was 13 – I wrote a /BLD DO programme for each. After that, using PROFILE+ I produced two screens, the first of which came up with AUTO on booting up. Then I only had to occassionally think about what I was doing. Push one button for the sort, and another for the print out, and go away and wet the tea.

SIR can be crashed, I have done it on making new entries. After several months, it transpired that I had managed to get 12 extants for the main /TXT file, and the crash destroyed quite a bit of that file, and totally destroyed the equivalent /PAR file. By COPYing the main /TXT file (I had backups!) several times onto its own I forced it down to Cyl. 25 or thereabouts, and then PURGED off the rubbish. After that I lived happily ever after, or at least until the end of the quarter.

SIR is an excellent programme designed to be generally useful, and must therefore have its limitations in highly specialised applications. I would love to find a back-door, as it were, into the programme, so that it could sort existing files. At the

moment it sorts files produced from its own rigidly formatted data entries. I have had a lengthy correspondance with Molimerx, but Mr Harding had played a very straight bat, and I havent got anywhere. The mysterious Mr Gordon Hatton who wrote the programme relays his delphic, if somewhat negative messages through his medium, the other Mr H. Could it be true that he has lost interest in Tandy? I do hope not – TRSDOS 6.x.x awaits his attention. We need you, Gordon!

JOHN ARTHUR 2 Exmoor Street London W10 6BD

Re-inking Ribbons and Printer Use for Stencils

Following up Phil's remarks in the News about re-inking ribbons, I have used a few drops of "Digby" Endorsing Ink from WHH & Co Ltd, old supplies to schools via County Stores. It has extended the life of fabric ribbons in both Epson and Brother printer ribbon cassettes with no apparent ill effects.

Leon seems to confuse banda masters with standard stencils. Bandas can be well-produced with a DM printer, especially in bold or emphasised mode but they are not cut: they work on the carbon-paper principle, with the print head pins striking clean paper. Stencils, however, are cut through the 'wax' by typing and could gum up the works of a DM print head.

The alternative of daisywheel printers for stencil-cutting, may be very disappointing. Do not rely on a daisywheel achieving a good result just because the printer is costly. I have had unsatisfactory results with the Tandy DW2 printer, no matter what impact setting was used, both on ordinary stencils and with bandas. The image or type was always too faint and uneven. The Brother HR15 is slightly better, but tends to cut or type too lightly at the bottom of letters. Double strike gives an acceptable but still not really good result.

The best way to obtain really good copies from computer output is to use either DW or near-letter-quality DM printer with a good ribbon. Then find someone who will make a master for offset litho by the photo-copying method. This allows the image to be increased in contrast and can even improve on the quality of the original. For a run of more than about ten copies the cost per copy is less than for direct photocopying and for long runs, little more than the paper in direct cost.

Problems with Superscripsit on Model 4

Why do I keep on having problems with Superscripsit, all this time after its release on sale, and why do Tandy react as though this is so unusual, not common to other users' experience?

(I enclose a copy of my recent letter to TRS 80 Customer Services in case you find parts of it worth editing in.)

The most common apparent bug is that some kind of print buffer unloads a copy of recently typed characters, including embedded print codes. About 80 characters may thus be spuriously printed, usually including "phrases" from more than one piece of the text already typed. Since this happens from the current cursor position onwards, it can overtype quite a lot of text if one is editing in the middle of a document. This fault has usually happened early in typing a new document, but sometimes at other stages. Spurious

printout started simply as a result of pressing a SHIFT key on its own, or once when @P was pressed to initiate printing.

Another bug was that the system would not allow normal exit from a document (by pressing CTRL Q). It first reported "Illegal access attempted to protected file" then, on a second attempt, "Record number out of range". I was forced to end by switching off while still in the document. Reloading again from scratch gave both normal load and Quit. Any ideas?

Tony Cottingham

PENMAN PLOTTER ROUTINE

This routine was written with the help of Laurie Shields to solve a problem in a program for the Penman plotter running under LDOS.

The program uses the cursor keys to draw or move in the indicated direction. It was found that using the codes for the arrows in an INKEY$ loop that the arrows were inoperative. The reason for this is that the computer was in the ECM (Extended Cursor Mode). This gives a range of useful facilities such as display first line of program etc. Toggling to SCM (Standard Cursor Mode) is achieved by 'CLEAR' 'SHIFT' 'SPACE' from the keyboard.

In order to toggle the cursor in software from ECM to SCM then bit 6 of KFLAG$ at &H4423 must be flipped. It was decided that a machine code routine called from BASIC would be most appropriate. EDAS was used to assemble the following code:-

```
0000 3A2344   00100  LD    A,(4423H)  'Get the contents of KFLAG$.
0003 EE40     00110  XOR   01000000B  'Toggle bit 6.
0005 322344   00120  LD    (4423),A   'Push toggled byte back to KFLAG$.
0008 C9       00130  RET               'Return.
```

A Calc filter was used to convert the hex code to decimal.

58 35 68 238 64 50 35 68 201

This code was then put in a string (to prevent having fixed memory addresses) and called from a USR.

```
100 'E C M Toggle.
120 T$=CHR$(58)+CHR$(35)+CHR$(68)+CHR$(238)+CHR$(64)
140 T$=T$+CHR$(50)+CHR$(35)+CHR$(68)+CHR$(201)
160 K=VARPTR(T$)
180 L=(256*PEEK(K+2))+PEEK(K+1)'Decimal location of T$.
190 IFL>32768THENL=L-65536
200 DEFUSR1=L
220 X=USR1(0)
```

To toggle, it is only necessary to GOSUB 160 after the routine has been run once. This ensures that VARPTR finds the string with the machine code. Line 190 has a better formula than in the manual for calculating -ve poke numbers.

This is not necessarily the most elegant method but it works !

If anyone has any software for the Penman plotter then please contact me. One particular problem is handshaking in BASIC. I ROUTE the printer to the RS232 line. Most commands work alright but some repeated commands generate a handshaking error.

John Christie
(0452) 830141

NEW MODEL 4 SOFTWARE

I had a Model 4P on loan from Tandy and found it a very neat and efficient machine. It also has the advantage for the home computerist in that it can be packed away very quickly. One point that seemed strange was that you could not use external drives but a hard disc was put on the external connector. The lack of external drives is understandable in a transportable but 2 X 40 track drives are not enough for the serious Wordstar enthusiast.

I also had the opportunity to try out the new software which is a available for the 4/4p. PFS file is offered as a simple filing system and is very like the card index file that we used in pre-computer days. Compared to the more powerful programs it is simple but adequate for a lot of purposes. Having read the adverts I was interested to see how it compared with other data base programs.

For a start, simple does not mean small. In fact there is a Hard disc version and even the floppy disc version will handle a tremendous number of records. Each application tends to have a specific reqirement for the presentation of data. You may want to have all the information on a specific customer/subject or specific information about certain customers/subjects. PFS seems to be best when the information is kept like the old card files. Find the relevant card or cards and all the information is in front of you. In fact each "card" can be several screen-fulls.

If you want the specific information about all customers, the programs starts to look less ideal. In fact to get reports printed down the page, line by line, you need another program. PFS File is therefore part of a package and PFS Report picks up where File leaves off. If this sounds a strange approach it is worth considering that for many applications File can stand alone but Report is there if you need it. This has advantages in that it makes File simple and cheaper for those that need only the basic facilities but the extras are available if needed.

The points I liked were the way you can design your own screen layouts and the ability to find a specific record quickly without reference to a "record number". You could also search for vague references and it even ignores the odd typo error. ie "Fred Smith" when you had typed in "Fred Smith". Now why cannot more computer programs do what you mean and not what you ask.

The Sort routines were limited when compared to the more powerful data bases and without Report there were limitations in printing out the data. In my limited test, the program seemed to be bug free and suported by good instructions. The price is a lot cheaper than Profiles but the extra cost of Report closes the gap. One feature that seems important to me is the ability th change your mind. Some people claim that this is a lack fo fore-thought but I find it easier to think as I go along. PFS file will allow you to move your data to a new file with more or different fields.

The other new package was Plannercalc. This has been described as a poor mans Visicalc. That is certainly unfair as it implies something inadequate that you would not buy if you could afford better. Plannercalc seemed to be a very good program which covered the major area of Visicalc. For most users it is more than adequate and half the price. It even had some useful features that are not available in Visicalc. You can Goto a label and this save you having to remember the cell reference. Cols can be underlined without using a Row.

With a quick test, it is impossible to do a comprehensive comparison but Plannercalc seemed a good buy for those people that want a calculation and balancing type of program. It fits well on the Model 4/4p range and makes some use of the Function keys. The manual is well written and contains good examples to help explain its potential.

These types of programs are well suited to nig-nogs like myself. You can get an expert to design the "template" and leave you to fill in the spaces. An electronic calculator can work out almost anything that you require, as long as you know the formula. There are experts who will supply the formulas (groans from my sons) but they are remarkably reluctant to tell you the same thing twice. Calc programs can remember formulas and save you the hassle of writing BASIC input routines.

One little tip when setting up calc programs for regular use. They are intended to be easily altered. This is an advantage in the development stage but a simple keying error can cause unfortunate consequences. You may be using a formula in one cell and accidently overwrite it. The effect spreads to all totals referencing that formula. One way round is to put the formulas in a protected area that is intended for Titles. You cannot access these areas with the arrow keys but the Goto allows you to jump the barrier if needed. It is a pity that you cannot lock in a formula in the same way that you can lock in a format command.

One small point about software that is noticable to those that have several systems. The suppliers of software for the BBC seem to be much better at marketting their products. We recently came across Magic Garden which is really a data base for gardeners. It starts of by using Shirley Conran to write the manual and comes with a ready made data base of flowers and shrubs. The whole package was attractive and moderately useful and at £20 was affordable.

There are many general purpose data base programs for the TRS-80 that are better programs but none sell the data. This program is part of a series that will cover other hobbies and the same basic program is sold to coin and stamp collectors. It seems ideal for the people who have bought a computer and are seeking a justification for its purchase.

The other comment is on the packaging of games like "Elite". This seems to be so addictive that it should bear a health warning. One of the features is a well writen book about the adventure. You can pirate the program but the book would cost more to copy than the purchase price. The BEEB is lucky to get the support of the big educational publishers while until recently Tandy discouraged outside software.

Derek Trayler

For Sale

Anadex DP8000Printer together with cable for interfacing to model 1 Tandy £140.
Star DP515 Printer (132 column) interface with Tandy Model 1 or Model 4 £195.

Telephone Tim Martin on 01-736 6582 in evenings.

STARS

NATGUG NEWS

Volume 6 Issue 9 March 1985

OFFICIAL JOURNAL OF THE

National TRS-80

& Genie Users

Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time.

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

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

An interesting rumour appeared in Microscope a couple of weeks ago, that Tandy were going to be selling the new Atari ST "Jackintosh" machines. Perhaps Tandy read my suggestion in a recent editorial that they develop a 68000-based system with high-res. colour graphics and lots of memory!

The Z800 chip that some of you were interested in as a replacement for the Z80 in your Model I machines is about to put in an appearance, according to a friend of mine who works for Zilog. It is about two years late already, and it won't be available in quantity for some months.

I've now got a C compiler for the QL, and it will be interesting to see how many of the C programs on my Model II will run on the QL. I shall shortly have UCSD Pascal for the QL, which I got years ago for the Model I. It will be interesting to see how they compare.

A Model 200 "lap-held" machine has been announced in the States. It appears to be based on the Model 100, and is probably also made by Kyocera. It has a much larger display and much more memory, and costs considerably more. The Model 16 now rejoices in the name of the Model 6000. I don't know what is happening to the Model 12.

I've been told that some of the stores are already selling the ACT machines. ACT seem to be having a few problems, with some of their key personnel in the States leaving the company, and the US launch of the Apricot falling behind schedule. Tandy and ACT have delayed their foray into the European market-place for several months. I still feel that this joint venture is a mistake.

Leon Heller

MEMBERS' LETTERS

Perhaps a few more notes on the Model 4 may be of interest, since I am in the throes of transferring programs originally written for Model 1, then transferred to the Model 4 in Model 3 mode and now being transferred to Model 4 mode.

I sent you the other day a program which puts in spaces and does one or two other things. Since sending it to you I have detected that there is an arithmetical error in it where it adjusts PRINT @ since it fails to allow for the different number of lines on the screen, however, at least it produces answers which look more or less right. There should also be a space BEFORE " THEN " as well as after.

Moving to Model 4 produced a number of problems. One is that the printer line counter is not accessible, so that it is necessary to add a variable to count Lprints. Another and much more tiresome one is that having lost NEWDOS 80 editing and re-numbering becomes much more difficult.

I have found Raymond Boggs program published in 80 MICRO for November 1984 on Page 56 to be extremely valuable because, quite apart from its original purpose, which is to find strings, it permits copying lines and re-numbering them, which so far as I have been able to discover Model 4 basic does not.

There is a major deficiency in the Model 4 re-number program in that it will only re-number from the selected starting line to the end of the program. It is not possible to re-number a group of lines in the middle of the program. Accordingly I have re-written the basic program, which I wrote three or four years ago for the Model 1. This permits the re-numbering of any group of lines within the program.

I cannot absolutely guarantee that it is bug free although if there are any I haven't found them yet.

When using the program if you answer Yes to the check for undefined lines it will print out references to all undefined lines throughout the entire program and will not re-number it. If you answer No to this question then it will still print out references to undefined lines within the area which is actually being re-numbered - that is between S1 and S2.

If it is of any interest I have also re-written Dennis Longs LPLIST program to run in Model 4 mode and I enclose a copy of this also.

I have trimmed out of Dennis Longs program a lot of bits which I never used and in particular I have trimmed out the reference to CHR$ (10) because Model 4 objects to this in a Basic program.

Another construction that I find the Model 4 appears to dislike is For A to B: If C then do something: next;else next. It complains of a next without for and the two nexts have to be combined in a separate line.

I have also found a dreadful trap - listing a program and using Shift @ to produce pauses of the listing I absentmindedly pressed another key, with the result that the machine locked up, but before it did it, it overwrote part of the System information on the disc, so that I had to transfer all the files on that disc to another one!

Another complaint. I absentmindedly failed to close the upper drive door and tried to save a program to the disc in the upper drive. This produced the message "Bad file name" which caused some confusion since I had just saved the program on the lower drive without any trouble. An attempt to use copy instead of save then resulted in the complaint "Illegal drive number". This alerted me to what had in fact happened.

I suppose there is no hope of NEWDOS 80 being re-written for Model 4. If not, can you recommend a utility program similar to Super Zap which enables examination and modification of disc sectors. This is something which I miss very badly. I can of course use Super Zap but the problem is finding the disc sectors that I want because it cannot read the directory.

M.F. Matthews

Bargains seem to abound in the Computer Market Place just at the moment, that is until you examine closely just what you get for your money! Fancy the Commodore Plus 4 being halved in price to £150.00 with ROM based business programs, then look at the restrictions on peripherals and the pluggery and socketry on it! Come into the Parlour said the Commodore Spider.

The Amstrad seems to provide very good value for money until you find that is only sends 7 bits to the printer and software seems very limited. Just another glorified games machine? The Memotech machine with its nice aluminium case is ideal for we Radio Amateurs who want a radiation free machine to operate alongside our rigs, but once again where is the software and the back up?

None of these manufacturers have had the courtesy to reply to my letters to them, unlike Tandy, from whom I have always had courteous and helpful treatment, but Tandy will have to buck up and introduce something new for the" Home" market between Model4 and the Colour Computer, with the extension and coupling capabilities that the wide ranging hobbyist requires or their market share will grow ever smaller!

I like Tandy equipment which has brought me into contact with such nice people in the user group, so I feel very much a traitor for having bought a Beeb B. after looking very carefully at the wide range of choices available. The Beeb seems to be the only machine which is a true combination of Business and Hobbyist machine with very wide support, and it was a bargain, I saved £105.00 by buying from a National Retailer!!!

This letter is being written on my TRS-80 Model 1 Level 11 modified to 48K user RAM in the keyboard and as you can see, lower case, and as you cannot see the official High Resolution Graphics mod., the printer is a Taxan Kaga and the Program is "Electric Pencil". I shall be sorry to part from my Tandy and Electric Pencil but the machine ~~might~~ has been superceded by others which are nearer to my ideal and my pocket, so please put the attached advertisement in the NATGUS

Basil Caines,
10 Shears Crescent,
West Mersea,
Essex CO5 8AR.

Enclosed are some words on your attack! on Tandy together with a description of a unix utility 'awk' which I have recently discovered.

You might like to tell people that I have been 'beta' testing a Basic compiler for TRS-Xenix. Any standard Microsoft Mbasic or TRSDOS basic program can be compiled and there are no intrinsic limits ie. the limits are the size requirements of the a.out file rather than the compiler. With the minimum Xenix memory of 256k it is quite easy to produce .out files but not then be able to run them.

The syntax required is as CP/M Mbasic or TRSDOS Basic ie. Xenix extensions (Record Locking & strings >256 characters) are not supported. However features such as 'shell', long arithmetic and calls to 'C' functions are available and of critical importance, use is made of the Xenix termcap database to allows CLS and print @ to operate on different terminals.!

The general speed up is some 5 to 6 over the interpreter but integer and string based operations are much faster than this average. The only problem is in the size of the .out compiled code which includes a large run time library. However as programs can include larger chunks of code which can reduce the number of modules this may not be a problem in practice.

The novel feature of this compiler is that it converts basic to 68000 Assembler and then uses the standard as and ld programs available on the system. Compile times even for large programs are quite acceptable - in fact most of the compile time is in the as and ld phases rather than in the translation to assembler.

Software compiled under this program is now faster than even a hard disc CP/M and is certainly effective under multi-user operation. However the benefits of Xenix lie not in speed but in throughput - due to batch processing of tasks and in the greater memory addressing ie. the basic interpreter has an internal limit of 16 megabytes. Under TRS-Xenix it would be unwise to exceed 200k but that is a significant improvement over the 62k on an IBM PC. The only niggle is that for larger programs there is a significant load time as Xenix travels to Australia and back to find enough core memory to run the program. If anyone has any hints on how to mimimise load terms under Xenix this would be very useful info! I suspect the answer revolves around more RAM - in my experience 512k is only just adequate.

This compiler will soon be available from Computerline Ltd., 118 Church Road, Addlestone, Surrey KT15 1SG (0932) 55757

Derrick Rowe

There was a comment in last months Newsletter stating that the model 4 Scripsit is not as good as the LDOS patched version for the model 111. Geof Smith has an elegant solution for Newdos 80 users which can achieve everything that the LSCRIPT version would do and some extras of Geof own development. For those that want to stay with LDOS, there is a patch listed in Jan 85 micro 80. While it lacks some of Geofs goodies it has the most important features and the 80 col mode allows the 'print to screen' to show a real representation of a normal A4 page. It also contains a feature to use the extra memory bank as an active spooler. I have not patched my version yet as it have a problem with my model 4 and have to use it in model III mode at present.

My model 4 was supplied with a single drive and I installed the Cuma drive off my model 1. This works quite well although the step rate needs to be slowed to 30ms. I found one strange feature when I set up the DIP switch to configure it as drive 1. The computer refused to acknowledge the setting and insisted it was dive 3. I tried various settings but it always configured as drive 3. The cable is a non Tandy version with all lines intact and I eventually found out that if the DIP switch is set to 0 it becomes 1. The two drives have a completely different sound and the official drive sounds as if it is in agony.

As a hobbiest it easy to agree with Leon's prophicy of gloom but as a salesperson (non computers) I can see the other side. Tandy are a multi-national company and as such are affected by the fluctuations of international currencies. If UK companies can get unexpectedly higher profits from the strong Dollar, then US companies will suffer the reverse. In fact, only the foresight of Tandy's European manufacturing can help them control prices in the UK. Even so their corporate profits are going to look poor because their overseas earning are worth less in US terms.

Unlike Leon, I cannot see the Tandy/ACT venture as being bad for both machines. Tandy have suffered through trying to sell business machines from 'Toy shops' and their Computer Centers are expensive to maintain. ACT have earned a valuable reputation in the past but are suffering in the face of IBM. Tandy can lend them the size and diversification that creates the business confidence which is vital for long term growth. Their customers will benefit from a choice and both companies will get reduced costs. Most of us appreciate the change in policy which has been to avoid third party support. When companies reduce prices to remain competive we all benefit but if they crash everyone loses.

Engineers like Leon seem to ignore the fact that sales costs are an important factor in marketting. Technically inovative products litter the museums while run of the mill products survive to fight another day. The inventor of the Unicycle was probably proud of his spec which promised fewer punctures, less moving parts and the ablity to move in any direction. The Moulton bike had an advanced spec but died while an overgrown fairy cycle created the BMX boom. My hobbiest customers have an inexhaustable list of requirement for the products they would like to buy and an even longer list of reasons why they did not buy them before they were discontinued.

Derek Trayler
88 Grosvenor Drive.
Hornchurch Essex. RM11 1PW

(* I'm not an engineer! My main qualification is in experimental psychology, although I did do an apprenticeship with what is now ICL, many years ago. *)

MODEL 3 TO MODEL 4 PROGRAM CONVERSION

Having just changed my Model 1 for Model 4 I found myself faced with the problem of about half a dozen 12-14 K programmes which I wanted, if possible, to run in Model 4 mode.

For the time being, of course, I ran them in Model 3 but the advantages of the Model 4 mode are very substantial. I boggled at the thought of re-entering them all particularly after comparing the editing facilities of TRS DOS 6.2 with NEW DOS.

After some thought I wrote the enclosed programme. Its facilities are limited but I think useful. Its main purpose is to provide the spaces which are required after reserved words in Model 4 basic but it also makes an approximate adjustment to Tabs and Print @. What it does, of course, is to convert a compressed basic programme into an ASCII programme which can then be transferred to Model 4 mode.

It also incidentally converts CMD to System but does not make any other adjustments.

I should make it clear that the original idea came from a programme called CHANGE published in 80 Micro for converting programmes to Model 2000 but it has been extensively altered and is substantially a new programme.

I suppose there is no hope of anyone converting NEW DOS 80 to work on Model 4 mode?

Convert Mod I/III programs to Mod.4. (Convert)

```
10 CLEAR5000:GOTO60:REM Convert 4
20 IFCH>127THEN40
30 PRINTCHR$(CH);:PRINT#2,CHR$(CH);:RETURN
40 PRINT#M$(CH-128);:PRINT#2,M$(CH-128);:RETURN
50 PRINT:LINEINPUT"Enter filespec. for compressed Basic input ";F1$
60 M$="Input file "+F1$+" open error.":ONERRORGOTO70
```

```
 70 OPEN"I",1,F1$:ONERRORGOTO0
 80 CLOSE1:OPEN"R",1,F1$:FIELD1,128AS A$,128ASB$
 90 LINEINPUT"Enter filespec for ASCII text output ";F2$
100 M$="Output file "+F2$+" open error.":ONERRORGOTO700
110 OPEN"O",2,F2$:ONERRORGOTO0:RETURN
120 GET1:J=0:X=0
130 J=J+1:IFX=1THEN140ELSEIFJ=129THENX=1:J=1:GOTO140ELSECH=ASC(MID$(A$,J,1)):RETURN
140 IFJ=129THEN120ELSECH=ASC(MID$(B$,J,1)):RETURN
150 GOSUB130:NM=CH
160 GOSUB130:NM=NM+CH*256
170 NM$=RIGHT$(STR$(NM),LEN(STR$(NM))-1)+" "
180 PRINTNM$;:PRINT#2,NM$;:RETURN
190 IFEOF(1)THENZ=-1:RETURN
200 GOSUB130:NM=CH:IFEOF(1)THENZ=-1:RETURN
210 Z=0:GOSUB130:NM=NM+CH*256:IFNM=0THENZ=-1:RETURN:ELSERETURN
220 C1=0:C2=0:IFCH<178THEN300ELSEC1=CH:GOSUB130:IFCH<64THEN250ELSECH$="PRINT#":
    PRINTCH$;:PRINT#2,CH$;:N$=""
230 GOSUB130:IFCH<48ORCH>57THEN240ELSEN$=N$+CHR$(CH):GOTO230
240 N=VAL(N$):N1=INT(N/64):N2=INT(N1*80+(N-N1*64)*5/4):N$=STR$(N2):N$=RIGHT$(N$,
    LEN(N$)-1):PRINTN$;:PRINT#2,N$;:GOSUB20:RETURN
250 IFCH<58THEN260ELSECH$="PRINT:":PRINTCH$;:PRINT#2,CH$;:RETURN
260 IFCH<188THEN290ELSEC2=CH:CH=C1:GOSUB20:CH=C2:GOSUB20:N$=""
270 GOSUB130:IFCH<48ORCH>57THEN280ELSEN$=N$+CHR$(CH):GOTO270
280 N=VAL(N$):N=INT(N*5/4):N$=STR$(N):N$=RIGHT$(N$,LEN(N$)-1):PRINTN$;:PRINT#2,N$;:
    GOSUB20:RETURN
290 C2=CH:CH=C1:GOSUB20:CH=C2:IFCH=34THEN60SUB20:GOSUB360:RETURN:
    ELSEIFCH=32THENRETURNELSEGOSUB20:RETURN
300 IFCH<175THEN310ELSEC1=CH:GOSUB130:IFCH=58THENCH$="LPRINT:":PRINTCH$;:PRINT#2,
    CH$;:RETURN:ELSEC2=CH:CH=C1:GOSUB20:CH=C2:IFCH=32THENRETURNELSEGOSUB20:RETURN
310 IFCH<135THEN320ELSEC1=CH:GOSUB130:IFCH<58THENC2=CH:CH=C1:GOSUB20:CH=C2:
    GOSUB20:RETURN:ELSECH$="NEXT:":PRINTCH$;:PRINT#2,CH$;:C1=0:RETURN
320 IFCH<186THEN330ELSEC1=CH:GOSUB130:IFCH<58THENC2=CH:CH=C1:GOSUB20:CH=C2:
    GOSUB20:RETURN:ELSECH$="CLOSE:":PRINTCH$;:PRINT#2,CH$;:C1=0:RETURN
330 IFCH<147ANDCH<>251THEN350ELSEGOSUB20
340 GOSUB130:IFCH=0THENRETURNELSEGOSUB20:GOTO340
350 GOSUB20:RETURN
360 GOSUB130:IFCH=0THENRETURNELSEIFCH=34THENGOSUB20:RETURN:ELSEGOSUB20:GOTO360
370 GOSUB190:IFZTHENRETURNELSECH=13:GOSUB20:GOSUB150:RETURN
380 CLS:PRINT@384,"CONVERT. Change Model I/III programs to Model 4."
390 GOSUB50:GOSUB500:GOSUB120:IFCH<255THENM$=CHR$(13)+"Input file is not
    a compressed Basic file":GOTO700
400 GOSUB190:IFZTHEN490
410 GOSUB150
420 GOSUB130:IFCH=32THEN420
430 IFCH=0THENGOSUB370:IFZTHEN490ELSE420
440 IFCH=13THENGOSUB20:IFCH=0THEN430ELSE420
450 IFCH=34THENGOSUB20:GOSUB360:GOSUB20:IFCH=0THEN430ELSE420
460 GOSUB20:GOTO420
470 CH=13:GOSUB20
480 GOTO490
490 CLOSE:END
NOTE:- The character - ^ - decides an embedded line feed
500 DIMKW$(127):FORI=0TO127:READKW$(I):NEXT:RETURN
510 DATA"END ","FOR ","RESET","SET","CLS","SYSTEM ","RANDOM"
520 DATA"NEXT ","DATA ","INPUT ","DIM ","READ ","LET ","GOTO "
530 DATA"RUN ","IF ","RESTORE ","GOSUB ","RETURN","REM "
540 DATA"STOP","ELSE ","TRON","TROFF","DEFSTR ","DEFINT "
550 DATA"DEFSNG ","DEFDBL ","LINE ","EDIT ","ERROR ","RESUME "
560 DATA"OUT ","ON ","OPEN ","FIELD ","GET ","PUT ","CLOSE "
570 DATA"LOAD ","MERGE ","NAME ","KILL ","LSET ","RSET "
580 DATA"SAVE ","SYSTEM ","LPRINT ","DEF ","POKE ","PRINT "
590 DATA"CONT","LIST ","LLIST ","DELETE ","AUTO ","CLEAR"
600 DATA"CLOAD ","CSAVE ","NEW","TAB(","TO ","FN ","USING "
610 DATA"VARPTR","USR ","ERL ","ERR ","STRING$","INSTR"
620 DATA"POINT","TIME$ ","MEM ","INKEY$ ","THEN ","NOT "
630 DATA"STEP ","+","-","*","/","^","AND ","OR ",">","="
```

```
640 DATA"","SGN","INT","ABS","FRE","INP","POS","SQR"
650 DATA"RND","LOG","EXP","COS","SIN","TAN","ATN"
660 DATA"PEEK","CVI","CVS","CVD","EOF","LOC","LOF"
670 DATA"MKI$","MKS$","MKD$","CINT","CSNG","CDBL"
680 DATA"FIX","LEN","STR$","VAL","ASC","CHR$","LEFT$"
690 DATA"RIGHT$","MID$","","","","","",""
700 PRINTM$:PRINT:END
```

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

M.C. Matthews,
13 Princes Street,
Dorchester,
Dorset DT1 1TW.

```
3 REM *** NEWDOS BASIC LINE NUMBER EVALUATOR DEMO
4 REM *** INSPIRED BY LAURIE'S TALK AT SWINDON
5 REM *** HE'S NOT RESPONSIBLE - C. CURRIE IS
10 CLEAR:CLS
20 FOR M=1 TO 3
30 N=1050+(M*10)
40 GOSUB 1000
50 NEXT:CLOSE:END
1000 CLOSE 1:OPEN"O",1,"CHUMLEY/JCL"
1010 PRINT#1,"/./5Y";CHR$(13);"A";CHR$(13);"GOTO";N
1040 CLOSE 1:CMD"DO CHUMLEY"
1045 CMD"ROUTE DO NL"
1050 INPUT DU$:STOP
1060 GOSUB 1090:PRINT"THIS IS THE FIRST SUBROUTINE":RETURN
1070 GOSUB 1090:PRINT"THIS IS THE SECOND SUBROUTINE":RETURN
1080 GOSUB 1090:PRINT"THIS IS THE THIRD SUBROUTINE":RETURN
1090 CMD"ROUTE DO DO":RETURN
```

VISICALC HISTOGRAMS

The Observer Colour Supplement, Jan. 1985, raised the problem of how to use a spreadsheet to generate a 10-row histogram in columns A to J, using data entered in row 12. A somewhat ragged solution for the Sinclair QL was given in the following issue.

I gave a (not very impressive) demonstration of the solution for Model III Visicalc at the Swindon meeting in March. In response to popular demand, here is a fuller explanation.

If we assume that the column above the largest data value in row 12 is wholly lit up (i.e. all cells in the column are set), the number of cells to be lit up in each other column is given by:

$$\frac{\text{No. of cells to be lit}}{\text{total cells in column}} = \frac{\text{data value of that column}}{\text{largest data value}}$$

Each cell in the column will be set if its position is equal to or lower than the number of cells to be lit (counting from the bottom of the column).

For a histogram with n rows and m columns, with data in row n+2, the rule for determining whether the cell in row i, column j is to be set can be expressed as

```
IF (n-i+1) <= (VAL(CELL(n+2,j)) * n) / MAX (ROW n+2))
                                        m
                                        1
THEN SET CELL(i,j)

ELSE RESET CELL(i,j)
```

Clearly we can't do the job with the old Model I Visicalc, which has no IF function, but we can with Enhanced Visicalc and other spreadsheet programs. We can establish the value of (n-i+1) as @COUNT(ji...jn), so for a spreadsheet with 10 rows and L columns, data in row 12, we get the following formula for cell A1:

@IF((@COUNT(A1...A10)<=(10*A12/@MAX(A12...L12))),111,0)

I think that the formula was given the other way round at the talk: either way should work.

Practical steps

1. Clear the spreadsheet and switch recalculation to Manual.

2. Enter dummy numbers in A12 and B12 (that avoids an error condition).

3. Format A1 in asterisk format: /F* .

4. Enter the formula in A1.

5. Replicate down the column. Source range A1; target A2...A10.

Replications in formula:

Relative/no change

A1	R
A10	N
A12	N
A12	N
L12	N

6. Replicate across the spreadsheet: source A1...A10; target B1...L1.

Replications for each row (row 1 as example):

A1	R
A10	N
A12	R
A12	N
L12	N

7. Type in test data from A12 to L12 and press ! to display graph.

Entering a scale

We can tidy up the histogram by moving it one cell diagonally to the south-east and putting in a self-adjusting scale on the left.

Move the cursor to A1, then type /IR <enter> /IC <enter>

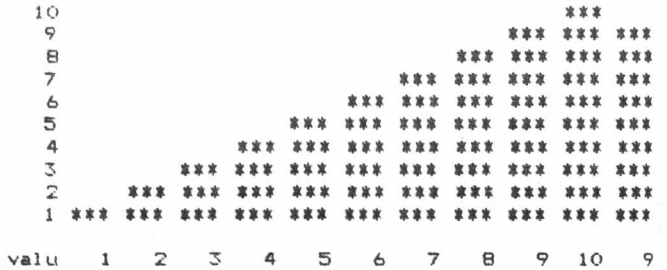
That moves the histogram to B2..M11, and the data to B13..M13.

In A1, type "Scale. In cell A13, type "Values.

The scale will run down column A from A2 to A11. A2 will contain the maximum of B13..M13 and A3... A11 will be proportionate. The formula is given by

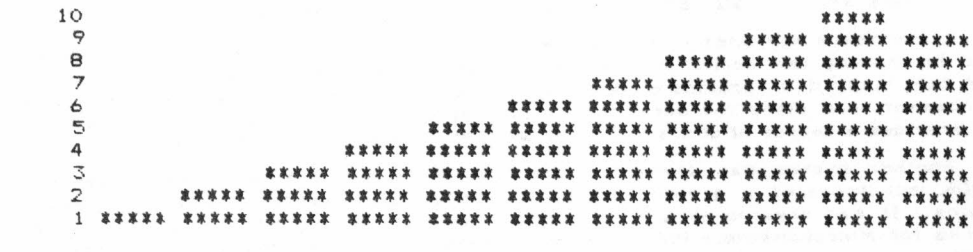
@MAX(B13...M13)*@COUNT(A1..A11)/10 [A1, NOT A1]

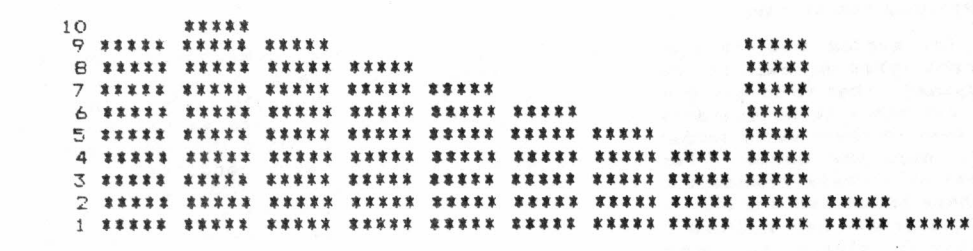
To give a tidy scale format A2 as /F1.

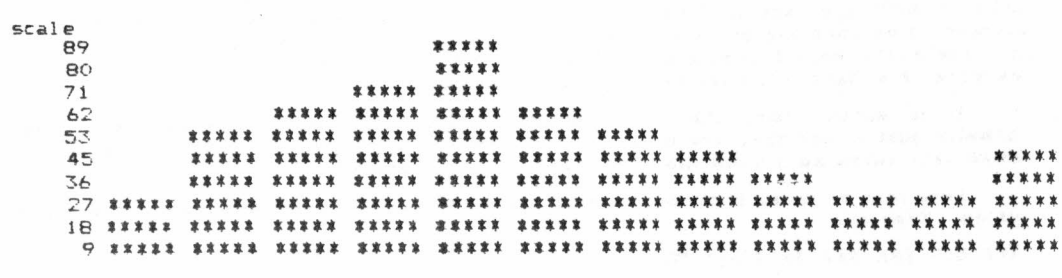


These are demonstration histograms prepared with Visicalc at the Swindon meeting: inspired by a problem in Observer Colour Supplement Computer Section, Jan. or Feb. 1985.

Chris Currie







Now enter the formula in A2, substituting A2 for Ai. Replicate: source A2, target A3..A11.

	Relative/no change
B13	N
M13	N
A2	R
A11	N

As a final step, you can split the screen to the right of the scale, allowing the column widths to be altered for display or printing. A 12 column histogram takes about 7% K. On my Model III I have room for a 26-column histogram. I haven't yet tried having more rows, although with Lotus 1-2-3 I've used 30 rows, which gives almost as good a resolution as TRS-80 pirel graphics.

Chris Currie, 14 Keston Road London N17 6PN.

CPM - A NEW USERS TUTORIAL

A few years ago some of us may remember using TRSDOS for the Model I. It was noted for having few useful utilities and somewhat awkward and cumbersome to use. Since then many new versions of this Disk Operating System (DOS) have been produced. All, however, are along the same lines with similar directory files and BOOT sectors. This provides a degree of compatibility between the various operating systems.

Another system was devised in the late 1970's which bore no resemblance to TRSDOS, but provided a greater degree of compatibility between different types of machine. It was created by Digital Research in the USA and was called the Control Program for Microcomputers (CP/M). It was hailed as the "industry standard operating system", so a large number of programs were written to run under it. In those early days many machines contained only RAM and had no system or BASIC in low memory ROM, therefore CPM operated around the low addresses. When the earlier TRS 80's came out they had their ROM in the low memory area and so they could not run under CPM. With the advent of the Model II and the Model IV, which used all RAM, CPM could be successfully run on them.

The system was, as I have said, designed to provide "compatibility" between different types of machine, but in fact in reality only "transportability" has been maintained. That is to say programs may be transferred from machine type to machine type, but there is no guarantee that they will run. Most of these earlier programs were kept in their early format so that they would still run under the newer systems coming onto the market. For example Wordstar was an early and powerful word processing package, nowadays it is not as good in some aspects as AllWrite or LeScript, but these latter two are only for the TRS 80 and do not run elsewhere. CPM means that if a firm gets a new machine running CPM then the typist using the old Wordstar will not have to relearn new commands before operating the new package. As a result the keys used to delete, insert, and suchlike within Wordstar have changed little since it's inception, thus the commands are not easy to remember ie CTRL D and CTRL I for delete and insert respectively are simpler then those used in Wordstar. I am not trying to knock Wordstar but just to demonstrate why the commands within CPM have remained simple and unchanged over the years. Again the onward compatibilty has to be maintained not only for all users but also to keep all machines still compatible. In addition with the lack of Cursor keys on some computers and differing methods of addressing peripherals and suchlike the commands within CPM were also kept simple, in fact there are only 5 commands as standard within the operating system although a few more "standard" utilities have been added since then.

It is worth noting that the 5 commands are contained in the system tracks, normally just 2, and they are comparable to the Library Commands in TRSDOS, which by comparison takes many more than 2 tracks to hold the system.

Lets look at those 5 commands plus one other usually found within the operating system. They are

TYPE, DIR, ERA, REN, SAVE and USER

TYPE

This command is similar to the LIST command in the TRSDOS except that it has no

parameters. It is used to list text files to the screen, and if a printout is required then CTRL P must be pressed prior to the TYPE command, this control sequence will route all screen output to the printer, a sort of JKL function.
The format is as follows
A>TYPE DEMO.TXT
A>TYPE B:DEMO.TXT
The "A>" in the above example is the CPM prompt when using the drive called A. From the above it can be seen that the standard extension type can be used for ASCII text files, but you should note the the extension is not preceded by the "/" used in TRSDOS but by a full stop. Also the second example demonstrates the use of drivespecs in CPM.

All drives are refered to by a letter, this is it's logical drivespec although it's physical drivespec is still a number as in TRSDOS. The drivespec, in this case logical drive B, is put in FRONT of the filespec and is separated from it by a colon. Pressing CTRL P before the above commands will direct output to the printer, remember to type CTRL P afterwards to cancel output to the printer.

DIR

This is the directory command for CPM, and again is similar to TRSDOS DIR with except that it has fewer parameters.
A>DIR
This command will produce a list of all files on the current drive and produce a display like this.

A: MOVCPM	COM	:	ASM	COM	:	DDT	COM	: PIP	COM
A: ED	COM	:	STAT	COM	:	DUMP	COM	: DUMP	ASM
A: USERS	LIB	:	SUBMIT	COM	:	DEFAULT	SUB	: CAT-ONE	TXT
A: WS	COM	:	WS	DOC	:	BILL	HEX		

The drivespec is to the left and the extension is offset and left justified; output to the printer is made by pressing CTRL P as for the TYPE command. At this point I will say a few words on filespecs, as you can see from above they may contain some characters not used in TRSDOS filespecs. In fact any character may be used in any position, including the first with the following exceptions.

< > . , ; : = ? * [ ]

There are no passwords allowed in CPM. Other allowable formats are
A>DIR B:
This will give the directory for drive B. Note that drives must be specified separately, there is no command for the directory on both drives, in fact if a program on drive B is called when using drive A, it will not be found unless B: is typed immediately in from of the filename. Another method is to move onto drive B and execute DIR from there, this takes longer but you remain in drive B as the default after the command. This is achieved as follows
A>B:
B>DIR
Note that the prompt character changes from A> to B> after the first command. Typing
A>B:DIR
will execute the DIR command from drive B's operating system but return a directory of drive A. The computer effectively runs a program called DIR on drive B whilst in the default drive A. A specific program or programs may be displayed by use of the following commands.
A>DIR B:ABC.COM
A>DIR B:A?C.COM
A>DIR B:A*.COM
A>DIR B:ABC.*
A>DIR *.COM
A>DIR FILE1.*
A>DIR *.*
In the above examples the first four will all display the program ABC.COM, on drive B, the ? is used to mask out specific characters and the * to mask out more than one character. From this it can be seen that the last three examples will display respectively,
STAT.COM
DDT.COM
WS.COM
FILE1.COM
etc in the first case

FILE1.COM
FILE1.DAT
FILE1.TXT
etc in the second
All files on drive A in the last

Finally a word of warning. CPM does not check the disk for it's directory, but gets it from memory once it has been initially read in. This means that if you change disks, CPM will not realize this and either report a file not available or more disastrously, write new data all over the wrong places on your disk. To cure this you MUST type CTRL C, to force a directory read from disk, after all disk changes; this practice must be used from the first time you power up CPM so that it becomes second nature. On the Model 4 the BREAK key usually returns a CTRL C.

ERA

This is the erase command and is similar to the KILL and PURGE commands of TRSDOS, it uses extensions and wildcard masks in the same way as DIR does
A>ERA FILE2.COM
will erase the program FILE2.COM
A>ERA FILE2.*
will erase all FILE2 files irrespective of extension
A>ERA *.ASM
will erase all files with the extension ASM
A>ERA *.*
will erase all files from the disk having first prompted you to
ALL (Y/N)?
replying Y will delete all files, N will abort the command

ERA is a fairly powerful command and any experimenting on filespecs should be done using the DIR command.

REN

REN is the rename command and is used to change the names of CPM files. It takes the form "newspec=oldspec"
A>REN FILE2.TXT=FILE1.TXT
will rename FILE1.TXT TO FILE2.TXT, note that this is the opposite way round to TRSDOS. The drivespec is optional and
A>REN B:FILE2.TXT=FILE1.TXT
A>REN FILE2.TXT=B:FILE2.TXT
will have the same effect as the first example when using drive B.

SAVE

This command will save an area of memory to disk, it ALWAYS starts at the same point and saves files using "page" numbers. A page is 256 Bytes of memory and the SAVE command always starts it's save at 0100H, which is the start of the program area. You will need to work out the size of the program you are using prior to a save, and this is best done using the program called DDT.COM, which is on your CPM disk. For now all you should worry about is the format of the command: it's uses and exactly how to calculate program size will be covered later.
A>SAVE 4 FILE3.COM
will save a 1K program called FILE3.COM starting at 0100H in memory.

In my early days I would over-estimate the value for the pages and thus guarantee the program being entirely saved. This command is worth more discussion, and at this early stage it is unlikely that you will need to use it and so I will mention it later when discussing the DDT.COM program

USER

This command is not found in all versions of CPM and in some version may exist as a command file called USER.COM, note that the effect will be the same providing USER.COM is resident on your disk. "COM" files, I should explain at this point are the same as TRSDOS "CMD" files.

A>USER 1
will define a new user area called USER 1. This needs some explaining. The system initializes using user area 0, and on some versions of CPM this is indicated by the CPM prompt being
A0>
This is the lowest user area and usually most disks have all their files within this area. If a file is saved whilst in another user area, it will become invisible to users in the original area.
So if you type
A>USER 1
A>SAVE 12 NEWFILE.DAT
A>USER 0
A>DIR
Then the file NEWFILE.DAT will not be visible to people only using user area 0 typing DIR whilst in user area 1 will only display the file NEWFILE.DAT, unless other programs have been saved in it.

That covers the commands resident within the operating system, the commands usually found as COM files are called transient commands and may vary from system to system. I will cover the usual ones that you will encounter in the next article. Finally I would like to point out that I am no expert on CPM, and in order to produce this article I have had to "bone up" on CPM; a useful book to help me in this has been, " The CP/M Handbook with MP/M" by Rodney Zaks. It cost me £11.95, but has proved worthwhile, in helping me understand this new and strange operating system.

If you have any problems with CPM, I will help where possible, although I cannot guarantee that I can solve them. Until the next time, may I wish you lots of luck and don't give up, it's nowhere near as difficult as Machine Code to learn!!!!!

Dave Holman
160 London Road West
Bath
Avon

Reflections

I continue to be surprised at the success of Big Blue - although generally recognised as no great step forwards, the blue PC has still swept the board. One reason for this wave of mediocrity is the lack of technical ability by most micro users. As Clive Sinclair has already said, the majority of micros have features well beyond the ability of the average user. The demands of the new technocrats will rarely exceed some sort of word processing and spreadsheet - Applications which were (are?) still well within the capability of the old TRS-80 model 1 let alone the now standard issue IBM XT.

I must take issue with Leon in his criticisms of Tandy. Contrary to his position I would argue that that the hardware and software have always been excellent and good value (as at the time of initial availability) but their marketing image has been appalling. It is interesting that in Leon's description of his ideal machine there are many overlaps with the TRS-80 model 16:-

ie.512k (and more) Ram
- CP/M 68k
- Xenix

Agreed the machine lacks gee whiz features but for conventional data processing it is full featured and good value (especially at the latest prices).

My large complaint about the cult acclaim for machines such as the BBC micro and the QL is that although they offer a lower starter price they are not effective until a great deal more money has been spent ie. monitor, disc drive and software. When this unique system has finally been created, there are then the obvious problems of support and service. If you take the current price for a Model 4p or Model 12 both of which have a large software base under TRSDOS or CP/M, it is unlikely that such value will be reached again especially if the dollar continues in its present strength.

Leon also makes the point about IBM compatibility. For most users and certainly all non-corporate users, IBM compatibility provides no added value. Products such as Multiplan, WordStart, Dbase and the ubiquitous Mbasic run on a variety of machines/operating systems and despite Charlie's talk the IBM label makes no difference to the effectiveness of the software or the hardware.

However what was once a market influenced by users is now one dominated by the larger corporate buyer. Issues of how good are now secondary to 'image' and IBM's image is beyond question. Tandy's progress reflect little of the quality of their machines; rather that a Hi-Fi chain is not an acceptable source for a large corporation's use of technology.

Derrick Rowe

Xenix

Xenix has a split personality. In one way the terseness of the system together with appalling documentation make even CP/M seem user friendly. Conversely there are few limits within the system and most needs can be satisfied. The problem is not whether a system can be developed but to detect which of the many software tools is the most appropriate.

Recently I stumbled across a software tool called 'awk' which is described as a pattern matching language and report generator. Once you can get through the documentation (both the lack and style) there is a tremendously useful package underneath - quite as good as a number of mainframe query languages.

Awk is designed to access serial files in asci layout. A record is a series of characters terminated by 'End of Line'. The records are divided into 'Fields' by a marker eg. a ':'". A typical layout would be as follows:-

```
Leo:Knaggs:01/12/85:34.78
Leon:Heller:02/12/85:78.90
Brian:Payne:02/12/85:10.78
```

The above file has 3 records with 4 fields Name, Surname, Date and Amount

An 'awk' program to list the first field in each record would be:-

```
BEGIN {
       FS=":"
      }
      {
      print $1
      }
```

Awk automatically places fields for a record into the variables $1,$1 ... $n. $0 provides the entire record. The BEGIN section is actioned before any data is read from the file. In this case FS=":" tells awk the field marker is the :.

Unlike BASIC there is no explicit file open or fielding required and with less junk required in the specification, the application is up and running in far less time.

However despite its lack of coding junk, there is no loss of function with awk in that the constructs support if, while and for.

To print only records with a surname of Payne or Heller you would enter:-

```
if ($2=="Heller"||$2=="Payne)
   {print $0}
```

The == is the equivalent of Basic's = and || the equivalent of OR. The language syntax is identical to the dreaded C but with the BIG advantage that it does not need to be compiled - a sort of C interpreter.

Awk is not limited to text but will also handle maths in a format virtually identical to Basic. To total on the amount field the program would be:-

```
BEGIN {
       FS=":"
      }
      {
       total=total+$4
       vat=int($4*.15*100)/100
       vattotal=vattotal+vat
       print $2,$4,vat
      }
END   {
       print "Total ",total,"Total Vat ",vattotal
      }
```

All of the above is simple stuff! It is with arrays that awk stands out. It is not just the fact that arrays come into use as called ie. no DIM statement but the use of keys as subscripts. Take the example file above with a date field. To provide a total by date would require a fairly complicated program in Basic or the need to index on date within many data management packages. Awk can deal with this need in one pass of the file as follows:-

```
BEGIN {
       FS=":"
      }
      {
       total[$3]=total[$3]+$4
      {
END   {
       for (case in total)
           {print case,total[case]}
      }
```

The array total is a conventional single dimensioned array quite familiar to all BASIC programmers. However, instead of subscripts 1,2,3 etc this array is subscripted on the contents of the date in field 4. The program above will provide a total of the amounts with a common date and there is no need for the overhead of index keys nor any need for a sort.

With some thought it is possible to provide full report formatting with Headers and Footers and there is full control over print formatting eg.
printf ("Total Z8.2\n",total) will print as Total ########.##.

In terms of most reports, it is doubtful that awk has any omissions and there is an added feature that instead of paper output, awk can be used to create new versions of the database.

A program to reverse name and surname would be as follows;-

```
BEGIN {
       FS=":"
      }
      {
       print $2,":",$1,":",$3,":",$4
      }
```

The program would be run by:-

```
awk -f prog datafile1 >datafile2
```

-f prog - tells awk to use instructions contained within prog.
datafile1 - the database as listed
>datafile2 - uses the redirection feature to place the output with reversed fields 1 & 2 into the file datafile2.

Derrick Rowe

"SPLIT" BAUD RATES

The American people, as a nation, have spent a lot of money looking for any signs of life on the Moon or Mars. They have also put considerable effort into attempts to communicate with any life form beyond these two bodies, reaching out past the solar system into the Universe at large.

Whilst so doing, they seem to have temporarily overlooked the existence of life forms external to the U.S. mainland, and the fact that some of these would also like to communicate, although not necessarily with Americans.

There are some, for example in the United Kingdom, that would like to make use of their modems with V23 standards. This seems to have escaped the American authors of certain software, since they appear to have overlooked the potential of TRS-80 computers to operate at the split baud rates that this requires. Notably the ability to transmit at 75 baud whilst receiving at 1200 baud or vice versa.

Whilst the pursuasion of such authors to expand the capability of their software is not impossible, it does seem as remote as the imminent discovery of intelligent life.

To facilitate TRS-80 users in the meantime, I have worked out a patch for TRSDOS 06.02.00 which will enable SETCOM to recognise the baud rate parameters (BAUD=7512) or (BAUD=1275) and set COM to operate the RS232 serial interface accordingly. With Luv from Leo at Blandford.

In the following,
All lines should be ended with the <ENTER> key unless otherwise specified.
Lines shown starting with a full stop may be omitted.
If these lines are included, the full stop IS required.

Ensure that a write enabled disc is available on-line.
At TRSDOS Ready type the following:-

```
BUILD BAUD620
.BAUD620
.
. Patch to TRSDOS 06.02.00  SETCOM
.
. Purpose - To permit UART initialisation for operation at
.
.         a.   75 Baud Tx.  1200 Baud Rx.    (BAUD=7512)
.         b. 1200 Baud Tx.    75 Baud Rx.    (BAUD=1275)
.
. This patch will NOT make COM/CMD compatible with PRESTEL display control
.    and character codes, but will permit split baud (V23) operation in
.    conjunction with mainframe systems which operate using Ascii codes.
.    (eg. Telcom Gold/Easylink/PSS Data links).
.
LB2
X'253E'=CD 00 2A
X'2889'=CD 14 2A
X'2A00'=DB 7E 06 21 58 1D FE 17 28 06 21 FB 04 FE 71 C0
X'2A10'=D1 C3 5C 25 ED 5B 4E 27 21 58 1D 7B BD 20 07 7A
X'2A20'=BC 20 03 3E 17 C9 21 FB 04 7B BD 20 07 7A BC 20
X'2A30'=03 3E 71 C9 C3 C2 28
.END of patch
.
. Press the <BREAK> key.  TRSDOS will close the file that you have created.
. LIST BAUD620/JCL to ensure that you have typed the details correctly.
. Apply to write enabled system disc with the following command line:-
.       PATCH SYS3/SYS.LSIDOS USING BAUD620/JCL
```

Leo Knaggs

List Basic Program to Printer (Lplist)

```
63000 REM ##LPLIST. SEE USERS GP. NEWSLETTER##
63010 CLS:CLEAR:DEFINT A-Z:DEFSNG F,S,L:DEFSTR P:LC=1:LP=66:BM=60:TM=3:CL=100:LM=10:
      RM=10:PT=CHR$(15)
63020 PN=CHR$(14):PS=CHR$(20):GOSUB 63030:GOTO 63040
63030 CLS:PRINT "        PROGRAM TO LIST AN ASCII CODED PROGRAM TO PRINTER FROM
      DISC":PRINT STRING$(79,61):RETURN
63040 PRINT@160,CHR$(31);:C$="":PH="":GOSUB 63360
63050 LINE INPUT "Enter the FILE name - ";N$
63060 INPUT "What is the first page number";NP:IF NP THEN NP=NP-1:GOTO 63070:ELSE
      NP=0
63070 INPUT "Enter start line number ";SL:IF SL THEN 63080:ELSE SL=0
63080 LN=SL:INPUT "Enter finish line number ";FL:IF FL THEN 63090:ELSE FL=65529
63090 INPUT "Do you want a space after each line ";C$:IF C$="Y"OR C$="y" THEN Z2=1:
      ELSE C$="":Z2=0
63100 PRINT PT;:GOSUB 63030:PRINT@160,CHR$(31);PH:PRINT"FILE NAME
      :-";TAB(14)N$TAB(35)"PAGE LENGTH";TAB(46)LP:PRINT"MARGINS :- LEFT"LM"
         RIGHT"RM"     TOP"TM"      BOTT@M"BM
63110 PRINT "PAGE NUMBER    "NP+1:PRINT:PRINT "LINE NUMBERS:
      -START";TAB(22)SL;TAB(30)"FINISH";TAB(36)FL;TAB(50)"CURRENT";TAB(60)LN
63120 PRINT CHR$(15);:LC=1:OPEN "I",1,N$
63130 MP=CL-RM
63140 GOSUB 63400:LPRINT PT;
63150 IF EOF(1) THEN PRINT@560,CHR$(30)"END OF FILE":CLOSE:PRINT PN;:GOSUB 63430:
      INPUT "ANOTHER FILE USING THE SAME FORMAT ";C$:IF C$="Y"OR C$="y" THEN C$="":
      SL=0:FL=0:LN=0:NP=0:GOTO 63040:ELSE 63010
63160 LINE INPUT £1,LI$
63170 LN=VAL(LI$):IF LN<0 THEN CLOSE:PRINT@1040," # # THIS IS NOT AN ASCII PROGRAM
      # # PRESS ENTER # #":INPUT C$:PRINT PN;:GOTO 63040:ELSE PRINT@620,LN;
63180 IF LN<SL THEN 63160
63190 IF LN>FL THEN PRINT@720,CHR$(31);"LAST LINE HAS BEEN PRINTED ":PRINT CHR$(14);:
      GOSUB 63430:CLOSE:INPUT "DO YOU WANT MORE LINES LISTED USING THIS FORMAT ";C$:
      IF C$="Y"OR C$="y" THEN C$="":GOTO 63060:ELSE END
63200 PRINT@720,CHR$(31);LI$
63210 I=1:IF Z1 THEN GOSUB 63390
63220 LL=INSTR(LI$,CHR$(32)):IN=LM-LL:GOSUB 63410
63230 IF LC=1 THEN NP=NP+1:PRINT@415,NP:GOTO 63260
63240 IF LC>=BM THEN GOSUB 63430:GOTO 63230
63250 GOTO 63280
63260 LPRINT TAB(T)PN;PH;" Page"NP;PS
63270 FOR N=2 TO TM:LPRINT:NEXT:LC=LC+TM
63280 IF LEN(LI$)<(MP-IN) THEN LPRINT PI;" ";LI$:LC=LC+1:IF Z2 THEN LPRINT:LC=LC+1:
      GOTO 63150:ELSE GOTO 63150
63290 L=MP-IN:V=L-5:TC$=" "
63300 I=INSTR(V,LI$,TC$):IF I>0 AND I<L THEN V=I:GOTO 63320:ELSE IF TC$=" " THEN
      TC$=":":GOTO 63300:ELSE IF TC$=":" THEN TC$=",":GOTO 63300
63310 IF TC$="," THEN TC$="ELSE":GOTO 63300:ELSE V=V-5:TC$=" ":IF V<25 THEN V=L-5:
      GOTO 63330:ELSE GOTO 63300
63320 IF TC$="ELSE" THEN V=V+3
63330 LPRINT PI" "LEFT$(LI$,V):LC=LC+1:IF Z2 THEN LPRINT:LC=LC+1
63340 LI$=RIGHT$(LI$,LEN(LI$)-V)
63350 IN=LM:GOSUB 63410:GOTO 63230
63360 PRINT"Enter not more than 55 characters for the heading ":LINE INPUT PH:IF
      LEN PH)<56 THEN 63370 ELSE PRINT"There is only room for:- ":PRINT LEFT$(PH,55):
      INPUT"Is this alright";C$:IF C$="Y"OR C$="y" THEN 63370 ELSE 63360
63370 IF FT=CHR$(15) THEN T=56-LEN(PH):ELSE T=32-LEN(PH)
63380 IF T<0 THEN T=0:RETURN:ELSE RETURN
```

```
63390 R=INSTR(LI$,"REM"+CHR$(32)):IF R THEN MID$(LI$,R+3,1)=CHR$(95):RETURN
63400 IF INP(251)<>61 THEN PRINT@1840,"# # SWITCH PRINTER ON # #";:SOUND 7,1:FOR
      N=1 TO 500:NEXT:SOUND 7,1:PRINT@1840,CHR$(30);:FOR N=1 TO 500:NEXT:GOTO 63400
63410 IF P1=CHR$(15) THEN P1=STRING$(IN,32)ELSE P1=STRING$(INT(IN/2),32)
63420 RETURN
63430 FOR M=LC   TO LP:LPRINT:NEXT:LC=1:RETURN
```

Renumber Model 4 programs. (Renumber)

```
63000 INPUT"Renumber lines from ";S1:REM V5
63010 INPUT"                  to ";S2
63020 X=PEEK(&H2601)+PEEK(&H2602)*256+3
63030 INPUT"What is the first new line number ";P
63040 INPUT"              What step (1 to 10) ";P1
63050 PRINT"Check for undefined lines? ";:INPUT X$:IF X$="Y" OR X$="y" THEN X2=1
      ELSE X2=0
63060 P=P-P1:T=1:P$=STR$(P):REM IF VAL(RIGHT$(P$,2))=0 THEN T=1
63070 DIM A(300),B(300):AD=X:FOR I=T TO 300
63080 GOSUB 63260:IF LN>62999 THEN Y=I-1:GOTO 63130
63090 N=P+I*P1:NH=INT(N/256):NL=N-NH*256
63100 A(I)=LN:IF (LN<S1 OR LN>S2) THEN B(I)=LN:GOTO 63120:ELSE B(I)=N
63110 IF X2=1 THEN 63120 ELSE POKE AD,NL:POKE AD+1,NH
63120 AD=NA:NEXT I:PRINT"Over 300 lines!":END
63130 AD=X:FOR I=T TO 300:GOSUB 63260
63140 IF LN 62999 THEN PRINT"Complete.":END
63150 FOR J=AD+2 TO NA-3:IF J=32768 THEN J=-32768
63160 C=PEEK(J):IF C<>44 AND C<>137 AND C<>141 AND C<>162 AND C<>208 THEN 63250
63170 J=J+1:GOSUB 63280:IF PEEK(J)=32 THEN 63170 ELSE IF PEEK(J)<>14 THEN 63250
63180 C(1)=LN:C(2)=0:K=J
63190 FOR M=1 TO 2:J=J+1:GOSUB 63280:C(M)=PEEK(J):NEXT
63200 L1=0:C=C(1)+256*C(2)
63210 FOR N=1 TO Y:IF C=A(N) THEN L1=N
63220 NEXT:IF L1<>0 THEN 63240 ELSE J=K:FOR N=1 TO 2:J=J+1:GOSUB 63280:NEXT:IF X2=1
      THEN 63230 ELSE IF C<S1 OR C>S2 THEN 63250
63230 PRINT"Undefined line "C" in line "LN:GOTO 63250
63240 J=K:BH=INT(B(L1)/256):BL=B(L1)-BH*256:J=J+1:GOSUB 63280:POKE J,BL:J=J+1:GOSUB
      63280:POKE J,BH
63250 NEXT J:AD=NA:NEXT I:PRINT"INCOMPLETE":END
63260 NA=PEEK(AD-1)*256+PEEK(AD-2)+2:IF NA>32767 THEN NA=NA-65536
63270 LN=PEEK(AD+1)*256+PEEK(AD):RETURN
63280 IF J=32768 THEN J=-32768:RETURN:ELSE RETURN
```

M.C. Matthews

Stencils for Daisy Wheel and Dot Matrix Printers

Following correspondence on this, I am writing to point out that there are special stencils for use with daisy wheel printers. They are used with a carbon ribbon in the printer. I have used the Gestetner Faxil 80D and the Roneo Alcatel Daisy Wheel E.T. stencils, both with excellent results. On a daisy wheel, reproduction is better if the typeface has a fairly uniform thickness of stroke. On my DWP 410, Madeleine and Bold PS faces do not give such good results as Prestige Elite, Letter Gothic and Cubic PS (which is this typeface).

I also obtained good results with an Epson dot matrix printer in enhanced mode, using the Gestetner Faxil 80D stencil. Again, I left the ribbon in the printer, so the wires in the head did not get wax on them.

David Hawgood, 26 Cloister Road, Acton, London W3 0DE

TRS-80 Graphics Dumps

Marcus L. Rowland

In 1983 I switched from a ZX81 to a TRS-80 Model 1 with line printer VII, later adding 48K and disk drives and upgrading to an Epson RX80 printer. While I've never regretted the change, one useful ZX81 facility which is missing on the TRS-80 is the Basic "COPY" command. On the ZX computers this useful instruction dumps the entire screen (including graphics) to a dedicated printer or a programmed printer interface. I used this command in most of the programs I wrote on the ZX81, and had to develop replacement routines on the TRS-80.

Luckily, there's no problem when you are dealing with text. It's easy to write a routine which PEEKs the 1024 screen locations and sends their contents to the printer. Most disk operating systems add an appropriate command, such as the Newdos CMD "JKL", which is slightly faster than an equivalent Basic routine.

Unfortunately, most printers don't contain the full TRS-80 character set. Neither of the printers I've owned had them, and their absence limits a screen dump to the ASCII characters; not very useful if you are trying to copy graphics. Figure 1 shows a CMD "JKL" dump of a graphics screen, as printed in the NEWDOS default mode.

For most applications I didn't need a simultaneous dump of graphics and text, so I decided to write a dumping routine for graphics only. My first idea was to write a program which would print a character for set pixels, and a space for empty pixels. Listing 1 (**LUMPY/BAS**) is written for the RX80, and represents set pixels as grey blocks. Lines 60-100 draw a simple graphic (a solid sine wave in a frame). Line 9030 selects a special character set which contains an appropriate character [Chr$(139) - "▒"]. Line 9040 sets the printer to a condensed mode which allows lines of up to 137 characters. Line 9050 sets the printer for 7/72" spacing, so that the lines overlap slightly. Figure 2 shows a graphics dump from this program. The printed image is 190mm wide by 118mm high. Running time is 3 minutes 05 seconds.

While this is adequate for some purposes, I tend to think of screen graphics as being white, not grey or black. Also, some of the programs I'm developing produce maps and plans, which are fairly useless with solid shading. Accordingly, I wrote a program to show the outlines of graphics areas without shading every graphics block. Since I was only interested in outlines, I decided to use the printer's bit graphics mode to produce thin lines rather than the blocks of the previous program. Another objective was compatibility with a compiler.

Program listing 2 (**OUTLINE/BAS**) is written for the RX80, but should work with most Epson printers, and other printers using Epson protocols. It uses the Epson CRT graphics mode (640 items of bit-image data per line), since this is an exact multiple of the pixel width of the screen. Lines 60-100 draw the same graphics screen. Line 9030 sets up the printer for 9/72" line spacing. Line 9050 selects the CRT graphics mode and instructs the printer to expect 640 items of bit-image data.

The loop in lines 9060 to 9320 is the core of the program. Line 9070 sets up an array B(0)..B(4), representing the five columns of dots printed for each point. Next, the state of each pixel is checked. If the point isn't set, line 9090 sends the array to the printout

routine in lines 9270-9310, otherwise the program checks above, below, and to either side of the pixel.

Lines 9100-9130 check above the pixel. If it's on the top screen row, or if the pixel above the point being checked isn't set, the routine in line 9130 sets B(0)..B(4) to 128, which puts a dot at the top of each printed column.

Lines 9140-9170 check below the pixel. If it's on the bottom row, or if the point below isn't set, the routine in 9170 adds 1 to the array B(0)..B(4). This puts a dot at the bottom of each printed column.

Lines 9180-9210 check the left side of the pixel. If it's in column 0, or if the adjacent pixel is clear, B(0) is set to 255, printing a solid column of dots.

Similarly, lines 9220-9250 set B(4) to 255 if the pixel is on the right-hand edge of the screen or the adjacent pixel isn't set.

Obviously, if a pixel is surrounded on all four sides none of these procedures will affect the array.

Lines 9270-9310 print out the graphics. Since the Model 1 won't LPRINT CHR$(0) a substitute routine is used, checking the state of the printer buffer and poking the array to the printer. For the Model 3 the pokes in line 9300 and 9330 should be replaced by OUT 248,B(N) and OUT 248,0.

When an entire row has been printed out, line 9330 fills the printer buffer with CHR$(0), to ensure that the printer is ready for the next graphics command. According to the RX-80 manual this isn't necessary, but I've found that the program won't work properly without it. Theoretically an LPRINT command is all that is needed in this line.

One other line that may need explaining is Line 9080, which prints figures showing the progress of the routine, using a part of the screen which doesn't interfere with the demonstration graphic. This line should be deleted for normal use.

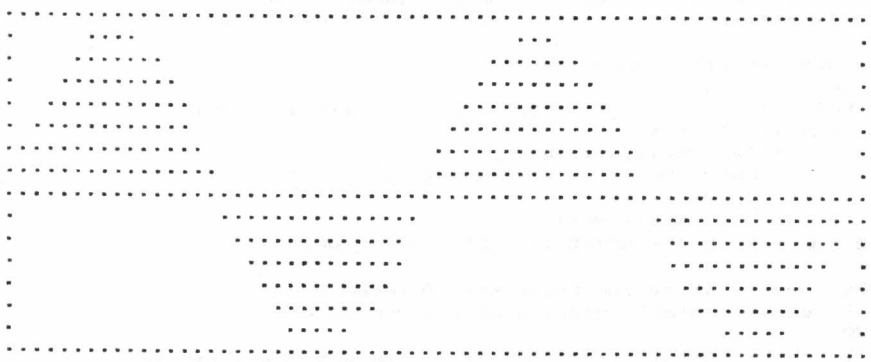
Figure 3 shows a graphics dump using OUTLINE/BAS. The finished printout is 203mm wide by 135mm high, and just fits nicely across A4 (209mm width) printer paper. Printing time was 28 minutes, rather slow for most applications. The printing time per row ranged from 25 seconds (a row consisting mostly of unset pixels) through 33 seconds (mixed set and unset pixels) to a worse-case 48 seconds (a row of pixels with unset pixels above or below). Compiled printing time (using ACCEL 3) was 10 minutes 15 seconds. This compiler required lines 90, 9130, and 9170 to be rewritten without spacing. It also gave bad results if the loop in line 9330 didn't run through a thousand cycles. With a simpler graphic (without SINS etc.) and the integer compiler ZBASIC 2.0 the printout speed was 3 minutes 15 seconds.

Use with other printers shouldn't cause any special problems. For example, my old Line Printer VII used a 7-bit graphics mode in which all characters had values of 128 or more. The upper dot of each column had a value of 129, the lowest a value of 192. Line 9070 would thus set B(N) to 128, not to 0, and line 9130 would become:

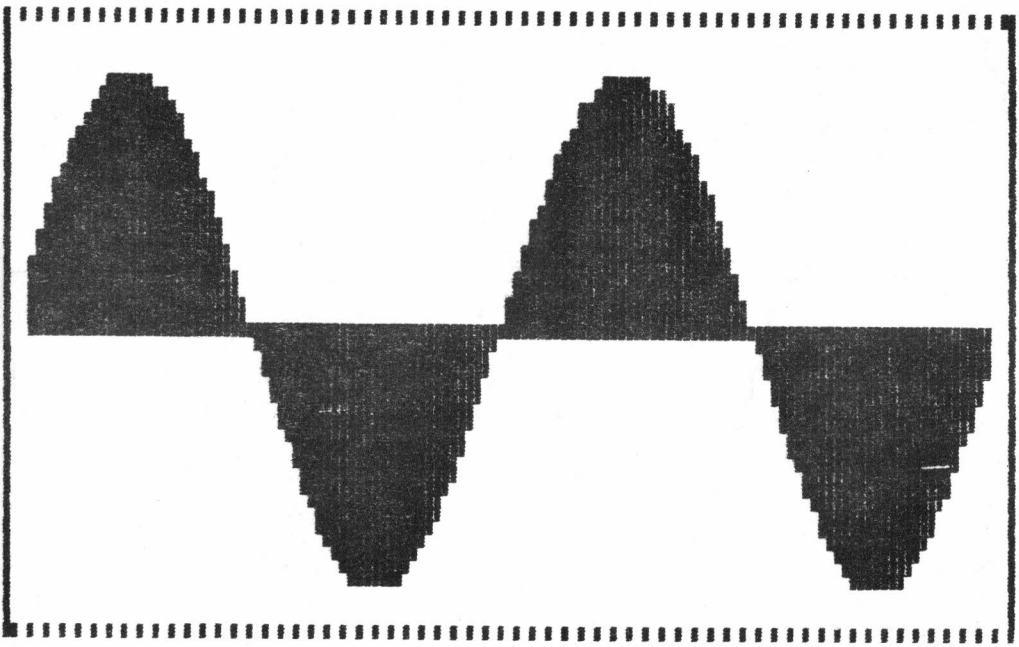
```
9130 FOR N = 0 to 4:
       B(N) = B(N) + 1:
       NEXT N
```

Similarly, line 9170 would add 64 to each column. Since CHR$(0) doesn't have to be printed, the routine in lines 9290-9300 becomes a simple LPRINT statement. I should stress that I can't check this program on an LPVII; 5 bit columns per pixel may be incorrect for this printer. Other

Screen Dump using JKL command - figure 1



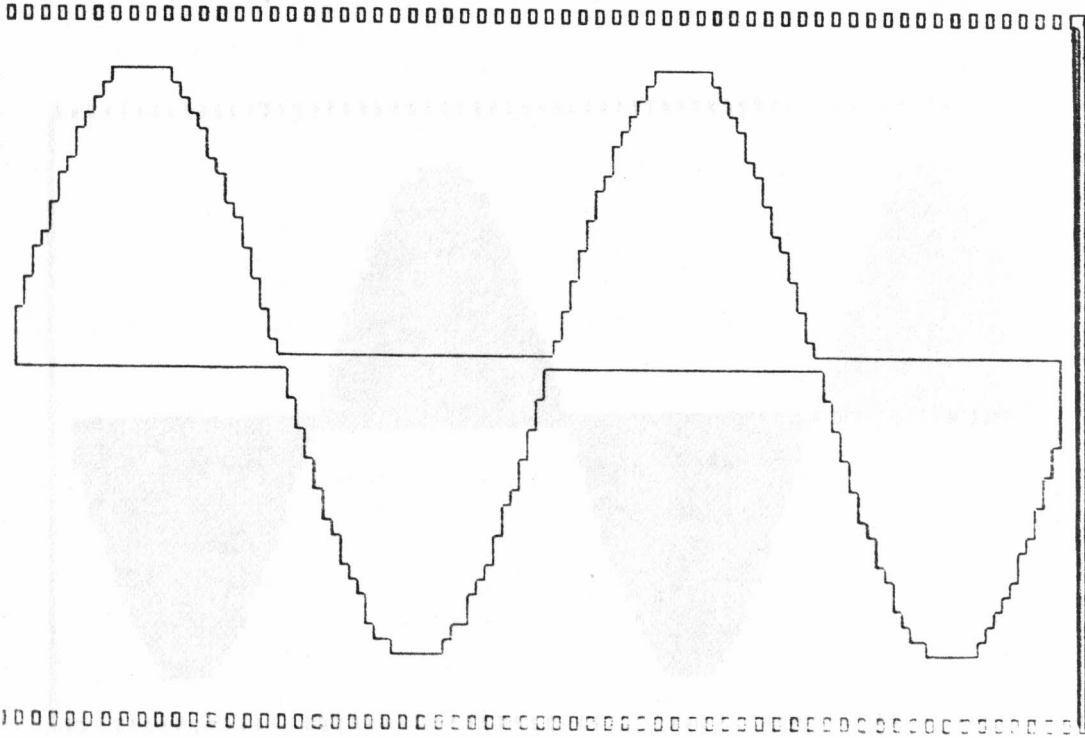
Screen Dump using LUMPY/BAS - figure 2



Listing 1: LUMPY/BAS

```
10 '***********************************************
20 '* Tandy Model 1 - RX-80 Graphics Dump Program *
30 '* By Marcus L. Rowland, London, January 1985  *
40 '***********************************************
50 '
60 'Demonstration graphics
70 CLS
80 FOR X=0 TO 126 STEP 2: SET(X,0): SET(X+1,47): NEXT
90  FOR X=3 TO 124:
       SY=24-(20*(SIN(X/10))):
          FOR Y=24 TO SY STEP(SGN(SY-24)):
             SET(X,Y):
               NEXT: NEXT
100 FOR Y=0 TO 47: SET(0,Y): SET(127,Y): NEXT
110 '
9000 'Dump Routine for Epson RX80 Printer
9010 'showing simple block graphics for pixels.
9020 '
9030 LPRINT CHR$(27);"m";CHR$(4);    'select character set
9040 LPRINT CHR$(15);                'condensed printing
9050 LPRINT CHR$(27);"1";            '7/72" line spacing
9060 FOR Y = 0 TO 47
9070 FOR X = 0 TO 127
9080 IF POINT(X,Y) THEN LPRINT CHR$(139); ELSE LPRINT " ";
9090 NEXT: LPRINT:  NEXT
```

Screen dump using OUTLINE/BAS - Figure 3



Program listing 2: OUTLINE/BAS

```
10 '************************************************
20 '* Tandy Model 1 - RX-80 Graphics Dump Program *
30 '* By Marcus L. Rowland, London, January 1985  *
40 '************************************************
50 '
60 'Demonstration graphics
70 CLS
80 FOR X=0 TO 126 STEP 2: SET(X,0): SET(X+1,47): NEXT
90  FOR X=3 TO 124:
       SY=24-(20*(SIN(X/10))):
          FOR Y=24 TO SY STEP(SGN(SY-24)):
             SET(X,Y):
               NEXT: NEXT
100 FOR Y=0 TO 47: SET(0,Y): SET(127,Y): NEXT
110 '
9000 'Special Dump Routine for Epson RX80 Printer
9010 'showing outlines of plotted areas only
9020 '
9030 LPRINT CHR$(27);"A";CHR$(8)   'Initialise, 8/72" spacing
9040 FOR Y = 0 TO 47
9050 LPRINT CHR$(27);"*";CHR$(4);CHR$(138);CHR$(2);
9055 'Printer is now in CRT graphics mode (640 bits / 8")
9060 FOR X = 0 TO 127
9070 FOR N = 0 TO 4: B(N)=0:  NEXT N
9080 PRINT@84,X;" ";Y;" ";
9090 IF POINT(X,Y) = 0 THEN 9260
9100 'Check space above pixel
9110 IF Y=0 THEN GOTO 9130            'Top pixel row
9120 IF POINT(X,Y-1) <> 0 THEN GOTO 9140
9130 FOR N = 0 TO 4:
       B(N) = B(N) + 128:
         NEXT N
9140 'Check space below pixel
9150 IF Y=47 THEN GOTO 9170           'Bottom pixel row
9160 IF POINT(X,Y+1) <> 0 THEN GOTO 9180
9170 FOR N = 0 TO 4:
       B(N) = B(N) + 1:
         NEXT N
9180 'Check space to left of pixel
9190 IF X = 0 THEN GOTO 9210          'Left pixel column
9200 IF POINT(X-1,Y) <> 0 THEN GOTO 9220
9210 B(0) = 255                       'Set left bit column
9220 'Check space to right of pixel
9230 IF X = 127 THEN GOTO 9250        'Right pixel column
9240 IF POINT(X+1,Y) <> 0 THEN GOTO 9260
9250 B(4) = 255                       'Set right bit column
9260 '
9270 'poke bits to printer
9280 FOR N=0 TO 4
9290 IF PEEK (14312)>127 GOTO 9290 'Wait for empty buffer
9300 POKE 14312,B(N)                  'avoid LPRINT CHR$(0)
9310 NEXT N
9320 NEXT X
9330 FOR N=0 TO 100: POKE 14312,0: NEXT
9340 NEXT Y
9350 LPRINT
```

changes might also be necessary, and interested readers will find the appropriate codes in their printer manuals.

Obviously, this program isn't a complete answer to TRS-80 graphics dumps, but I'm hoping that someone will see it and think of something faster and better. Ideally I'd like a fast machine-code dump that could be called from Basic or DOS, similar to CMD "JKL" but giving the effect shown in figure 3. Perhaps it's possible to change the addresses of the compiled program to allow it to be called in this way, but I've found that the CMD "DOS COMMAND" function on NEWDOS always seems to clear the screen, unless JKL is the function invoked. I'm sure that there must be a way of avoiding this, but I've yet to work it out. An even better program, from my point of view, would be one that used the outline graphics mode (in some form) and also dumped text.

TRS-80 hackers of the world, I've thrown down a gauntlet. Is anyone going to pick it up....please!!!!

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RING BAS ON 0206 384505 ANY TIME

I am havin9 some problems with my disc drives. Would any members have circuit dia9rams on the Gnomic DP2000 (or DP1000) and on Canon or Cumana drives.

A Fowke
28 Queensway
Sawston
Cambs CB2 4DJ

Do you own a Tandy or a Video Genie computer?

if so read on

Are you aware that there is a National TRS 80 and Genie Users Group (NATGUG)? It is a non-commercial group and both home and business users are most welcome. Membership is by subscription, and there is a monthly newsletter containing letters, articles and programmes.

Information on the group can be obtained from the Secretary:-

Brian Pain,
40A High Street,
Stony Stratford,
Milton Keynes.

Tel: Milton Keynes (0908) 564271

If you own a TRS 80 or a Video Genie or intend to shortly then get in touch with the Secretary now, both you and the group will benefit from your membership.

* FOR YOUR OFFICE/LIBRARY.

```
.tm0;.sd3;.pron;.up32;.lh12;.ks1;.kron;.l160
.pnoff;.ceon;.foeff
.bf CM
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.sk1
if so read on
.sk1;.foon;.ceoff;.bf Clarity
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Tel: Milton Keynes (0908) 564271
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membership.
.en
```

DO YOU OWN A COMPUTER?

IS IT A TANDY OR A VIDEO GENIE?

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* for your office / library

```
.tm0;.sd3;.pron;.up32;.lh12;.ks1;.kron
.pnoff;.cew;.fooff
.bf ANT
do you own a computer?
.sk3
is it a tandy or a video genie?
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if so read on
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Milton Keynes.
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Tel: Milton Keynes (0908) 564271
.sk1;.foon
If you own a TRS 80 or a Video Genie or intend to shortly then get in touch
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membership.
.en
```

INTRODUCING THE Digicomm Panther



THE DIGICOMM 'PANTHER' Mk1 MODEM.

This is one of the first of a new breed of international modem that runs on both North American and European phone systems so can be used almost anywhere in the world. It supports the following features:-

1. An industry standard 25 way 'D' socket to connect to the micro computer.

2. 300/300 baud full duplex CCITT standard (this is used by all MAILBOX systems).

3. 1200/1200 half duplex for fast transfer of data.

4. 1200/75 baud for PRESTEL/ MICRONET etc.

5. Full Answer/Originate on all of the above.

6. Carrier Detect LED (to show if computer is logged on at other end of phone link).

7. Data Tri state LED (to show that data is being transmitted between both computers).

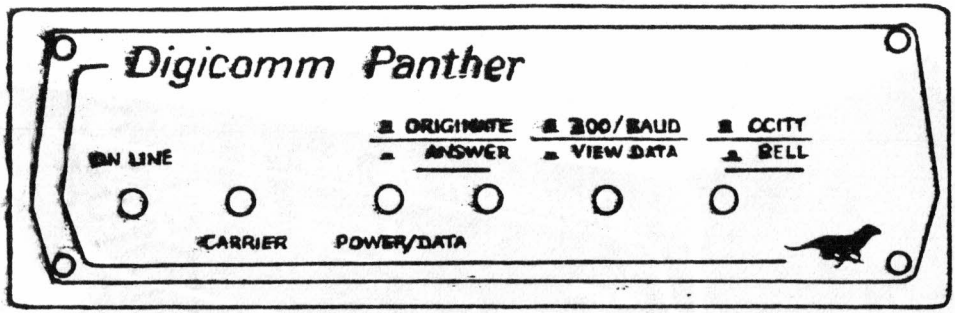
8. Online switch to connect call (when computer loggs off at other end this will automatically disconnect the phone line).

9. Optional Auto/Answer board (this allows your computer to answer the phone without intervension from you).

10. Comes complete with a 600 series modular jack plug to connect your phone line (the phone plugs into the PANTHER).

11. Full instructions for use.

FRONT PANEL



DIGICOMM Systems

(0384) 635336

One of the great (and not as yet fully realised) advantages of using a microcomputer is the ability to communicate with other computers via a modem and a telephone system. This advantage can be realised today with a state of art modem by DIGICOMM called the 'PANTHER'. This modem used the very latest LSI technology to bring you a world standard modem of unheard of power just a few years ago.

WHAT IS A MODEM ?

A modem is a device that interfaces between the micro computer and the telephone line allowing communication to be established between two computers. These computers can be alike or not as the case may be.
You could use this link for :-
contacting friends for the exchange of computer software, transfering personal mail, banking or even shopping.

In the US where the use of modems for communications are now firmly estabilised there are around 2000 privately run MAIL BOX systems, these allow you or I to dial them up and browse around a whole new world of free information, free software, messages and any other thing you can think of. In this country there are around thirty privately run MAIL BOX systems but these are increasing almost daily as more people find out about the fascinating world of communications. On the commercial side of this there is of course PRESTEL/VIEWDATA, MICRONET, TELECOM GOLD, COMET, REWTEL, DIALOG INFORMATION SERVICES etc. etc.

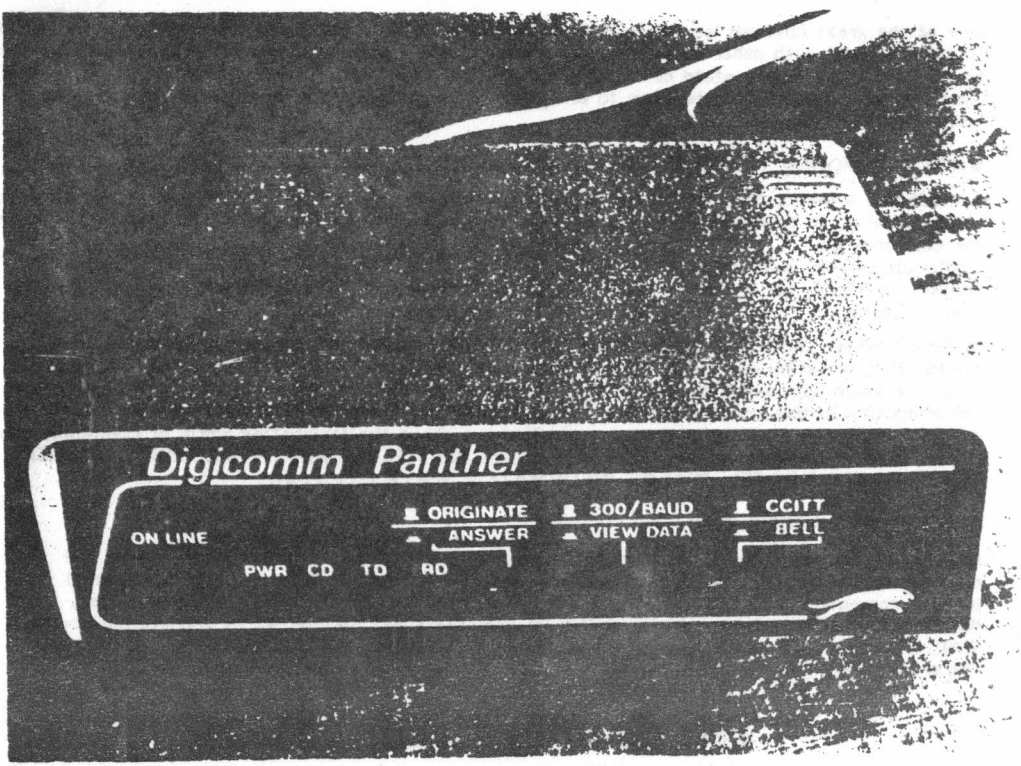
WHAT ELSE IS REQUIRED ?

All that is required other from a modem, computer and a phone, is software to handle the exchange of information between the computers. We have some free software for several popular computers including CP/M machines, BBC, TANDY, ELECTRON, SPECTRUM etc. We can also supply software for a number of computers just ask for prices and availability, MAIL BOX software can be purchased i.e. TBBS, FORUMBO, MAIL BOX, CBBS etc. (Includes CP/M machines) this software can be used with a number of well known computers.

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STORES

NATGUG NEWS

Volume 6 Issue 10 April 1985

OFFICIAL JOURNAL OF THE

National TRS-80 & Genie Users Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided in the Newsletter from time to time.

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

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

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor.

Chairman and Newsletter Editor:-

Leon Heller,
8 Morris Walk,
Newport Pagnell,
Bucks. MK16 8QD.
Tel: (0908) 613004

Secretary and Newsletter Publisher:-

Brian Pain,
24 Oxford Street,
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WORKSHOP DETAILS.

EDINBURGH Ted Gladstone's Hotel Sunday 9th June 1985
Business - MULTIPLAN & VISICALC, WORDPROCESSING and APPLICATIONS SALES, PURCHASES, ACCOUNTING.

GLOUCESTER CREST HOTEL Sunday 16th June 1985
Printers and Word Processors. The car park is very close so bring along your system. DOTWRITERS in attendance.

LONDON Sunday 28th July 1985
Spreadsheets and only spreadsheets. Hopefully around 5 talks with ideas/experiences on both VISICALC and MULTIPLAN. Possibly Robert Vieira, Gordon Collins and Chris Currie can be persuaded to talk and explain, using the Swindon enthusiasm as a base. Dave Washford certainly appreciated the Sunday afternoon session.

Milton Keynes Post Office College - 8/9/10 November 1985

With Model 4/4P going so well I think CP/M ought to be done again with Dave H..... Playing an active part. We might even have our first Model 1000 member attending who knows. I know what we will be doing in NOV'86 - a weekend on DOMESTOS.

EDITORIAL

I now have a Silver Reed EXP 500 daisy wheel printer, so you should see an improvement in the bits of the newsletter that I write or transcribe.

Milton Keynes is back this Autumn! Many members will recall the splendid residential workshops that we used to have in the MK College of Education, until it was sold to the Post Office for use as a training centre. The Post Office is now hiring the premises out at weekends, and the Autumn workshop will be held there on the 8/9/10 November, instead of Swindon. The cost will be somewhat higher than Swindon, but the facilities are much better, and the reduced travelling costs for many members, especially those from the North and Midlands, will offset the increase. The Wiltshire Hotel would be too small, anyway, for the large number of IQLUG members that we expect to attend.

Leon Heller

MEMBERS' LETTERS

I would like to follow up my earlier letter about **WORD4WORD SUPERPLUS** with an apology to **PREMIER** for my inability to read their manual properly. In addition I would like to thank all the many members who took the trouble to ring me up with the answer to the "no spaces" problem. Simply I was selecting "proportional" when the MX80 cannot do it, all as explained on page 16 of the manual.

I have now received the back copies of the Newsletter and have noted the references to sending chr(0) to the printer. When using LDOS. I still think that redefining another character, in my case chr(7) to give chr(0) is much the easiest solution. Incidently on some of my disks I have sysgened the filter to change a "dollar" into a "pound" which allows me to print "£" signs with the Print Using statement, this is much less trouble then the various machine code solutions!

My Model III was looking "long in the tooth" but is now, with both W4WSPLUS and NEWSCRIPT, a useful wordprocessor. I have just acquired HYPERCROSS and commend this to those with access to IBM PC or CPM machines. I can now write ASCII files at home and use them at the college where I teach. This goes for PASCAL or other source programs and, of course, BASIC programs saved in ASCII. In other words I have a useful "data prep." device.

The club is not dead and, in my opinion, neither is my Model III, although the upgrade path to CPM now seems pointless (I was very tempted by Holmes VID-80). CPM software is at "ripoff" prices and the lure of a better Microsoft Basic is less powerfull now with more use of Pascal. I would like Fortran 77 on my Model III though!

To close I would like to put the cat amongst the pigeons. I also use BBC machines and see them as excellent for initial teaching due to the wide range of low priced packages such as WORDWISE and BEEBCALC.

Expansion boards really are too expensive and lead to systems much inferior to Tandy 1000/1200 and many others. CPM machines are dead ducks for new installation, as only a software committment could preserve markets for such systems as they are not much cheaper than 16 bit . It is easy to move from TRS80 or CPM to PC/MSDOS but the BBC is a total dead end at present, and it only represents a tiny part of the worlds computing.

I often think how nice it would be if Microsoft Basic had procedures and lower case variable names to aid readability but where do you stop? the problem is that, like Cobol, Microsoft Basic is too well established (sorry BBC). It is very good for writing short unplanned programs for one's own use, with little documentation. This was the original purpose not to provide an extended training route for professional programmers. I am aware that many good packages have been written in Basic, even it does not compile well. All in all my vote goes for Pascal for teaching although I doubt its utility for producing commercial programs, even when a full compiler is available. I suspect that Pascal will become extended (non-standard?) as more people use it, but hope control is maintained.

JIM LANE (01-866-4650)

Having just read through the March issue of NATGUG I was sorry to see that the program listings by M.C.Mathews were unreadable & as he did not include his phone No. I haven't been able to ring him up to find out if he can send me copies that I can type in to my 4P, even Leo's UART initialisation program fades out by the end of the page.

On the subject of phone numbers, quite often I have seen a query raised by a member that I could have helped with if a phone number had been included.

I am gradualy learning how to use my 4P, I have just bought DOSPLUS 4 as TRSDOS 6.01.02 is not all that much better than TRSDOS 2.3 & I am hoping that I will be able to get on better with it, one thing I found puzzling, I loaded the M-ZAL text editor that comes with it & tried to load a basic program saved in ASCII, it kept displaying 'OUT OF MEMORY' & there was 45k to play with when I invoked the 'M' command, anybody know the answer as I had hoped the editor would take the place of NEWDOS 80's program display, stepping & editing facilities.

There is no chance of a NEWDOS for the model 4 unless we can adapt Version 2 ourselves because APPARAT only write for 'BIG BLUE' now, can't blame them after the way Tandy have always snubbed them.

Having read of several problems people have been having with Superscripsit I am reluctant to get involved with it although a friend of mine seems to be very satisfied with his copy which was on a TRSDOS 6.2 disc, maybe that cures the problems, so this is being written with Pencil 2 Plus (breathed on by Peter Knaggs) in Model III mode, it doesn't do silly things any more.

Since starting this letter I have been reading through the DOSPLUS 4 manual & it is an improvement on TRSDOS 6.01.02 but still lacking some of NEWDOS's facilities. you cant see so easily what sort of configuration has been set up nor can you step through a program except line at a time, no paging through either way. still it makes up in other ways, the INPUT@ function looks very good, using Labels instead of line numbers for GOTOs & GOSUBSs is also a good idea, so is Sysgen, (shades of CP/M?), Dircheck even has the ability to repair GAT & HIT sectors, pity two utilities are needed to equal Superzap though.

I have just finished typing in the Scripsit modifications published in the January issue of 80 Micro, makes Scripsit almost as good as Peter Knaggs' version of Pencil, but then I'm biased, the printer driver program is very useful.

I was in London last Thursday at the Computer Fair, on the way I called in at the Tandy Computer Centre in Bishopsgate hoping (still) that they could supply me with TRSDOS 6.2, I should have known better, they hadn't even got a copy for themselves, such a great shame that first class computers should have such third rate support.

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

PROBLEM SECTION

HELP PLEASE FOR MODEL 4p CLOCK

I was talking to some one at the Swindon Computer Week-end about the real time clock for the Model 4p. The problem is the clock stops when you switch off the computer, and restarts when it is switched on again. I cannot remember who I was talking to about this problem and how they had solved it, but who ever it was had sloved the problem. So could they please get in touch with me and let me know how to get over this problem.

Bob Sparling. The Ridgeway, 51 Station Road, Chiseldon, Swindon SN4 OPW
(0793) 740762

Just a note which I hope can be published in the magazine to see if anybody else in NATGUG shares my sporting interests and is using their Tandy to either: pick the winners on the flat or pick score draws for their pools coupon; and if so with what degree of success?! I'd be pleased to hear from anybody who has tried to work out a program for either the horses or the pools to compare notes.

P A Roberts
11 Spring Gardens
Parkstone
Poole
Dorset BH12 2DQ

I am having a problem at the moment with my monitor. The screen lifts about 5mm and then returns about every 5 seconds very disconcerting! A TV does the same so the fault would seem to be in the Genies video circuits

If anyone has met this I would appreciate some help

Allan Fowke

ANOTHER RESTORE MODIFICATION

With reference to Ken Robinson's article on modifying the RESTORE command in last month's newsletter, I too found some code in the way when I wanted to put it on disk, and put mine at the same place as his. However, I had previously extended the command to include RESTORE(expression) as I had a program that calculated a line number to restore to, and then read the data from it. I include a source listing of the complete item which can be seen to be very similar to that in 80-Micro.

The extra code is in lines 78-86, where a bracket is looked for, and then the contents evaluated using ROM routines at 2337H and 0A7FH. The other enclosure shows the dump of sectors 14 and 15 of the BASIC.

I hope others will find this addition useful.

R. Rolison,
6 Picket Piece,
Andover,
Hants. SP11 6LU.
Tel: 210388.

```
 1                ;RESTORE/SOF
 2                ;
 3                ;From u80 June 83
 4                ;
 5                ;271083
 6                ;
 7                ;091183 With HOBMODS
 8                ;
 9                ;It now has the following sytaxes:-
10                ;RESTORE  - existing syntax
11                ;RESTORE..   where .. is a valid line no
12                ;RESTORE(....)     where .... is any expression)
13                ;that calculates a line no
14                ;
15                EXIT:     EQU  1D78H
16                STRING:   EQU  40A0H
17                HIMEM:    EQU  40B1H
18                ;HIMEM = 4049H for MOD 1 disc
19                ;  "    = 4411H  "   "  3   "
20                BEGIN:    EQU  7000H
21                ;
22                          ORG  BEGIN
23                ;
24 7000 2AB140              LD   HL,(HIMEM)
25 7003 014100              LD   BC,ZFIN-START
26 7006 AF                  XOR  A
27 7007 ED42                SBC  HL,BC
28 7009 E5                  PUSH HL
29 700A D1                  POP  DE
30 700B 224040              LD   (4004H),HL
31 700E 2B                  DEC  HL
32 700F 22B140              LD   (HIMEM),HL
33 7012 C5                  PUSH BC
34 7013 01CEFF              LD   BC,0-50
35 7016 09                  ADD  HL,BC
36 7017 22A040              LD   (STRING),HL
37 701A C1                  POP  BC
38 701B 212370              LD   HL,START
39 701E EDB0                LDIR
40 7020 C3CC06              JP   1740       ; or 402DH
41                ;
42                ;
```

```
   43 7023 E3        START:    EX    (SP),HL    ; Start of disk code
   44 7024 7D                  LD    A,L
   45 7025 FE5B                CP    5BH
   46 7027 2003                JR    NZ,NO
   47 7029 7C                  LD    A,H
   48 702A FE1D                CP    1DH
   49 702C E3        NO:       EX    (SP),HL
   50 702D C2781D              JP    NZ,EXIT
   51                  ;
   52                  ;look for RESTORE token
   53                  ;
   54 7030 CD781D              CALL  EXIT
   55 7033 FE90                CP    90H          ; restore token
   56 7035 2804                JR    Z,YES
   57 7037 2B                  DEC   HL
   58 7038 C3781D              JP    EXIT
   59                  ;
   60                  ;found so look for nnnn
   61                  ;
   62 703B CD781D    YES:      CALL  EXIT
   63 703E 3805                JR    C,YES2
   64 7040 CA911D              JP    Z,1D91H
   65 7043 1810                JR    NOTCON       ; Not a constant
   66                  ;
   67                  ;
   68                  ;found !!
   69                  ;
   70 7045 CD5A1E    YES2:     CALL  1E5AH
   71 7048 E5                  PUSH  HL
   72 7049 CDC81E    STUFF:    CALL  1EC8H        ; Get line no location
   73 704C 2B                  DEC   HL
   74 704D 22FF40              LD    (40FFH),HL
   75 7050 E1                  POP   HL
   76 7051 2B                  DEC   HL
   77 7052 C3781D              JP    EXIT
   78 7055 FE28      NOTCON:   CP    '('          ; A has got the)
   79                  ;next value because of RST10)
   80                  ;and we need a (
   81 7057 C24A1E              JP    NZ,1E4AH     ;FC ERROR if no (
   82 705A CD3723              CALL  2337H        ; Evaluate expression
   83 705D E5                  PUSH  HL
   84 705E CD7F0A              CALL  0A7FH        ; Get interger into HL
   85 7061 EB                  EX    DE,HL
   86 7062 18E5                JR    STUFF
   87                  ZFIN:     END
Exec Addr 0000
```

```
   DRV 00   D977 BEC2 C957 7022 B140 11CE FF19 22A0 .w...Wp".@....".
   0   10   4021 5C67 CD67 4421 FEFF 22A2 4021 CA64 @!\g.gD!..".@!.d
   0H  20   22A7 4021 6943 CBBE 3A6C 43CB 773E C928 ".@!iC..:lC.w>.(
       30   067C 3221 643E C332 1243 21BB 6711 5241 .|2!d>.2.C!.g.RA
   DRS 40   0193 00F3 EDB0 3E03 3289 5F21 BE66 3134 ......>.2._!.f14
   99  50   E5FB B728 1108 ED4B C564 3600 0B23 78B1 e..(...K.d6..#x.
   63H 60   20F8 083D 20EF 3600 2322 A440 112C 0119 ...=..6.#".@.,..
       70   EB2A B140 DFDA C957 CD4D 1B21 0000 7EFE .*.@...W.M.!..~.
       80   2A20 1701 0000 2AA4 4071 2370 2100 00CD *.....*.@q#p!...
       90   5A1B 21E9 5422 5E65 1804 FE0D 2806 2189 Z.!.T"^e....(.!.
       A0   6522 0552 C319 1AE1 2133 0022 0552 C521 e".R....!3.".R.!
       B0   AC65 CD67 44ED 5B5E 652A A740 1AFE 0D77 .e.gD.[^e*.@...w
   FRS C0   1323 20F8 AFF5 2BC3 7903 1D1B 1F03 0[redacted].#....+.y.....
   14  D0   C965 0000 0000 2A2A 237E FE3D C9C5 CDE1 .e....**#~.=....
   EH  E0   6179 C1C9 ED5B C564 C9DD CB04 FEC9 C24A ay...[.d.......J
       F0   1E3A 0251 B7FD 2100 4228 04FD 2117 42E5 .:.Q..!.B(..!.B.
```

```
DRV 00  DD6E 05DD 6605 FD5E 05FD 5606 DF20 04DD .n..f..^..V.....
0   10  CB04 F611 1700 FD19 FD7E 00B9 38E8 E1C9 .........~..8...
0H  20  DDCB 0476 C032 024F C3DD 5E13 DDCB 0476 ...v.2.O..^....v
    30  C8F1 09C9 DDCB 0476 C019 10FD C9DD 740A .......v......t.
DRS 40  09EB DDCB 0476 C078 B128 042B 1BED B8AF .....v.x.(.+....
100 50  C900 [illegible]                        ...).[..!....x..
64H 60  [illegible]                             x...(.+.x..x.8..
    70  [illegible]                             .....Z.....+".@.
    80  [illegible]                             +.x..(.J..7#...
    90  [illegible]                             ]....RESTORE0584.
    A0  0000 0000 0000 0000 0000 0000 0000 0000 ................
    B0  0000 0000 0000 0000 0000 0000 0000 0000 ................
FRS C0  0000 0000 0000 0000 0000 [illegible]    ............@If
15  D0  012A C766 0000 0000 0000 0000 0000 0000 .*.f............
FH  E0  0000 0000 0000 0000 0000 0000 0000 0000 ................
    F0  0000 0000 0000 0000 0000 0000 0100 BCE6 ...............f
```

DMP2100

From: Peter Kyle, 1 Barrowsfield, Sanderstead, Surrey 01-657 1694.

As many will know, Brian Pain is very persuasive. Several months ago he got me to write about how I was getting on with my DMP2100. Since then I have been exploring what I can do with it using one or two simple programs of my own and also Newscript. I then made the mistake of phoning Brian and telling him how I was getting on. "Great" he says "let me have an article. There are lots of members using Newscript and what you have worked out could save them hours of time." His mastery of flattery has to be much admired.

I sat down at the keyboard in the glow of an inflated ego which suddenly vanished as I thought "what have I let myself in for?" However, here goes:

Attached is a sample and the small program of my own which produced it.

However Newscript does not cater for changing fonts in the middle of a line. Its printing program, "Script", is a HUGE Basic one which takes most of the memory. It can therefore only take short lengths of the file that has to be printed and send short "squirts" to the printer. It plays merry hell with the latter's "Bidirectional minimum-distance access carriage motion". Mostly it prints a whole line. But sometimes, if the head is on the right-hand side of the paper, it will start printing one or more characters in from the right margin and after reaching the left margin go back and print the one or more characters it left out. To be fair to Newscript it is possible to get the printer's logic tied in a mess when printing from one's own programs. Tandy, Croydon found the same thing. In any case it's only the "hunting" of the print-head that looks odd. The printed result is OK.

Newscript defaults to proportional spacing which, in my opinion, is the best print font on the DMP2100. There is a slight problem if one wants to tabulate. It doesn't, unless one switches to 10, 12 or 16 pitch. Newscript's method in Proportional is to print the first column, reverse feed the paper, change the left margin to where the second column is to be positioned, print the second column, reverse feed, etc. A warning is given that because of slippage the registration of the lines may be a little out. This method would have to be used if the columns were all text but I only wanted to produce a simple table of meeting dates. So I was stuck with changing to 12 pitch -- or was I?

DMP2100's Operation Manual has 2½ pages of Control Codes. Much of the rest of the manual explains how to use them such as "How to position the Print Head." Thinks: "I wonder if I can use that." After a little experimenting I found I could, as attached sample.

On the full width of the printer there are 2448 positions one can tell the head to go to, subdivided into zones about 1½ inches long. A string of 4 CHR$'s is used to define the position wanted. The first 2 are CHR$(27);CHR$(16). The third is the zone (0 to 9). The fourth is the position within each zone (0 to 255 except zone 9 whose maximum is 143). These figures are different if using 16 cpi or regular graphics. One also has to be careful on the Model 1 in that some CHR$'s get intercepted and don't reach the printer eg CHR$(0).

No doubt other wordprocessors can create hexadecimal characters in the middle of text and users of such programs should adapt the following appropriately.

Newscript's manual states that characters in the range ASCII 1 to 31 can almost never be created through direct hexadecimal entry. The ALter command has to be used and I decided to use it for all 4 of the CHR$'s required. Thus 4 regular keyboard characters WHICH HAVE NOT BEEN USED ELSEWHERE IN THE TEXT are inserted before the text of each column eg #$-² #$+(#$<). Thus a line of dates will look like this:

3rd June#$-² 10th June#$+(17th June#$<) 24th June

The command AL/#/27/99g will change up to 99 #'s to CHR$(27)'s. The command AL $/16/99g will change up to 99 $'s to CHR$(16)'s. The - + and < must be ALtered to the zone you want. I chose 1 2 and 3. The * (and) must be ALtered to the position you want in the zone ie 1 (NOT 0) to 255. You will, of course, get some odd characters on the screen. I haven't tried a position so far to the right that the text overflowed the line. Perhaps some of you adventurous souls might like to explore the result. I hope you will have backed-up your disks before you start.

The next thing I should like to get is columns of proportional figures lined up eg:

1,000,000
    1,000
      500

(It was lined up on the screen.) I think part of the problem is that the proportional character width table in Newscript is different from that for the DMP2100. BUT how does one cope with a comma which is 8 dot columns wide and a space which is 14 dot columns wide?

Any ideas would be welcome. I think.

PRINT IN BLOCK CAPITALS & send or hand to your Section Secretary

SURNAME.....SECTION.....

FORENAMES.....

HOUSE/STREET.....

TOWN.....

COUNTY.....POSTAL CODE.....

DO YOU OBJECT TO YOUR NAME & ADDRESS APPEARING IN

A CIRCULATED LIST? YES.....NO.....(Please tick appropriate space)

BMW
MODEL
OWNED.....SIGNATURE.....

(PLEASE SEE OVERLEAF)

MEMBERSHIP FEE £12 (Includes V.A.T. - Reg. No. 344 5870 40)
(Cheques etc. payable to BMW CLUB - Do NOT send cash please)

IF YOU'VE CHANGED YOUR ADDRESS IN THE LAST YEAR
PLEASE PRINT YOUR 'OLD ADDRESS' HERE

.....

.....

```
10 CLS:CLEAR3300:DEFSTRA-H:H=CHR$(27):G=STRING$(58,46):LPRINTH;CHR$(31)
20 PRINT,"1 - RENEWAL FORM":PRINT,"2 - QUESTIONAIRE":PRINT,"3 - HEADING"
30 A=INKEY$:IFA="3"THEN40ELSEIFA="2"THEN190ELSEIFA()"1"THEN30ELSELPRINTH;CHR$(56);H;CHR$(17);:GOTO50
40 LPRINTH;CHR$(17);H;CHR$(14);CHR$(15);"1985 RENEWAL";H;CHR$(15);CHR$(14):GOTO300
50 LPRINTCHR$(15);"PRINT IN BLOCK CAPITALS";H;CHR$(20);CHR$(14);" & send or hand to your Section Secretary";H;CHR$(17)
60 LPRINT:LPRINT"SURNAME";LEFT$(G,51);"SECTION....."
70 LPRINT:LPRINT"FORENAMES.....";G
80 LPRINT:LPRINT"HOUSE/STREET.....";G
90 LPRINT:LPRINT"TOWN.....";G
100 LPRINT:LPRINT"COUNTY";LEFT$(G,45);"POSTAL CODE....."
110 LPRINT:LPRINT"DO YOU OBJECT TO YOUR NAME & ADDRESS APPEARING IN":LPRINT:LPRINT"A CIRCULATED LIST? YES.....NO.....";H;
    CHR$(20);"(Please tick appropriate space)
120 LPRINT:LPRINTH;CHR$(17);"BMW":LPRINT"MODEL":
    LPRINT"OWNED.....SIGNATURE.....
130 LPRINTH;CHR$(20);TAB(57);"(PLEASE SEE OVERLEAF)";H;CHR$(17)
140 LPRINT"MEMBERSHIP FEE ";H;CHR$(14);CHR$(163);"12";H;CHR$(15);H;CHR$(20);" (Includes V.A.T. - Reg. No. 344 5870 40)"
150 LPRINT"(Cheques etc. payable to BMW CLUB - Do NOT send cash please)":LPRINT
160 LPRINT"IF YOU'VE CHANGED YOUR ADDRESS IN THE LAST YEAR":LPRINT"PLEASE PRINT YOUR 'OLD ADDRESS' HERE"
170 LPRINT:LPRINTG:LPRINT:LPRINTG
180 GOTO300

300 LPRINTH;CHR$(19);H;CHR$(54);H;CHR$(32):END
```

GENIE SYSTEM TAPE BACKUP

In dealing with some other members I have found that there are some tape users who have no facility for making system tape back up copies

In case it is of use I enclose a copy of the back up Program I have written for the Video Genie I

This uses the ROM tape routines so I cannot be sure it will run on a TRS80 I but I think it should. It is set at FF00 for a 48K machine. It would need relocation for 4 or 16K

It requires that the memory blck to be copied is continuous. Start & Entry addresses are required in lines 200 & 210. Line 220 requires the number of 256 byte blocks to be copied. Line 190 requires the name of the Program being backed up. As listed it will back up tape based SciPsit

If anyone is interested I will copy source and object tapes to the library

Allan Fouke
28 Queensway
Sawston
Cambs CB2 4DJ

```
                00100 ;THIS IS ** BACKUP **
                00110 ;PROGRAM TO SAVE MEMORY BLOCK TO M/C CODE (OBJECT TAPE)
                00120 ;NOW SET FOR EDTASM
FF00            00130          ORG     0FF00H
0282            00140 SYSTEM   EQU     282H     ;ROM ADDRESSES
01F8            00150 CASOFF   EQU     1F8H
0212            00160 DEFDRV   EQU     212H
0287            00170 WSYNC    EQU     287H
0264            00180 WBYTE    EQU     264H
FF00 53         00190 FNAME    DEFM    'SCRIPS' ;DATA TABLES
FF01 43
FF02 52
FF03 49
FF04 50
FF05 53
FF06 0043       00200 ADDS1    DEFW    4300H    ;START
FF08 0043       00210 ADDSE    DEFW    4300H    ;ENTRY POINT
FF0A 27         00220 BLOCKS   DEFB    39       ;39*256=9984
FF0B AF         00230 START    XOR     A        ;ZERO A
FF0C CD1202     00240          CALL    DEFDRV   ;START DRIVE 1
FF0F CD8702     00250          CALL    WSYNC    ;SAVE SYNC LEADER
FF12 3A0AFF     00260          LD      A,(BLOCKS);BLOCK COUNT
FF15 4F         00270          LD      C,A      ;TO C
FF16 3E55       00280          LD      A,55H    ;START BLOCK HEADER
FF18 CD6402     00290          CALL    WBYTE
FF1B 2100FF     00300          LD      HL,FNAME;SAVE FILE NAME
FF1E 0606       00310          LD      B,6
FF20 7E         00320 LOOP1    LD      A,(HL)
FF21 CD6402     00330          CALL    WBYTE
FF24 23         00340          INC     HL
FF25 10F9       00350          DJNZ    LOOP1    ;SAVED 6 CHARS ?
FF27 2A06FF     00360          LD      HL,(ADDS1);1ST ADDRESS
FF2A 3E3C       00370 LOOP2    LD      A,3CH    ;DATA BLOCK HEADER
FF2C CD6402     00380          CALL    WBYTE
FF2F AF         00390          XOR     A        ;0 FOR 256 BLOCKS
```

```
FF30 CD6402    00400          CALL    WBYTE
FF33 7D        00410          LD      A,L      ;SAVE START ADDRESS
FF34 CD6402    00420          CALL    WBYTE
FF37 57        00430          LD      D,A      ;START CHECKSUM COUNT
FF38 7C        00440          LD      A,H      ;SAVE MSB ADDS1
FF39 CD6402    00450          CALL    WBYTE
FF3C 82        00460          ADD     A,D      ;COMP CHECKSUM
FF3D 57        00470          LD      D,A      ;& RESTORE
               00480 ;B=0 (FROM DJNZ). B IS CHARS/BLOCK. 0 FOR 256
FF3E 7E        00490 LOOP3    LD      A,(HL)   ;GET BYTE
FF3F CD6402    00500          CALL    WBYTE
FF42 82        00510          ADD     A,D      ;COMP CHECKSUM
FF43 57        00520          LD      D,A      ;& RESTORE
FF44 23        00530          INC     HL
FF45 10F7      00540          DJNZ    LOOP3    ;END BLOCK ?
FF47 CD6402    00550          CALL    WBYTE    ;SAVE CHECKSUM
FF4A 0D        00560          DEC     C
FF4B 20DD      00570          JR      NZ,LOOP2;MORE BLOCKS ?
FF4D 3E78      00580          LD      A,78H    ;ENTRY BLOCK HEADER
FF4F CD6402    00590          CALL    WBYTE
FF52 3A08FF    00600          LD      A,(ADDSE);ENTRY ADDRESS
FF55 CD6402    00610          CALL    WBYTE
FF58 3A09FF    00620          LD      A,(ADDSE+1)
FF5B CD6402    00630          CALL    WBYTE
FF5E CDF301    00640          CALL    CASOFF   ;END OF TAPE
FF61 C3B202    00650          JP      SYSTEM   ;BACK TO SYSTEM
FF0B           00660          END     START
```

USING THE ZILOG Z8 PROCESSOR

I am doing some consultancy involving the Zilog Z8 processor. This is probably the most powerful of the various single-chip devices, having 32 lines of I/O, 144 bytes of RAM, prioritised interrupts, two counter/timers, and a UART, all on the one chip. All software development is done on the Model II, using a cross-assembler available from the CP/M Users Group (UK). The Z8 may be used to build a very simple EPROM programmer, with a serial RS-232 interface, and I'll include the circuit and software in the next issue.

Leon Heller

READING AND WRITING TANDY DISKS ON THE QL

The latest version of disk software for the QL allows one to read and write 128, 256, 512, and 1024 byte sectors, using SuperBASIC. I wrote a simple test program and successfully read sectors from a SS/SD 35-track TRSDOS disk. In theory, it should be possible to create TRSDOS, CP/M and MSDOS compatible disks on the QL which could be read on the Model I, IV, or even the Model 1000 and 2000. The reverse operation should also be feasible. Since I have now put my old Model I out to grass, I will still be able to read contributions to this newsletter sent in on disk, using the QL!

Incidentally, many QL users are upgrading to disk, and might be interested in your old drives, if any members have any 40-track TEACs or Shugarts that they want to get rid of. I can advertise them for you free in the IQLUG newsletter. Micropolis and Pertec drives don't work very well on the QL, unfortunately.

Leon Heller

OGGY OGGY OGGY

Probably by the time that you read this it will seem like Ancient History, but I am writing on my return home from the best Swindon workshop yet - Congratulations to all those who set it up! Inevitably there were some disappointments - machines broke down, no one played Interlude, suppliers forgot promised supplies, I didn't talk on Visicalc, etc, etc, but the only real disaster was when the Hotel people had the dxxxxxd nerve to ask us to leave before 6.00pm, just as it was really warming up!

Of course, there was the little matter of a fire alarm in the middle of the night which produced two kinds of idiot - those who wouldn't quit the rooms, and those who did but used the lifts! But when you consider the lengths that our hosts went to, getting those Army personnel carriers to trundle by to make our N.I. colleagues feel at home, well ..... !

Those of you who know me will also know that I never manage to attend all the lectures that I would like to, and this meeting proved no exception. However, I did manage two - Laurie's rapid Screen Swap routines with really sound Basic applications, and the Spreadsheet talks by Robert Veira, Chris Currie, and Gordon Collins. Please, all those of you who haven't yet tapped in the list on p6 of December '84 Natgug News - do it now! I must confess that I hadn't, but having now seen Laurie's business program screen routines in action, I can't wait to incorporate them in my programs. And the best of it is that you've not only got a listing, you've also got full documentation - thanks, Laurie.

Speaking for myself, I was quite pleased that Robert couldn't do his talk on Lotus 1-2-3 - not only was it of no relevance to my Models I & 4, but it meant that he could spend longer on Multiplan! For those of you who couldn't make it to room 802, here are what I gleaned as the salient points for Multiplan on the Model 4:

If you use a Trsdos 6.x then you don't need to 'Convert' LDOS VC files.

Your DOS must not Sysgen any function keys prior to loading Multiplan.

Multiplan expects to use Drive 0.

Multiplan not much use on a 64k machine, and is best with the Overlay files in Memdisk (renamed where necessary on 0).

Multiplan can read and manipulate data from other files on the same disk - ensure common column widths!

Multiplan for the Model 4 has been known to clobber Directory tracks, so keep taking the backups!

Robert was followed by Chris Currie, who demonstrated his answer to the Observer challenge for a histogram program. Using in particular the @IF function, Chris has developed a particularly clever piece of Visicalc programming which I earnestly commend you all to try - I am sure that you will then find fresh applications for VC that you would not otherwise have thought of. And, Chris says that until just two months ago, he'd never touched Visicalc.

And then came Gordon with his DIF files. DIF files? Of course I've used DIF files, haven't we all ? But not like this little bit of wizardry. Gordon uses Visicalc to produce invoices, on pre-printed stationery; basically he sells labour and travelling time which we can all recognise as being ideal candidates for VC manipulation. Honestly though, how many of us would recognise the advantage of loading in customer data from a DIF file - and this data including important things like surcharge or discount percentages ? All these guys together just prove that, with a Tandy you never stop learning !!

Something else happened this weekend - oh yes, the AGM which was attended by one member for each month of the year, plus one for luck - I reckon the majority of our members are scared off of AGM's by all this 'ere newspaper reporting of Boardroom Battles; please make a note for next year that OUR AGM's are NOT like that! I'm sure that the Chairman's Report and the Secretary's Report will be reported elsewhere, so I'll just get on with the gossippy bit. Membership of NATGUG is very slightly less now than at the same time last year - which really is commendable in view of the relatively low Tandy visibility, and also when compared to other UG's of similar age. However, contributions to the (YOUR) Newsletter are abysmally few and far between and one suggestion (mine of course) was that subscriptions should be raised to Seven pounds and four Newsletter articles; come on for goodness sake, do you really want to see this rag magazine reduced to bi-monthly publication ? Let's have some program listings, reviews, comparisons, anything you like, but let's keep to monthly publication eh ? And if anyone has any good ideas on how we can make contact with new Tandy owners, of new or s/h machines, let Brian have your suggestions.

I said at the beginning how good Swindon was this weekend; one point to be borne in mind is that events like this are planned well in advance with suppliers being geared up to provide food, beds, beer, etc. Those suppliers have to be guaranteed a minimum return, and it essential therefore that we have as much advance booking as possible - would you like to book your place now for October 25th, 26th, and 27th ? There is a chance of a Leeds meeting in the Summer, and rumour has it that the Post Office have offered the original Milton Keynes venue ..... pity nobody seems to want any meetings, isn't it ?

You might have gathered that I withdrew my resignation. Truth of the matter is that a. No one told me it was a two-year job, and, b. I'm a snob who is mighty proud to be seen close to a man who has just had his first book published (pity 'tis all about 68000!!) Well done, Leon - what percentage of the royalties did you say were going to Natgug?

Finally, another retraction on my part. Although I've yet to receive the goodies, Prosoft have accepted my order for Dotwriter font disks - I'll report more when same are received and working. Regrettably there has been no change on the Molimerx front though.

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

FED PATCH

I enclose a FED print out of the patch needed to let FED print out using most of the Tandy extended character set. What is actually happening is dependent on the printer, in part. There are 4 sections of the set in question:

- from 00 to 20H; these characters have two roles in a Tandy, special characters and normal ASCII control codes. Because of the latter's non-desirable effects, I've left them as . .

- from 21 to 7FH; normal ASCII, printed as such.

- from 80 to 9FH; graphics characters, unavailable on the DMP 110, which prints them as X.

- from A0 to FFH; special characters, which can be Greek, Katakana, European and I don't know what else, depending on the character generator you have.

Just to make things easy, you have to remember several quirks in the Tandy implementation:

- The Models III & 4 have different internal codes to the Tandy printers and the Model 100. When you see £ on your screen, FED will give the hex equivalent as C3, but the printer will be fed an A3. In this case it is the programmer, not the user, who has to apply the conversion. The printer will print £.

- Some characters appear in two places. £ is in both the below 20H subset and in the above A0 subset.

- Some characters change their code number between Models. The £ bounces around almost as quick as on the currency markets: in the III it is coded 01, in the Model 4 06.

I don't suppose that anyone in the UK is interested, as you can get by without ever using accents on vowels. Here they are part of life. There is a problem with the DMP 110, which is not compatible accent-wise with the DMP 400 driver supplied with Superscripsit. I have developed a patch to get over this, but will not take up space in the Newsletter with a solution that interests I suppose very few members. If anyone does want it, they have only to ask.

This is written on a Model 4 using Superscripsit for the Model III but with all its overlays tucked away in a top RAM bank. No waits now for disk accesses, except to write the text to disk. Combined with the fast clock speed of the 4, that makes an agreeably quick program. It is all due to ALPS, who advertise in 80 Micro. On the 4 you have 80k of RAMdisk, on the 4P only 64k. One has to juggle a bit to make the RAMdisk into the system disk, but it is worth it, not least because at the end you can backup files between data disks in a twinkling, the two drives being available without complications. The instructions are fairly minimal, just the beloved-of-software-developers list of the commands available, with little attention paid to explanation, sequence, consequences, alternatives. Just to prove that life is never simple, I now discover that my user programmed printing codes are full of garbage. I am tempted to say that it is a consequence of using ALPS' Mdisk program, for it is the first time I have had the problem, but that would be unjustified without a bit of sleuthing. But it means that I am going to have to print this using standard oxide-born Superscripsit, as opposed to the silicon flyer, if all the appearances of the hard-pressed £ aren't going to appear as if they've paid a visit to the trash-can.

John Negus

tel (010.33).(75) 38.61.25. Bessas, 07150 Vallon Pont d'Arc, France

FED/CMD Drive 1 Record 24 X'0018'

0123456789ABCDEF	BYTE	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
o£uj›.▌;...›q£uj	<00>	6F	C3	75	6A	3E	0D	CD	3B	00	01	02	3E	71	C3	75	6A
▌Ei▌0r▒G›-X▒/G›	<10>	CD	FE	69	CD	30	72	F5	47	3E	2D	90	CB	2F	47	3E	20
▌0q..1æ'.G.▌0q..1	<20>	CD	FA	71	10	F9	F1	C6	1D	47	1A	CD	FA	71	13	10	F9
▌▒q▌▒q!XZ.1~▌0q#	<30>	CD	F5	71	CD	F5	71	21	92	5A	06	49	7E	CD	FA	71	23
.1▌▒q.1›=▌0q.1▌▒	<40>	10	F9	CD	F5	71	06	49	3E	3D	CD	FA	71	10	F9	CD	F5
q!bR..µ'..~E 8..	<50>	71	21	62	52	06	10	C5	E5	06	10	7E	FE	20	38	04	00 ←
...›.▌0q#.ðé▌æq▌	<60> →	00	18	02	3E	2E	CD	FA	71	23	10	EF	E1	CD	F1	71	CD
æq›<▌0q'.bRXMR)è	<70>	F1	71	3E	3C	CD	FA	71	E5	11	62	52	B7	ED	52	7D	E1
▌åq››▌0q▌æq▌æq..	<80>	CD	E0	71	3E	3E	CD	FA	71	CD	F1	71	CD	F1	71	06	10
~▌åq▌æq×E. .▌æq▌	<90>	7E	CD	E0	71	CD	F1	71	78	FE	09	20	06	CD	F1	71	CD

```
æq#.G‡#qà.X‡#q§‡  <A0>  F1 71 23 10 EB CD F5 71   C1 10 AB CD F5 71 C9 CD
X g‡X j)‡Oq!..>...  <B0>  82 67 CD A6 6A 7D CD FA   71 7C 18 0D 3E 0C 18 09
> ..‡æq>.‡Xg‡;.f  <C0>  3E 20 18 05 CD F1 71 3E   0D CD 82 67 CD 3B 00 C3
.q‡Xg X.Z@‡#...†.  <D0>  1A 71 CD 82 67 AF 11 25   40 CD 23 00 00 00 C8 00
.........†‡qg.X=  <E0>  00 00 00 00 00 00 00 00   00 C8 CD 71 67 11 98 3D
!ùZ‡.h‡.p‡Xmfr.  <F0>  21 DC 5A CD 08 68 CD 16   70 CD 8E 6D C3 BF 72 11
```

```
                FED/CMD   Drive 1   Record 24  X'0018'

0123456789ABCDEF  BYTE  00 01 02 03 04 05 06 07   08 09 0A 0B 0C 0D 0E 0F
================================================================================
o.uj>..;...>q.uj  <00>  6F C3 75 6A 3E 0D CD 3B   00 01 02 3E 71 C3 75 6A
..i.0r.G>-../G>   <10>  CD FE 69 CD 30 72 F5 47   3E 2D 90 CB 2F 47 3E 20
..q.....G...q...  <20>  CD FA 71 10 F9 F1 C6 1D   47 1A CD FA 71 13 10 F9
..q..q!.Z.1~..q#  <30>  CD F5 71 CD F5 71 21 92   5A 06 49 7E CD FA 71 23
....q.1>=..q....  <40>  10 F9 CD F5 71 06 49 3E   3D CD FA 71 10 F9 CD F5
q!bR.....~. 8..   <50>  71 21 62 52 06 10 C5 E5   06 10 7E FE 20 38 04 FE ←
.8.>...q#.....q.  <60>→7F 38 02 3E 2E CD FA 71   23 10 EF E1 CD F1 71 CD
.q><..q..bR..R).  <70>  F1 71 3E 3C CD FA 71 E5   11 62 52 B7 ED 52 7D E1
~.q>>..q..q..q..  <80>  CD E0 71 3E 3E CD FA 71   CD F1 71 CD F1 71 06 10
...q..qx.. ...q.  <90>  7E CD E0 71 CD F1 71 78   FE 09 20 06 CD F1 71 CD
.q#....q.....q..  <A0>  F1 71 23 10 EB CD F5 71   C1 10 AB CD F5 71 C9 CD
.g..j)..q!..>...  <B0>  82 67 CD A6 6A 7D CD FA   71 7C 18 0D 3E 0C 18 09
>  ....q>...g.;..  <C0>  3E 20 18 05 CD F1 71 3E   0D CD 82 67 CD 3B 00 C3
.q..g..Z0.#.....  <D0>  1A 71 CD 82 67 AF 11 25   40 CD 23 00 00 00 C8 00
.........qg..=    <E0>  00 00 00 00 00 00 00 00   00 C8 CD 71 67 11 98 3D
!.Z..h..p..m..r.  <F0>  21 DC 5A CD 08 68 CD 16   70 CD 8E 6D C3 BF 72 11
```

NEWSCRIPT

Here is an offering for your excellent Newsletter. I am glad that I managed to attend the well presented formal NEWSCRIPT session at the Blandford Workshop (last Autumn) because I learned a new feature. In the spare few minutes before the next lecture Brian allowed me a few impromptu comments on extra features of NS which are presented in modified form here.

Like many others I began 'WORD PROCESSING' with 'ELECTRIC PENCIL' - an early primitive version which was slow, liable to be overtaken and confused during enthusiastic typing but having an extremely superior, slick, block move facility. However my model I had no lower case fitment and suffered the inherent plug/socket difficulties. Having need to revise an extensive manual I bought a model III and then needed a WP. The NATGUG WP reviews were useful and NS sounded just the thing. Wordsworth were very helpful - they lent me a trial copy. There were some difficulties, which I put down to my inexperience, but NS seemed to have great potential; so I bought version 6.9. Soon 7.0 came along; complete with loading difficulties due to the stepping speed demand being too high. Eventually a suitably slow version was forwarded. AND IT WAS GOOD. (Not SUPER you'll notice because it is not so slick as E.P.) On the strength of it, particularly the INDEX facilities, I undertook to produce a major manual for an electronic instrument manufacturer.

My OKI 80 printer was suitable for drafts, but no way could it be used for camera-ready copy so after discussions with my customer I bought an EPSON MX100 - just before the FX100 was announced! The drafts looked OK, especially the slashed zeros - Ø - so a full set of descriptions and operating instructions were produced, leaving the parts lists and index until last. The circuit diagrams and illustrations were produced with matching slashed zeros - and there were lots of those. Then it was decided that a manual with a dot-matrix typeface would not do justice to the instrument itself; what was really required was a specific daisy-wheel typeface. After many telephone calls it seemed that no way could a suitable printer and typeface be hired for the task.

A different typeface was agreed and I bought another printer. The output looked really smart except that the zero had no slash. Never mind, what is a WP for if not to slash a zero! Obviously there was, in principle, going to be no problem getting the printed text to match all that drawing office output. In NS all you need is to print the zero, back-space one place and overwrite with the slash; simple, use 0 ! < / (I have put the spaces in otherwise NS would use it all as commands and produced a slashed zero as above). So all you do is write your text and when it is otherwise OK use the general replacement command.

However, what about the NS commands such as '.LL0' (which reverts a local change in line length to its initial value)? It comes unstuck when faced with the slash ploy! They have to be edited out - a task somewhat eased by (attempts at) sticking to a self-imposed standard of NS commands (of that ilk) always being entered in UPPER CASE.

There is a similar problem when you write multi-tab lines containing slashed zeros - and there are hundreds of zeros in component lists, even more than there are on the circuit diagrams. The problem is that the NS character field counter loses count. Well here two dodges come back to mind; the first is to break the line about half way; print the first half with its slashed zeros and tabs and after the carriage has returned do a line back space followed by enough tabs to get to where you left off and then print the second half. There are times when halves won't do, then it's thirds or even quarters! In the end there were places where first parts of several lines were printed then, following the right number of line backspaces, the second parts were printed. It became quite an intellectual exercise to optimise the hacking, especially bearing in mind (a) some of the complications were due to tab positions being masked by the control sequences for the slashed zeros, and (b) that the printer did not cope too well with back feeding near the bottom of the page. (If that was unavoidable then an extra sheet was gingerly tacked on to the bottom of the first with three of four minute pieces of selo-tape.)

The second dodge was to use a specially writen program called BACKSP which had the job of correctly accounting for the back-spacings in the parts-lists. All the 13 parts list files had to be processed by the program - was I pleased that there was a 'speed-up' mod fitted to my III.

Note: Parts of NS are written in BASIC and its text files are in ASCII. Both matters are of importance if you are (as I was) forced into making modifications of your own.

Ultimately the result of the exercise was highly satisfactory in appearance but, in future, if there are more than a handful of slashed zeros required they will have to come straight from the printer or not at all.

***** *Intermediate Post-script* *****

Trials and tribulations of WP users abound! The final draft offerings have just been returned - only a few mods to do. One of them concerns a passage in which there is one line containing the only four appearances of one odd character. A new daisy wheel was bought specifically for the character. (Actually an assortment were bought to make the most of a minimum charge situation.)

The change required - delete the passage!

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BASIC OVERLAYS ON THE MODEL 4

My accounting program became so large that memory was disappearing fast and operation becoming sluggish. I decided the answer was to split it into more managable sections. A Master program to hold the initializing elements, main menu and the subroutines. Overlay programs to be brought in when required.

Using the Model 3 and the "Basic Faster & Better" bottom loading overlay routines all my problems were answered, but upon upgrading to Model 4 disaster struck. All DOS addresses changed with no information available to help and the added problem of a miserable Basic. After grafting 6.0's Extended Basic onto 6.2 making a very usable Basic and many midnight watches spent searching for addresses at last I am back in commission. Overlays of 4000 bytes take 3-4 seconds to load which is a small price to pay for almost unlimited program size. The overlay routine is easier under the Model 4 as the basic program always starts at the same address regardless of the number of files called for upon entering basic.

The starting address of basic programs is 8408H so we need to load our Master Program at a point high enough above 8408H to leave room for the largest of our overlays (plus a bit for safety). This is achieved by poking this new basic start address into 5E1BH & 5E1CH. It is neccesary to poke a "0" into the new start address -1. ie. (If 9000H is to be the start address of the Master program , you will need to Poke &H8FFF,0). I use /BOV as the extension on my programs connected with overlays. The small basic program START/BOV will handle the above.

START/BOV initializes the program. This alters Basic's start address and runs the Master program. Only after using an overlay is this address corrected. Take great care when editing any program that it has been loaded separately and that Basic's start address is back to 8408H. This is important as I am sure that many errors in my early attempts were due to not paying attention to this.

Both the Master program and all the Overlays need special program lines, so to save trouble I have these lines held in two files (OLAY/BOV & MAS/BOV) both saved in ASCII to be merged into the appropriate programs. The listings are below but slight modification will be needed to suit different program sizes.

OLAY/BOV (to be merged with all Overlays) contains two lines. Line 29999 modifies itself in memory so that it points to the address where the Master Program starts thus joining Overlay to Master.

MAS/BOV (to be merged with MASTER/BOV) controls the storage and passing of variables. It also restores Basic's starting address in line 52300.

The Hex numbers underlined are the ones to adjust.

START/BOV

```
10 POKE &H5E1B,0:POKE &H5E1C,&H90:POKE &H8FFF,0
20 RUN"MASTER/BOV"
```

START/BOV can also be used to load in any machine code needed.

OLAY/BOV

```
1 GOSUB 29999:GOSUB 52200
29999  A$="":A%=PEEK(VARPTR(A$)+1):POKE  VARPTR(A%)+1,PEEK(VARPTR
(A$)+2):POKE A%-8,&H0:POKE A%-7,&H90:RETURN
```

MAS/BOV

```
30000 'MASTER/BOV
30001 CLEAR:GOSUB 52000
52000 A$="":FOR  A%=1  TO 3:A$=A$+MKI$(&H93A0):NEXT:AN$="XXXXXX":
POKE VARPTR(AN$)+1,&H1B:POKE VARPTR(AN$)+2,&H61:LSET AN$=A$:A$=""
:RETURN
52100  AN$="":POKE  VARPTR(AN$),108:POKE  VARPTR(AN$)+1,&HD1:POKE
VARPTR(AN$)+2,&H60:A$=STRING$(108,0):LSET A$=AN$:RETURN
52200 A$="":FOR  A%=0 TO  2:POKE VARPTR(A$)+A%,PEEK(&H93A0+A%+4):
NEXT :AN$="":POKE  VARPTR(AN$),108:POKE VARPTR(AN$)+1,  &HD1:POKE
VARPTR(AN$)+2,&H60:LSET AN$=A$: RETURN
52300 GOSUB 52100:POKE &H5E1B,8:POKE &H5E1C,&H84:POKE &H8407,0
52301 LOAD FD$,R
```

PROCEDURE

Item 1 Calculate starting address of MASTER/BOV (8408H + length of longest overlay). Allow some spare. In START/BOV put this new start address in place of 9000H.(LSB in &H5E1B, MSB in &H5E1C). Don't forget to Poke the zero in one below this address.In OLAY/BOV replace existing 00 90 with LSB and MSB of the new start address.

Item 2 Calculate end address of MASTER/BOV. Allow some spare. In MAS/BOV replace &H93A0 in lines 52000 and 52200 with this address. The variable pointers from Basic's communication area will be stored here.

Item 3 All Overlay program lines to be numbered between 2 and 29998

Item 4 Master program to be numbered from 30002 avoiding 52000, 52100, 52200, 52300 & 52310.

Item 5 Overlays are called by putting the filename into FD$ and going to 52300. ie:- 30100 FD$="OVERLAY/BOV":GOTO 52300

MINI TEST PROGRAM

START/BOV

```
10 POKE &H5E1B,0:POKE &H5E1C,&H90
20 POKE &H8FFF,0
30 RUN"MASTER/BOV
```

MASTER/BOV

```
30000 'MASTER/BOV
30001 CLEAR:GOSUB 52000
30010 SS$=STRING$(79,130):DD$=STRING$(79,141)
30020 AA$="    YOUR PROGRAMS  ARE LIMITED  ONLY BY  THE AVAILABLE
DISC SPACE"
30030 FOR X=1 TO 10:AA%(X)=X:NEXT
30050 CLS
30055 PRINT"YOU ARE IN THE MASTER PROGRAM"
30060 PRINT"PRESS ANY KEY TO LOAD OVERLAY"
30096 IN$=INKEY$:IF IN$="" THEN 30096
30100 FD$="OVERLAY/BOV":GOTO 52300
52000 A$="":FOR  A%=1  TO 3:A$=A$+MKI$(&H93A0):NEXT:AN$="XXXXXX":
POKE VARPTR(AN$)+1,&H1B:POKE VARPTR(AN$)+2,&H61:LSET AN$=A$:A$=""
:RETURN
52100  AN$="":POKE  VARPTR(AN$),108:POKE  VARPTR(AN$)+1,&HD1:POKE
VARPTR(AN$)+2,&H60:A$=STRING$(108,0):LSET A$=AN$:RETURN
52200 A$="":FOR  A%=0 TO  2:POKE VARPTR(A$)+A%,PEEK(&H93A0+A%+4):
```

```
NEXT:AN$="":POKE   VARPTR(AN$),108:POKE   VARPTR(AN$)+1,&HD1:POKE
VARPTR(AN$)+2,&H60:LSET AN$=A$:RETURN
52300 GOSUB 52100:POKE &H5E1B,&H8:POKE &H5E1C,&HB4
52301 LOAD FD$,R
```

OVERLAY/BOV

```
0 'OVERLAY/BOV
1 GOSUB 29999:GOSUB 52200
100 CLS
110 PRINT"OVERLAY IN AND PRINTING VARIABLES CARRIED OVER"
120 PRINT:PRINT SS$
130 PRINT:PRINT AA$:PRINT:PRINT DD$
140 PRINT"AA%(X)=1 TO 10 :- ";:FOR X=1 TO 10:PRINT AA%(X);:NEXT
145 PRINT:PRINT"HIT ANY KEY TO RETURN TO MASTER"
150 IN$=INKEY$:IF IN$="" THEN 150
200 CLS:GOTO 30060
29999  A$="":A%=PEEK(VARPTR(A$)+1):POKE  VARPTR(A%)+1,PEEK(VARPTR
(A$)+2):POKE A%-8,0:POKE A%-7,&H90:RETURN
```

Any help I can give with further addresses in basic or any other problems my telephone number is 0480 72715.

Tony Endersby, 138 St.Neots Road, Eaton Ford, Cambs.

LDOS ENHANCEMENTS : by Edward Rashbrooke

INTRODUCTION

This column will describe a number of enhancements to LDOS. Many of the facilities will be transient commands that should be possible to transfer to other operating systems such as DOSPLUS or NEWDOS80.

LANGUAGES

The commands and facilities will be implemented using a variety of languages, including BASIC, LC and JCL.

DATASHEETS

With each facility, there will be a datasheet in a standard format, that could form a page of a manual for documentation. I suggest that others may also like to adopt this style for similar contributions.

DEVICE RE-DIRECTION

In using these enhancements, it will help to have an understanding of device re-direction capabilities as provided with LC under LDOS.

When using LC programs with LDOS, a special re-direction facility exists, similar to that with a UNIX or MSDOS shell. This permits the use of two standard files known as standard input and standard output. Normally, the standard input and output files are both assigned to the terminal (keyboard and screen respectively). Re-direction is possible by use of two symbols as follows:

< Re-assigns input
> Re-assigns output

Therefore a command could send its output to another file instead of the terminal by using the following syntax:

(example 1)

```
command >filename
```

This would cause the output from command "command" to be sent to the file specified as "filename", instead of the terminal.

(example 2)

```
command <infile >outfile
```

This would read input from a file called "infile" a nd send the output to a file called "outfile".

Understanding this fully will add a great deal to the potential uses of certain of the functions described.

PRE-REQUISITE ROUTINES

Many LC programs require special functions to do such things as open files, send messages, terminate programs etc. A range of special functions is provided, and used within the various programs to be detailed.

These pre-requisite routines will be "#include"d with the programs wherever needed. The LC manual fully documents the method of using "#include", building assembler libraries or using partitioned datasets.

LIST OF COMMON FUNCTIONS TO BE USED

This list consists of the basic functions required, other additional facilities will be described as needed.

FUNCTION	: PURPOSE
abort	Issue error Message and terminate
broff	Disable Break Key
bron	Enable Break key
clscrn	Clear Screen (CLS)
filecopy	Copy file using stdio
getfile	Open a file
modelid	Return Model 1 or Model 3 indicator
vprint	Print to video

Each of these functions is listed in full.

```
/*-------------------------------------------------------------*/
/* abort : issue error and abort (rc=1)                        */
/*       : ER 27-Jan-84                                        */
/*-------------------------------------------------------------*/
#include stdio/csh
abort(msg)

   char *msg;

{
   fputs(msg,stderr);
   putc(eol,stderr);
   exit(1);
}
```

```
/*-------------------------------------------------------*/
/* BROFF : disable break                                 */
/*-------------------------------------------------------*/
#include stdio/csh
#option INLIB
#option KBECHO OFF
broff()
{
        cmd("system(break=off)");
}
/*-------------------------------------------------------*/
/* BRON : enable break                                   */
/*-------------------------------------------------------*/
#include stdio/csh
#option inlib
#option KBECHO OFF
bron()
{
        cmd("system(break=on)");
}

/***********************************************/
/* clscrn : clear screen                       */
/***********************************************/
#include stdio/csh
clscrn()
{
puts("\x1d\x1f");
return 0;
}

/*-------------------------------------------------------*/
/* FILECOPY : copy a file to stdio                       */
/*-------------------------------------------------------*/
#include stdio/csh
filecopy(fp)
FILE *fp;
{
    int c;
    while ((c = getc(fp)) != eof)
    if (c != putc(c,stdout))
    abort("Output FILE write error");
}


/* getfile : Open a file                                 */
/*         : ER 27-Jan-84                                */
/*-------------------------------------------------------*/
#include stdio/csh
getfile (fname,mode)
    char *fname, *mode;
{
    char *fp;
    if ((fp = fopen(fname,mode)) == NULL)
     {
      printf("GETFILE : Open error - %-20s\n",fname);
      exit();
     }
    else return fp;
}
```

```
/*-------------------------------------------------*/
/* modelid : return Model 1 or Model 3 indication  */
/*-------------------------------------------------*/
#include stdio/csh
#define IDLOC  0x0125
modelid()
{
 char *modloc;
 modloc = IDLOC;
 if (*modloc == 'I') return 3;
 else                return 1;
}

/*-----------------------------------------*/
/* vprint   : print to video               */
/*-----------------------------------------*/
#include stdio/csh
vprint(msg)
char *msg;
{
    puts(msg);
    puts("\n");
```

```
==============================================================
REV 1.1     : UTILITY                    TITLE  : CAT
==============================================================
SUMMARY     : Concatenate files to stdout

--------------------------------------------------------------
DESCRIPTION :

Allows files to be concatenated to stdout.

--------------------------------------------------------------
SYNTAX   :

CAT file1.. filen

    where : file1
            file2
            filen  are files to be concatenated

--------------------------------------------------------------
NOTES    :

Full re-direction supported

--------------------------------------------------------------
EXAMPLES :

(1) CAT file1
        lists file to terminal

(2) CAT >file2 file1
        copies file1 to file2

(3) CAT >fileout file1 file2 file3
        creates fileout from file1 + file2 + file3

(4) CAT >*PR file1 file2 file3 file4
        lists file1,2,3,4 to printer

(5) CAT *KI
        lists keyboard input to terminal
```

(6) CAT *KI >*PR
lists keyboard input to printer

```
------------------------------------------------------------
COMPONENTS : CAT/CCC
------------------------------------------------------------
AUTHOR     : LC User Group                  : xx xxx xx
REVISED    : Edward Rashbrooke              : 10 Apr 84
============================================================
```

```
/*-----------------------------------------------------*/
/* CAT : Concatenate a file to standard output         */
/*                                                     */
/* Created : LC User Group                             */
/* Revised : Edward Rashbrooke 23 Mar 83               */
/* Revised : Edward Rashbrooke 11 Apr 84               */
/*-----------------------------------------------------*/
#include stdio/csh
FILE *fp;
main(argc,argv)
    int argc,*argv[];
{
    if (argc ==1)
       filecopy(stdin);
    else
       while (--argc)
        {
         if ((fp = fopen(*++argv,"r")) == NULL)
          {
           fputs(*argv);
           abort(" - open error.");
          }
         else
          {
           filecopy(fp);
           fclose(fp);
          }
        }
}
```

To be continued.

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Curve fitting - or what to do with a cubic spline!

Once the initial enthusiasm for blasting aliens and getting killed by darstardly wizards has abated, a lot of home computerists have a bit of trouble finding things to do with their computer. However, in the scientific field there is no problem at all finding tasks for our micros, the problem is often finding the money to get a micro to do them on. One of the things we do very often is to attempt to fit curves and straight lines to experimental data so that we can estimate unknown values from the fitted line. If the thing we are measuring increases or decreases continuously with the applied stimulus, then we can normally manipulate our equation to give a straight line form, which you all remember from school days

i.e. $y = mx + c$

This best straight line can easily be fitted using the technique of linear regression which can be found in all simple statistics books. However, real

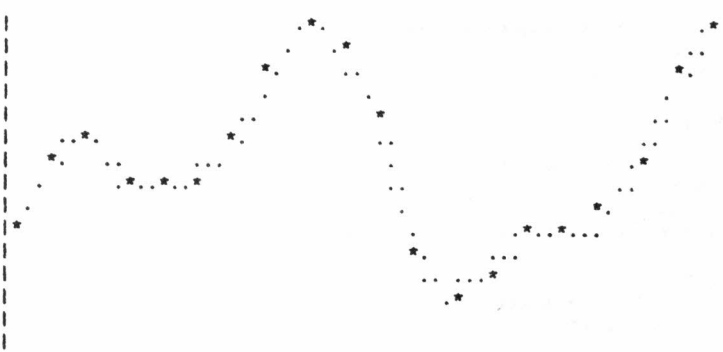
life often does not behave like that and if you are plotting a histogram of your bank balance you may find that it oscillates monthly, dipping to zero at the end of each month, with perhaps two big dips at six month periods corresponding to Christmas and the summer holiday, with an odd peak corresponding to a pools win! So how do we fit a nice smooth line through something that looks like The Rockies.

The answer lies in a not so well known procedure that goes under the forebidding name of cubic spline fitting. Without going into maths, the procedure basically sets up a cubic (i.e. containing terms raised to the 3rd power) equation for pairs of points. These equations are then 'knotted' together to obtain a continuous function. There are various ways of deciding where to tie the 'knots', but the simplest is to do it at each data point. None of the maths need worry you since you can treat it as a black box. The BASIC program given below is adapted from an article published in PCW in 1982. It allows you to input up to 30 pairs of data points. Input is terminated with a 0,0 entry. It will then go away and calculate the coefficients for the cubic equations which are stored in variables A1,B,C,D. The program then does a crude screen plot, generating intermediate values between the observed data points and plotting them on the screen. It will then wait in an INKEY$ loop for either 'P' to be pressed to do a JKL screen dump to printer, or any other key which will send it back to the beginning. For those who might want a higher definition plot, line 6260 is where the values of y are generated as the variable TEMP, for each given x, according to the equation

$$y = a_i + b_i(x-X_i) + c_i(x-X_i)^2 + d_i(x-X_i)^3$$

where x is the value of x for which you are trying to find the value of y. The particular set of pre-calculated spline coefficients that are used to calculate y are selected on the basis that $X_i < x < X_{i+1}$. In other words, two adjacent observed X values and their associated set of spline coefficients are found which bracket the value x. The program uses increments of 1/10th the difference between adjacent observed X values (line 6225) to plot the calculated curve. This may not provide sufficient resolution if you are outputting directly to a printer or if your observations are widely spaced apart.

Sample graph produced. * = observed points, ... = fitted line.



BASIC PROGRAM TO PERFORM CUBIC SPLINE FITTING

```
10 DIM
P(1,30),F$(35),F(10),A(30),X(32),Y(32),A1(30),B(30),C(30),D(31),V(30),W(30)
15 REM                  **** Main Program ****
20 GOSUB 50000                              'Sign on message
```

```
30 GOSUB 45000                          'Data input
40 GOSUB 40000                          'Scaling factor
50 GOSUB 5060                           'Calculate spline
51 GOSUB 350                            'Draw axis
60 GOSUB 6220                           'Plot data and fitted curve
70 GOSUB 125                            'Hang around 'til a key pressed
80 GOTO 20                              'Loop around again
90 END
100 REM              **** Wait & Do a JKL if P ****
125 ZZ$=INKEY$
140 IF ZZ$="" THEN 125
           ELSE IF (ASC(ZZ$) AND 223) = 80 THEN CMD"JKL"
           ELSE RETURN
180 REM              **** Sorting ****
190 FOR J = 1 TO N
200     I = J - 1
210     A = A(J)
220     IF A >= A(I) THEN 260
230     A(I+1) = A(I)
240     I=I - 1
250     IF I >= 0 THEN 220
260     A(I + 1) = A
270 NEXT J
280 RETURN
340 REM              **** Axis plotting ****
350 CLS
360 FOR I = 1 TO 45
370     SET (3,I)
380 NEXT
400 FOR I = 3 TO 127
410     SET (I,45)
420 NEXT
430 RETURN
5057 '
5058 REM        **** Calculate Spline Parameters ****
5059 '
5060 CLS : PRINT "Spline being fitted"
5069 REM             **** Parameter A1 ****
5070 FOR I = 0 TO N
5071     A1(I) = P(1,I)
5072 NEXT
5079 REM             **** Parameter H ****
5080 FOR I = 0 TO N-1
5081     D(I) = P(0,I+1) - P(0,I)
5082 NEXT
5085 D(N) = D(N-1)
5086 D(N+1) = D(0)
5089 REM             **** Parameter V ****
5090 B(0) = 2 * D(0)
5091 FOR I = 1 TO N-1
5092      B(I) = 2 * (D(I) + D(I-1))
5093 NEXT
5094 B(N) =2 * D(N-1)
5099 REM             **** Parameter W ****
6000 C(0) = 3 * (A1(1) -A1(0))
6001 FOR I = 1 TO N-1
6002     C(I) =(D(I-1) *(A1(I + 1) - A1(I))) / D(I)
6010     C(I) = C(I) +((D(I)/D(I-1))*(A1(I) -A1(I-1)))
6020     C(I) = 3 * C(I)
6021 NEXT
6022 C(N) = 3 * (A1(N) -A1(N-1))
6029 REM             **** Parameter V' ****
6030 V(0) = B(0)
6031 V(1) = B(1) -(D(1) * D(N+1)/ V(0))
6040 FOR I = 2 TO N
```

```
6041      V(I)= B(I) -((D(I) * D(I-2)) / V(I-1))
6042  NEXT
6049  REM               **** Parameter W' ****
6050  W(0) =C(0)
6051  FOR I = 1 TO N
6052      W(I) = C(I) - (D(I) * W(I-1) / V(I-1))
6053  NEXT
6059  REM               **** Parameter B ****
6060  B(N) = W(N) / V(N)
6061  FOR I = (N-1) TO 1 STEP -1
6062      B(I) = (W(I)-(D(I-1) * B(I+1)))/V(I)
6063  NEXT
6070  B(0) = (W(0) - (D(N+1) * B(1))) / V(0)
6079  REM               **** Paramter c ****
6080  C(0) = 0
6081  C(N) = 0
6082  FOR I = 1 TO N-1
6083      C(I) = (A1(I+1) -A1(I)) /(D(I) [2)
6084      C(I) = 3 * C(I)
6085      C(I) = C(I) - (((2 * B(I)) + B(I+1))/ D(I))
6086  NEXT
6089  REM               **** Parameter D ****
6090  FOR I = 0 TO N - 1
6100  D(I) = (C(I + 1) - C(I)) / (3 * D(I))
6110  NEXT
6120  RETURN
6210  REM               **** Plot the curve ****
6220  '
6222  FOR I = 0 TO N -1
6225      INC = (P(0,I+1)- P(0,I))/10
6230      FOR J = 1 TO 10
6240          X = P(0,I) + (J * INC)
6250          TEMP = X - P(0,I)
6260          TEMP = A1(I) + B(I) * TEMP + C(I) * TEMP[2 + D(I) * TEMP[3
6270          X = INT(((X - XO) * SX) + 0.5) + 2
6271          Y = INT(14 - (TEMP * SY) + 0.5) * 64
6272          X = X + Y
6273          IF X < 0 OR X > 1919 THEN  NEXT J          'Out of bounds
6275          PRINT@X,".";
6280      NEXT J
6290  NEXT I
6300  REM               **** Plot the Points ****
6320  FOR I = 0 TO N
6340      X = INT(((P(0,I) - XO) * SX) +0.5) + 2
6350      Y = INT(14 - (P(1,I) * SY) +0.5) * 64
6360      X = X + Y
6370      PRINT@X,"*";
6380  NEXT I
6390  RETURN
6400  '
39999 REM          **** SCALING FOR DRAWING ****
40000 FOR I=0 TO N
40001      A(I) = P(0,I)
40002 NEXT
40003 GOSUB 190                                    'Sort the points
40004 SX = 61 / (A(N) -A(0))
40005 XO = A(0)
40010 FOR I = 0 TO N
40020      A(I) = P(1,I)
40030 NEXT
40040 GOSUB 190                                    'Sort the points
40050 SY = 14 / A(N)
40060 YO = A(N)
40070 RETURN
```

```
44999 REM                  **** DATA INPUT ****
45000 N=-1
45010 N=N+1
45030 PRINT@161, CHR$(29)CHR$(30) CHR$(29) "ENTER X & Y VALUE FOR ";N+1 ;
45040 INPUT P(0,N),P(1,N)
45050 IF P(0,N)=0 AND P(1,N)=0 THEN N=N-1:RETURN
45060 GOTO 45010
49999 REM INTRO
50000 CLS :PRINT "SPLINE FIT "
50019 RETURN
```

Geoff Smith

FOR SALE AND WANTED

TRS-80 MODEL I AND MODEL 4 ITEMS FOR SALE

After selling my Model I system in Feb. I now have some further items to sell:-

Dual TEAC FD50A Disk Drives 40 Track, built in PSU, TRS-80 Grey, Full Height, Double density, including 4 Drive Model I cable	£200.00
11 X "TRS-80" SSDD 40 Track Diskettes	£5.00
11 X Verbatim "Datalife" Diskettes	£5.00
9 X Verbatim Minidisks	£4.00

Most of the above diskettes have been used but are, to the best of my knowledge, 100% Usable.

TRS-80 Models I/III/4 Printer Cable	£7.00
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ACCEL 4 Model I Version Cost new £59.95	£39.00
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Model 4 Technical Reference Manual Brand new, Cost new £16.95	£12.00
LBASIC Users Guide (LDOS Basic)	£2.00
LDOS Quarterlys (April 82 to last issue, April 84)	£10.00
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lots of software including Scripsit-Plus, what a bargain !! @

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WANTED

Has anyone a battery clock, (Newclock or Trswatch) suitable for a Model I that they wish to sell? If so please write or phone to me at the address or phone number below. Please dont mind the Answering Machine if I am out, just leave your Name and Phone Number and I'll get back to you as soon as I can.

Don Harrison
24 Gifford Gardens
London W7 3AN

01-575-2678

Notes from YOUR secretary.

You will see that the Gloucester workshop is again based on WORD PROCESSING and the meeting in LONDON will be on SPREADSHEETS. Dick Mackie and I have decided on a business bias for the EDINBURGH meeting Sunday 9th June '85. We envisage 5 sessions on SPREADSHEETS, WORD PROCESSING and TANDY in business. Are there any members interested in a library of TEMPLATES as the commercial boys seem to Pushing these. How about a TEMPLATES WANTED and AVAILABLE section?
Please ring for further information.

I am currently trying to transfer BASIC Programs from the M100 to the IBM PC at college. A technician very kindly explained all about ERASE *.* on PC DOS while making a system disk and the COPY function also seemed very workmanlike. The IBM PC RS232 Package consists of a card, a disk and a manual and is supplied by PARAGON. At this moment in time I am using one version of the Program and another version of the manual. So far transfers have been affected from the M100 to the IBM PC but not the saving of the Program to disk. Our ST80III is quite seductive compared to the frosty 'FILE TRANSFER SCREEN' on the PC.

During the first attempts at transfers just gibberish was appearing on the PC. By using the same one line BASIC Program and trial and error a successful transfer was accomplished. By the time you read this a file will have been saved to disk and subsequently run. The experiences/ sequence of keystrokes will be available to anybody interested.

For those in a BBC/IBM PC/TANDY environment Laurie Shields has some teaching Programs that run on all three micros and can do a nice session on writing for all three - at the same time !

Brian Pain

BOOK REVIEWS

The other day I was browsing in my local library in Bo'ness, which has a good selection of computing books, when I came across two new books (both published in 1985). They cover topics I am interested in, and some other members, so I thought I would write a brief review of them.

EPSON Printer User's Handbook

Author : Weber Systems Inc. Staff
Publisher : Century Communications Limited
Price : £9.95

I was really thrilled when I saw the title of this book. I have been keen on utilising the capabilities of my Epson MX-80 ever since I got it a few years ago, and have bemoaned the lack of published guides. This is the first book on the Epson printer I have seen. It is an American book, but has been republished here with a preface to the UK edition which includes a special note for BBC computers and comments on the international character set.

The blurb on the back says the book covers the FX, MX and RX series of printers but, as the introduction makes clear, it only deals with the newer FX and RX models. However, as these differ mainly by having extra features, the book can still be useful to an MX owner.

The book has 303 pages, and is written as an expanded manual. In several chapters, taking them in logical groups, it deals with all the printer modes and control codes. Each one is described in detail and its result is illustrated. Sample Basic programmes are given to demonstrate how to use them.

The book contains information on connecting the printer up to an Apple IIe and II+, the Commodore 64 and the IBM PC among others, but not, please note, the TRS-80 or QL. An interesting chapter deals with the use of the Epson with widely used software packages. It provides the correct responses to the installation prompts for each package and offers hints on how to utilise many of the printer's features. The packages covered are dBase II, Lotus 1-2-3, Symphony, WordStar, pfs:file and pfs:report.

Bit image graphics are described, and some simple examples are given, but no attempt is made to delve very far as this would be beyond the scope of the book. There is a chapter on how to select modes through DIP switches.

The most useful section of the book deals with designing, creating and filling in bar graphs and forms, and this included some good ideas. Apart from this, I did not think the book told me anything I didn't know already and treated topics at a fairly shallow level.

I think the comment above about bit image graphics really applies to the whole book. It would be an excellent introduction to first time users, and might be useful as a reference if you want to remember how a particular mode works, but don't expect more than that.

Best of PCW Assembler Routines for the Z-80

Author : David Barrow
Publisher : Century Communications Limited
Price : £7.95

This is a collection of the best routines for the Z-80 compiled from the famous Sub Set series that has been running in

Personal Computer World magazine for several years. These routines have been collected together in a logical way and are introduced and explained to those new to the series by the editor. Each routine is presented as part of a well documented Datasheet and, it is claimed, has been thoroughly tested.

This book is in no way another introduction to Z-80 Assembly Language, nor does it claim to be. It is a collection of some of the most sophisticated subroutines I have seen, and a knowledge of assembler is important before you tackle it. Except for a couple of cases, they are not written for any particular computer or hardware configuration (the exceptions I found refer to the Video Genie).

Within its 192 pages the book has 20 chapters, each dealing with a selection of routines associated with a particular topic. Delays, Sorting, A Graphics Suite, Random Numbers and 32 Bit Arithmetic are just some of the chapter titles. Each routine is thoroughly documented with regard to what it does, inputs and outputs, registers used and more. In many cases the documentation takes more space than the routine.

The routines range from two bytes long to some in the hundreds of bytes, but the average must be about 40 to 50 bytes long. The two byter, by the way, is :

```
FOWIA   POP     HL      : E1
        JP      (HL)    : E9
```

This brings you back to the instruction following CALL FOWIA with the address of that instruction in HL. You can use this to write your code to be completely relocatable. FOWIA means Find Out Where I'm At.

The impression I get, and I'm sure I'm right in a lot of cases, is that many of the routines have been written to show how clever the writer is rather than to be of particular use somewhere. On the other hand, there is interest and education to be gained from studying the routines to determine how they work, even if you don't intend to use them. The good documentation is of help in this regard.

On the whole, I must say I like this book. I doubt whether I will ever have cause to use most of the routines, but they are a source of good ideas and the documentation sets a fine example. If you are interested in Z-80 Asembly Language, then I would certainly recommend that you consider adding it to your collection.

Jim Bartholomew 0506 823327

RS232 INTERFACE FOR THE VIDEO GENIE I

After nearly two months of problems my RS232 interface is now working! The main problem was a faulty chip, but I did have some soldering errors to correct.

If anyone else is building Eric Hartley's board my experience may be of help. The main difficulty on soldering was of course the use of a double sided board without plated through holes. I used soldecons, but this is not easy! It pays to push the sockets OUT of the board as far as possible, just leaving minimum to solder on the back of the board. Even so I had difficulty in getting a clean joint on the front using a 1.3 mm miniature solder bit. It is very easy to wick up solder into the body of the socket and easy to bridge tracks when working with so little space.

It helps to thread PTFE sleeving or a 1 mm drill through the bodies of the soldercons. This goes a long way to stop wicking, and the heat sink helps to keep solder off the socket bodies.

Having had quite a few tries at this I think there is a case for direct soldering the IC's without sockets. Again keep the IC'S as high in the board as possible, and leave 15 seconds between joints for cooling when working on the front. It is certainly much easier to do a tidy job this way, and this means less chance of faults. Unfortuneately if you do have trouble soldered in IC'S make testing more difficult.

I had some minor problems with Eric's test software. I am running SmallDOS and Eric's Program was for tape. The disc interrupts caused faults on repetitive transmission. CMD "T" stops interrupts but disables the break key which you need to change tests. Putting CMD "R" : CMD "T" at crucial breakPoints put the break key back in control.

There is no Program to check the links. If, like me you use a DIL switch as links then this is a usefull first test to Prove address and data bus, and address decoding. A suitable Program is given below.

```
10 CMD "T":CLS
20 A=INP(233):REM ** READ LINKS **
30 PRINT A
40 CMD "R":FOR N=1 TO 500:NEXT:CMD "T"
50 GOTO 20
```

This Program should read the DIL switch settings as you change them.

Regards

Allan Fowke, 28 Queensway, Sawston, Cambs CB2 4DJ

FOR SALE

Brand new modern QWERTY keyboards,75 keys including control,cursor and numeric keypad. 5V only,uses 8048 processor and 2716 EPROM.For details ring Neville on Milton Keynes 568960.Price £18 by post;will haggle or swap for something useful.

NATGUG NEWS

Volume 6 Issue 11 May 1985

OFFICIAL JOURNAL OF THE

National TRS-80
& Genie Users
Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided in the Newsletter from time to time.

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

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

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor.

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VOL 4

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EDITORIAL

Contrary to what I said in the last issue, Milton Keynes is not back this Autumn, not for NATGUG, that is! We've had a word with Bob Sparling, of the Southern group, and he will be organising a NATGUG-only weekend at Swindon in October, and Milton Keynes will be for IQLUG members only, in November. This should ensure a good turnout for the Swindon meeting, and will avoid any NATGUG members feeling they are being treated as "second-class citizens", by comparison with the hordes of IQLUGgers that will probably attend an MK meeting.

We aren't doing too badly for newsletter contributions, and those I do get are usually quite lengthy, which makes it very much easier to put the thing together, so we should be able to continue on a monthly basis, as long as you keep sending me material.

Leon Heller

MEMBERS LETTERS

Just a line to say how much I appreciated Dave Washford's comments in the April magazine - like him I'm sure the Tandy and NATGUG aren't by any means dead (or even in danger of dying!) yet... I don't want to see a bi-monthly magazine and willingly endorse his idea that the subscription should be so many pounds and so many articles... If only I could think of something to write about!

Talking of magazines, does anyone out there know what has happened to the Australian Micro-80 magazine? I subscribed for three years then all of a sudden halfway through my subscription it stopped coming about six months ago. The last one I received was Vol. 4 Iss. 8 of 1984, and I have heard nothing since, despite having written three times in the last three months to the importer, Mr. Atkinson, of Tunbridge Wells, who just hasn't replied to my letters. I have now written to the publishers in S. Australia to try and find out what the score is, but does anyone know, or is anyone else halfway through an unfinished subscription?

P.A. Roberts,
11 Spring Gardens,
Poole,
Dorset BH12 2DQ.

READING AND WRITING TANDY DISKS ON THE QL

Further to my note about this in the last issue, I've now managed to read the contents of an IBM PC disk into the QL, which means that the technique will work with Model 1000 and 2000 disks.

I'm writing a program in C called QZAP, for the QL, which will be very similar to the old SUPERZAP supplied with NewDOS on the

Model I. With a few small changes it should run on the Model 1000 and 2000, since they use 512 byte sectors like the QL.

Leon Heller

SIMPLE Z8 SYSTEM

Here is the circuit diagram for the Z8 system mentioned in the last issue. The monitor listing will be in the next issue - I might need some padding!

Leon Heller

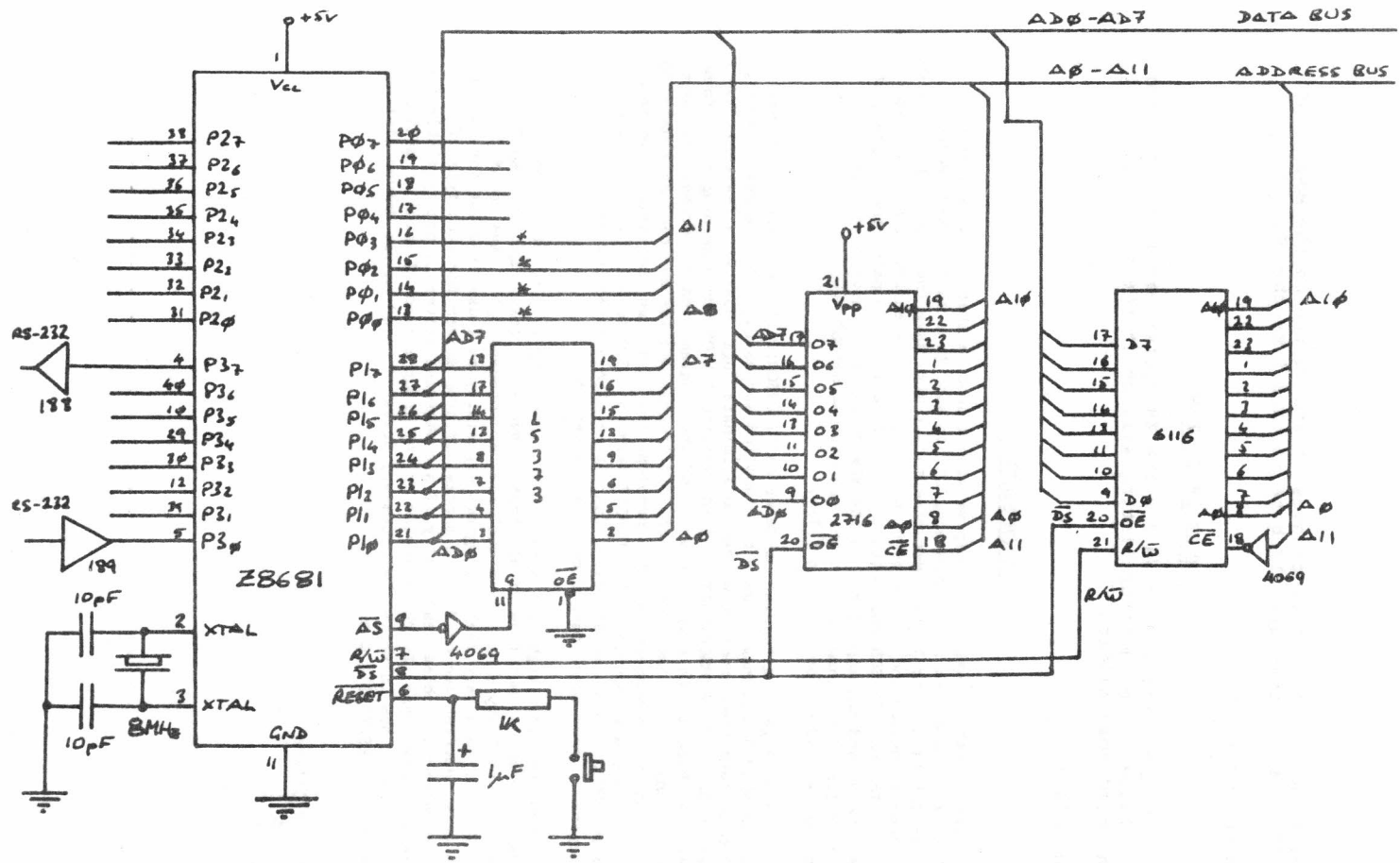
PROBLEM SECTION

Perhaps a NATGUG member can help me with a problem that has arisen with SUPERSCRIPSIT. I have been using this program for some time on my TRS-80 Model I, with 2 disk drives and the Tandy lower-case mod. I also have the machine fitted with a double-density device and I have been running in double-density with this, under NEWDOS/80.2. To use SUPERSCRIPSIT with this DOS I have had to patch the program, and for this I have used the zaps given in the NEWDOS manual. I have also added the changes that Tony Cottingham gave in the August 1984 NATGUG News, which remove the odd "two spaces" codes from the text files.

I have been getting regular up-dates on SUPERSCRIPSIT from Tandy, and until recently the NEWDOS zaps have always been applied successfully to the new versions, which seem to have been minor re-writes to eliminate bugs. However a few weeks ago I got a new up-date of SUPERSCRIPSIT, called "Version 1.3.0". On examining it, I found that there had been a much bigger re-write of the program, and the normal zaps were no longer of any use. In fact some of the old program modules had been eliminated by Tandy! Have any other members had this problem, and if so can they tell me where I can get the necessary zaps to SUPERSCRIPSIT Version 1.3.0 to allow it to be used under NEWDOS/80.2 in double-density.? Can anyone also tell me how to use Mr.Cottingham's space code changes on this new version.?

I know that this might all seem rather elementary to some of our more knowledgeable members, but I am afraid that I have never really got into machine code, as I use my Tandy simply as a tool for word-processing! I have found SUPERSCRIPSIT to be a very useful program, especially as I use it a lot for foreign language work. However the need for a special printer driver for each type of printer is rather a problem, especially if a commercial driver is not available for an uncommon printer type. Is there anyone in the group who could write an article for NATGUG News on how to write the necessary drivers, based on the driver listing given in the SUPERSCRIPSIT manual.?

B.Rumary
The Old Post Office
Gurney Slade
Nr.Bath, BA3 4TY



Z8 CONTROLLER

* 2K2 PULL-DOWNS NEEDED HERE

L.F.H.

More on NEWSCRIPT
********* ********
********* ********

What about the INDEX? Well I could not get INDEX in the 7.0 version to work very well (probably my fault); it also had the detraction that although it printed the index half-page wide it could put only one column to the page so a cut-and-paste job would be needed. In the nick of time - the job was by then becoming overdue - version 7.1 became available; this could produce a double column index (given that the printer could back-feed), but.... A serious problem! The system produces an index by comparing the text with a lexicon, word for word. However the lexicon has to contain all forms of any word you wish to trace i.e. not only singular, plural and tensed forms but also all types of terminating punctuation and even prefixes e.g. cast cast, cast. cast; casting pre-cast etc. which makes a lexicon very large and hence scan-times are most prolonged. (The text file was actually about 31 files and the parts lists comprised another 11, in total almost filling two SSDD discs.) Solution; write a small modification into NS to allow comparison between lexicon words and only the beginnings of the text words. This allowed the lexicon to be shortened by a factor of about five (just as well since it had not been completed).

NS implants the index identifier commands in the text on each successful match, some of which you don't want. Hence the NS efforts have to be edited to remove the surplus entries and also to put in a few variants it missed or others that you had omitted from the lexicon.

The next matter was that the manual pages were to be numbered as X.YY i.e. chapter and page. Regrettably that style is beyond NS although it seems a common enough form. So a procedure was adopted to change all page number references for chapter X to XYY in all the INDEX produced files. Remember this is symbollic, we are seeking 2.03, 2.04,....2.15 .....7.34 etc. so it is not quite straight-forward since some pages have a single digit number. (Since NS can count only up to 999 it is just as well that there were fewer than 10 chapters otherwise there would have been another problem to solve.) Then, when the index files have been merged, go through with NS to reset all to X.YY - The final index is some four pages long and one file, see example. There were also quite a lot of intermediate files.

When finally all is OK then you call up the index printing routine and sit back watching the pages pour out. But then you ask yourself how did I come to make a mistake over the format of the titles at the top of the page? Why does it spill off the right-hand side? Answer: You didn't, it is merely that version 7.1 is a bit off colour. One of the benefits of NS is that you can specify several titles at top and/or bottom of the page. Each can be comprised of left, centre and right portions and all appear desirably located on the page, i.e. left justified, centred and right justified, in whatever print pitch you use (10, 12 or 16/inch). Well at least it is supposed to and 7.0 does. Version 7.1 however, when commanded to use 12 pitch, obligingly does for the left part of the title but it then auto-changes to 10 pitch for the other two parts so of course the titles fall off the page! Strangely, despite the auto-change, the non-titular part of the document gets printed in the required pitch.

The escape route here was to write all three parts of the title as a left part with suitable spacing, which is all very well but why pay a gardener and then do the digging yourself? I put this problem to Wordsworth, together with examples. They precised the NS author's reply - He is busy working on a new venture but, having had no other reports on the lines of my queries, is unable to locate the fault. They themselves suggested that perhaps I had not properly matched NS to my printer (despite 7.0 working properly) and that I should try some of the alternative printer-matchings. For completeness sake that was done, see example herewith, so was a re-test with freshly written masters from Wordsworth (no better). Their final shot was that perhaps a different printer should be considered! A fourth one? Another £800 to fall in-line with £100 of software? That idea has not gone down too well. The point of this is that we users of commercially available software (I produce some myself) have a right to expect continued support on the (expensive) items we buy particularly when they lead directly or indirectly to extensive investments in terms of time, money and materials (think of all those discs and their back-ups which, despite the printer matching features of software, nonetheless have some data personalised to a printer).

You may gather from the above that producing a large document with a WP is not all cream and honey. To get the manual written I had to adopt a written procedure (now a NS file) to ensure that I used the right disc, read from the right file and edited with the right format to produce the right result. Also an ad hoc set of standards were built up early on. These two features were of great importance in getting the job done.

I still like NS; this was written with it although it does not show off all advantages (many of which crop up in preparing the text, not in the final presentation). There are various improvements I would like to see in it e.g. means to tell how much text there is beyond the current line or within the .a and .b pointers. There are several others..

*Personally I consider NS far superior to W***S*** which is even less slick. But I really must try the latest ELECTRIC PENCIL someday - and I have yet to rewrite my own manuals, which is where this all started!*

Norman Baust

Some notes on Superscripsit

Mains-borne transients (See letter by John Negus, Feb '85) I, too, am a sufferer! Following John's letter I've fitted a mains filter (surplus EMI, takes up to 20 A, only £5) and (I think!) the situation has improved. Has anyone done any work on mastering the structure of S/S files? I'd be delighted to hear from them because (a) I'd like to be able to reconstruct corrupted files, and (b) I'd like to write a routine for merging S/S files without changing them to ASCII first. Is there an article about it somewhere? I bought my system secondhand, so am new to the literature.

Model 1/Video Genie versions A letter from Tandy claimed that the latest version is 01.02.08. However, my updated disk (which arrived before the letter) puts "Version 1.3.0" up on the screen! Tandy say it works OK for LDOS 5.1.3 by installing the patches in HARDDISK/JCL, but won't commit themselves to 5.1.4. Well, the patches do appear to be OK, and I've listed them below.
However, the keyboard response is slower. Any suggestions for improving it?
They've also changed the characters used to represent <ENTER>, <CLEAR> and 'double space'. The graphics characters they've chosen make, to my mind, the text rather unreadable. Does anyone know how to change them back?
I've also noticed that S/S is not too good on observing high memory. Up until recently I've been operating with certain LDOS SYS files resident. With large S/S files, or

small files with numerous insertions, S/S appears to overwrite the 'protected' area leading to disk write failures when you come to quit the document. Be warned!

Smith-Corona D200 printer These notes were printed on the D200. I have made some modifications to S/S's DW2/CTL to drive this printer. I've not got around to changing it for proportional spacing cum justification yet, so the mods are simply to enable me to call NLQ, underline, emphasise and italics using the standard S/S <CLEAR> calls. If anyone is interested let me know.

```
PATCH SCR17/CTL (D01.BE=0A 8D)
PATCH SCR17/CTL (D05.FE=1D 6E)
PATCH SCR17/CTL (D02.0E=63)
PATCH SCR32/CTL (D02.0F=1D 6E)
PATCH SCRIPSIT/CMD (D01.4D=18)
PATCH SCRIPSIT/CMD (D01.58=CD 4E 89 00)
PATCH SCRIPSIT/CMD (D12.AC=CD 5E 89)
PATCH SCRIPSIT/CMD (D12.B7=18)
PATCH SCRIPSIT/CMD (D1C.9B=63)
PATCH SCRIPSIT/CMD (D37.07=3A 1F 44 32 5F 89 CB 8F 32 1F)
PATCH SCRIPSIT/CMD (D37.11=44 AF 11 05 AC C9 32 00 32 1F)
PATCH SCRIPSIT/CMD (D37.1B=44 21 FF 3F C9)
```

Rev. Vernon Blackmore,
11 Mylor Road,
Ecclesall,
Sheffield S11 7PF.
Tel: (0742) 662313

LPRINTING CHR$(0) AGAIN

Our Newsletter has carried various articles on the subject of persuading the TRS-80 to send CHR$(0),(10),(11) and (12) to a printer. The computer sends nothing at all for the (0) and changes the others into a number of linefeeds. This is particularly awkward if you own one of the Epson range of printers as they need these codes sometimes as control characters. Standby for another way of achieving this.

I found this piece of code in an article called 'Graftrax Art Palette' in the November 1983 80 Micro. The author credits it to another article called 'Trick Your ROM' By Bob Boothe in the November 1982 80 Micro. I haven't seen that original article.

The subroutine from the Graftrax article is as follows :

```
9179 'LOAD MODEL I PRINTER DRIVER
9180 B="21E837CB7E20FC211100397E32E837C9": V=16571
9185 FORX=1TOLEN(B)STEP2: Y=ASC(MID$(B,X,1))-48: IFY>9THENY=Y-7
9190 T=ASC(MID$(B,X+1,1))-48: IFT>9THENT=T-7
9195 POKEV,Y*16+T: V=V+1: NEXTX: POKE16422,187: POKE16423,64: RETURN
```

There has been a previous DEFSTR B instruction and calling this subroutine installs the patch. The code is relocatable so V can be changed if desired, but remember to alter the POKEs to 16422 and 16423 accordingly. The address (16571=40BBH) in the subroutine seems to work quite well and must be an unused area of RAM.

I have disassembled the code, but leave it to the interested reader to determine how it works :

```
21E837          LD      HL,37E8H    ;PRINTER ADDRESS
CB7E    READY   BIT     7,(HL)      ;TEST READY BIT
20FC            JR      NZ,READY    ;TRY AGAIN IF NOT READY
211100          LD      HL,0011H    ;17 DECIMAL
39              ADD     HL,SP       ;POINT SOMEWHERE DOWN THE STACK
7E              LD      A,(HL)      ;GET BYTE IN A
32E837          LD      (37E8H),A   ;SEND BYTE TO PRINTER
C9              RET
```

Jim Bartholomew 0506 823327

OGGY OGGY OGGY

I had quite a few phone calls following last month's issue in which I had said Swindon on October 25th - 27th and Brian had said Milton Keynes on November 8th - 10th. Well folks, as things stand right now, both meetings could be on - and then again, they might not. The problem, if indeed it is going to be a problem, arises from being too efficient; the March meeting having been so very, very successful it was quite natural for Bob Sparling to make sure that we would be O.K. for the Autumn meeting and to book the hotel there and then (remember how we said how much advance notice was necessary with these commercial operations?). Anyway, you might remember that at the beginning of the year there was a concern at the loss of the Milton Keynes workshops, and so when the College suddenly became available it was only natural that our Commissar should snap it up! And now it is only natural that we have a potentially embarrassing situation on our hands - but you, dear reader and loyal member, are going to help us, aren't you? Oh yes you are, and right now this very day please. For the vast majority of you, today is Subscription Renewal day, and so I ask all those of you living within travelling distance to either location to write on the back of your cheque (yes, the one that you're posting to Brian today) either an S or a MK or S+MK to show which venue, on the dates quoted, you personally might attend. Now collectively you've got a lousy reputation for paying up on time, but I plead with you to respond as requested - just this once. Thanks.

80-Micro continues to be the only other magazine devoted to the Tandy, even though it appears to have a slimmers disease. The April issue was down to only 128 pages and was on the UK news-stands at £3.20 but the majority of readers agree that the quality of the articles make it well worth the price. For any of you who don't have a subscription, I am told that W.H. Smith in Bedford have spare copies each month. That's bad news really, since unsold copies usually lead to un-stocked copies so get on down there and snap 'em up!

Yes I did get my Dotwriter fonts from Prosoft, and am well pleased even though the poor exchange rate priced two disks at just over £24 each (including p&p). Unfortunately Mr. Harding of Molimerx has failed to come up with any answers on my Super Utility, and has ignored my last letter to him. My Model 4 is working well now thanks to Os, and one day I might boot up that Spanish OS, El Dose. At the moment I am following Dave Holman's series on CP/M and will close now so that I can receive his next instalment. Cheers.....

David Washford, 6 Houston Way, FROME, Somerset BA11 3EU. (0373) 72739

..... as a result of the above SWINDON will be NATGUG only. Milton Keynes will be IQLUG only. The spreadsheet day will be at Swindon, and <u>not</u> LONDON. Brian Pain.

CPM - A NEW USERS TUTORIAL PART 2

Welcome back to my series of articles on CPM. I hope that there are still a few of you left with me. If you haven't read the first part then I strongly suggest that you do so, if you leap in at this stage, you could find things difficult to follow. In the last article I explained the commands that were resident in the operating system. In this article I will discuss the commands that are found as command files on your disk. These files which all have the extension "COM" are called the transient commands. I looked up transient in the dictionary and found that it meant temporary, passing away quickly or passing through. Of these temporary is the meaning that applies here, because these commands are not permanently in the program area but are loaded in from disk and discarded after use. They are identical to the "CMD" files under TRSDOS and they are used in a similar way to programs such as BACKUP and FORMAT in TRSDOS. Actually all COM files are transient commands, but CPM has ten which are standard. These are PIP, SYSGEN, STAT, SUBMIT, DUMP, ASM, DDT, MOVCPM, ED and LOAD. These programs have in many cases been replaced by up to date programs which combine some of the facilities of the above, and in some cases greatly extend their capabilities. Obviously it would be impractical for this article to explain all of these so I shall confine myself to the ten standard commands.

PIP.COM

This command is the first one I shall look at, and is probably the most frequently used command within CPM. PIP is the file transfer program for CPM and is similar to both BACKUP and COPY in TRSDOS. PIP stands for Peripheral Interchange Program. To copy a single file simply type the following simple command.

```
0A>PIP B:FILE1.BAK=FILE1.FIL
```

This will copy the file FILE1.FIL from the current drive, in this case Drive A (indicated by the prompt 0A>), to FILE1.BAK on Drive B. Note that the destination filename is the first name typed and that the two filenames are separated by the equals sign. The drive letters are optional, however if they are not used then all copying will be done on the default drive. The copy will overwrite any existing file called FILE1.BAK on Drive B, but, if this file exists on Drive B and the Drive letter "B:" is left off the front of the filename, then the file will be copied to A:FILE1.BAK and the existing file on B will remain unchanged. Remember CPM will not search all drives to find out if a program already exists.

Another method achieving the same result is to call up PIP as a program and answer the PIP prompt which is "*", for example.

```
0A>PIP
*B:FILE1.BAK=FILE1.FIL
*
0A>
```

This will carry out the same backup as the first example. PIP commands may be issued at the * prompt and the prompt will return each time, pressing ENTER at the prompt will return to the CPM prompt. Other examples of PIP copy operations are shown below.

```
0A>PIP
*A:=B:EXAMPLE.TXT
*A:EXAMPLE.TXT=B:EXAMPLE.TXT
*B:=FILE?.TXT
*B:=*.COM
*B:=FILE*.TXT
*B:=*.*
*
0A>
```

Lets look at each of these in turn: the first and second examples both achieve the same result and demonstrate a method of copying a file from one drive to another. The third example shows the use of a single letter wildcard character, the "?" in the filename. This would copy the following files.

FILE1.TXT

FILE2.TXT
FILE3.TXT
FILE5.TXT
This multiple copy facility of PIP is extremely powerful and the next three examples show the use of the "*" wildcard character, which looks for a match irrespective of the number of characters missing. The first of these three copies all COM files, the next all TXT files whose name starts with the four letters FILE, and may then contain any number or combination of letters up to 8. The final example copies all files from one disk to another, but does NOT do a backup of the disk, as the CPM operating system is not held as a file and needs to be copied using another transient command. Obviously a complete disk copying program will be faster, but the file copy utility will ensure that the new disk has files which are usually in one block and not spread over the disk. This results in faster access times for the files. Note that the file copies are only carried out in the current user area, in this case area 0, as indicated by the 0 in the prompt. Many people do not use separate areas and this may not be a problem for you, but files CAN be copied from area 0 to area 1
Parameters used with PIP

There are a number of parameters used with PIP and these are entered in the following way
0A>PIP B:=*.COM[param]
0A>PIP B:=*.*[OV]
The meaning of this command will become clear later. The parameters available are as follows.

B Block File Transfer:
This transfers the data into a buffer and copies this block when the buffer receives a CTRL S. This is useful when copying from a continuously reading device such as a cassette recorder or similar device. Yes you can PIP to and from devices, more later.

Dn Deletes all characters past column n. For example it can be used when sending to a narrow printer (40 Column). It will cut off all the comments on Assembler Files after a certain column.

E Echo all the characters copied onto the screen.

F Filters Form Feeds from the file.

Gn Get file from user area, used to copy between user areas.

H Copies files in .HEX format.

I Ignores ":00" records in .HEX format, sets H parameter automatically.

L Translates all UPPER CASE to lower case.

N Adds line numbers to the file or listing if sent to a printer, this is useful in providing a reference to a TXT file.

O Object file transfer, used to force a copy to ignore the physical end of file marker when joining non-ASCII files together.

Pn Page eject after n lines, for use when copying to a printer.

Q This is used to terminate a copy when a specified string is encountered it takes the format QstringCTRL Z. The string can be any valid string and is terminated by pressing CTRL and Z at the same time.

R Copies files with $SYS attribute or Read Only attribute.

S This is similar to the Q command but commences the copy when a specific string is encountered.

Tn Expands tab characters to n, useful when printing.

U Translates all lower case characters to UPPER CASE.

V Verifies a file copy, not used when copying to a device.

W Overwrite files with Read Only attributes.

Z Turns the parity bit to zero when inputting ASCII files.

Copying to Devices

Files can be copied to a device as well as to a drive, and this is useful when using printers or RS232 interfaces. Devices can either be "logical" or "physical", this is similar to logical and physical drives as discussed in the first article. The logical devices allowed within PIP are

CON: Console, both Input and Output, ie Keyboard and Screen
RDR: Reader, Input, ie paper tape reader
PUN: Punch, Output, ie paper tape punch
LST: List, Output, ie a list device such as a printer

These logical devices may be allocated physical device names by using the STAT command, in fact the physical names can be used in PIP for convenience. The physical devices are

TTY: Teletype
CRT: Cathode Ray Tube
PTR: Paper Tape Reader
PTP: Paper Tape Punch
LPT: Line printer
UC1: User defined console
UR1: User defined reader
UR2: Second user defined reader
UP1: User defined punch
UP2: Second user defined punch
UL1: User defined listing device

There are five special PIP devices

NULL: Sends 40 nulls to a device
EOF: Sends and End Of File character to the device - CTRL Z
PRN: Printer, similar to list but tabs are expanded, lines are numbered and page ejects are inserted every 60 lines
INP: A special input device that the user can patch into PIP
OUT: A special output device that the user can patch into PIP

Examples of using PIP to a device follow

```
*PRN:=DATA.TXT
*PRN=*.TXT
*CON:=DATA.FIL
*B:DATA.BAS=RDR:
*INP:=CLOCK.DAT
```

PIP will also concatenate (join) text files, for example

```
0A>PIP DUMMY.TXT=DEMO1.TXT,DEMO2.TXT,DEMO3.TXT
0A>PIP PROG.ASM=PROG.ASM,PROG2.ASM,PROG3.ASM
0A>PIP PRN:=FIRST.ASM,SECOND.ASM,THIRD.ASM
```

The first will join DEMO1.TXT to DEMO2.TXT to DEMO3.TXT and save the result in DUMMY.TXT. The next takes PROG.ASM and adds PROG2.ASM and PROG3.ASM to it, the final file is still called PROG.ASM. The last example sends the three ASM files to the PRN: device. Non text files may be concatenated using the H, I or O parameters explained earlier.

From this article you can see that PIP is a powerful program and is in fact only used by most people to transfer files from one drive to another. If that is all that you wish to do then a utility called SWEEP will perform file transfers easier than PIP.

SYSGEN.COM

The next program in the transient series is SYSGEN. It is used to copy the CPM system from one disk to another. It is invoked by typing.

```
0A>SYSGEN
```

This will bring up a copyright message showing the version number. After this you will be requested to select the Source Disk for the SYSGEN, you are then asked to place the Source Disk in the selected drive thus allowing a change of disk at this stage. A message informing you that CPM tracks have been loaded into memory will be

displayed. The program then prompts for a Destination Drive and asks you to place it in the drive. After pressing ENTER the tracks will be copied across. If an error occurs, for example a write protected disk, then the SYSGEN will abort. Once the original tracks have been read into memory, they may be copied to as many destination disks as required. The destination disk must have been formatted, but it does not matter whether the destination disk is blank or contains programs when SYSGEN is executed. However, in some versions of CPM 2.2, you can create DATA and SYSTEM disks; SYSTEM disks have reserved tracks for the CPM system, DATA disks do not. Therefore SYSGENing a 2.2 DATA disk may corrupt existing DATA, and care should be taken that you understand what type of disk is present.

STAT.COM

The STAT program is used to change STATus, assign devices or more usually show free space on a disk. Straight forward STAT will display remaining space on a disk. The examples shown here are for Version 2.2, earlier versions may differ in their display.

```
0A>STAT
A:R/W, SPACE: 12K
B:R/O, SPACE: 158K
M:R/O, SPACE: 63K
```

The R/W indicates Read and Write status and R/O indicates Read Only. Space is shown in K for all drives including the memory drive M: Read Write status is changed by typing

```
0A>STAT B:=R/O
```

Note that initially only the status of the current drive will be shown. Only after each drive has been interrogated will the full STAT list above be displayed. Thus typing

```
0A>STAT B:
```

will display

```
Bytes Remaining on B: 158K
```

Repeating this for all drives will "read in" the status for each drive. Other forms of STAT produce a number of results:-

```
0A>STAT VAL:
```

Displays the possible physical devices that can be assigned to logical ones
One line of which could read

```
LST:  =TTY:  CRT:  LPT:  UL1
```

Other devices will have their own combinations that can be assigned. Typing the following:-

```
0A>STAT DEV:
```

Produces the current assignments

```
CON:=CRT
RDR:=UR1
PUN:=PTP
LST:=TTY
```

These assignments can be modified by using the format

```
0A>STAT LST:=LPT:,CON:=CRT:
```

This will reassign the logical device LST: to the physical device LPT: and the CON: device to CRT:

```
0A>STAT B:DSK:
```

Displays the current configuration for the selected drive

```
    B: Drive Characteristics
1360: 128 Byte Record Capacity
 170: Kilobyte Drive  Capacity
 128: 32  Byte Directory Entries
 128: Checked  Directory Entries
 256: Records / Extent
  16: Records / Block
  36: Sectors / Track
   2: Reserved Tracks
```

The above is a typical configuration for the TRS 80 Model 4.

```
DA>STAT USR:
Displays
Active User :0
Active Files :0 1
```
Which shows that areas 0 and 1 have files on them.
```
DA>STAT B:*.TXT
Displays
Recs  Bytes  Ext Acc
  58     8K    1 R/W A:DUMMY.TXT
   8     2K    1 R/O A:(FILE.TXT)
Bytes Remaining On A: 4K
```
This will display all files in the current user area irrespective of it's attributes, adding the extra parameter $S after the above command will display an extra column headed Size, this will display the allocated file size, although the Recs column may not use all of the allocated Size. Attributes are something that I have spoken about fairly extensively, and they exist under CPM 2.2 and later versions. There are four attributes and they are

R/O Read Only
R/W Read/Write
$DIR Directory File
$SYS System File

They are arranged in pairs and will cancel the other member of the pair when used. The first pair protect a file from being accidently erased, files will default to R/W. The next pair allow a file to be made invisible by giving it a $SYS or invisible attribute. $DIR will reverse this process. $SYS files will be hidden from DIR and PIP (unless the R parameter is used). ERA will find $SYS files, however it will not delete R/O files, and STAT must be used to change the attribute of a R/O files that you need to delete. When using STAT on files the $SYS attribute is indicated by placing the filename in brackets, as in the example above, where FILE.TXT is both R/O and $SYS. Attributes are changed by typing

```
DA>STAT FILE.TXT $R/W
```

This article has only covered three of the transient commands, so you can see that they are more complex than the resident commands. In the next part I will cover more of the transient commands. Good luck with CPM and pleases don't hesitate to write to me with your problems, although I can't absolutely guarantee that I know the answer.

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Sour Grapes?

Regular readers will probably have noticed my struggles with 40-track drives, screen dumps, etc, and wondered "why doesn't the idiot get a new computer?". Here, then, is the saga of my struggles with a model 4, and the reasons why I will probably be sticking to my model 1 for the time being.

A friend runs a computer shop which sometimes sells used machines. I've always said that I'd buy a model 4 if he picked one up, and last week he decided to call my bluff, by offering me one (with a fair amount of software) at roughly half the new price, making virtually no profit. As it happens I'm about to receive a pay rise backdated seven years, and could actually afford it!

First impressions (in the shop) were very favourable. Everything seemed to work correctly, and all the software seemed to run. I wasn't very keen on the syntax used by Model 4 DOS and Basic, but thought that I'd get used to them in time. Visions of 128K upgrades and CP/M began to dance in my head. I decided I'd retain a model 1 drive as an external drive, and generally do things in a big way.

Once I got the thing home the real problems started to develop. I need to use a printer, since most of my work is word processing, and the computer manager of a Tandy shop had told me that the model 4 printer cable is the same as the model 1 expansion box printer cable. This took me an hour of phoning, since it appears that most Tandy computer centres (and Tandy national parts) now have no-one easily available who can give technical information about models 1 or 4. Perhaps the merger with ACT has caused this; it isn't going to be very funny when Model 4's start wearing out. Unfortunately I've either got an odd cable, or my contact was wrong, because the thing just wouldn't work. I was quoted £40 for the correct cable...

The external disk drive idea soon died. Again, the machine didn't seem to be able to recognise external drives on the regular cable. I've since been told that Model 1 drives can be used, but need fairly expensive circuit modifications and a special cable.

Shock number 3 was the discovery that I really didn't like having the keyboard so close to the screen. I'm a 2-finger typist and need to glance down fairly frequently (in fact, I rarely look up at the screen until I finish a line or need to change a mistake), so I thought that this would be an advantage. Instead, I found that I was developing back ache after an hour or so, and eyestrain from leaning over the screen. I also found the model 4 green-screen monitor notably inferior to the model 1 version, in terms of definition and contrast.

A suprisingly large number of (supposedly) model 1/3/4 compatible games wouldn't self-boot on the 4, so I decided to try converting some games on data disks. Unpleasant suprise 4 was the discovery that the TRSDOS convert routine won't read NEWDOS, TRSDOS 2.3B, or DOSPLUS data disks.

The last straw developed during this phase. I was using the drives fairly frequently, and began to notice that the slight wavering of the screen during disk access was getting much worse. Soon it started to continue when I wasn't using the drives, until it was actually making me feel a bit queasy. At the same time I noticed that I was getting disk I/O errors, more than I usually get with the model 1. I switched off for a while, but found that the wobbling and errors resumed soon after I switched it back on. This is a fault that I've heard of in model 3, but never in 4. Apparently frequent disk access puts so much strain on the power supply that it overheats, and the voltage regulator starts to lose control.

As I write the model 4 is sitting in a packing box behind me, waiting for a ride back to the shop. The model 4 experience was interesting, but the sort of trouble and potential costs I encountered aren't justified by the moderate gain in capacity and (supposedly) reliability a Model 4 should produce. I'm not really doing the sort of work that makes a model 4 essential, and can't afford most of the software that takes full advantage of its special features. Perhaps I'll think again, but I suspect that I'll probably stick to the model 1 for at least another year.

The model 1 is a dinosaur of the computer industry. With its "brains" in two boxes, and the way it's spread out over a table, the analogy is quite striking. However, it's worth remembering that the dinosaurs survived for millions of years; perhaps the model 1 will make it to a decade or two. My experience suggests that the evolution of the Tandy genus hasn't been entirely successful, so there may still be room for a few living fossils.

Finally, my letter to the last NATGUG news broke all records for a quick response. Michael Cross, of North Humberside, sent me a fast graphics/text screen dump 2 days after the issue arrived. Unfortunately it gives a solid image, not the outline I would have preferred, but it goes to show that there are still a few people prepared to tackle this sort of problem!

Marcus L. Rowland,
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SYNONYM PROCESSOR : Edward Rashbrooke

Back in January 1984, a small article was published in the LDOS quarterly about a small filter called "SYNONYM". This program by Henry Melton was published in full, and I have been using a modified version of it since more or less the time of original publication. It consists of a modification to the normal error trapping of LDOS whenever a command is unrecognised. A text file MACRO/TXT is searched after all "Program not Found" errors, to check whether the specified command has a substitute. A trivial example would be the use of "FILES" as a substitute for "DIR (A=N)". The degree of flexibility of this very simple concept is quite astonishing, particularly when used with JCL and other BASIC programs.

I include a copy of a binhex version of my modified command which requires simple execution to install itself as a top of memory filter, honouring all normal LDOS memory conventions. Seasoned LDOS users will know all about BINHEX which is a utility program to convert an ASCII file of hex characters into the equivalent CMD file. The advantage is that the command is much quicker to type in as a binhex file, than it would be as pure assembler (it also runs straight away!).

To give a flavour of SYNONYM, I include a listing of one of my current MACRO/TXT files.

QUIET BASIC

LDOS patch to remove execution banner from LBASIC
(further thanks to Henry Melton)

```
Model 1 : (Untested!) X'541E' 00 00 00 00 00 00
Model 3 : (Proven!)    X'5446' 00 00 00 00 00 00
          (Was     )   X'5446' 21 00 52 CD A7 28
```

Binhex version of MACRO/CMD (15 Mar 85) - Edward Rashbrooke

```
05 06 4D 41 43 52 4F 20 01 02 00 52 21 AD 52 CD 67 44 3A 2D 40
FE C3 20 09 21 FC 52 CD 67 44 C3 2D 40 3A 25 01 FE 49 20 2F 21
11 44 22 51 52 22 79 52 22 85 52 21 1D 42 22 94 52 22 A2 52 23
22 9A 52 22 A8 52 21 25 42 22 9E 53 22 7B 54 2B 22 F9 53 21 99
42 22 A4 53 DD 21 2E 53 2A 49 40 22 5C 53 11 56 56 B7 ED 52 44
4D 3E 16 DD 6E 00 DD 66 01 23 5E 23 56 EB 09 EB 72 2B 73 DD 23
DD 23 3D 20 E9 ED 5B 49 40 21 56 56 01 FD 02 ED B8 ED 53 49 40
2A 0D 40 22 6B 53 21 64 53 22 0D 40 3A 03 43 32 92 54 2A 04 43
22 93 54 3E C3 32 03 43 21 8C 54 22 04 43 C3 2D 40 4D 41 43 52
4F 20 3A 20 4C 44 4F 53 20 63 6F 6D 6D 61 6E 64 20 6C 69 6E 65
20 70 72 6F 63 65 73 73 6F 72 20 3A 20 45 52 20 32 36 20 4D 61
72 20 38 34 0D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
20 20 20 20 20 20 20 20 20 20 20 0D 4F 6E 6C 79 01 02 00 53 20
76 61 6C 69 64 20 61 74 20 4C 44 4F 53 20 52 65 61 64 79 20 2D
```

```
20 69 6E 73 74 61 6C 6C 61 74 69 6F 6E 20 61 62 6F 72 74 65 64
21 0A 0D 8D 52 8A 52 8C 54 96 52 E0 53 9C 52 A4 52 85 53 8A 53
8F 53 96 53 99 53 A6 53 A9 53 AC 53 B5 53 B8 53 CD 53 D0 53 EB
53 29 54 77 54 18 08 00 00 05 4D 41 43 52 4F F5 FE 86 28 04 F1
C3 00 00 33 33 33 33 F1 FE 5F 28 09 F5 3E 86 3B 3B 3B 3B 18 EA
3B 3B 3B 3B 3B 3B CD A6 53 20 DF CD CD 53 20 DA CD EB 53 28 02
18 F4 CD 25 54 CD 77 54 F1 21 18 43 00 00 00 C3 05 44 CD B5 53
21 C7 54 11 95 54 06 00 CD 24 44 C9 21 C1 53 11 95 54 01 0C 00
ED B0 C9 4D 41 43 52 4F 2F 54 58 54 20 20 0D 21 07 56 11 95 54
CD 13 00 C0 77 FE 0D C8 FE 20 38 F1 E5 11 57 56 ED 52 E1 28 E8
23 18 E5 21 07 56 7E D6 30 47 23 7E FE 20 28 FA 11 17 43 13 1A
FE 20 28 01 97 00 54 FA 1A AE E6 DF C0 23 13 10 F7 1A FE 0D C8
FE 20 C8 7E FE 20 28 0D FE 0D 28 09 1A AE E6 DF C0 23 13 18 E7
B7 C9 DD E5 D5 E5 21 C7 55 D1 1A FE 20 28 03 13 18 F8 13 1A FE
20 28 FA 77 FE 0D 28 33 FE 26 28 05 23 13 1A 18 F2 DD E1 DD E5
DD 7E 00 FE 20 28 06 38 1A DD 23 18 F3 DD 23 DD 7E 00 FE 20 38
0D 28 F5 77 23 DD 23 DD 7E 00 FE 20 30 F5 2B 18 D1 D1 DD E1 C9
21 C7 55 11 18 43 06 3F 7E 12 FE 20 D8 23 13 10 F7 3E 0D 12 C9
21 64 53 22 0D 40 C9 00 00 01 05 57 56 48 4A 4D 02 02 00 52
*60
```

Example edited version of MACRO/TXT, Used with MACRO/CMD
15 Mar 85 - Edward Rashbrooke

```
4 accounts do master (@profdisk,d=aldos078)
3 ascchar lbasic print " ASCII character : ";chr$(&):cmd"s
3 asm     aul(edas)
3 bas     lbasic (f=4,e=y) &
3 bel     lbasic lprintchr$(7);:cmd"s
3 blink   lbasic poke16412,&:cmd"s
4 calc    lbasic ?&:cmd"s
2 cc       do master (@cc,file=&)
4 cinl pds(list) acl/cin(&) (a)
4 cinp pds(list) acl/cin(&) (a,p)
3 cls     jmp lc9
3 cursor  lbasic run"cursor/bas"
3 decval  lbasic print " Decimal value : ";asc("&"):cmd"s
3 delete  kill &
5 disks   do master (@disks)
3 doff    system (drive=&,disable)
3 don     system (drive=&,enable)
3 dsm     aul(dsmblr) &
3 erase   kill &
8 filtdir  pds(dir) afl/flt
3 floppy   do master (@floppy)
3 jcl      ed master/jcl
3 jmp     memory (go=x'&')
2 keep lbasic run"keep/bas"
4 macnew  lbasic run"macnew/bas"
4 macsort lbasic run"synsort/bas"
2 memo    lbasic run"memo/bas"
8 memoedit ed memo/txt
8 memoscan lbasic run"memoscan/bas"
1 menu lbasic run"menu/bas"
3 nofloppy do master (@noflop)
4 nsset   do master (@nsset)
3 pascal   do master (@pascal)
4 pdsadd   do master (@pdsadd,&)
4 pdssplit do master (@pdssplit,&)
3 pfilter  do master (@pfilter,filter=&)
3 prbig   lbasic lprintchr$(14);:lprint"&";:cmd"s
3 pre     lbasic lprintchr$(27);"E";:cmd"s
6 remove  kill &
```

```
4 setfilt  lbasic run"pfilter/bas"
4 spoff    spool *pr (off)
4 spon     spool *pr spooler/spl:1 (d=200)
5 step0    system (drive=&,step=0)
5 step3    system (drive=&,step=3)
3 synonym ed macro/txt
6 sysgen   system (sysgen)
2 tl500    lbasic poke16913,1:cmd"s
2 t500     lbasic poke16913,0:cmd"s
3 tab       list & (num,tab,a8)
3 tof      lbasic lprintchr$(12);:cmd"s
4 unhide   attrib & (vis)
6 unprot   attrib &.ezto (all)
```

Model 4P Agoraphobia

Last year I finally gave up struggling with all that laborious tape palaver and a Video Genie that sometimes goes away and forgets everything (well it does have rather a lot of extra wire in it these days), and bought a 128k Model 4P. 'Portable' - have you tried lugging 26lbs around?

I must admit I liked the machine from the very beginning; it had all those things that the Genie lacked - simple things like flashing cursor, lower case, spooler, RS232 etc. etc. But there were some problems. For instance, SCRIPSIT (common or garden variety, because SuperScripsit is too complicated) would not work properly with the spooler. What surprises me is that I have seen no reports of this. More of this later. Meanwhile, am I the ONLY Scripsit user ??

(In fact, the Genie did have SOME of the 'extras' but only after lots of hard work with EPROMs and extra wiring. I even wrote an in-RAM spooler - and patched it into Scripsit.)

I even liked using TRSDOS61 (well, the only other DOSes I knew were CP/M and MS-DOS). I do find NEWDOS80 a bit of a struggle for a mere mortal like me, requiring the manual out at all times, but I suppose practice makes perfect and I try to use Model 4 mode rather than Model III mode in any case.

However, it doesn't take long before you start thinking how slow these disks are at loading/copying etc. and how little data they can hold, even when turned over.

Fate played her hand in the saga recently. While I was editing a Pascal program I got a 'Parity error on read' message from drive 0 a couple of times and eventually lost the file (it didn't work anyway!). Then I tried to boot up with DOSPLUS 4 and nothing happened. Strangely enough TRSDOS was Ok. I continued using the machine for an hour or two and it eventually crashed again, only this time it wouldn't reboot. All I got was an error message, suggesting I try again or use another disk. Out came the user manual.

It said, "Dirty R/W head or faulty drive". I thought, " How am I going to clean the head if it won't boot up?" I tried the cleaning disk in drive 0 and pressed reset and found the problem immediately. The drive was only going round occasionally.

Well, it was time I looked inside the machine anyway, so off with the case. It is certainly very compact inside there, but a simple matter to remove the drives complete with attached ironwork. After peering at them for a while I swapped them over, no re-addressing required, slipped a disk into the 'new' drive 0 and it booted Ok. The faulty drive was completely useless, however, as nothing could be read even if it did go round.

The next day I got on the blower to Os House at Blandford and he suggested I swap the drive for a new one at a small cost. I suggested that while he had the machine apart he might as well fit 80 track, double sided drives (a service which he has advertised in the Newsletter). The modification includes switches to enable use of 40 track disks. This all agreed, I dropped the machine off at Blandford and started calculating how much storage I would have. The normal 40 track S/S drive offers about 180k. 80 track D/S allows 720k per drive (subtracting BOOT/SYS and DIR/SYS leaves around 709k free space). It seemed that I would only need to own one disk for the rest of my life!!

There was some delay obtaining the drives and so it was a fortnight later I went back to Blandford to collect the machine. While there I upgraded to TRSDOS 6.2.0 and am glad to report that this boots up from an 80 track D/S disk. I now find I can fit all my system utilities on one disk and still have about 150 kbytes spare. What's more I haven't bothered to purge the various help files as there is plenty of room for them as well!

I do have a couple of complaints about TRSDOS62 though; the type-ahead feature and the system clock. I got quite used to the type-ahead feature in TRSDOS61 because it worked very well. In 62, however, even with SMOOTH turned off, the type-ahead facility isn't too good. Probably, the interrupts are kept off longer, which would account for the clock losing so much time as well (about 6 seconds every minute).

To get back to Scripsit for a moment, I found when trying to use the Spooler with it that the printer, at the first page feed (and probably at every other though it didn't get the chance) spewed out reams of blank paper. I also noticed that when *PR was routed to a disk file, the file was full of linefeeds (about 200 of them!!) at the page boundaries. This rather bewildering problem has been cured by incorporating the enhancements to Scripsit in the January issue of 80 Micro. Apart from the enhancements (which include facilities for reading the directory, RAM bank switching, printer control etc.) the article says there are problems with the Spooler due to the break vector being reset by Scripsit. This problem can be cured by the following patch:

```
PATCH SCRIPSIT/CMD (X'3906'=00 00 00 00 00 00)
```

Lastly, on the subject of modifications, I use the program PMOD6, one of a suite of programs making up Toolbelt (down to £29 from £42+ at Molimerx). This allows the user to modify a single file, a disk or RAM in hex, ASCII, decimal, octal or even binary, should you feel so inclined.

P.S. Since starting this letter I have managed to get NEWDOS80 to run 80 track D/S as well and now have DOTPRINT plus all fonts on one disk. It's so much easier to use.

Keith Taylor
Weston Super Mare
(0934) 813262

LIVING WITH THE MODEL 4

John Miller

It is some time that I wrote in these columns, and I thought that members might be interested in some of my experiences with the Model 4, particularly the software which I use. Perhaps I should begin by explaining that I am a geologist at Edinburgh University, so my computing uses are primarily word processing (to produce often complex typescripts for publication in scientific journals), keeping a large data base of references to scientific papers, and data processing with graph plotting.

I rushed to get one of the first Model 4s to arrive here, following several happy years with a Model I and a few months of a loaned Model 3 to fill the gap. The Model 4 was upgraded with the 128K option, and then the HiRes graphics board, as well as the RS232 board. Then I found I needed another machine in my office, so I acquired a Model 4P, and added the extra 64K RAM with chips from Wordsworth. Dismantling the 4P was a major operation - each compartment is encased separately in thick shielding, and I began to despair of ever getting to the mother board beneath the screen. Eventually, I had the chips seated in the spare sockets. There is no need for a PLA chip as in the Model 4, and shifting one jumper allowed the system access to the extra RAM. The 4P has the cursor keys in a cluster below the right shift key - and this causes some fumbling around when you transfer from one machine to another! The 4P is hooked up to an Epson FX80 for drafts and graph printing, and the Model 4 at home has a Juki 6100 for high quality scripts. This printer is excellent: the ribbons are standard IBM typewriter types, and wheels can be obtained easily from the Adler range. Now some notes on the software.

OPERATING SYSTEMS - I use DOSPLUS 4 as my standard system. It has many advantages over TRSDOS 6 in its various incarnations. First, you get the MZAL macro assembler, disassembler and linker package, and a full-screen text editor, TED. Many of the utilities which have to be bought separately to upgrade TRSDOS are standard parts of DOSPLUS 4, either as library commands or /CMD files. MEDIC is supplied as a superb "front end" or shell to DOS, giving menu-operated operation of many file-orientated DOS commands. Most of the system is less complex to operate than TRSDOS - filtering and linking are done much more easily without creating phantom devices. The library command DATE CAL produces a very nice calendar for the month. A whole line of DOS commands can be entered at once, separated by semicolons, and entering a / repeats the last DOS command.

There is a very comprehensive patch to BASIC, providing abbreviations, array sorting, space compression, formatted input, named subroutines and many other enhancements. The system as a whole is very much faster than TRSDOS 6.1 and somewhat faster than 6.2. When used on 80 track double-sided drives as the system disk, it is VERY much faster than 6.2, which for some reason seems to spend a lot of time searching for overlays when used as a double-sided system. MEMDISK installation is much easier and faster with DOSPLUS: you get more space available than with TRSDOS, so that you can SYSGEN the alternate memory bank and load the entire MULTIPLAN overlay file as well. This really makes MULTIPLAN worthwhile; otherwise it is crawls compared to VISICALC. Incidentally, I have patches for MULTIPLAN to make it work with DOSPLUS 4, including a filter which makes the keyboard behave exactly as with TRSDOS 6.x. Drop me a line if you want a copy -

it is the "official" version! Some programs, however, are appearing which use the unique architecture of TRSDOS 6.2, for which the commented source code is offered to programmers. 6.2 is available from Tandy, and it is a worthwhile upgrade to 6.1, being faster and curing bugs in 6.1. DOSPLUS 4 and TRSDOS 6.x are file compatible.

If some of your programs still work only in Model 3 mode, then a good partner for DOSPLUS 4 is DOSPLUS 3.5. Watch out, though, if you have double-sided drives: DOSPLUS 3.5 only allocates half the size of directory as DOSPLUS 4, and you can lose some files if you aren't aware of this when using DOSPLUS 4 to work on 3.5 double-sided disks. To take advantage of Mod 4 features, there are several programs such as VIDEO4/CMD from The Alternate Source in the US, which copies the ROM into the low RAM, patches it and then runs the system in 80 column mode with the fast clock. Effectively, you have a Model 4, but running with a Model 3 DOS and software. Don't think this will save you buying the Mod 4 version of Scripsit or Visicalc, though - these do not use the standard video DCB and thus don't work in 80 column mode. A very convenient way of operating a Model 4 in 3 mode with all the 4 features is the new MULTIDOS for the Model 4: it is RAM based, has the usual compatibility and ability to read other DOS's disks but runs automatically at the 4 MHz clock and can toggle between 80 and 64 column mode. Its SUPERBASIC is a very much enhanced version, with many features of Model 4 BASIC and lots of extras. It will NOT run TRSDOS 6 programs, but I use it successfully with Datawriter, as it has a MEMDISK to use the alternate 64K as a system (or data) disk. It was a great pity to have the extra RAM banks sitting idle while in Model 3 mode, and the new Multidos fills this gap nicely.

WORD PROCESSING - I quickly abandoned Model I Scripsit for Newscript, and followed the latter program through its various upgrades until it became one of the best Word Processors available - and I've looked at lots of 'em! Then along came the Model 4, and LESCRIPT was the first to provide 80 column capability, so I defected. The novelty of "What You See Is What You Get" soon wore off, as editing had bits of lines flying all over the place disconcertingly as justification was performed, scrolling was slow and the underlines and bolds all blinked at you, driving you bonkers. You could turn off the blinking - but then you couldn't see what you had underlined...! Lescript is, however, a good program for many purposes. However, along came ALLWRITE, Prosoft's upgrade to Newscript for the Model 4. I had to buy this program by proxy in the US, since a new law forbids them selling software directly overseas. But it was worth it. Allwrite contains just about everything you could want in a word processor: I can't begin to list all its capabilities - but it makes all the very expensive programs for 16 bit machines (including Microsoft WORD) look clumsy. Like Newscript, it is not WYSIWYG, but can produce columns on any printer, footnotes, automatic indexing and much more. In a 128K machine, you can edit 3 files at once. And the editor is a customizable dream! The superlative ELECTRIC WEBSTER proofing program (spelling checker, grammar checker and hyphenator) is fully integrated with Allwrite, as is DOTWRITER4 - all you ever need for text.

WINDOWS - TRS80 owners were perhaps feeling left out in the cold after all the media hype about windowing programs. What IBM PC owner could be without his SIDEKICK? Well, shed tears of envy no more. With a 128K Model 4 running TRSDOS 6.2, just order PRONTO from Misosys, Inc., P.O. Box 239, Sterling, VA 22170-0239, U.S.A. with your VISA (or equivalent). For $49 plus postage you'll have your windows. PRONTO sets up a window device in 32K of the alternate bank

and loads 4 selected applications from the 8 or 9 supplied. Just touch (control)-(p) (or whatever you have set) and a window opens up with a menu, showing which function keys call which applications. You can have up to four windows on the screen at once. Applications include a calendar, an appointments file tied to the calendar date, decimal and reverse polish calculators (the latter can operate in mixed decimal, hex, octal and binary!), a full character set which reads out hex and dec equivalents for each character as you move a cursor over the character, a direct-to-printer typewriter window, a mini-terminal, a card index and an autodial address book (not too much use over here). You are also given a window driver for BASIC, so that you can write your own window programs while running BASIC using simple OPEN and PRINT statements. Moreover, you can import and export data between application screens and windows. A very well thought out and useful package from Karl Hessinger. You can interrupt and return to any applications which use the TRSDOS 6.2 [KBRD SVCs, including DOS, MULTIPLAN and SCRIPSIT. SuperScripsit and Lescript have their own drivers and won't work with Pronto. Allwrite works but locks up when returning, but I have written to Mr Hessinger about this problem and am hopeful of a solution.

HIRES GRAPHICS - The graphics software supplied with Tandy board is quite good. Not many people know that Mod 4 BASCOM will fully compile all the graphics BASIC commands as well, considerably speeding up execution. However, I suspect that many have been put off acquiring this very good upgrade because you have to have an RS printer to get hard copy of the graphics. Help is at hand! Micro-Labs Inc., 902 Pinecrest, Richardson, Texas 75080, produce a rival graphics board, and their graphics BASIC (GBASIC 3.0) has all the commands of the Tandy BASICG and more, in less memory. It works with the Tandy board, and can dump hires pictures direct from BASIC to a number of different printers, including the Epsons. GBASIC is $49.95, and they offer DRAW - an excellent screen editing and drawing program, BIZGRAPH - a comprehensive graph-making program, which can use and create DIF data files, and several other applications including a music drawing one. I've been using these three programs for some time with very good results, and have not returned to the Tandy graphics software, except where compilation is needed.

PROGRAMS FOR SALE

I have a number of items left over from pre-Model 4 days which might be of use to members with Models 1 and 3. The prices do not include postage.

1. EDX - a Mods 1/3 text editor from The Alternate Source, ideal for writing BASIC, C, PASCAL or FORTRAN source programs, but with excellent text formatting capabilities, rivalling many WP programs. On screen justification. Learns keystrokes. Completely customizable with programmed key sequences, 26 text buffers, columnar formatting etc etc. A very valuable ability - EDX can edit files as big as you like - you are not limited to ones which will fit in memory: you can "scroll" through a disk file - very valuable for editing large data files. £15, excellent manual, most DOS.
2. DOSPLUS 3.5 (latest version) Model 3, **£45.00.**
3. SOLE - allows booting in double density with LDOS Model 1, **£5.00.**
4. SCRIPSIT - Model 1 or 3, including SCRIPLUS, customizer for Epson, **£25.00.**
5. COPYART 2, word processor, graphics (draw screens and produce hires line drawings on an Epson), sort, maths, all in one program - Epson and Daisy II drivers included, with mailmerge, **£25.**

6. ZBASIC 2.2 (disk) - compiler for most BASIC commands, disk I/O, extra sound, block move and hi-precis. maths: gives /CMD file with NO runtime module needed. Fast, interactive. Works on Mod 1 or 3, **£30.**
7. EXEC - Southern Software (TRSDOS only, 1 or 3) - automatic execution and job control, takes input to programs from text file - write self-teaching tutorials, run series of programs with no personal attention, **£10.**
8. LOG Electronic Notebook (Mod 1 TRSDOS only): pages of info, rapid search, called from Basic in middle of program if needed, **£10.**
9. ACCEL 4 - Southern Software. Interactive compiler system for LDOS BASIC only - works in overlay mode - speed up those games! **£15.**
10. MONEY MANAGER - easy to use, versatile personal accounting program: BASIC for Mod 1 or 3, **£10.**
11. LESCRIPT - professional WYSIWYG word processor with mailmerge and extensive formatting capabilites; supports dozens of printers. Same program works on Mod 1, Mod 3 and Mod 4 in true native 4 mode! Bargain at **£50.**

All of the above programs are on disk. All are registered, and I am prepared to give each buyer a certificate stating change of ownership of a legitimate program.

BOOKS

Programming in Style - Dwyer & Critchfield (Radio Shack) £3.00
TRS-80 Graphics for Mod1 & 3 - Kater & Thomas £4.00
TRS-80 Machine Language Disk I/O - IJG Series £7.00
Introduction to TRS-80 Graphics - Inman £2.50
Computer Programs That Work - Lee, Beech, Lee £1.00
Machine Language Programming from the Ground Up - Howe £3.00
TRS-80 Basic - Inman et al., Wiley £3.50
More TRS-80 Basic - Inman et al. £3.50

==== All books are in mint condition ====

MAGAZINES

I have a complete set of 80 MICRO from 1981 to end of 1983 in very good condition, 80 US from 1981 and H. E. Computronics TRS 80 magazine from 1981-1983. Any offers?

CONCLUSION - if anyone would like further details about any of the Model 4 software I have described, or wants to purchase any of the items listed above, contact me by writing to 28/5 Causewayside, Edinburgh EH9 1QB, telephone me on 031-667-5983 or Mailbox me via PRESTEL. Don Bannister supplied me with a super PRESTEL program which uses the 40 char display in Model 4 mode - just right for teletext.

John Miller

NATGUG NEWS

Volume 6 Issue 12 June 1985

OFFICIAL JOURNAL OF THE

National TRS-80 & Genie Users Group.

INFORMATION ON THE GROUP

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

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

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

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

Sub-groups exist in many areas. A list is provided in the Newsletter from time to time.

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

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

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor.

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FORTHCOMING WORKSHOPS

August 18th Sunday.

Os House of Blandford Computers invites members to his now annual workshop at Blandford where Leo Knaggs has arranged a series of talks during the day.

October 25/26/27 Swindon.

Bob Sparling is organising this workshop at the popular Swindon venue-THE WILTSHIRE HOTEL-where there will be the usual full programme of talks which should include some on spreadsheets.

It would be rather nice if another hardware project could be undertaken. Could members either make suggestions or volunteer as tutors. Are there any members trying to download weather data from those circling objects? That is my idea for the Swindon Project.

Brian Pain

EDITORIAL

The last few weeks have seen a dramatic increase in the number of contributions. Keep up the good work.

The Edinburgh workshop was quite successful, although there were a lot more IQLUGgers present than NATGUG members. My thanks to Ted Gladstone and Dick Mackie for organising the event. Brian organised a workshop in Gloucester at which the attendance was a bit disappointing.

I hope to have some information soon on the MIDI (Musical Instrument Digital Interface) specification. The construction of a MIDI interface for the Model I/III/IV machines would be quite straightforward, although I must confess that I am mainly interested in such an interface for the QL. MIDI, for those who haven't come across it, is a high-speed (31.25 Kbit/s) serial interface for the interconnection of keyboard instruments, synthesisers and computers. Both the new Atari ST machines and the Commodore Amiga have MIDI interfaces, by the way. I've seen a Beeb fitted with a MIDI interface controlling a Siel keyboard instrument, and it was very impressive.

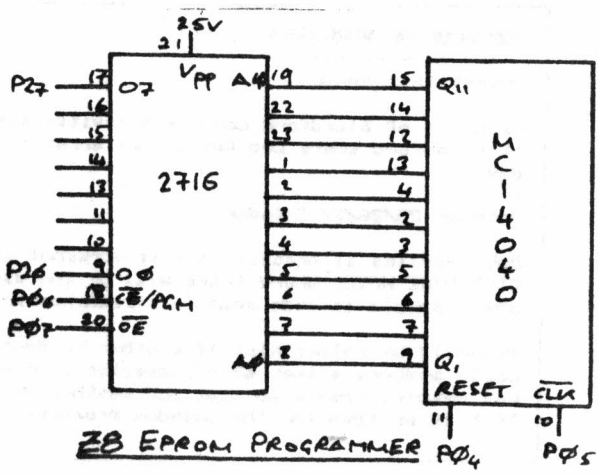
Leon Heller

Z8 MONITOR

The monitor listing for the Z8 system described in the last issue would take about nine pages, so I won't include it after all. It will be available from the CP/M Users Group library, as is the cross-assembler I am using.

One feature of the monitor is an EPROM programming facility. This merely requires the addition of an MC14040 counter to the circuit in the last issue, and a suitable socket for the EPROM, of course. A 25V supply for the EPROM programming voltage will also be required.

Leon Heller



PROBLEM SECTION

I am particularly interested in fitting a print buffer into the S100 slots of my VG expansion box. How about someone writing about the S100... I've never seen any mention of it in the Newsletter. Brian once gave me the number of an S100 merchant, but surely there must be NATGUG members who have some experience of the VG S100. I understand that it is not "standard" S100 which rather cancels the whole point of having bought it!

Chris Lovell,
5 Montpelier Road,
Ilfracombe,
Devon EX34 9HP.

Can anyone help please?

I have had a long textfile refuse to load because it contained a "Parity error". On looking at the file in Diskdump or Super Utility, I find that it appears intact. Is there any way of recovering the bulk of the text rather than key it all in again?

I have found that the Dosplus Memdisk does not have to be formatted and will hold about 60K which is more than the TRSdos 6.0 version. Is there any reason for the difference?

I can get a JCL to set up the Memdisk and go straight to Scripsit and this makes it easy to save files to Memdisk but they have to be backed up to disk at the end of the session. Although I tried to get the JCL to do this automatically on ENDing Scrispit I get "job aborted". Is there an answer?

Derek Trayler,
88 Grosvenor Drive,
Hornchurch,
Essex RM11 1PW.
(04024) 47661

It's Buffer Time, And The Living Is Easy.....?

Last week I bought a Gram 64k intelligent Centronics buffer board for my Epson RX-80 printer, and I'm currently typing this letter while the printer is busy with two Scripsit files, a total of 9000 plus words! The time saving these machines give is enormous, and I wish that I'd bought one a year ago. However, I've run into one fairly silly problem, which may have an obvious solution I'm missing.

The buffer is supposed to take control messages as a code preceded by a question mark (I'll use an asterisk here to avoid confusing it). For example: *REPEATn makes it repeat text n times
*END goes at the bottom of the chunk to be repeated
*PICA switches the printer to pica.

I'm only interested in a few of these commands, since I already have Geoff Smith's Scripsit upgrade and can send all the normal control codes I want. However, it seems to be impossible to send the repeat and end commands without upsetting the page length and justification; Scripsit assumes that they are supposed to be printed, even if they don't reach the paper. Can anyone suggest a way of beating this, short of redefining the line length and page length every time I want to use a control code?

Another problem I've solved, which may help other readers, is an omission from the buffer board instruction manual. When the board is installed you must change one dip switch, to alter the line feed instructions. On the RX-80 it's switch 2-3, which goes from off to on. If this is omitted lines overprint.

The only other problem is printer noise. I'm currently overcoming this by playing ELO on the stereo, but will probably make an acoustic hood eventually.

Now for a silly question: does anyone know who sold a program called Dam Busters for the TRS-80. Before I bought my computer I saw this game running on a Genie. It consisted of a simulation of the last minutes of the 617 squadron raid, with the plane navigating across the dam lake and dropping its bouncing bomb. Graphics were moderately good, and included flak, the dam appearing between hills, light gleaming on the water, etc. The idea was to drop the bomb at the right angle, height, speed, etc, and avoid crashing or being shot down. As you dropped the bomb the screen switched to a side-on view of it bouncing across the water (usually bouncing back into the aircraft and destroying it), then either sinking beside the dam, exploding on the parapet (and blowing the plane out of the sky), or overshooting. If you cracked the dam it showed a little trickle of water.

Unfortunately I've not seen this program since I bought the TRS-80 and don't know of a source. Can anyone help? Contact;
Marcus L. Rowland, 22, Westbourne Park Villas, London W2 5EA

Several people have recommended loading the system files into memory on the model 4 and putting the Scripsit overlays into Memdisk. When I try the Scripsit and overlays in Memdisk, I do get faster operation although the program has to search all the drives before it finds the overlays and with 80 track D/S drive this wastes some time. If I have loaded my system files into memory the program crashes before it reaches the first menu. What is the correct proceedure?

MR. DEREK TRAYLER
88 GROSVENOR DRIVE
HORNCHURCH
ESSEX RM11 1PW
040 24 47661

Please can anybody please help with the followins:-

1. How to modify the free FED that comes with LDOS 5.1.4 (Model-III version) so that it starts off in the 128-byte display mode.

2. How to modify LED so that it is not mandatory to have typeahead turned on. (Assuming, of course that it will work properly without it!). I almost never use typeahead, and I'm getting fed up with being dumped back to LDOS Ready because I haven't first actived it.

3. How to zap the Model-I SCRIPSIT 1.0 so that Indent=0 as default instead of Indent=5.

4. Model-III ROMs. I would really like to get hold of the book "Model-III ROM Commented" (or similar), so I can get some of my old Model-I stuff working again.

Roy Sainsbury,
Park Farm Nurseries,
Landford,
Salisbury,
Wilts. SP5 2BE.
(0794) 390319 (after 6pm)

MEMBERS' LETTERS

SIR has a problem if you want to edit a large number of files in a specific order. The normal proceedure is to SORT the files and then mark them for editing. The records are presented for editing in chronological order because that is the way they are stored. My data comes on a computer print out in a completely different order. This means that I have to search to find the appropriate item before I can update it.

This makes a two hour job take over five hours and adds to the frustration. At first the order was reasonable because the records had been entered from the print out but as new records were added and old ones deleted it got more tedious. I managed to tidy up the file by loading it into a Wordprocessor and using the block commands but once it exceeded the memory size this became impossible.

I decided to try and sort the data base externally and managed to use the CMD "O" sort in LDOS. However the next time I tried I found the file would not fit into memory. The DOSPLUS manual gives a short BASIC routine that carries out a Index/key sort and this worked very well. The crashing of the drives as the sequentially GET and PUT made me use a block at a time but essentially it works the same.

TRSDOS 6.0 does not have even a simple sort but one is available as an extra. BSORT will sort an index for an array without physically moving the array. It is simple, quick and very powerfull. It is much better than the old LDOS or model III TRSdos which required you to manipulate your arrays to keep the index and array together. Newdos enthusiast will find it as good as the CMD "O" sort on version 2.

Once the SIR TXT file is sorted it will load in that order each time. This causes it to present the records for ammendment in your sorted order and so far I have not found any bugs. As this type of program is written specifically for a particular file it is not much point in sending in a listing and the technique has been mentioned in most elementary books on BASIC file handling.

One small ecconomy tip. The multi-strike ribbon ran out in my printer and being a Sunday I could not get a replacement to finish an urgent job. Unlike the fabric ribbons, the multi and single strike ribbons are designed to stop the printer when they reach the end. I had heard that a kit is available to rewind ribbons and thought I would have a go and see if it cn be done by hand.

My plastic cassette was fairly easy to prise apart and I found that there is a small spring which keeps the ribbon tensioned. It also prevents it being would the wrong way. By removing the spring I was able to rewind the ribbon. After replacing the spring, I put the top back on a carried on printing. The result was better than I dared hope and was perfectly acceptable.

I have found that ribbons vary and some new ribbons are very poor right from the start. However it appears that a good one will stand rewinding. I do hope this will not result in the daisy brigade sending feint copy for repro

Now that you can get double sided 80 track drives for about £140, I decided to use them in my model 4. I ran into all sorts of problems before I found my non standard 40 track dive was causing the problem. I settled for a little professional help in fitting them and found it very worth while. I can still boot in on 40 track discs and drive 1 can be switched to either 40/80. The 2 x 80 track double sided drives fit in the bottom slot of the model 4 and drive 0 is in the top. Another 80 track drive could be hung on the external bus if required.

The job is not a simple plug in and go item but it did not take long. The 750K disk space makes life a lot easier for word processing and most of my old

disks work. If any one is considering purchasing a drive for the TRS-80 they will find that Akhters of Harlow have bare drives even though they are not mentioned in their adverts. There is no point in paying for a power supply and case that you do not need. If you want to have a 40/80 switch on the Mitsubishi drives then make sure you get one with it as it is not a standard item. I paid an extra £5 for the switch which is worth it. The Mitsubishi drives do not have the arm that catches the side of the slot and add to the fittng trouble.

Regards Derek Trayler

88 Grosvenor Drive, Horchurch, Essex RM11 1PW. 040 24 47661

If you want to develop software on LDOS for eventual use under Model-III TRSDOS, you can transfer files LDOS ==) TRSDOS 1.3 without resorting to Super Utility, as follows:-

First, format a single density 35-track data disk under LDOS, and copy all the files you want transferred to TRSDOS onto it. Now, boot up TRSDOS and use CONVERT as if it were a Model-I disk. You MUST use a 35-track disk in order that the directory gets put on track 17, otherwise CONVERT will throw you out.

Did you know.....? that When Using LDOS JCL files, you can use substitution fields in an ASSIGN macro? I use this to allow an "INCLUDEd" file to refer to different filenames each time it is called, using the same "token". If the "INCLUDE" file contains something like "LOAD #FILE#", the main JCL can say "ASSIGN FILE=#F1#, INCLUDE XYZ/JCL, ASSIGN FILE=#F2#, ASSIGN XYZ/JCL" etc., where F1 and F2 are files specified on the command line.

Finally, a little LBASIC program to tell you what is in high memory. It needs a bit of refinment to deal with un-headed modules (it goes bonkers if there are any!), and if you are using Model-I change the references to the HIGH$ address (&H4411/2 for MIII) to suit:-

```
10 CLEAR 500
12 DEFFNH2$(X)=MID$("0123456789ABCDEF",INT(X/16)+1,1)+
   MID$("0123456789ABCDEF",X-INT(X/16)*16+1,1)
14 DEFFNH4$(X)=FNH2$(ASC(MID$(MKI$(X),2)))+FNH2$(ASC(MKI$(X)))
20 PRINT"CURRENT ALLOCATION OF HIGH$"
30 HI=PEEK(&H4411)+PEEK(&H4412)*256+1-65536:IF HI=0 THEN END
40                    PRINT"X'";FNH4$(HI);"'                    =
":HI=HI+2:NH=PEEK(HI)+PEEK(HI+1)*256+1-65536
50 HI=HI+2:L=PEEK(HI)
60 FOR B=1 TO L:PRINT CHR$(PEEK(HI+B));:NEXT:PRINT
70 HI=NH:IF HI=0 THEN END ELSE 40
```

Roy P. Sainsbury, Park Farm Nurseries, Landford, Salisbury, Wilts, SP5 2BE. Telephone: Romsey (0794) 390319 after 6pm.

STOP PRESS! Full marks if you noticed the deliberate mistake in line 40! That'l teach me not to select "Justify=No" when printing BASIC programs from SCRIPSIT, won't it? There should, of course, only be ONE space after the line number, one space between the apostrophe and the equals sign, and one after the equals sign. This afterthought is also easier to read because the article was printed out on my Microline 80, but this was typed on my Dad's electronic typewriter! Pity it doesn't have a computer interface! (It's even got "computer" symbols, like [ ] < > $ and #).

Model 4P 'Real Time' clock corrections

As many people will know by now the clock facility has been rendered even more useless than ever by the upgrade to TRSDOS 6.2. When I can find the time I will look into the code in a bit more depth (unless somebody else already has - if so WRITE!!), meanwhile a minor foray into low RAM has revealed that the byte at address 0750H is some kind of loop counter for the clock. I am currently using a temporary evaluation patch as follows:

```
AUTO MEMORY (ADD=X'0750',BYTE=X'19')
```

This is proving satisfactory, so far, but the clock will still lose time during disk access, of course. I will keep you posted.

STOP PRESS: Have just had occasion to use SCRIPSIT patched as stated in my last letter. Reams of printer paper on the floor again!! No problem with SCRIPAID though. Oh well, something else to look into!

Keith Taylor
Weston Super Mare
(0934) 813262

MACARONIC PROGRAMMING

We're all familiar with interfacing Basic and Assembler, but how many members have tried using a combination of other high-level languages as source code? The idea would be to implement algorithms, forming part of a program, in the most appropriate language, without having to write the rest of the program in that language. My experiments may be of interest to Model 4 users or anyone else who uses both TRS-80 DOSes and CP/M, particularly if these notes arouse informative criticism from Leon or other experts.

I recently acquired the remaindered Microsoft Model III Fortran compiler, with the Microsoft L80 linker. In the office we have a CP/M machine with the CP/M version of L80, and BASCOM and Pro-Pascal. Since all three compilers produce REL files which can be linked by L80, it occurred to me to experiment with mixed-language source code. The first test was to see if I could cross-compile Fortran routines on the Model III to run under CP/M using a Basic or Pascal shell. I wrote and tested a short Fortran routine on the MIII to evaluate factorials of numbers under 34, and copied it over to CP/M together with a copy of the TRS-80 version of FORLIB. I then wrote a short Basic shell to handle I/O under CP/M, and compiled that with CP/M BASCOM.

Listings of the source code are appended (separate sheet). It was not too difficult to produce a linked .COM file, using CP/M BASLIB and TRS-80 FORLIB, which ran correctly under CP/M. I assume that it would not have worked if a) the Fortran program included any I/O or the $MAIN initialization section, b) the CP/M FORLIB had been used (I haven't got it anyway).

Further tests involved seeing whether I could get a Basic program to call a compiled ProPascal segment under CP/M, and whether I could get a Pascal shell program to call the Fortran factorial routine. Although the linking appeared to work correctly, it was obvious in both tests that in the resulting .COM file the calls weren't working properly. The ProPascal routine called by the Basic program used no variables but was supposed to display the string literal THIS IS A TEST. The ProPascal shell had the correct data types to pass and receive parameters from the Fortran subroutine, which it treated as a procedure. (ProPascal supports 'Longreals' which are supposed to be stored in the same form as MBASIC and MS-FORTRAN double-precision variables.) Any explanations for this failure would be gratefully received.

The third possibility - getting Fortran and Pascal shells to call a Basic subroutine - won't work because Basic doesn't allow named procedures, and the whole of every REL file produced by Bascom forms a single module called - BASIC, which includes initialization routines and/or calls to BRUN.COM.

If anyone can come up with a solution to the Basic/Pascal and Pascal/Fortran interfaces, that would allow ProPascal programs to be compiled for the Model I/III to run under TRSDOS etc. using a Fortran or Basic shell and I/O routines - an intriguing idea. Of course the pros would write assembly language routines to handle all the I/O, but life is short....

Chris Currie, 01-801-2185

```
10 CLEAR
20 INPUT "TYPE IN NUMBER FOR FACTORIAL:";A%
30 CALL FACT(A%,Z#)
40 PRINT"FACTORIAL IS:"Z#
50 END
```

```
00900             SUBROUTINE FACT(A,N)
01000             INTEGER A,I
01040             DOUBLE PRECISION N
01050             IF (A .GT. 1) GOTO 100
01100             IF (A .LT. 1) N=0
01200             IF (A .EQ. 1) N=1
01210             GOTO 200
01220    100      N=1
01230             DO 110 I=1,A,1
01240             N=N*I
01340    110      CONTINUE
01400    200      RETURN
01500             END
```

The love affair with Tandy

Stung to the core by the Editor's complaints that contributions were sometimes a little thin on the ground, I felt constrained to put finger's to keyboard - especially since it was January 1984 when I last made a contribution. Having recently taken over the Editorship of **Read Using**, the journal of the Research Machines National User Group and "put to bed" (I believe that's the phrase!) an issue of 124 pages I now have a realistic understanding of Leon's task.

When I last wrote I responded to observations made in a previous NATGUG News about the Tandy v Beeb arguments and comments then appearing in one or two issues. It's interesting to look back and now note how the mighty have fallen - or at least tripped over. In fact, as we are all aware, at the time of writing (May 27th 1985) the news of Sinclair's financial problems is making the headlines. It really is intriguing to see how the Tandy ship sails on, and on, and.....

During the last 16 months I've been using my Genie 3 quite a lot: too much, my wife would cry! I've found little time to write programs, but I've spent happy hours pouring over 80micro and other UK mags when they have something relevant. More than anything, the Genie 3 has enabled me to learn something about CP/M, which I've had to get to grips with for the Research Machines computers at school.

I've found the Genie 3 to be most efficient and robust. Most of my Model 1 software has run very happily on it, with the one exception of Instant Sort Search which doesn't like the DOS. The extra facilities offered by the machine have been interesting to explore. Given more time I would wish to convert more programs to the 80 x 24 video display offered under the NewDos 80 v2.a that comes with the Genie 3. The same could be said for the MBasic (Basic-80) that runs under CP/M.

My son (and his Dad) has missed the sound on the arcade games. I couldn't face disassembling all those m/l games to find out where the sound routines were and then altering them to talk to the Genie's built-in speaker. However, one can live without that. It has been a joy to have 80-track D/S & D/D drives. Under CP/M that has given around 1.2Mbytes of storage.

Apart from MBasic, I've got Wordstar up and running and have used it a lot. However, trying to print from Wordstar onto a Microline 82a via the parallel port proved a real pain. It would print okay, but all blank lines were ignored. As in many word-processing programs, when you get to the end of a line in Wordstar, it automatically wraps round the characters to the next line, so that both right and left margins are justified: as in this article. To make a space one just presses the <RETURN> or <NEW LINE> or <ENTER> keys. This, under Wordstar, is called a "hard return" and is flagged on the right-hand side of the display.

Because the Genie CP/M 2.2 is, I'm told (by a very clever young man I know who has written his own CP/M for his Model 1 - just like that!), not quite standard it needed altering (that is, the BIOS). So now it works, but if I want to print from Basic under NewDos, I have to alter one DIP switch on the Microline first. A slight nuisance, but quite bearable. Whilst I have to accept that part of the problem may be the way that the Genie BIOS is written, I'm also sure that part of the problem lies with the Microline 82a as I can obtain a perfect printout from the Tandy CGP-115 printer. I've a slight problem with Mailmerge, but hope to cure that very soon: it's my fault and not the machines.

Using CP/M machines entirely at school has got me used to that system and some of the software we've bought at school, such as CARDBOX, an electronic card-index system. I suppose, although I don't know, that Cardbox is something like LOG and SUPERLOG, often advertised in 80Micro. Cardbox works fine on the Genie 3. One has to configure the Genie as a Soroc 120/140 terminal. The searching/retrieval facilities are impressive. The main problem I had was working out how to set up my first file. The key is to carefully read the manual!

One strange aspect of moving onto the Genie 3 was learning to use NewDos 80 v2.0a. On my old Model 1 I used LDOS 5.1.3 and I have often been intrigued by people's comments about the two operating systems. From my point of view, you have to use what is available, so any real discussion is rather academic. I was once on the phone to Keith Bedford, the resident computer expert at Lowe's (importers of the Genie machines) and he was most withering about LDOS and its coding. In the same vein, NewDos is slated by devotees of LDOS. I'm sure that it is a question of what you most enjoy or are used to, but is there any definitive way of assessing their relative worth?

In the May issue of **Natgug News**, Dave Holman writes about some of the transient commands within CP/M. Those readers who are interested in CP/M should keep their eye on **Practical Computing**, now running a regular CP/M page(s) with some useful programs published, including what looks like a good machine-to-machine file transfer program that I couldn't get to work at all! If anybody out there with a Genie has got the program up and running, I'd love to hear from them. Also, get hold of a book called **CP/M The Software Bus**, by Clarke,Eaton and Powys-Libbe. This is published by Sigma at about £8.50 (I forget exactly how much). It is a mine of information about the workings of CP/M and worth its weight in gold. It's written by three leading lights in the CP/M UK Users' Group - also worth joining.

David Washford's comments about 80Micro are interesting. Having bought every single issue it is interesting to see them just above me now. 64 volumes, plus the anniversary issue. The first issue, January 1980,

had 146 pages. The November 1982 issue had 518 pages and the special Anniversary issue of 1983 had 594 and now the June 1985 issue has 128 pages! However, the quality of material published during this year seems generally very good and I am keen to continue my subscription. If anybody ever has a query about anything out of 80Micro, I'm only to happy to help where I can. With the Genie 3 one has to use Model 1 material, but there's still plenty of that coming in. In the June issue there is an interesting Critical Path Analysis method program which contains all the necessary program code to enable the program to run on Models 1 3,4,1000 and 2000. Also in the issue are lots of hints and tips about the Tandy 1000; a utility for setting up a personal version of LDOS 5/TRSDOS 6; windows for the Model 4; a packing program for SuperScripsit and a file recovery program for SuperScripsit. In various parts of the magazine are all sorts of useful and interesting bits and pieces, reviews, ads, etc. To subscribe to 80Micro via Access (MasterCard) or Visa costs $44.70 (surface) and my issues arrive regularly at the beginning of the month on the cover. The overseas surface subscription hasn't altered in 3 years.

Since starting this piece I've decided to sell my Genie as it is rather surplus to requirements. I'll eventually buy a Model 4P, I think and have been fascinated by the recent interesting articles on the 4P - keep it up, folks! See my ad elsewhere (I hope!).

Robin Davies:13 Paget Rd, Wolverhampton. WV6 0DS (0902) 23735

BASIC Overlays on the Model 4 - further notes.

Being a user who tends to like his programs a lot more than commercial ones, I too have been using basic overlays, using the techniques of the "BASIC Faster & Better..." book, on the model 1. One of my main worries when I heard about the model 4's lack of compatibility with models 1 & 3 was the difficulties that would arise when I tried to convert my programs, all making heavy use of overlays, to the 4. I need not have worried. Tony Endersby came up with the solution in the April newsletter.

But wait a moment... isn't there a command for doing that in TRSDOS 6.x BASIC ?

CHAIN [MERGE] filespec [,line] [,ALL] [,DELETE line1-line2]

does everything for you. If you want only selected variables passed, use COMMON, and a list of variables, arrays etc. before calling the overlay.

Or am I missing the point..?

Jon Silver, Brighton.
Tel: (0273) 501901 at various times of the day.

SWINDON WORKSHOP ?? - A PERSONAL GRIPE

I have been watching the list of venues for NATGUG workshops with interest over the past while. I am a more than a little disappointed to see that Swindon seems to have been dropped. I wonder why this is.

A recent Editorial observes that the Wiltshire Hotel would be too small "for the large number of IQLUG members that we expect to attend". The mix with another group seems to work fine - especially if the numbers help the with the

hotel cost. I do hope, however, that the members of NATGUG aren't becoming forgotten souls. I have always found the IQLUG members attending at Swindon good company, but had a feeling that the NATGUG users may have been in the majority. Indeed the existence of the Model 4 seems to have created considerable new interest within NATGUG.

I could not possibly afford to attend all the workshops, but certainly haven't attended a bad venue yet. However, I personally have found Swindon to be one of the best, and reasonably central to travel to. The hotel is comfortable, good food is available, and the systems and lecture rooms are ideal. The staff are very friendly and largely understanding of the computer nut's condition. Add to this the fact that it is not outrageously expensive (for a hotel of its standard) and that the accommodation costs at MK will evidently be higher.

Maybe I'm alone in these disjointed ramblings, but some recent 'phone conversations have suggested that there are others who too would miss the "meet" at Swindon. I believe that a date was set at the end of the last session there, although I can't actually find a mention of it in the comic. At any rate, I seem to have gone to the trouble of booking some leave over the last weekend of October to be sure of being free to go.

I hope there is not going to be a clash of workshops, or two so close together that it reduces the attendance at both. Perhaps somebody can clarify the situation for poor little me, and indeed others may have views which they wish to air.

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Home Telephone: 0232-668899

HELP... Model 1 NEWDOS 80 v2 on Model 4 ?

I only own model 1 NEWDOS 80 v2, and model 1 Super Utility Plus, but would dearly love to use them on my model 4P in model 3 mode. Can anybody help?

Will anybody ever come up with half the utilities which appeared for the model 1? Programs like Nigel Dibben's IMPAKT and Southern Software's EDIT, which are but two which I use almost every day on my model 1, but sadly miss on the 4P. Most of all, I would like to have a model 4 NEWDOS 80.

Any chance at all?

Jon Silver, Brighton.
Tel: (0273) 501901 at various times of the day.

If anyone doesn't know how to find the current record number, its in LOC(x).
Then you just PUT or GET x,rn where rn is your record number. If you are certain that the record number is never going to be greater that 256 then you could try just storing one byte each record, i.e. using CHR$ to get the index entry and ASC to retrieve it.

Finally, if anyone wants any help on any aspect of setting up this kind of file, or indeed any file, I would be pleased to help them. This is only the tip of the iceberg. Slow files are *the pits...*

Jon Silver,
Brighton.
Tel : (0273) 501901 at various times.

SCRIPSIT, EDTASM, EDAS and VISICALC on LDOS

SCRIPSIT
The usual method of running SCRIPSIT on the Model-III under LDOS is to use the "Fix Disk" to patch the Model-I version. (You can use the TRSDOS 1.3 version, but it adds no useful features). Unfortunately, the following problems arise: a) You get a leading line-feed at the start of the first page of printout, and b) the displayed control charecters do not match the TRSDOS version. The following additonal patches may be made by editing the patch file before applying it, or afterwards by direct disk zapping or an additional patch file. Be aware that if you have used X-patches, you will have to zap those, not the code they modify!

1. Change the contents of the LAST occurance of address X'665E' from CD 02 52 to 00 00 00. This gets rid of a leading CR on the 1st page. This problem did not happen on the Model-I because most printers ignore an initial CR, but the Model-III ROM (which is used by the patched version), changes a leading CR into an LF. Model-I users may find that this happens if they have PR/FLT active, in which case they can try this fix.

2. The following table indicates optional modifications to the translation table for control charecters for use on the MIII, since some of these look neither like the MI or the MIII TRSDOS versions. If you are used to the TRSDOS 1.3 version, you may prefer to have the "Paragraph", "Copy" and "Block" marks confora to that standard, to prevent confusion. Personally, I prefer the orisonal "chunky" block marks rather than the easily-lost square bracket thingys on the MIII TRSDOS version, but I have included these for you to change if you wish, but remember that if you do this, you MUST change the other two symbols otherwise you (and possibly the program) will get confused! These are not changed by the patch files, so I have included the disk locations and orisonal contents for direct zapping.

ADDR	SEC	BYTE	FROM	TO	CHARECTER
796A	28	0A	B7	5B	"Open Block" mark
796C	28	0C	BB	5D	"Close Block" mark.
796E	28	0E	5E	F1	"Paragraph" symbol.
7972	28	12	5B	5E	"Copy" Mark.

3. If you used the SCRIP3/FIX patch, you may wish to alter the "LDOS Scripsit 1.3" signon message to reflect these changes. I changed it to version 1.4, by changing the last byte of the new message string. This will be found at X'5807' (Sector 29H, byte F6H if you are zapping after applying SCRIPT3/FIX).

Some additional notes on SCRIPSIT on LDOS:-
1. The SCRIP3/FIX Docs. don't mention that the directory display function can be given a file extension to search for in the following way:-

(BREAK) Qd/EXT (ENTER)

where "d" is the drive number, just as one does with MiniDOS.

2. Since *PR is now used to drive the printouts, you can get a "quick review" facility by ROUTEing *PR to *DO before running SCRIPSIT, which is handy for finding out how many pages will be printed by using "P,P" to generate page-breaks. Since you can't pause the display, it's not much use for anything else. Alternatively, you can route output to a disk file and use the LDOS LIST command to examine it later. This will let you distribute documents to people without Scripsit, and all they have to do is LIST FILESPEC (P) to get exactly the same result as a "real" Scripsit printout! (Which is how the documentation for the "Fix Disk" is done). Bear in mind, however, that the output file will be open all the time you are in Scripsit, so don't swap disks until you have returned to LDOS to close it by RESETting *PR.

3. Although the SCRIPT3/FIX does not enable the LDOS type-ahead feature, it is interesting to note that if TYPE is ON, SCRIPSIT turns it off, but turned it back on again upon exit. So, anything typed while the SCRIPSIT program is loading will be executed upon return to LDOS! Therefore, you could set up a SYSTEM/JCL file to do a BACKUP of any MODified files, type SCRIPSIT(ENTER), DO *(ENTER), and when you leave SCRIPSIT, your backups will be automatically initiated! Good eh?

SERIES-I EDTASM
If you must, you can run the Tandy Series-I Editor/Assembler without modification under LDOS on Models I or III. It already honors HIGH$, so you can use it with the LDOS keyboard drivers and filters, and possibly the spooler too, but don't try using typeahead or JCL, as input will be lost in some circumstances.

However, there are a couple of convenience modifications which you can make, regardless of DOS. These are to change the default file extension to the LDOS convension of "/ASM" instead of "/SRC" (which I keep confusing with "/SCR" for SCRIPSIT files!), and to change the (Q)uit command to an e(X)it command, to stop a slip of the fingers causing you to quit the progrm when you really wanted to (W)rite that 20k source file or obtain a disk directory with (CLEAR)(SHIFT)Q from MiniDOS.

The patches required to do this are as follows (Contents in ASCII):-

ADDR	SEC	BYTE	FROM	TO	FUNCTION
5C40	05	E4	SRC	ASM	Default extension
5C76	06	1E	Q	X	(Q)uit becomes e(X)it

EDAS 3.5.2
EDAS is, of course, totally compatable with LDOS! Wrong! (At least, on the MIII it isn't). Having installed the supplied patch program to convert the directory command, any attempt to use it caused the machine to crash and/or reboot after displaying the directory, while under MIII TRSDOS it had worked perfectly. Molimerx claimed that "....There is no known bug in EDAS". In fact, there is a typographical error in the source code supplied for the patch routine, causing it to call the @RAMDIR module instead of the @CKDRV module, thus clobbering part of EDAS

and.....SPLAT! If you have EDAS on MIII or 4(III) and want to get the directory command working, change the value equated to @CKDRV from 4290H to 4209H, and it'll work! As an aside, there are typos in the DTT source program which make the *GETs call nonexistent files! (So much for "Fully Supported Software"). There is also a patch to make typeahead work properly with EDAS, but as I rarely use typeahead, I didn't bother, and EDAS works perfectly well without.

Users of EDAS on MIII TRSDOS will probably have discovered that the XREF program cannot produce EQUates files because it dumps you out of the program with an "Invalid File Name" error when it tries. Under LDOS this function works, and it turns out to be because TRSDOS 1.3 uses 50-byte DCBs while other DOSes use the normal 32 bytes, hence DCB1 clobbers DCB2 and screws everything up because Misosys forgot to allow 50 bytes between them!

VISICALC

The Fix Disk provides patches for various versions of VisiCalc, in particular, the Enhanced versions VC 150Y0-T83 and VC 160Y0-T83 will run on MI or MIII and have access to LDOS's keyboard driver after patching, and provided you have JKL active, it is now possible to do a screendump. In addition, a screen refresh facility is added to restore the display after use of MiniDOS. Also, VC's "Directory Scroll" facility is much faster than on TRSDOS.

Because VC's internal keyboard driver is replaced by the normal *KI driver, it is necessary to learn some new control-keys. These are:-

Shift-0	(cursor blink toggle)	becomes Control-B
Shift-Clear	(Vanish cursor)	becomes Control-L
Shift-Enter	(Edit during input)	becomes Control-E
Shift-8	(Enter "carat" symbol)	becomes Clear-;
Clear	(Backspace)	becomes Shift-Clear

It is advisable to use KI/DVR because key-repeat will be at a snail's pace otherwise, and although you can use (CLEAR) instead of (SHIFT)(CLEAR) for backspace, you won't be able to enter the "caret" symbol required for raising numbers to powers and entering printer control codes! You will need to juggle with the KI/DVR parameters to get a suitable key-repeat, but it is not advisable to use the typeahead feature of LDOS because VC's own typeahead buffer still operates and the both of them together sometimes get carried away!

Roy P. Sainsbury, Park Farm Nurseries, Landford, Salisbury, Wilts, SP5 2BE. Telephone: Romsey (0794) 390319 after 6pm.

Indexed Sequential Filing on TRS-80's.

Setting up an indexed sequential file for fixed length records is not difficult using any DOS, but NEWDOS 80's Relative Byte Address (RBA) system makes it just as easy with variable length fields.

This is the way *I* do it:

For *variable length* records (NEWDOS 80 only, I think...) :

For each file, choose your key fields (the only ones by which any search can be done).
Set up string arrays to serve as indexes (indices?)
The arrays must be dimensioned to however many categories for that field there are, i.e. a field which always starts

with a letter will be DIMensioned to 26, e.g. DIM IX$(26), or a numeric field would be 10 categories, DIM IX$(10). Before all the sticklers for efficiency start complaining about the fact that element 0 is not used, it *will* be.
Element 0 is for A (or 0).
Element 1 is for B (or 1).
Element 25 is for Z.
Element 26 is for anything else.
Only if you are sure that you won't be using anything else but A to Z should you not use element 26.

When a record is placed on disk, you do something like...

```
300 IP=ASC (KF$)-65
310 IF IP<0 OR (IP>25 AND IP<32) OR IP>57 THEN IP=26
320 IF IP>26 THEN IP=IP-32
330 RB$=MKI$( LOC(1)% )
340 IX$(IP)=IX$(IP)+RB$
350 PUT 1,I$%,1000
1000 KF$,A$,B$,C$,D$,E$;
```

Lines	300 - 320	Get Index Pointer value. Set it within the range 0 - 26.
	330	Get RBA (current EOF) as a 2-byte string.
	340	Put RBA string at end of Index element pointed to by IP.
	350	Put record on disk.
	1000	*I*tem *G*roup *E*xpression *L*ist for record.

When searching for a record, you need only to search through all those records whose initial letters are the same, i.e. using only one index pointer element.
When Deleting a record, find it's Index Pointer again, search for the record's RBA string in the appropriate element, and remove the RBA string of the record via LEFT$ and RIGHT$.

For all those lazy people, here is a search/deletion subroutine...

```
2000 INPUT "Search string ";SS$
2010 CN=0:DE=0
2020 IP=ASC (SS$)-65
2030 IF IP<0 OR (IP>25 AND IP<32) OR IP>57 THEN IP=26
2040 IF IP>26 THEN IP=IP-32
2050 J=1
2060 IF IX$(IP)="" THEN 2170
2070 RB$=MID$(IX$(IP),J,2): RB=CVI(RB$): GET1,RB,1000
2080 IF INSTR(KF$,SS$)<>0 THEN XN=XN+1 ELSE 2170
2090 CLS: PRINT KF$: PRINT A$: PRINT B$: PRINT C$: PRINT D$:
PRINT E$
2100 PRINT "Delete it ?"
2110 I$=INKEY$: IF I$="" THEN 2110
2120 IF INSTR ("YN",I$)=0 THEN 2110
2130 IF I$="N" THEN 2170
2140 P=INSTR (IX$(IP),RB$)
2150 IX$(IP)=LEFT$ (IX$(IP),P-1) + RIGHT$
(IX$(IP),LEN(IX$(IP))-P-1)
2160 DE=DE+1: PRINT "Record for " KF$ " has been deleted."
2170 J=J+2: IF J>LEN (IX$(IP)) THEN 2180 ELSE 2060
2180 IF CN=0 THEN PRINT "None found": GOTO 2190 ELSE PRINT "No
more found"
2190 PRINT "Found ="CN,"Deleted ="DE
```

Now for *fixed length records*:

Set up your file in the usual way:
OPEN "R",x,"filespec", FIELD x,a AS a$,b AS b$ etc...

Have the index array like before, only this time, you use the record number, pure and simple, to go in as a record pointer.

continued on p14.

CP/M80,PROGRAMS AND BOARDS

Just got the April issue of the NATBUG and, shamed by appeals for contributions, I have decided to produce something - for all the good it will do (Not much!).

I have not appeared in print for quite a while, not due to any loss of interest in my Model4, but to the fact that, since I went CP/M way, I seem to be spending all my so called free time at the keyboard - as my boss claims to the detriment of the garden, house maintenance and my second hobby, the woodturning.

To start with I will not agree with the statement that CP/M and 8bit computers are dead. There are over 3,000 programs running under CP/M80. The 8bit hardware is coming down in price although the prices of good quality CP/M software are not tumbling down - whatever some magazines may say to the contrary. dBASEII still costs about £400 as it did before the 'Big Blue' hit the micro market. Still, one can get the system to meet one's requirements for much less using the old, boring CP/M boxes. Let's face it - it does not matter a hoot whether the hardware contains suppa 68000 chip or the tired Z80A so long as the box does what is required from it. In fact the suppa-suppa chips, though exciting to programmers, may not be much good to the user. (as for example QL and MAC)

And so I have just bought (in January) Model 4P and DWII for a detached duty for my firm and, on my recommendation, at least two individuals are buying Model4 (I have heard that 4P is now round £600 - a good bargain). The point though is that to make the best use of the Model4 or 4P one just has to move the CP/M way - but not Tandy CP/M+. Montezuma Micro CP/M 2.2 is the answer. This can read about 50 disk formats, can turn the 3 function keys into 9, permits defining arrow, break and clear keys and, what is most important, can format all sorts of drives. Thanks to this bit of software my poor CP/M box has four physical drives - the two provided by Tandy and a dual, double density, double sided 80 track drive. Total nominal storage 1,000K. You cannot get that on IBM PC. Of course you can have a hard disk but my version of CP/M also supports the Tandy 5MB and 15MB hard disks. Please don't try to point out to me that Tandy hard disks are very expensive whilst one can get a hard disk for IBM quite cheaply. All I can say is 'Shame on you Tandy'. Their biggest mistake was that after sticking a really good controller board in the box they ordered a miserable version of CP/M+ which allows only single sided 40track disks. No good for any serious application. They were hoping to sell the hard disks but, instead, many people continued to buy other boxes whilst the Tandy faithful went for a decent version of CP/M.

Anyway my first piece of software was the dear, old, tired unexciting WS. It may be so but it is damn reliable. I have now been using it for two years and not once yet have I lost either any text or any characters. Absolutely bomb-proof as far as I am

concerned. And you can do so much with it - you can even print one bit of text whilst you are writing or editing another. I shudder when I remember the trouble with the Superscipsit on Model 1, though I must admit the upgrade has improved matters a bit.

The second bit of software was SAGE accounts, which I use to run my home accounts. Both my boss and I got into the habit of noting every penny spent and I enter the transactions daily. You may wish to ask me, why? I admit that it does nothing for us apart from knowing exactly to the penny why we have not got any money. As my boss says 'How can we have any money if you have spent over £5,000 on the computer'. She is right, you know, my computer and bits (excluding maintenace, stationery etc) stand in our books at over £5,000 - but what she does not know is that I have been depreciating this at 10% annually and have written off the losses on the sale of Model1 and some programs like Superscripsit etc. As they say, buy a computer and you have acquired a deep well into which you are constantly pouring money. Nevertheless, and joking apart, (my boss positively encourages me to spend money on the computer) we don't need to save but, if we had to, we would know the areas where we could cut. I have had a spot of trouble with the monthly update with SAGE accounts and SAGE Soft have sent me a new version 5.1. This bit of software was pass-word protected and they have not told me what the pass-word was. Not much good and I was getting ready to get on to them on the blower the following day and give them a piece of my mind, but then I took SuperZap and had a look through the diskette - and there somewhere between tracks 30 and 39 it was as plain as the nose on my face.

The next bit of software which I bought was dBASEII and this was mainly responsible for my forgetting everything else. What fun I had and am still having converting anything I can think to to dBASE files and writing programs. One of the correspondents in NATGUG wants to know about anyone using a computer for betting. Well I wrote a suite of programs for pools and the programs are a real pleasure to operate, good screen presentation etc. etc. In fact they do everything I wish them to do - apart from winning the pools. It is not that there is anything wrong with my program logic - no - it is the teams which are not logical when playing matches. I ran my programs for four weeks prior to the end of the season and these were the results:

Matches played	206
My correct results	112
Sunday Express forecast	91
Sunday Telegraph forecast	87
Tuesday Telegraph forecast	93
Total draws	43
I forecast correctly	15
Sunday Express	8
Sunday Telegraph	8
Tuesday Telegraph	12

So I have done better than the experts but - you just cannot win the pools using a computer and logic. To start with, if the teams behaved logically and played according to 'form', there would be a lot of winners and winnings would not be that good. The best chances of winning are at the beginning of the season after about five home and five away fixtures but, after that, any forecast based on overall performance during the season cannot be accurate as it will not reflect fully either the latest improvements or loss of form. Basing the prediction on the last x games does not help much either as the team may have had the last x games very easy or very difficult. To get a proper assessment one would have to judge the performance together with the weighting of the opposing team. Too much programming but even assuming that one would take the trouble to do it how does one convince Nottingham Forest that they cannot possibly lose at home to a team at the bottom of the league? They say they can and they promptly prove it. If one wants to bet on the pools using a computer one would probably have as good a chance by using a program which selects 55 random numbers. I have one like that and it not only selects the 55 numbers but they are not repeating (I have told it to go and look again if the number now selected is already in the array) and finally are presented to me sorted in ascending order. No need to say that this has not won me any money either but it is fun! Like all programming.

Having most strongly denied in the past any intention of going 16bit way, when I read some year or two back in BYTE news of a board which turns a Z80 into 16 bit computer, I came across an article in February CP/M Users Magazine by someone who has got the HSC16. So what do I do - I went and bought one! At the cost of £833.75 including installation (though the supplier skipped the £0.75) I got myself the HSC16 Co-processor board. The board has 8086 processor and 256K of RAM. I could have got 68000 but, as far as I am concerned, 68000 is no good to man or beast (Hello Leon - long time no see!). I got MS-DOS and not a single program to run under it but I am buying SuperCalc 2 (now on order). What I have however is yet another RAM disk under CP/M80. So in addition to my RAM disk M: (63K) I also have disk N: (250K). You just load the WS or dBASEII and .CMD files onto N: and the data files on M: and my God - you see some speed. To get from the beginning of 16K WS text file to the end it takes an eye blink. It really is fun. There is a snag to it too - and the snag is in the shape of 5 manuals - and I detest reading the manuals. All I know so far is that, providing that my physical drives can read IBM disks, I can run IBM programs which are not hardware specific. The programs provided with MS-DOS contain IBM ROM emulation program and key board definition program which permits simulation of 42 IBM keys by using tables of one to four characters for each key. The beauty of it also is that the board can be obtained in London from:

System Science
6 - 7 West Smithfield
London EC1A 9JK

so, if the things should go wrong you don't have to ring USA but have ready local support. And if you, just like I, are not too happy with a soldering iron you can have it installed either in London or, as in my case, in your own home. I am in the age when lugging heavy computers could rapidly terminate my enjoyment of them.

Now to a few facts and figures including prices. The boards are produced in USA by Hallock System Company and come basically in two kinds. One contains the 8086 processor and the other 68000. The minimum configuration comes with 256K RAM. The HSC1686 board will accept the 8087 for number crunching routines. Any Z80 system can be fitted with them and the makers claimed that in between many computers they have been fitted successfully to TRS 2/3/4/12 and 16.

The 8086 board comes with MS-DOS v 2.11, CP/M86 being an optional item. There are several utilities - but I will describe them when I investigate them a bit. The cost is £675. 8086 uses Z80 for I/O. I have already mentioned the possibility of defining a drive as IBM compatible as our CP/M can read and write IBM CP/M86 format disks. But one does not have to have this facility. One formats the disk under CP/M80 and then using one of the utilities supplied one creates what to CP/M80 appears as MS-DOS file. This file can be defined in 64K segments so the maximum MS-DOS file I can have on my Cumana drive is between 576K and 640K. One should leave some space on such disk for CP/M utilities. When in MS-DOS this file becomes a MS-DOS disk. One can read CP/M80 directory from MS-DOS but not the other way. One can move from CP/M80 to MS-DOS and back under software control but with some limitations. When in CP/M80 the command EX16 transfers the control to MS-DOS. To return back the command is CPM80 (seems fairly logical) but the return to MS-DOS, once this been run already, is EX16 R(un). I have found that on return from MS-DOS the computer hangs if one wants to initialise the RAM disk under CP/M. One also cannot run SYSGEN if the RAM disk has been installed. The box hangs when trying to load the CP/M tracks into memory. But these were the only two funnies I came across and I have been using the new RAM disk extensively since I have got this board. The processor runs at 6MH, has 20 bit address bus and no wait states (whatever that means). The memory can be expanded to 768k. RAM disk cannot be used with CP/M+ and the correct version of CP/M has to be specified when ordering.

The second board - CO-1668 - comes with CP/M68. The specifications are really impressive: 32 bit design, over 1000 instructions, 15 general purpose 32 bit working registers, two state design, external architecture with 23 bit bus and addressing capability of 16MB combined with 16 bit data bus. (Uncle Clive must be spinning - wherever he is). The number crunching is done by NS16081 (an optional item). In addition to the CP/M68 one can also have (at some £550) OS9/68 which is a real time multitasking system. The present memory expansion available is to 1.2MB though I hear the whispers that there could be more in future. Bundled up with CP/M68 there is also a full C compiler with UNIX V7 com-

patible run time library. The cost of the minimum configuration board (256K memory) is £850.

The memory expansion boards cost £445 for 256K and £695 for 512K (my next item on the shopping list after the Supercalc). Obviously a much better option. Intel 8087 costs £225 and 16081 £250. The board, which seems to be of solid construction, can be housed in a system box. This box with power supply and a fan costs some £125.

At present my board lives on the piece of foam rubber and plays at being a vampire by feeding off the M4 power supply. No adverse effects or any other effects for that matter are apparent even though lately I had the machine working for ten or more hours a day over weekends. Once I get the extra memory I think that a separate power supply will be necessary.

Neither of the boards will run Unix etc due to lack of the memory management but, who knows ? If the board takes off well all sorts of things may happen. The boards are guaranteed by the UK supplier for three months (the usual US guarantee) but the supplier tells me that, if the board should have to go back for repair, he would help out with a temporary loan if he could.

Well this is not a cheap way to 16bit but still cheaper than buying a 16bit machine. The £1000 Model 1000 costs rather nearer £1800 by the time one buys extra disk drive, monitor, memory and what have you. And of course your whole investment in 8bit software is gone too.

The installation of the board is quite simple too. This is described in CP/M Users Group magazine of February 1985. Full and comprehensive instructions are provided with the board. There are only two bits of knowledge required and these are - where to tap the power supply and which port to use to interface the board. As Model4 uses the ports 80H upwards my supplier selected port 60H. Of course one does not require the soldering iron if one opts for the system box.

Anon.

DOUBLE, DOUBLE .....without the Trouble.

People keep telling me that the 8-bit computer is a thing of the past and that no-one should consider a system which does not have colour. Of course, there are also many people who have never heard of the TRS-80 so I am not too upset. If I was in business and my Model 4 was a tax-deductable item then I would probably be looking at a Tandy 2000 or even an IBM but since my machine is used purely for hobby purposes I have had to take a long, hard look at the situation and have come up with the following conclusions.

(a) The Model 4 is by no means an outdated collector's item.
(b) The value of my Model III and Model 4 software is far in excess of the cost of a new computer.
(c) I have learned my way around my current software - well, most of it anyway!
(d) The cost of software for the 16-bit micros is so high that it would take me at least 5 years to build up my present stock - assuming that the same or similar programs are available for these largely business-orientated machines.

Which is by way of introduction to justifying spending more money on my Model 4! Well, you try putting a word-processer, a spelling dictionary,

'Dotwriter' and a collection of fonts on one disk and you will understand why I started looking at 80-track drives.

As any good NATGUG member should, I turned for advice to Blandford and was, very gently, persuaded to look at a pair of half-height, double-sided, switchable 40/80-track disk drives. I duly dropped off my computer on a Friday afternoon and spent a pleasant weekend exploring Southern Dorset and called back on Sunday to pick up my new system. However, disaster had struck, via the local Water Authority, but in typical fashion, we were royally entertained whilst Os and Neil completed the job. Truly Blandford Computers must be a unique organisation. I can hardly imagine any other Tandy dealer missing his Sunday dinner in order to finish a job!

Needless to say, the installation of the drives was perfect but the subsequent transfer of my 40-track disks to the new format produced some problems which I thought might be of interest to someone out there contemplating the same change. I still have a large collection of Model III disks so the procedure involved transferring LDOS 5.1.4 files and TRSDOS 6.2 files. (TRSDOS 1.3 does not recognise double-sided disks but I have not used this DOS for at least 2 years.) The situation is slightly different for each operating system so I will discuss them separately.

TRSDOS 06.02.00

Tandy have suppressed the prompt for "No. of sides" on the FORMAT utility but I took a chance and tried parameters of (SIDES=2, CYL=80) and it worked. A normal BACKUP :0 :1 then also worked (although as a backup reconstruct) and the resultant disk booted and operated but only at a stepping rate of 30 msec. (Have you ever wondered what increasing the disk access time by a factor of five would mean? Absolute disaster! Not to mention the grinding noises of the drives as they methodically went through their paces!) I had previously set all the SYSTEM parameters before the FORMAT and BACKUP but somehow it didn't seem to make any difference. I subsequently received information I had earlier requested from Logical Systems Inc. and two main points emerged.

Firstly, there is a patch to set the FORMAT to default to SIDES=2.

PATCH FORMAT/CMD.UTILITY (D09,5B=02:F09,5B=00) (TRSDOS 06.02.00 only)

Secondly, after formatting the 80-track double-sided disk copy SYS0 over by using BACKUP SYS0/SYS :0 :1 (S,I). This apparently ensures that this important system file is placed on cylinder 01 and is not fragmented across the disk. Then copy the rest of the disk using BACKUP :0 :1 (S,I). A backup reconstruct is invoked which, while painfully slow, ensures that all your operating system is compacted in the lowest cylinders.

I therefore repeated the whole process and once again carefully set the SYSTEM parameters - one at a time - and on this occasion the disk not only booted but with a stepping rate of 6 msecs. Unfortunately, I am not sure whether I corrected a mistake the second time around or whether transferring SYS0 first is the magical event. My advice is, take no chances! Use SYSTEM (DRIVE = 1, CYL = 80, BSTEP = 0, STEP = 0, DELAY = NO) and copy SYS0 over first.

If you have not thought about it, a DIR :1 on a blank formatted disk comes up with 709.5K free! A bit of an improvement on 174.0K.

LDOS 5.1.4

There is no problem with formatting 80-track, double-sided disks since all the required prompts are present under FORMAT. I followed this with a BACKUP :0 :1 and all seemed well. To test the system I tried SYSTEM (SYSTEM=1) and my new operating system did everything I asked of it.

However, when the disk was transferred to drive 0 it just refused to BOOT. After discussing the problem with Leo I tried copying LDOS over to an 80-track, single-sided disk and this booted and operated but seemed to prefer to operate at a stepping rate of 12 msec. Unlike the problem with TRSDOS 6.2 which was always set at 30 msec the stepping rate with LDOS seemed to randomly adopt 6 or 12 but usually 12 msec.

I reviewed the problem again after hearing from Logical Systems Inc. There is a patch to default to SIDES = 2 when formatting a disk but this is really redundant since this is a normal prompt when formatting. However, if you wish to make the change it is

PATCH FORMAT/CMD.RRW3 (D08,88=02)

The most important step is to transfer SYS0 before the complete backup by BACKUP SYS0/SYS :0 :1 followed by BACKUP :0 :1. Once again this ensures that SYS0 is on cylinder 01 (and possibly on one side of the disk.) After this modification there were no further problems and all the disks BOOTed and stepped at 6 msec in 80-track double-sided format. This seems to suggest that the crucial step is the transfer of SYS0 to cylinder 01.

Once installed, the drives are almost "invisible" to the user and physical switching to 40- or 80-track format is all that is required. Both operating systems automatically recognise the set-up and no special software instructions are needed. (I have actually actuated the switch whilst a drive is 'hunting' the wrong format and it has then successfully read the disk. However, I do not think this is a practice to be encouraged!)

At this stage you are probably asking "Was it worth it?". In my case I have no hesitation in answering "Yes!". It has solved the problem I mentioned at the beginning and I can now relax and know that I can carry my correspondence files for many more months rather than having to sort through the files every month. The only physical disadvantage that I think I have noticed is that if you have packed both disks 0 and 1 with files then it takes longer to find a particular file, particularly on disk 1. However, this is a matter of seconds and should not discourage anyone from making the change. What is more important, however, is that you check through all your programs, particularly those utilities with their own disk drivers. I discovered that my old friend 'Super Utility 3.2' does not copy files from or to double-sided disks as there is not enough memory in a 48K machine to hold both directories. This deficiency has been overcome in 'Super Utility 4.0' which utilises the full 64K of the Model 4. Also my trusty 'Disk Index' by Bryan Mumford cannot handle double-sided disks and, sadly, this has not been corrected in the new Model 4 version. However, since all but one of my working disks are now LDOS formatted I will probably get away with using 'Z-CAT'. (I still carry a copy of TRSDOS 1.3 and the Radio Shack EDTASM to load some commercial programs.)

There was also an unexpected benefit in that I was forced to review all my files before transfer and I actually removed a vast amount of rubbish which I had accumulated over the years - some of which was for the Model I and never even operated on the Model III! This event, taken together with the greatly expanded capacity per disk means that most of my disks are now blank and ready to accept more rubbish! And so on ad infinitum as per microcomputer freak!

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(Printed on a Juki 2200 Daisywheel typewriter via 'Allwrite'.)

CPM - A NEW USERS TUTORIAL PART 3

Hello again. In the last article I explained the Transient Commands, PIP, SYSGEN and STAT. In this part I will explain some more of the Transient Commands, namely SUBMIT, XSUB, MOVCPM and ED.

SUBMIT.COM

SUBMIT is a program for submitting a batch of commands for processing. If that sounds technical and confusing, well it is, however SUBMIT is really very simple. It's use is similar to the most simple LDOS JCL file. It works in the same way as many DO commands in other Disk Operating Systems. Firstly a file of commands is created using either a word processor or CPM's ED.COM program. The file should have the extension SUB and be a pure ASCII file. An example of a SUB file is shown below.

```
DIR *.TXT
STAT A:
STAT B:
WORDSTAR
```

The above file could be called WORDSTAR.SUB and when submitted it will firstly display a directory of all TXT files on the disk, then do a STAT A: to show how much space is left on the system disk, followed by a STAT B: finally WORDSTAR is run. To execute this SUB file all you type is.

```
A>SUBMIT WORDSTAR
```

In addition to this simple use of SUBMIT, you can use a form of wildcard within the SUB file, this allows more flexibility by specifying parameters when actually submitting the file, as opposed to making fixed parameters within a SUB file. Complicated, well it's not as I hope this example will show. Firstly the file demonstrated above could be changed to the following file, which I have now called DEMO.SUB.

```
DIR *.$1
STAT A:
STAT B:
$2
```

This is submitted as follows:

```
A>SUBMIT DEMO BAS BASIC
```

or

```
A>SUBMIT DEMO TXT ED
```

The first SUBMIT example takes the DEMO.SUB file and replaces the $1 with BAS and the $2 with BASIC, thus making it actually execute.

```
DIR *.BAS
STAT A:
STAT B:
BASIC
```

What happens is that the first value on the command line after the SUB filename, is used to replace the $1 wildcard and the second value replaces the $2, and so on. This means that the second example will do a DIR of TXT files, STAT both disks and execute ED.COM, which is the CPM Textfile Editor. If $1 occurs more than once in the SUB file then it will be replaced in every case by the first value. In the unlikely event that you wish to use a dollar sign within your SUB files, for other than wildcards, then if it is followed by a number, SUBMIT will think it is a wildcard argument. To use a dollar sign in SUB files without confusing the SUBMIT program, type two dollar signs, which SUBMIT will read as only one dollar and not try to replace it with a value from the command line. CTRL Characters may also be used within SUB files, however when

creating the file in your editor/word processor pressing CTRL sequences may not actually create the necessary CTRL character in your SUB file, in my version of CPM typing CTRL S will create the carat mark used to indicate CTRL keys, and this will now allow CTRL characters within a SUB file.

SUB files may be chained together inside one another, and may be aborted during processing by pressing CTRL C. The submit program creates a file called $$$.SUB when it is working which it deletes after completion or after being aborted. In the event that this file is left on your disk it should be deleted to prevent incorrect operation of SUBMIT.

XSUB

In CPM 2.2 SUBMIT can be extended so that it will operate within applications programs, such as ED, ASM etc. This is achieved by using XSUB. XSUB should be placed on the first line of your SUB file, and therefore be executed first. Whenever a command from the SUB file is encountered during the execution of the application program it will be treated as if the command was issued as normal with the program.

SUBMIT and XSUB are not complicated programs and can be useful to carry out tasks for you, especially when booting the disk with an automatic command. Some people even rename SUBMIT.COM to S.COM to cut down on keystrokes when using it.

MOVCPM

This one is more difficult for me to understand and as yet I can see no real use for it. Maybe someone out there can enlighten me, although the enlightened amongst us probably won't be reading this article.

As I understand it many CPM users can adjust their memory size by the addition, by the addition of extra memory boards. For example the extra 64K RAM on the Model 4. To allow for this CPM needs to be told of any change and reconfigure it's size accordingly. Thus you can have a 64K, 48K or 32K CPM. This sounds wonderful to those owners of the extra 64K RAM, but as yet the maximum size of CPM is 64K, so the extra memory can only be used as a memory drive.

It is executed by typing:

```
A>MOVCPM
A>MOVCPM *
```

Either of these will release all available memory for use by CPM starting at 100H. The system will then execute without being recorded on disk.

```
A>MOVCPM 32
```

This will create a 32K version of CPM and execute it without recording to disk.

```
A>MOVCPM 32 *
```

This command creates a 32K system and leaves it in TPA (Transient Program Area, an area of low memory, where programs execute from), it then prompts for a SAVE or SYSGEN to record the system to disk

```
A>SYSGEN * *
```

This creates a full sized CPM and leaves it in the TPA for SAVEing or SYSGENing.

Obviously users of the Model 4, like me, will have little or no use for this application, except for those clever people who have realized that reconfiguring your operating system can allow a user to modify the way it actually operates. For example an automatic boot up sequence can be installed within CPM. This is acheived by changing some areas within CPM using a memory debugger, CPM's DDT is an example. Details on how to use this will come later on in the series, but as a foretaste of what is to come just to whet your appetite, I will briefly explain an autoboot for CPM.

Firstly you MUST carry out this operation on a BACKUP copy of your CPM, in case it doesn't work!!! Enter your debugger and examine the area from 0980H to 0A07H. The value at 0986H is the maximum length allowed for the autoboot buffer, usually 7FH, this value means nothing to me as my mind works in decimal still, however I will let you work out for yourselves how long the buffer is. It actually ends at location 0A07H. This means that you can have a fairly large buffer for your modification. The location 0987H normally holds a 00H, even I can understand that value, and the location indicates the actual length of any buffer installed. Therefore a 00H means that normally CPM will move straight to the A> prompt mark on booting. Changing this figure to a 06, means that a buffer of 6 bytes can now be added to the system and will execute on booting. Adding the buffer could not be simpler. The next location in line is 0988H and this is where you start to add your command. In this case I am going to add the command MBASIC, which strangely enough is just 6 Bytes long. using your debugger change the 6 values after the byte indicating the actual buffer length, ie Bytes 0988H to 098DH to the bytes for MBASIC, ie 4D 42 41 53 49 43. Then add a terminating byte of 00H after the 43 and hey presto you have an autoboot all ready to use. Note when calculating the length of the buffer do not include the terminating byte of 00H. Once you have installed your patch the go to location 0 using your debugger, normally acheived by typing GO. Then type:
A>SAVE 34 AUTOBOOT.COM
This will save your new version of CPM. If you are using Version 1.4 the you should SYSGEN before SAVEing as the SAVE command destroys the first part of the TPA. If you are using Version 2.2 then simply SAVE as above before SYSGENing the new system to the disk. If the above is not obvious or simple to you then don't worry, I only just understand it and anyway there are plenty of utilities to allow autobooting of your system; I include it as an example for all of those machine code buffs, so that they have some food for thought.

ED

The last command for this session is ED.COM, which is an editor found as standard on all CPM's. If you have a half decent word processor (Wordstar only just fits that description), then ED is of little use to you. It is however found as standard on all CPM's and therefore allows you to know how to edit on someone else's different CPM system. A word of caution, I found this program very cumbersome and difficult to use and some features don't seem to do what they should, although to be fair they probably do, it's just they don't do what I expect them to!!!!!

The program doesn't use a visible cursor to indicate where in text you are but an invisible Character Pointer (CP). This is I believe the cause of confusion and in fact when I expect to move the CP to a position, I don't actually move directly to it, only the CP is moved. To display the CP position and thus the point I wished to move to requires a second command. Confused, so was I, I suggest that you experiment on a DUMMY file until you get used to what ED is doing. Remember ED is not a Rolls-Royce word processor, only a Model T Ford Line Editor!!!!!

The program is entered by typing:
A>ED
The ED prompt is then displayed:
*
ED may be entered by typing:
A>ED DEMO.TXT
This will prepare the file DEMO.TXT for editing, it is actually called by you into the edit buffer. Let us imagine that the File DEMO.TXT contains the following lines:
This is the first line of DEMO.TXT
This is the second
This is the third
This is the fourth
This is the fifth
This is the sixth and last line of DEMO.TXT
To call a line or lines into the editors buffer we use the Append command:

*3A
This will append or get 3 lines into the buffer and thus allow them to be edited. More lines can be appended onto the first 3 by using the same format of the append command. Having overtyped your text in, for example, line 2 so that it reads:
This is the 2nd.
You can now write the text to the file by using the Write command. In fact the data is written to a file called DEMO.$$$, which is a temporary file. The operation:
*2W
Will write the first 2 lines of the buffer to the File DEMO.$$$ and move the lines in the buffer up creating the following:
File DEMO.$$$ contains
This is the first line of DEMO.TXT
This is the 2nd

The edit buffer contains
This is the third
This is the fourth
This is the fifth
This is the sixth and last line of DEMO.TXT

The original file DEMO.TXT is still unchanged.
Note that the first line of the buffer is now the third text line. Using the command
*E
Would exit the editor and save all the lines in the buffer to DEMO.$$$, then ED renames DEMO.TXT to DEMO.BAK and DEMO.$$$ to DEMO.TXT, thus creating a backup of the original file. When executing ED on a file that already has a .BAK version the BAK version will automatically be deleted. TAKE CARE!!!!! You can write lines from the buffer to the $$$ file in any order, to allow changes in the sequence of your file, all lines saved using the W Command are appended to the $$$ file.

To insert text from the keyboard use the I command. All lines MUST be terminated by the ENTER key, and then that line is appended into the buffer. To end inserting type CTRL Z. If you want to type a line that is longer than the screen line length the use CTRL E to force a line feed. These LONG lines may not exceed 128 characters.

To insert text in the front of an existing file you should execute an I command, type in your text, and with the CP at the end of your typed text, execute an A command.

Note the CP can play some funny tricks on you, for example if the CP is resting on the figure 2 in this line:
This is the 12th line.
Then carrying out the T command with a 0 value for n will display the current line up to but not including the CP, ie
This is the 1
Using a value of 1 for n, the current line after, and including the CP will be displayed, ie
2th line.

A range of numbers is used as follows
*3::7T
This will display lines 3 to 7.

The X command will create a file called X$$$$$$$.LIB, this is a temporary file for you to hold portions of text safely whilst manipulating you main text within the buffer. It can then be read back in to the buffer with the R command.

I will now give a complete list of the ED CTRL Characters and their uses.

CTRL C Normal Warm Reboot
CTRL E Moves cursor to the next line without transmitting to buffer
CTRL H Backspace
CTRL I Tab
CTRL J RETURN

CTRL L Replaces Carriage Return when using search strings
CTRL M RETURN
CTRL P Turns on the printer
CTRL R Retypes (erases) current line, similar to CTRL U and CTRL X
CTRL S Pauses the display
CTRL U Deletes current line
CTRL X Backspace to beginning of line and erase
CTRL Z Ends I Command or separates text in search strings. End of Text Marker
BREAK Stops current ED command
ENTER Transmits line to buffer, Carriage Return key.

The CTRL characters are standard ones used within CPM and other programs such as Wordstar. Now lets look at the summary of commands.

Used instead of n in the examples below, it indicates a value of 65335
nA Appends lines to the buffer
0A Appends half the buffer
#A Appends the whole file to the buffer
+/-B Moves CP to beginning (+) or end (-) of buffer
+/-nC Moves CP forward (+) or backward (-) n characters
+/-nD Deletes n characters forward (+) or backward (-)
E end ED
nFstring Find a string of characters
H End ED by doing an E command and then resume ED on a new file
I Insert a new line (in version 2.2 enter text in upper case)
i Insert a new line in lower and upper case (version 8.2)
Itext Insert characters
+/-nK Delete following (+) or preceding (-) n lines
+/-nL Move CP forward (+) or back (-) n lines
0L Move the CP to the start of the current line
nMstring Repeat string of ED commands n times
nNtext Search WHOLE file for nth occurrence of text
O Omit (leave) current file and clear the buffer
+/-nP Print n Pages forward (+) or back (-). Use 0P for current page
Q Quit and return to CPM no BAK file created but old BAK files WILL be deleted
R Read from file X$$$$$$$.LIB and append lines into buffer
Rfilename Read from the file filename.LIB and append lines into buffer
nSoldtext<CTRL Z>newtext Find oldtext and substitute newtext
+/-nT Display n lines forward (+) or backward (-)
+/-U Changes all characters inserted/appended to upper (+) or lower (-) case
+/-V Turn line numbers on (+) or off (-)
0V Display the amount of free bytes in the buffer and the total buffer space
nW Write n lines to the buffer
0W Write out half the buffer, the reverse of the 0A command
nX Copies n lines of text to X$$$$$$$.LIB. 0X deletes X$$$$$$$.LIB file
nZ Suspend the ED program for n seconds - No idea why this is needed
+/-n performs a +/- nLT command
n: Move to beginning of line number n
n1:n2 Specify line numbers from n1 to n2. If not specified then current line

In the above examples the + sign is not always used and is often assumed to be + unless the - sign is used. Note that series of commands can be used together, eg B#T will move to the first line and display all lines in buffer. There is one other command, the juxtaposition or J command, it seemed so obscure to me that I could not use it or find any use for it; go on someone prove me wrong, it takes the format
nJstring1<CTRL Z>string2<CTRL Z>string3
I dare anyone to play with it and achieve the same results twice in a row, perhaps if someone does they might like to write a letter or small article to the newsletter!!!!!

Lastly I will mention errors within ED. An error on version 2.2 or later will generate the message
BREAK x AT c
Where c is the command currently being executed and x is one of the following error conditions.
? Unrecognizable command
> Buffer is full or the string used with F, N or S is too long
Cannot execute command that many times
O Cannot open a LIB file in the R command
Occasionally CPM will detect an error, usually a disk error, and ED will display
PERM ERR DISK d
Where d is the drive on which the error occurred.

That concludes Part 3 of the Tutorial. In the next session I will discuss the last of the transient commands, which are DUMP, LOAD and ASM. I am sorry if it my articles are not appearing in consecutive editions of the newsletter, but that is due to either my copy being late or a need to save some large articles over to the next edition, well that's my excuse. Actually I have just been moving lately from Omagh in Northern Ireland to Truro in Cornwall. You needn't bother about this change though just keep sending your queries to me.

Dave Holman
160 London Road West,
Bath,
Avon

BA1 7QU

```
============================================================
REV 1.1      : UTILITY                    TITLE   : FCOPY
============================================================
SUMMARY      : Copy input file to output file

------------------------------------------------------------
DESCRIPTION :

Copies a file to another file. This is a very simple
utility that can be used as the basis of other more
sophisticated routines.
------------------------------------------------------------
SYNTAX    :

FCOPY file1 file2

    where : file1 : file being copied
            file2 : target file being created

------------------------------------------------------------
NOTES     : None
------------------------------------------------------------
EXAMPLES :

(1) FCOPY file1 file2
        simple copy of file 1 to file2

(2) FCOPY *KI *PR
        copy keyboard entry to printer

------------------------------------------------------------
COMPONENTS : FCOPY/CCC
------------------------------------------------------------
AUTHOR       : Edward Rashbrooke              : 22 Nov 83
REVISED      : Edward Rashbrooke              : 07 Apr 84
============================================================
```

```
/*-------------------------------------------------*/
/* FCOPY    : Copy utility                         */
/*                                                 */
/* Created  : 22 Nov 83 : Edward Rashbrooke        */
/* Revised  : 07 Apr 84 : Edward Rashbrooke        */
/*-------------------------------------------------*/
#include stdio/csh
#option KBECHO OFF
FILE *fp1, *fp2;
main(argc, argv)
        int argc, *argv[];
{
        int c;
        if (argc != 3)
                {
                        puts("usage : FILECOPY infile outfile \n");
                        exit();
                }
        fp1 = getfile(*++argv,"r");
        fp2 = getfile(*++argv,"w");
        while ((c=getc(fp1)) != eof)
                {
                        if (c != putc(c,fp2))
                                abort("Output file write ERROR !\n");
                }
        fclose(fp1);
        fclose(fp2);
}
```

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I am looking for an additional model so our existing disks can run on a second machine. Has anyone got a Model II for sale?

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****

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****

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