

NATGUG *NEWS*

Volume 7 Issue 6 December 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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EDITORIAL

Although this is the December issue, you won't receive it until well into January, so Brian and I wish you a belated Merry Christmas and a Happy New Year.

Rather unusually, I received too much material for this issue, so if your contribution wasn't included, it'll be in the next issue. I've only got about eight pages, so that doesn't excuse the rest of you from sending in anything for January.

I've developed an interesting add-on: a simple 8 MHz MC68000 system running programs in RAM with no wait states, with an RS-232 interface to a TRS-80, QL or whatever, and a digital/analogue converter for music synthesis. I haven't done much work on the software yet, but it should be able to produce some quite interesting sounds, given the speed of the processor. A MIDI interface could be added quite easily. The total cost was about £75.

As I predicted, Tandy's joint venture with ACT has run into trouble, and has been terminated. Prices of the 1000 and 2000 PC clones have been reduced, and they are now good value for money, if you like that sort of thing. I read somewhere that they are in fact made by Tandon, who are now selling their own range of similar machines in Europe. However, with very cheap Taiwanese machines now coming onto the market, and the likelihood of Amstrad bringing out a PC for under £500, the marketing of machines like the 1000 and 2000 is going to be an uphill struggle.

I've just expanded my QL to 512K, by replacing the 64K RAMs with 256K devices, at a cost of about £60, and a few hours work. Several other members of QUANTA (formerly IQLUG) have added additional memory to their machines in this way. It might be possible to use 256K RAMs in the Model 4 - is anyone thinking of trying it? Amstrad use them in their PCW256.

John Wellsman has formed a group for LISPers. There is a newsletter, entitled LAMBDA (for readers not yet addicted to LISP, the language is based on Church's Lambda Calculus, hence the name). Membership is £5 p.a. Enquiries to:-

John Wellsman,
294a Caledonian Road,
London N1 1BA.

The C group I am organising is gradually getting off the ground, after a slow start, following a mention in PCW. There are now have enough members for me to be able to produce the first newsletter.

Leon Heller

MEMBERS' LETTERS

TO WHOM IT MAY CONCERN: Someone from Bognor has sent me a disk. Unfortunately the GPO, bless their cotton socks, have seen fit to bend it in two, with the result that it can't be read. Since there's no covering note I have no idea what it contained, or who sent it, apart from a vague idea that someone phoned me from Bognor after my piece on buffer boards appeared. Needless to say I can't find his number.

Since I'm on the verge of parting with my TRS-80 (see letter and advertisement elsewhere in this issue), there's no point in sending me any software. The disk was a home-made floppy, sent in an ordinary Jiffy bag (not a particularly good idea), and had NEWDOS files on both sides, none of which would load. If the owner would like to write I'll send a replacement disk.

Marcus L. Rowland, 22 Westbourne Park Villas, London W2 5EA

PROBLEM SECTION

I'm a member of NATGUG and have a TRS-80 Model 1 48K and also an Epson RX-80F/T+ printer. I use my outfit to help in my other hobby of Genealogy and one of the jobs I would like to be able to do is to print a document at least 22" wide but no longer than 8" in height.

I've seen reference somewhere that it is possible to program the printer so that it prints 'sideways' characters. If this is indeed the case this would solve my problem. Have you any experience of this or can you put me in touch with someone in NATGUG who might be able to help me?

I must add that I'm not too technical so any instructions would have to be very basic. Hope you can assist me on this and look forward to your reply.

D.E. Mann,
9 Launceston Rd.,
Wigston Magna,
Leicester LE8 2GZ.

I am running WORD4WORD SUPERPLUS on a Video Genie I with 48k upgrade and DP2000 disk & controller. I have two disk drives and I normally run in double density using LDOS 513.

I cannot get W4W to run on LDOS. I have no data on patches and Premier seem to be out of business.

Even on TRSDOS 2.3 I cannot use the 'O-DIR', or any O-DOS commands.

Can anyone help with zaps to run on LDOS or to get DOS commands with TRSDOS please.

I am now running a Taxan 810 printer. Has anyone got a program to put TRS80/Genie graphics into an alternative character set?

Allan Fowke
28 Queensway
Sawston
CAMBRIDGE CB2 4DJ

Has any member any experience of using the Concept keyboard produced by Star Peripherals at Winchester, either for use with the Model 1 or Model 3/4, and if so is any special interface necessary?

Although the keyboard is primarily designed for educational use, I wish to use it in connection with my accounting programs for single key input of code numbers to be converted via the keyboard from alpha descriptions. This would avoid errors which inevitably occur in translating account names into code numbers.

If there are any other such keyboards known to any members, I should be grateful for information.

Peter Errington,
34/35 West Bute St.,
Cardiff CF1 5LH.

WANTED

Books for Model I TRS-80:

"Microsoft BASIC decoded and other mysteries" by J. Farvour
"The custom TRS-80 and other mysteries" by D. Bathory Kitz

must be in good condition.

John Mortlock,
36 Valleyfield Road,
Streatham,
London SW16 2HR.
Tel: 01-348 2047 (eve.)
01-769 1639 (weekends)

SECRETARY'S NOTES

A member sent in an add for the M3 compiler. I lost it in record time which was ironic as I wanted to buy it! Please send in a fresh copy. Yes I know my middle name is Wxxxxy. A London member has an article which explains how to convert the M1 TRSDOS/TANDY double density board into PERCOM compatible board. I will pass on his number to those interested. John Mortlock would like to hear from anybody with BASE II Printer experience - especially downloading own characters - call him on 01-769-1639.

The AGM is in March '86 when Bob Sparling can give us a date for the weekend workshop.

Talking to the Luton College's VAX. I have some very short useful booklets on "howtodoit". The two main areas are MAIL/messages to & from and playing with BASIC etc on the VAX. Remember my account is under BPain with the Password 566660. Once you are in type MAIL. There are some messages so you can then type READ 1 or READ 2 which will be the message numbers. You can SEND messages to yourself by typing SEND and following the prompts. you finish SEND by CTRL Z, and MAIL by EXIT.

I had hoped members would leave their electricity/gas readings in the messages as most users of bulletin boards cannot bring themselves to leave a message. My own readings since October are available covering gas/electricity/telephone costs if anybody is interested.

MODEL 4 FILE HANDLING

A further report on Model 4. I have been pursuing my memory-saving efforts, with considerable success. In common, I suspect, with a lot of other people, I derived my filing routines from the Model I handbook, without at that stage realising all the implications of what I was doing!

Transfer to the Model 4 eventually produced the error message 'Out of string space' in the middle of a FIELD line. A little thought made me realise that the memory was littered with field strings which were only used at the start and end of the program, that is to get initial data and to refile it as amended at the end.

There are two possible remedies for this. The first is simple but increases the program length. At the end of a filing routine add another line which throws away all the field strings thus:-

```
10 FIELD1,25ASA$,30ASB$,25ASD$,60ASE$
GET1,10:A1$(I)=A$:B1$(I)=B$:D1$(I)=D$:E1$(I)=E$
20 A$="":B$="":D$="":E$="":RETURN
```

The second is to adopt as far as possible a standard string for fielding. I use GF\$, with GG\$ etc where more than one is essential. In this way there is never normally more than one string in use. Judicious use of Z=FRE(Z\$) keeps the memory from becoming cluttered by forcing a garbage collection.

An example of this is the routine I now use to file and recover miscellaneous data in one of my accounting programs. This includes such items as the opening bank balance, the year, the week in the year, the rates and water rate, and a variety of counters for such matters as cheques and receipts. First the old version:-

```
10 FIELD 1,8ASBB$,2ASN1$,2ASN3$,2ASS$,2ASN5$,2ASN7$,2ASF2$,
2ASF3$,2ASG2$,4ASH1$,2ASO$,8ASBD$,2ASB5$,2ASQ$,4ASPT$,4ASRT$,203ASSH$:
GET 1,10
20 BB=CVD(BB$):N1=CVI(N1$):N3=CVI(N3$):S=CVI(S$):N5=CVI(N5$):
N7=CVI(N7$):F2=CVI(F2$):F3=CVI(F3$):G=CVS(G2$):H=CVS(H1$):O=CVI(O$):
B=CVI(B5$):Q=CVI(Q$):BD=CVD(BD$):PT=CVI(PT$):RT=CVI(RT$)
30 BB$="":N1$="":etc.:REM Throw away all the strings.
```

This is replaced by:-

```
10 FIELD 1,48ASGF$:GET 1,10:BB=CVD(LEFT$(GF$,8)):
N1=CVI(MID$(GF$,9,2)):N3=CVI(MID$(GF$,11,2)):S=CVI(MID$(GF$,13,2)):
N5=CVI(MID$(GF$,15,2)):N7=CVI(MID$(GF$,17,2)):F2=CVI(MID$(GF$,19,2)):
F3=CVI(MID$(GF$,21,2)):G=CVS(MID$(GF$,23,4)):H=CVS(MID$(GF$,27,4)):
20 O=CVI(MID$(GF$,31,2)):B=CVI(MID$(GF$,33,2)):
Q=CVI(MID$(GF$,35,2)):BD=CVD(MID$(GF$,37,8)):PT=CVI(MID$(GF$,45,2)):
RT=CVI(MID$(GF$,47,2)):GF$="":Z=FRE(Z$):RETURN
```

Refiling is done in a similar way to the filing of references I described in my last letter, but I think a sample will make it clear:-

First, the old method:-

```
10 FIELD 1,8ASBB$,2ASN1$,2ASN3$,2ASS$,2ASN5$,2ASN7$,2ASF2$,
2ASF3$,4ASG2$,4ASH1$,2ASO$,8ASBD$,2ADB5$,2ASQ$,4ASPT$,4ASRT$:
GET 1,10
20 LSET BB$=MKD$(BB$):LSET N1$=MKI$(N1):LSET N3$=MKI$(N3):
LSET S$=MKI$(S):LSET N5$=MKI$(N5):LSET N7$=MKI$(N7):LSET F2$=MKI$(F2):
LSET F3$=MKI$(F3):LSET G2$=MKS$(G):LSET H1$=MKS$(H)
```

```

30 LSET Q$=MKI$(Q%):LSET B$=MKI$(B%):LSET Q$=MKI$(Q%):
LSET BD$=MKD$(BD%):LSET PT$=MKI$(PT%):LSET RT$=MKI$(RT%):PUT 1,10:
RETURN

```

40 Throw away all the strings

The new one:-

```

10 FIELD 1,48ASGF$:GET 1,10:LSET GF$=MKD$(BD%):LSET
GF$=LEFT$(GF$,8)+MKI$(N1):LSET GF$=LEFT$(GF$(10)+MKI$(N3):
LSET GF$=LEFT$(GF$,12)+MKI$(S):LSET GF$=LEFT$(GF$(14)+MKI$(N5):
LSET GF$=LEFT$(GF$,16)+MKI$(N7):LSET GF$=LEFT$(GF$,18)+MKI$(F2):
20 LSET GF$=LEFT$(GF$,20)+MKI$(F3):
LSET GF$=LEFT$(GF$,22)+MKI$(G):LSET GF$=LEFT$(GF$,26)+MKI$(H):
LSET GF$=LEFT$(GF$,30)+MKI$(O):LSET GF$=LEFT$(GF$,32)+MKI$(B%):
LSET GF$=LEFT$(GF$,34)+MKI$(Q%):LSET GF$=LEFT$(GF$,36)+MKD$(BD%):
30 LSET GF$=LEFT$(GF$,44)+MKI$(PT%):
LSET GF$=LEFT$(GF$,46)+MKI$(RT%):PUT 1,10:GF$="":Z=FRE(Z%):RETURN
REM The remainder of this sector is used for storage of other matters,
SO CARE MUST BE TAKEN NOT TO OVERWRITE IT.

```

I have set this out at length because it shows that my method is not usually longer in terms of program, and may actually be shorter. You will notice that I have belatedly realised that the subsidiary string (B%) used in my previous version is not needed, the string version of the number can be directly added to the earlier part of the field string.

A small point is that a space before AS is not needed, and a space after it only if the string name starts with C. 4ASC\$ reads as ASC and you get a syntax error.

I have at last cured a bug in my version of Dennis Long's listing program. Every now and then it would refuse to read beyond a certain point, complaining that the line number was astronomically high. I found that if the line started with the letter D, as D\$="", it read the D as part of the number in line 63170 where it starts LN=VAL(LI\$). Change this to LN=VAL(LEFT\$(LI\$,5)) and all is well.

M.C. Matthews,
13 Princess St.,
Dorchester,
Dorset.

Misc notes from Peter Tootill

The Model III/4 and external disk drives.

=====

Having been presented with a very good deal, I have just changed my Model I for a single drive Model 4. First impressions are very favourable, and I can now pronounce on the matter of external drives (discussed a couple of issues ago). The facts (or so I believe) are as follows: although the Model 3 and 4 external drives are accessed (when you type 'DIR' for example) as numbers 2 and 3, they are configured (inside the drives) as numbers 0 and 1. This is due to the way that Tandy have set up the disk bus, probably, so that they could sell Model I drives to Model III owners when the Model III first came out. Having set mine up in this way I have no problems, it is just a bit strange having drives 0, 2 and 3, with no number 1. (Drive 1 has to be an internal drive). To avoid unnecessary delays, I have disabled drive 1 (using the LDOS command 'SYSTEM (DRIVE=1, DISABLE)'). This tells the system that there is no drive 1, and stops it looking for files on it.

Model 1 and double sided drives.

=====

I had a very old expansion interface (twisted pair mod and buffered cable type), and I had a lot of problems trying to run double sided drives on it. The problem was eventually tracked down to the fact that two of the connectors on the disk bus were joined. I think it was J2 and J4. If you are having this sort of problem, it is worth checking this point.

40/80 track switching on the Teac FD-55F

=====

I obtained a pair of Teac FD-55Fs, which are 80 track double sided. They were not switchable to 40 track when I got them. However, I was told of a simple mod to make them so. All you need to do is locate the place where R14 should be on the PCB. It's near a large square IC. Solder a 100 ohm resistor in series with a switch to the connections on the PCB. Hey presto, you can now switch the resistor in to get 40 track mode, out to return to 80! The normal warnings about it not being a good idea to write to a 40 track disk apply. I have done it successfully, but if you must, it is safest to start with a new, or bulk erased disk and format it on the switched drive.

This mod needs a fine tipped soldering iron and a steady hand, there's not much room and the contacts are small too.

Other makes of drive can also be made switchable, but I don't know how (any suggestions, anyone?). By the way, if you have a 40 track Teac 55, don't think that you can convert it to an 80 track just by cutting out R14. I'm afraid it doesn't work. I think it is because the head is fatter than on a 40 track drive (it should be) and it can't write the narrower tracks.

Model 4 printer problems

=====

I wanted to be clever and use the printer cable from my NEC portable (same cable as Model 100 and EEC micro) on my Model 4, so I just added a 34 way edge connector to it. It didn't work. The reason being that the cable only has 26 ways and the Model 4 uses pin 28 (fault) as well. The strange thing is that my printer doesn't! However, I added a few more strands to the cable and it now works.

Model 4 Software

=====

If anyone is interested in a very smart terminal program for the Model 4, I have one called XT4 (I also have a Model 1/III version). I also have a public domain 80 by 20 screen driver for the Model 4 in Model 3 mode, together with source code.

All are public domain, so if anyone wants a copies, send me a disk formatted - in any LDOS format, or if it's Newdos-80 make it single density).

Mod 140 Commercial software.

=====

As for commercial software, I like IFC very much - it is a 'cursor oriented directory' program. A disk directory is displayed on the screen and you can scroll through it (both ways). Files can be tagged for multiple copy or kill. This can be done in a number of ways, including (and I really like this) those that do (or don't) exist on another drive. So I can now check for multiple copies of a file and kill off spares. Other programs I have (or have used and

can recommend are the Powersoft Toolbox, Fed II, LED, and the LDOS modified version of Scripsit. The last gives most of the features I need in a word processor, including printer codes, print to screen (or disk). I will try to write more about these in a future issue, but if anyone wants to ask me anything, give me a ring on (051)429 2733.

Peter Footill

NATGUG

=====

Whither Natgug? Well I for one hope that it does keep going. However, I must admit that I find the sub a bit steep at £7.00 for 6 months. The CP/M users group is around the same for the year. Its newsletter only comes out quarterly, but is an excellent publication - properly typeset and very thick. I'm certainly not criticising Leon, he does a good job, but my vote would go for a lower sub with fewer (say quarterly) newsletters. What do others think?

Peter Footill

P C C O M P A T I B L E S

Speed as percentage of the fastest

Machine	Disk write	Disk read	Sieve	Calc	Format & copy	File copy	Av
AT&T 6300	81	80	87	89	36	39	69
Canon A200	46	83	58	59	36	30	52
Columbia	84	80	39	41	40	44	55
Compaq Deskpro	46	45	41	41	33	46	42
Corona	46	44	38	39	24	35	38
DG One	46	44	33	35	50	33	40
Epson QX16	45	80	42	44	33	57	50
Ericsson PC	46	77	42	43	33	42	47
IBM PC	46	52	40	35	40	67	47
ITT xtra	79	75	41	43	36	44	53
Kaypro 16	46	80	41	43	36	53	50
Lead. Edge	81	83	50	52	31	42	57
MPX 16	45	44	35	33	50	41	42
Mindset	45	44	25	44	33	33	37
Morrow Pivot	32	43	24	25	29	35	31
NCR Plus 4	46	80	42	43	16	30	43
NEC APC III	87	83	88	83	100	60	83
Osborne 3	44	43	28	29	29	26	33
Otrona Attache	84	80	97	100	36	39	73
Sr Partner	87	83	41	43	36	67	60
Polo	84	43	17	33	24	39	40
Sanyo MBC 775	84	83	67	69	100	49	75
Sanyo MBC 550	81	83	28	26	31	51	50
Color Fox	44	43	32	33	36	35	37
Chameleon +	81	83	35	37	17	41	49
Stearns	84	83	100	100	57	63	81
STM PC	81	80	96	100	33	51	74
Tandy 1000	46	44	34	35	33	49	40
Tandy 2000	87	83	96	100	40	40	74

Televideo 1605	43	42	41	43	27	35	39
TI Professional	84	77	44	46	44	41	56
Visual Commuter	46	53	42	43	44	56	47
Zenith 150	81	80	39	42	40	46	55
Compaq +	48	47	45	43	N/A	50	47
HP 150	74	71	51	49	N/A	35	56
IBM AT	100	100	95	89	N/A	100	97
" PCjr	32	44	32	28	N/A	46	36
" PC XT	44	59	36	34	N/A	76	50
Tandy 1200HD	44	44	34	35	N/A	53	42
TI Prolite	76	73	49	47	N/A	35	56
HP 110	62	86	67	63	N/A	N/A	69
Average	63	66	49	50	39	46	53
Maximum	100	100	100	100	100	100	97
Minimum	32	42	17	25	16	26	31
Model 4	15	35	18	14	12	18	19

PCs. The speed comparison is an adaptation of figures Byte published. Theirs were in seconds, which gave the reader an impossible task if he wanted to compare a range of machines. I got Multiplan to reduce all that to percentages. Then I got out a Model 4(III) version of the programs and tasks tested to see what I'm missing. The disk write and read were Basic programs accessing records.

IBM have obviously done a good job on the AT disks, at the cost of special disquettes and non-compatibility. The yet-to-be-announced PC DOS will not apparently bring much overall improvement in speed because the 80286 in protected mode has a lot of work to do accessing its memory segments.

The figures seem to damn the Model 4. But in reality I find that I am only rarely kept waiting; Multiplan sheets with a lot of formatting are slow, unbearably so. Drive operations are too, but most times I am expecting this and use the time productively elsewhere. And then the price . . . for the programs as well as the hardware. The cost of an IBM system-with-programs to equal my Model 4 would be an expensive way to save a few minutes a day.

The Debug bug probably only affects us continentals (are they incontinent the other side of the water?). We find the character ROM in special-character mode at start-up, not space-compression mode. LSI's use of the latter therefore gives us a mucky screen.

Superscript. I launched a few flying insects when I turned on my central heating, some of which got into my SS files. The problem is interference (presumably mains-borne, not broadcast) causing garbage in SS files. It seems incredible but SS manages most times to channel the interference not into the text but into the control codes. Garbage there is capable of sending the machine looping towards the great data dump in the sky.

I found, with FED's help, that one of the character strings SS uses for a carriage return had been garbled. Simply replacing it with a copy of its neighbouring untouched brothers cured the problem. In a proportionally spaced file, like this one, these CR strings are some 7 characters long and most of the characters are in the above AOH range. I do wonder how the Basic program in 80 Micro for saving damaged SS files coped with these control strings.

French TUG. I suggested a few contacts between Tandy user groups each side of the Channel in an earlier issue. Deafened by the enthusiastic responses, all one of them, I have unfortunately to report an equally deafening silence from Paris. The last issue of the quarterly 'L'Utilisateur de TRS-80' was dated Février 85. It was the first issue brought out by the new committee, too. But then I haven't sent much along since then, either.

Much of the scene is similar - unease about Tandy and ACT, numbers of members, Big Blue . . . Tandy shops here now have the Amstrad, which comes out here with a French keyboard (azerty not qwerty, the numbers on the top row are all shifted) almost when it does in the UK. That's the first time that has happened. Sugar knows business, and means business. Prices are generally a little higher here. French machines include Thomson (3 models), Goupil, Exel, Bull, Léanord. The French individual has gone for micros less than the British. On the other hand the four biggest software firms in Europe are French. Don't ask me what they write, though.

Articles in recent issues of the mag include a Model 100 calculator, a Mod III expert system in Basic, a JCL file to create a DOSPLUS 3.5 Basic system disk, a patch allowing Mod I Pascal UCSD to use 80-track disks, solving algebraic equations, access to video and keyboard memory on the Mod 4, running two tasks on a Mod I simultaneously. If anyone would like one of them, just let me know.

LDOS. One useful feature of LDOS buried in the documentation is the 'keep the file closed' command. Very useful when power supplies aren't too reliable. If you tack a ! on to the end of a file spec, the OS will close the file again after each access. It takes a bit longer to complete the access but I've blessed it more than once. I live in a region subject to high winds and thunder storms. There is a very effective protection system on the mains which usually involves a 2 or 3 second black-out; 'nuff said. I have a battery power supply project in hand. More news soon, if I don't touch the wrong wire.

Disk drive reliability. Micro-Cornucopia, who are not experts, just fairly big users, gave their opinion of drive makes in a recent issue, as follows, in rough order of reliability: Epson, Panasonic (= Shugart), Misubishi, TEAC, Tandon full-height, TEC, Tandon half-height, Remex.

John Negus, (010.33.75.38.61.25), Bessas, 07150 Vallon Pont d'Arc, France

NOISY DRIVES

Following the sale of my trusty Model 1 several months ago, I use the proceeds of the sale to finance the purchase of twin Cumana 40/80 track double sided drives which I have added externally to my Model 4. With 710k+ on each drive I no longer have to worry much about disk capacity - in fact I managed to reorganise the software so that I no longer have to purchase floppies for some time to come.

Ever since I purchased them however, they seemed considerably noisier than even the Model 4 internal drives which in themselves were like coffe grinders. I put this down to resonance in the case after ensuring that I was using a 6ms stepping rate and had resigned myself to the fact that there was nothing which I could do about it. However, a few weeks ago whilst using CP/M, I was horrified to see the dreaded "Drive A: NOT READY" message and even worse, "Unrecoverable Error on Drive A:". Repeated cleaning of the edge connector underneath the Model 4 and cleaning of the disk heads made no improvement. I had visions of problems on the floppy disk controller board or other expensive horrors.

Last week whilst visiting Compec 85 with a fellow member and good friend we approached the Cumana stand and met the Quality Control Manager Carl Aldous. His advice for curing the noise was to open the drive case, remove the drives from the base plate and apply a little silicon grease to the guide runners for the heads. I did this one night and the difference was unbelievable, immediate silence. Since then I have not had one failure to access the drive. A friend with a Model 4P carried out the same to his drives and he also found that they were quieter.

I see we now have a new (?) Bulletin Board for Tandy Users - the TUG board on 01-200-7577. I've just bought myself a Miracle Technology WS2000 modem (in order to increase my telephone bill!!!). I am considering subscribing to Prestel initially for a year. Do those members who use Prestel find that it is worth subscribing to for home use?

MBASIC

Whilst browsing through back issues of NATGUG NEWS and in particular, Dave Holman's CP/M - A NEW USERS TUTORIAL PART 5 (August 1985), my attention was drawn to his comment on Mbasic. He discusses the method of printing to the screen where Mbasic has no PRINT @ statement. He suggests (as in line 80 of his sample program) that the following will position the cursor to specific coordinates. If I may, I would like to add to this suggestion.

A simple method of simulating the PRINT @ (x,y) command is as follows:

```
DEF FNP$(L,C)=CHR$(27);"=";CHR$(L+32);CHR$(C+32)
```

To use this defined function (declared at the beginning of the program) all that is required is to write:

```
80 PRINT FNP$(8,25);"This is row 8, column 25)
```

David Roberts 0247-462564

A BOUQUET FOR TANDY.

As a well known detractor of Tandy's efforts to support it's computer users it gives me much pleasure to report the very willing help I have had from their service department recently.

A few weeks ago I bought a HI-RES board from a franchise dealer for my model 4P, it would not work, various phone calls later it was obvious that it was not designed for 'Gate Array' machines, so as no one else new the detailed answer I contacted Tandy's service department & was put in touch with Reg Williams who I was told understood the 4-4P differences.

He quickly confirmed that indeed the board was not the correct one for my machine, he told me to send it back with a note quoting my machine's serial number.

A few days later a new board arrived, it had a different gate array & the 'PALIO' chip had been replaced with a different type also there several extra wires added to both sides of the board, success, almost, there were shimmering vertical lines on the screen, text verticals were completely missing.

I contacted Tandy again, Reg Williams was not available so they asked me to leave my phone number & he would get back to me. Oh dear, I thought, how long will that be. First thing next morning he rang, then got called away, rang back about an hour later & after I told him the fault he said that he quite understood, would put another board on test at once on a 4P, (the previous one had been tested on a 4) & asked me to send mine back.

Two days the new one arrived together with an updated BASICG disc for good measure & every thing worked OK. Now you can't ask for better service than that can you, he was quite suprised when I rang & thanked him for his help.

As someone was complaining in the November issue that nobody had a good word for Tandy I hope this will help to redress the balance a little.
E.C.Kilpatrick, 3a Gainsborough St,
Sudbury. SUFFOLK. CO10 6ET. Phone 0787 79504.

MODEL 4 FILE HANDLING EXTRA

Since I wrote on 25th.November I have had a rush of sanity to the brain. As a result one or two of my filing routines have been vastly simplified.

The principal one is the one which files counters and suchlike, ALL OF WHICH ARE OF FIXED LENGTH. The result is that while recovery is unchanged, filing reduces to the following:-

```
10 FIELD 1,48ASGF$:GET 1,X:LSET GF$=MKD$(BB£)+MKI$(N1)+  
MKI$(N3)+MKI$(S)+MKI$(N5)+MKI$(N7)+MKI$(F2)+MKI$(F3)+MKS$(G)+MKS$(H)+  
MKI$(QZ)+MKI$(BZ)+MKI$(QZ)+MKD$(BD£)+MKI$(PTZ)+MKI$(RTZ):PUT 1,X:  
GF$="":Z=FRE(Z):RETURN
```

I have a number of others where two or three variable length strings are followed by a number of fixed length ones, and the same principle applies.

Simply put each in turn into GF\$, and then add the fixed length ones as above. To give a simple example, we have A\$, maximum length 25 chars, actual length say 15, and B\$, maximum 10 chars, actually 8.

```
FIELD 1,50ASGF$:LSET GF$=A$:LSET GF$=LEFT$(GF$,25)+B$:  
LSET GF$=LEFT$(GF$,35)+MKD$(X£)+MKI$(N)+ etc as required.
```

One of the principal gains, apart from extra working space, is that hangups due to being out of string space have vanished, and garbage collection has also ceased to be a problem.

I am sorry I was premature in writing last time, but I was too pleased with myself!

M.C. Matthews

HSC1686 YET AGAIN

The board is still a great novelty and is used mainly as a RAMDISK and I have a box with the power supply and fan for it. This did cost me £172.50 and my study now sounds like a factory - the fan being fairly noisy. The RAMDISK does speed up everything. I have discovered yet another little quirk though. Resetting the computer does make the drive N: inaccessible and one has to invoke RAMDSK.Com again but, once this command is invoked, any files which existed before the re-booting are still there (Did I already say this somewhere before?). I understood that RAMDSK.Com does clear the RAM but this is not so. I am waiting rather impatiently for the next issue of CP/MUG magazine to see how the other chap is progressing with his board.

In the office the 4P is a nuisance. Every time I try to start it in the morning (or any other time of the day) there appears a message 'not ready on drive a:'. One just presses <enter> in response and it generally works. Sometimes one gets this message again but the second <enter> hardly ever fails. And this nonsense occurs on occasions right through the day. WS sometimes tells that it has bad overlays and so on. My clerks are rather amused when they hear me speak to this miserable excuse for a computer. The trouble with Tandy machines is that there is hardly anybody who does repair them and of those who do, none seem to be interested in doing it. I rang one of the dealers and I was told that, as the machine was still under the guarantee, I should send it to Tandy for repair through the dealer from whom it was purchased. As I bought the machine from the dealer in Aberdeen or somewhere about and the thing is now in London this was hardly feasible. Nor do I wish to carry the thing to ACT Computerworld. It is not my computer! So the dealer said to me 'it will cost you £100.' I said 'lovely - good' and of course nothing has happened since. Does anyone know someone round London who can repair Tandy computers? Or for that matter someone who is interested in earning the money - wherever in the country they may be? Still in spite of my love/hate relationship with Model 4P I hope to use it for system development once I hand over my present responsibilities. I had already one successor but he has proved completely unsuitable. He did not know the first thing about accounts, was not interested in the computers ('they are tools only') and, after being shown a spreadsheet, and having explained to him the principles and help features, he came to me after one hour saying that he could not even make it add up two figures. Anyway I ought to hand over to someone after this year's audit because I will not be available to answer any questions on 1986 accounts and PW cost enough as it is without them having to search for the answers themselves. My project is to computerise some 5,000 welfare records, provide for automatic weeding, label print, print of pensioners etc. dBASEII is ideal for such a job and Model 4P can be set up in any odd corner and I can play with it, writing programs and testing them on a small data base. Once I have the thing operating to the satisfaction of the Welfare section then I think Tandy Model 4 and 15 MB hard disk would be the cheapest answer. Montezume CP/M supports Tandy SMB or 15MB

hard disks.

On Thursday I collected Multiplan (CP/M version) for the office Model 4P. The dealer has done the installation but, not having access to Model 4, he has not been very successful. The Multiplan installation part of the manual is not that clear although the manual has the reputation of being one of the best. The dealer's trouble was that he has not realised that all control codes have to be prefixed by either &D, &H or &O (for decimal, hex or octal). So the 1A, which clears the screen and despatches the cursor home has to be entered as &H1A. I am ashamed to admit that it took me some time before the penny dropped and so I went to bed rather late that night and did not go to the office on Friday.

From the short time spent playing with this bit of software I find that it is considerably faster than the Tandy version but it does not have the type ahead buffer and it appears to be missing input if one types fast. I think the problem is that this version is a 8MHz and it ought to be slowed down to 4MHz - if I only could find out how to do it. Whilst playing with the Multiplan I have prepared myself a 'thingy' for paying the salaries. In this I have adopted the method which the Army used when the pay was computerised back in 1962. The assessment of the tax is done by:

- a. obtaining total pay for the tax year based on the pay already received and the current rate of pay,
 - b. working out the total tax liability for the year
 - c. working out this month's tax by deducting tax already paid from the total liability and dividing the leftovers by the number of months/weeks remaining in the year.
- The spreadsheet is just ideal for this type of work - but beware recursion when setting out the formulas.

Funny thing happened though (although not on the way to the Forum) as I played with Multiplan. The Multiplan cursor on the menu line has the '&' inside it and so one cannot see the first character. This happens in WS and dBASEII though only on odd occasions. So I decided to play some more with the installation to see whether I could find a cure. In order to speed up the proceedings I decided to do it using my new memory. I was really astonished when on linkage of blocks the installation bombed out due to lack of memory. The installation links 33 blocks on writing the product to the disk and it bombed out on me whilst linking block H0C. So I decided to do the installation without using the RAMDISK though I have not disabled it - and there it was again: 'linking block C', 'Not enough memory' and A>. I switched off the HSC 1686 and the installation proceeded to the bitter end. It is beside the point that I have not found any cure for the accursed ampersand in the cursor - what is important is that the use of RAMDISK does reduce the TPA. Montezuma CP/M boasts TPA of 55K and I wonder how much I lose when using the RAMDISK. Both WS and dBASEII are not affected by this reduction but I must try to install WS using RAMDISK to see whether there is any effect.

Looking through 'Readers Choice' in the last issue of Mini-computer News I see that the supermicros are based either on the proprietary processors or 68000 with odd 68020. But I found one based on 8086 and this one can take 250 peripherals. 68000 seems to be a very popular chip for the more powerful machines. And to think that I could have chosen one for my magic box. In the office we have now a couple of part time soldiers helping us with the aftermath of our move and one of them is a young lad awaiting university entry in the autumn. The lad is a real wizard with the computers, programs in five languages but his forte is operating systems. So of course we talk 'computers' especially as I am starved for the company of people who know the difference between a micro and a terminal. I was interested to hear this lad's opinion of the QL. He thinks it a 'botched up product'. Let's hope that Jack Tramiel will make a better job of his bid at producing a wonder machine.

Couple of items of interest to the TRS community in the July Byte. MISOSYS Inc. is selling PRO-NTD, a program which claims to be window controller and applications manager for Models 4, 4P, II, 12, 16 and Lobo MAX-80. This program is supposed to support four nested overlay windows which can be called from application programs (Basic, C, Pascal etc). The windows can be from 1x1 to 80x24. The application manager provides address mailing label and rotating index file, appointment scheduler, calculator, card filer and notepad, telephone list and auto-dialer. The second offering is by Tandy and consists of ViaNet software which, with ARCnet, links Tandy computers running MSDOS into a local area network.

There are quite a few LANs and communications about now. All this is lumped into now popular new cry 'Office automation'. To my mind - however much I am for the office automation - the most important aspects of such automation are word processing, filing and appointments/returns etc diaries. The communications are a nice addition (if you have your office spread round the country) but the least important at least to the customer. Not so to the hardware suppliers and programmers. The computer market has matured some time ago now but those making the living out of hardware and software must not admit it. After all who would survive then? So we have new gimmicks all the time - windows, mice, Lans, 16bit, 32bit etc etc. There is tremendous processing power packed now in very small boxes but how many people or firms do require all this power? The latest bit in Minicomputers News mentioned a supermicro capable of having 10,000 peripherals. Wonderful as an exercise in technology but does anyone really want 10,000 peripherals attached to one box? What puzzles me also is how does one plug in 10,000 cables into one box?

I have gone for communications in the office though as it does not look that my successor (yet to be found) will be likely to sort out the problems on the 11/23. So I have got myself a direct telephone line and a couple of boxes (for £800+VAT). These boxes permit a link to OEM. There's a clever arrangement in that turning a switch on one box and pressing a button on the other

turns OEM's terminal into a console (cutting out mine) and he then can start sorting the things out. I have not tried it yet to see whether the thing works. But it should prove useful once I am gone and the things need sorting out or programs need alterations. We were very lucky with our box of tricks though (11/23). We had the thing delivered in 1982 and for all purposes it keeps running trouble free. The minor problems like RL02 throwing reading problems were sorted out by DEC within 24 hours (and it only happened once). I have been now pressed to think about getting another machine (from public funds) which would also be maintained by the public and my answer is 'over my dead body'. The box is doing now all we want it to do and, unless the public would provide me with a duplicate, I don't want to face a conversion. Let them do it after I have gone!

My submissions to the NATGUG seem to have got out of order. The later bits are sent off before the earlier ones and so on. Also I seem to have about four different articles going at the same time and some of them get finished before the others and so they go off first. They also take some time to write depending on the time available and the inspiration or the lack of it. So please bear with me if, after reading that my office Model 4P has been sorted out, you then subsequently find out what was wrong with it.

Reading the CP/M tutorials in the NATGUG brought my attention to the feature of CP/M which, I would think, is never used on single user computer and that is the user command. Swapping the user area is very easy - just type User n (n being number from 1 to 15) and there you are. But what do you do once you get there? The operating system boots in User 0 and there is a real desert in any other user area, unless you already put something there. I believe there are patches to CP/M which make User 0 programs available to any other user area but I don't have any of these. So to run in any other user area you have got to get some programs there. The obvious answer is PIP.COM which can transfer from one user area to the other with flag G but it only works for transferring from other user area to the current one. So how do we get the PIP to area other than 0. Actually this is quite easily done with DDT. Invoke DDT PIP.COM and then <CTRL>C. Change the user area and then, if you can convert the DDT pointers, you will know that you have 29 pages of PIP.COM in memory (TPA) and you can save it with SAVE. And there you are - you have PIP in your user area and you can pip at leisure using the switch G. Now your wife, if she is also using your system, won't find your private diary.

September BYTE today - I always look forward to it and nothing ever gets done on the BYTE day whether at home or in the office. Finally I have discovered the meaning of BASIC which is acronym for Baby's All-purpose Simple Instruction Code. Do I hear howls of protest? The argument about structured and non-structured programming has been going on for ages and somehow I fail to see a purpose in it. As one can write bad programs in any language so no doubt one also can write good programs in Basic as

well, and Basic programs can be very neat with the main program at the end and all sub-routines at the beginning - sorted out in the frequency of their access. The problem with BASIC is that it should not be the first language one learns. The ability to create variables on the fly and GOTO-ing all over the program does create bad habits which subsequently prevent people from learning a language which enforces a structure. Another bad habit created by BASIC is sitting at the keyboard with barely an outline of a program in the mind and proceeding to write the code. With effort, ingenuity and improvisation it is possible to get a working program finally - program which will do for the author what he wants but also a program, which is impossible to maintain or to be used by anyone else.

Whilst on the subject of languages I am still waiting for my Borland Pascal v.3 and Toolbox to run under MSDOS. I am looking forward to it and to some programming as I have not done any for some time. The trouble with programming at home for own use is that one does come to the end of applications one can program for. When I got dBASE II I put every possible application I could think of on it and I became reasonably proficient in writing dBase programs. Then I have not touched it for a while. Last week, in the office, I was asked to put all returns and annual events on a computer and so I have written a quick and dirty program for a clerk to input the data which subsequently, using Report, could produce a monthly diary of events. The only snag was that, when I started, I realised that I had forgotten the dBase commands and I was making silly mistake like 'Store to mvariable....' and could not see what was wrong (for those uninitiated the syntax is 'store <whatever> to <variablename>'). I got it going in the end and it has done the job but, what should have taken me about ten minutes actually required almost half an hour. The girl input 300+ records in very quick time, Report in command mode has taken care of printing monthly diaries but now I shall have to produce a menu, provide for amending records and so on. I was going to do it this weekend but instead I spent my time fighting with five years' plan and also getting out to NATGUG two further articles, which have been written some time ago but needed checking and printing.

A friend of mine has bought QL. He is an electronic engineer and has studied programming when taking his degree. The QL is now £199 at Dixon's which I think is good value (Yes, Leon, I do know that SAGE accounts program is available on QL. I read that it was going to be some months ago in Minicomputer News and I mentioned it in one of my articles). Anyway that friend of mine has bought a game on tape (microdrive) and it won't work. He has changed it already three times and it still does not work. I must have a look at that QL one of these days. I wonder how fast does the SAGE run on QL? It is very fast on Z80 and the only bottleneck is the disk access as SAGE does not hold data in memory. I have got so used to it now that I can do a lot of my data input without the drives stopping the rotation. Of course I could put the whole lot of data on the Ramdisk but for these few entries every day it is not worth writing a submit file.

Anon.

WORK AND PLAY ON A MODEL 4

by

John Miller

Several months ago, I wrote about my experience with some Model 4 software, including DOSPLUS 4, PRONTO, ALLWRITE and HiRes Graphics programs. Here is a promised report on using databases, including Little Brother, some hardware notes, more on ALLWRITE and other odds and ends.

First of all, I'd like to thank everyone who took part in my super software sale - especially the long-suffering Brian Pain and some previously unheard-of neighbors. They took part quite involuntarily, owing to a pair of transposed digits in the typing of my telephone number! However, I had many interesting chats with Members: thanks to you all for your forbearance. At the end of this article, I have a few more items to offer for sale - and this time the 'phone no. is correct!

ALLWRITE - I previously speculated about the refusal of Prosoft to sell their products here anymore (mine being bought by proxy in the States). Knowing that software protection was one of the problems, I wrote to Chuck Tesler to tell him of our new Copyright Law extensions to software, and asking if he would reconsider. Here is his entire reply:-

Thank you for your comments and suggestion. They came at a good time, because we recently decided that we would offer ALLWRITE in the U.K., under certain conditions.

Piracy was NOT the reason we stopped selling outside the U.S. (Well, it was a factor, but only a very minor one for the U.K.) The real reason had to do with the after-the-sale support. Our support system depends on the telephone, not the mail. Domestic customers mostly call for help, and we get only a couple of letters a day for help.

By contrast, overseas customers mostly write, and that costs us a lot more to handle. Further, we found that the complaint rate was MUCH higher from the U.K. than from the U.S., and the letters were, in many cases, unbelievably nasty. When we came out with ALLWRITE, I decided that being called names was not worth it (and since we were not able to make a profit on

overseas sales (because of the cost of answering letters), we just dropped such sales.

The situation with DOTWRITER is a little different: the previous distributor (RCM Computers) granted exclusive rights for Version 3.0 to a U.K. company, and that meant we could not legally sell it in the U.K. Apparently, that restriction does not apply to the current version 4.0, so we can sell it in the U.K.

Now, we will accept orders from the U.K., but we cannot and will not give the same level of support that we can give our U.S. customers: we cannot afford the cost. I hope this clarifies things a little.

Ted Gladstone tells me that he has just ordered ALLWRITE, and that he got a rather formidable declaration to sign before he did so; it amounted to saying that there was no guarantee that it would work on U.K. keyboards and machines and that he could not return the program if it did not work. This sounded pretty daunting, but I and several other people have been using ALLWRITE now for over a year with no problems at all. Reading the disclaimer in detail, it is clear that there is considerable confusion in the US as to what versions of the Model 4 are out over here. All of our standard Model 4s were built in France: right from the start, they came with a green screen and certain modifications which made them an upgrade on contemporary US models.

Further complications exist: there are two versions sold on the Continent, one with AZERTY keyboards for France and Belgium, with a different keyboard and version of TRSDOS 6 with the appropriate keyboard driver. The other is our own QUERTY machine. Some people had obviously been trying to use NEWSRIPT with AZERTY keyboards, or trying to write in French with QUERTY keyboards, as Chuck Tesler specifically states that ALLWRITE works only with "American English" (it works fine with English English too...!) If you want to have French on your screen, then get the latest version of LESCRIPT, which works with either keyboard and 'talks' French if you want it to. Over in California (let alone in Tandy Towers, Dallas), there is not much known about the rather complex hardware situation, so it seems Mr Tesler is playing safe. I can understand the confusion over the hardware, but perhaps he is over-reacting a little - but then I did not get those nasty letters, so perhaps should not judge.

Certainly he produces excellent software with some of the best documentation in the business. I'd have signed away my soul to get ALLWRITE, I think!

I'm appalled to hear about the abusive letters from the UK. Hopefully, no members of this group are responsible. Both NEWSSCRIPT and ALLWRITE are superb programs, with outstanding documentation. I have used them for years, in very exacting circumstances, and only needed to ask for advice from Prosoft a couple of times - usually to do something particularly tricky and unusual. The response has always been prompt and courteous. What sort of support do we expect from software publishers? I expect to get a disk that boots and a program that runs: I should have checked beforehand that it does the things I want it to and works on my hardware, printer included. I expect to get upgrades when they appear. If the manual is good, AND ONE READS IT, there should be few occasions to call for help. What do others think?

Yes, I have been through other Word Processors too: SCRIPSIT didn't last long; all the reviews and pages of patches in popular magazines put me off ever trying SUPERSCRIPSIT; LESCRIPT is nice (see my last article) but not for me. I did even try LAZYWRITER, which was the first to produce an 80 column Model 4 version, but I had to send it back. It must have been a very early incarnation, because several features didn't work (mainly involving the function keys - this could have been a hardware incompatibility problem). However, the main drawback was that text entry and editing were two separate modes, which I don't find intuitive. I need to go back and make corrections "on the fly", rather than writing corrupt text and having to go back later and clean it up after setting up another mode.

HARDWARE - I'm a lecturer in Geology at Edinburgh University. As well as teaching, I'm actively engaged in research and try to write one or two papers a year for publication. As well as word processing, I need to have a database of references for the many thousands of publications to which I refer, and I also need to process raw data and produce graphs etc. My current hardware consists of a 128K Model 4 with HiRes board, RS232, modem and Juki 6100 daisywheel at home, and a 128K Model 4P with an Epson Fx80 in my office. Recently, with the aid of Charles Lawson, our local electronics Guru, I put 2 80 track double-sided Mitsubishi drives into the 4P. These drives were formerly external ones on the 4 at home. The installation was quite easy, but we found that the drive cable had to be

replaced, as Tandy had yanked the SIDE SELECT pins as well as the DRIVE SELECT pins from theirs. The change makes the 4P a real workhorse, as now the ALLWRITE system disk can contain all the ALLWRITE support files, all the ELECTRIC WEBSTER dictionary, grammar and hyphenation files as well as PRONTO and lots more. Having done the conversion "blind", we now find that the Jan issue of 80 Micro has a detailed article on upgrading a 4P for 128K, HiRes board, double sided drives and more!

Beware of the 40 track Tandon half height drives extracted from the 4P. They appear to have ben hard-wired in some strange way, so that they won't work together outside the 4P, but do work OK singly. Thanks, Tandy! Incidentally, all the 4Ps sold in Britain, as far as I know, came directly from the US, rather than France, but there are two quite different board versions, the later one using gate arrays. Even more confounding, I see from Northern Bytes that Tandy changed the disk controllers to 1770 and 1773 Western Digital chips from the older 1791 and 1793 ones. They need different timing loops for software control, and appear in the latest 4s and 4Ps: Northern Bytes give patches for Format in TRSDOS 6.2 and LDOS. If you have been suffering I/O errors, this could be one cause.

Three new half-height 80 track DS Mitsubishi drives (80/40 switchable) went into the Model 4, and one 40 track single side drive for compatability with disks sent to colleagues. This was quite a job, as the fixing screws for disk drives are not standard from manufacturer to manufacturer. However, I'm very pleased with the results. Previously, I had twin 80 track DS drives as external drives, and booted up in 40 track, switching to one of the 80 track drives as SYSTEM by software. The direct bootup is much neater. WATCH OUT - either if you have external drives or 4 drives internally. The first two drives, Logical 0 and 1, are attached to the controller board internal card edge and addressed as 0 and 1 (by the usual Tandy whip-out-the-pin method, side select missing also). The next pair, Physical 2 and 4, are attached to the external bus card edge. This is only tinned, and after a few weeks, needs cleaning, as per the old Model 1 Expansion Interface days! TWEAK, a special surfactant contact enhancer used in HiFi, works well here. Also, the way the controller is set up, you must address your two external drives as Logical 0 and 1, not 2 and 3 as you might think, so set the program blocks in the drives accordingly.

PRONTO AND ALLWRITE - last time I wrote, I reported that although you could call a PRONTO window from ALLWRITE, the computer froze on return to ALLWRITE. It turns out that the problem was a stack conflict in TRSDOS 6.2, and the following patch not only enables PRONTO and ALLWRITE to work together (heaven!) but is considered by LSI to be mandatory for TRSDOS 6.2, as other applications may have similar conflicts.

PATCH BOOT/SYS.LSIDOS (D06,2C=40:F06,2C=60)

After applying the patch, you must reboot for it to take effect. NOTE: this is for TRSDOS 6.2 **ONLY**, no other versions. Having a diary, card-file, calendar, calculator etc available in the middle of writing episodes is fantastic, and you can import and export information from windows to word processor and vice versa. This is the sort of thing that computers were made for, surely!

DATABASES - I use databases in two main applications. First, to keep a bibliography of scientific papers used in my work. The requirements here are to be able to rapidly access a reference or group of references by author and date or by subject, to print out lists of references in selected subject groupings, and, finally, to be able to access the references directly from the word processor. Bibliographic citations are often lengthy and complex; I don't want to type them twice. I want to be able to use the powerful "GET" command of ALLWRITE to pull in the references from the database file directly into the reference section of a paper I'm writing. So the database file has to be in ASCII format. The fields I use are AUTHOR, DATE, TITLE, REFERENCE, KEYWORDS and TERMINATOR. The keywords are a line of key word descriptors separated by commas, so that they can be examined by an INSTRING type search. The terminator is simply two full stops as the last data field: by using this, I can tell ALLWRITE where to stop the GET, so I don't get several hundred references each time! Incidentally, the double full stop marked End Of Record in DATAWRITER files, so I adopted it for LB. Since LB knows the length of each field, it has no need of an EOR marker.

The second application is in our University Extra-Mural Department, which has a huge number of different account numbers and a very large sum of money coming in and out each year. I set up a Model 4 there for accounting and word processing. There is no way we could use a standard accounting system package, so I simply used a data base to generate two

master files, one for income, one for expenditure, with every record a single transaction, from 5p up to thousands of pounds. We need to be able to check entries quickly in case of queries, but don't need running totals and balances during the year. In fact this is impossible, because the University Accounts Dept. ultimately handles the cash, and throughput of cheques etc can lag by several months. At the end of the financial year, however, we need to produce a report with subtotals for each account in both income and expenditure, as well as consolidated totals. Final reconciliation can be done by VISICALC or MULTIPLAN if need be. Datawriter coped very well here, and now LB is taking over.

Both I and the University started off with a Model 1 and Maxi Manager (remember that?). It was a hybrid BASIC/Machine code system. Very slow, and often used to freeze up during sorts (which took several hours), but it did work - ultimately, after garbage collection had taken place for ages. It wasn't too good for the references, however, as these involved long strings and thus more calls for the garbage collector. Then along came DATAWRITER, first on the Model 1 and then Model 3. Compiled BASIC and very much faster. I found the system very good for both uses. The ASCII files could be "got at" easily, storage space was reduced by using sequential files with variable length internal sub-records - important for references, as author's names etc can be as short as 5 characters or as long as 150. If you allocate the maximum likely field length each time, you waste a lot of disk space. The various DATAWRITER modules gave pretty complete control, allowing sorting, merging, restructuring, sophisticated selecting, calculating and a good, flexible report system. Drawbacks included a lack of menu operation: you had to know what each module would do, and any editing or other manipulation of the database meant the computer re-wrote the whole file, instead of altering it in place. This meant that secretaries etc sometimes managed to "loose" files when moving them about, despite my best efforts to make a fool-proof system. The ACCESS module gave extremely quick access to a record (half a second for any record amongst thousands) by using an index system, but only one field could be indexed, and that was a literal search. The ENTRY module was limited in the number of characters per field (usually too short for my bibliography), but you could make entries of any length using a word processor - but no error checking was done with this method. However, I liked DATAWRITER and stuck with it until...

LITTLE BROTHER came along for the Model 4. American software firms seem to compete in finding excruciating names for their products. I don't mind calling it "LB", but object to having to tell someone I'm using my Little Brother! However, it is an excellent program, and I have now converted all my databases to it. The file format is sequential ASCII, like DATAWRITER, but differs in that the fields are pre-defined as a fixed length, and unused character spaces are padded out to the field length with binary 0s. A simple BASIC program did the conversion. It does mean, however, that files grow in length considerably, but alterations to records can be done "in situ" so you don't have to live dangerously and re-write the data file after each operation. You can have 64K of records in a file and 1K of characters per record.

You need 128K, TRSDOS 6.2 and at least two drives to use LB. (There is also an MSDOS version, data file compatible with the TRS80 version). You boot up on a STARTUP diskette, which craftily loads a core image of the SYSTEM into the alternate banks and uses it as SYSTEM drive: your two hardware drives become data/program drives 1 and 2. This makes for very fast I/O and is quick to load up. LB is menu-driven, with attractive screens, using reverse video, function keys and other Mod 4 features. There is always a context-sensitive Help available, and selections from the main menu or mini-menus at the bottom of the screen use either a reverse video cursor for selection or tapping a single key where appropriate. Very friendly and easy to use. With ordinary Model 4s, you need a RUNTIME disk in drive 1, with data in Drive 2; the runtime disk contains the appropriate overlays for each function. Creating new files, screens, reports etc needs the CREATION disk. With my new 80tr DS drives, all the programs are available on the one disk, so no swapping is needed.

You can have up to 10 different screens defined for display of information from each database; they are produced with a full screen editor and you can use reverse video highlighting etc to get classy results. Similarly, you can have 10 different INDEX files active, each with a customised select/sort combination for your rapid access to data. The sorting and search modules are very fast and comprehensive, and once indexed, records are quickly up on screen or sent to the printer. A very useful feature is an ADD index, which you can turn on or off, to tell you what records have been added but not yet inserted into the other indices. I'm very impressed wiith the report module, which is extremely flexible;

virtually any format can easily be designed for printed reports, including labels (many across if you want), and even form letters. Printer codes can be sent at any point, so, for example, I can print the Author, Date and Title files of my bibliography in condensed mode and the reference in condensed italics. Classy! System date, time, page no. and filespec are automatically available for report Headers and Footers if and where needed.

LSI have produced a first support utility package for LB, including a manager which allows new fields to be added, unallocated records to be stripped, field types changed in position and type and so on. Molimerx supplies LB in the UK. I must say it is the best system I have found for many years. Be warned, however: all good databases need lots of disk space. LB works superbly on hard disk or on quad density floppies, but could be limiting if you have large amounts of data to hold on a 40 track disk. There are a few features which I hope to see added, such as a repeating field that would insert the previous entry at a key touch. However, a real labour-saving feature is the RUN AUTOMATICALLY feature. You simply teach the program how to do the chores such as sorting, creating and index and then using that index to produce a printed report, by going through the key presses and responses as you carry out the operation. This procedure is saved in a file, and thereafter you simply give LB the filename, switch on the printer and go and do something else. Now if they could come up with a system that actually entered the data, that would be something. Or I could employ a secretary.. but that's another (hard luck) story! A point to look out for with the automatic run: it is the only save operation not prompting for a drive spec: it saves to drive 0, which of course is in RAM, so when you power down and run automatically next time, you get a file not found message. No wonder! The answer is to add a line to the Startup JCL which write protects the SYSTEM disk after it is established in RAM.

PLAY - well, that was work, and now for a game. Apart from ZORK, my only computer game is TOURNAMENT CHESS by Rapidynamic from Micro-Labs Inc, 902 Pinecrest Drive, Richardson, Texas, 75080. It uses the HiRes board (there is a Model 3 version also) for a very pretty display. See the screen-dump, which I hope Leon has some space for. You can run it in LoRes mode, but the display is almost unintelligible, owing to the asymmetric graphics blocks on the Model 4. Using the arrow keys, you move a cursor to the piece you want to move, "hook" it by pressing the

space bar (the computer beeps), move it to where you want it, and "unhook" by pressing enter. Provided it is a legal move, the computer politely beeps again and displays its devastating thoughts as it finds out how to mate you in three moves. Once decided how to kill you, it flashes its piece, moves it, beeps again and you are cornered. Well, I am. The damn thing has beaten me every time now - but I'm a novice player. There are seven levels, including Tournament, with built in clock (adjustable timing). Moves can be backed up (this is a sophisticated way of cheating, which I use often); games can be saved on disk; boards set up to your specification, a game history run through, screen sent to printer, kibitz moves made, notation style changed, opening styles and mid-game zeal set, games reviewed in animation, and so on. It apparently plays a pretty mean game, as some of my shame-faced so-called "expert" friends have had to admit. All this for \$49 - definitely recommended, even if you just want to see some smooth animation HiRes graphics on a Tandy machine. Oh yes - it comes on a free operating system called RAPIDOS (TRSDOS 6 compatible), which boots while you blink!

PROGRAMS AND HARDWARE FOR SALE

* * * Tel: 031-667-5938 * * *

Now for the commercial section. Owing to a mailing mix-up, I have an extra copy of a very nice windowing calculator for the Model 4, which works on TRSDOS 6.x and DOSPLUS 4. It is called SUM-UP - you may have seen it advertised in 80 Micro. The program hides itself in HIMEM and you run your word processor, BASIC or whatever. If you want to do a calculation, in DOS or any application, press control C and the calculator appears in a window. You can do standard arithmetic operations, add text labels (decimals align automatically), send all calculations direct to the printer and convert from dec to hex and back. The latter is very handy when in BASIC. X exits to your program with the screen restored intact. If you don't want PRONTO or haven't got 128K RAM, then Sum-Up is really useful - and it works on DOSPLUS 4, whereas PRONTO doesn't. £22 including postage.

DATAWRITER - database program described above. I have Model 1 or 3 disks for this; runs on most DOS. £35 including postage.

BASCOM - Microsoft's BASIC Compiler for TRSDOS 6.x or DOSPLUS 4 (I have Dosplus patches). Current standard compiler for Model 4 BASIC - compiles HiRes GBASIC programs as well, a fact not generally advertised. Comprehensive manual; cost over £100 - only **£47** including postage.

DOTPLOT - a Tandy program for the Model 1 and 3 and Tandy printers: never appeared in the UK. Machine code driver and set of BASIC subroutines for adding to your own program to give HIRES graphics plotting commands on suitable printer (MUST BE TANDY - Line Printers VII or VIII, DMP 100,200,400). Standard plotting commands are implemented, including text, which can be printed sideways, upside-down etc,etc. Easy to produce business graphs, charts, math plots and "art". Comes on cassettes but all routines can be saved on disk and used under DOS. Very nice: I can't understand why it wasn't released here. **£11** including postage.

DOS RANDOM ACCESS & BASIC FILE HANDLING - Vols 1 and 2 by Muller; DSC Publishing, U.S.A. Two books with all the tricks for Random files, and a series of very useful BASIC programs, illustrating menu management, sorting, hashing, indexing, relational data bases, sequential searching, binary searches, printing, file maintenance, linked lists, blocking records, spanning across sectors etc etc. Programs in standard MICROSOFT BASIC for TRS80, inc. Model 2, or CPM. Using these routines saves hours of coding in your own programs. **£11 each**, postage included.

MODEL 100, 24K, complete with power supply, all manuals; includes BUSINESSPAK+ from PCSG, David Lien's Model 100 book and a printer cable. The BUSINESSPAK software comprises an album with 6 cassettes: WRITE+ (versatile print formatter for TEXT files - centering, underlining, justification, headers, footers and much more; sends embedded printer codes), EXPNS+ (a kind of spreadsheet, designed for expense-keeping, but adaptable for other purposes), PUT+ (simple database manager), SORT+ (rapid M/C code sort for TEXT, EXPNS and PUT files), TELEX+ (Telex and EMAIL using the 100's TELECOM package), GRAPH+ (pie, bar and line graph generator on DMP printers and the colour CGP115). The Model 100 has the US ROM fitted, not the standard UK one, so it will work with all the extensive US software packages, the Tandy Disk controller and the listings in past 80 Micro, including the M/C code ones. **£255 complete**, including carriage.

























































Telephone me first if you are interested in any of these items or want to chat about anything in this article - I'm in most evenings. Next month I hope to write about ZBASIC 3.0, a new "interpilr" whose source code can be ported to IBMs, Apples, Macs, CPM and other machines. First impressions are very favourable, but I'm going to play with it over Christmas.

Seasons Greetings to everyone!

Dr John Miller, 28/5 Causewayside, EDINBURGH EH9 3JW, Scotland.

My turn. P/Q2-Q4

Black

Turn 2

Skill Level 1

Search depth:

Press I for Instructions

O:close 2 5

N:desc (Q4) J 5

Your turn:

White

WORDSTAR and EPSON PRINTERS

Further to David Robert's above named item in the November issue, Epson issued a paper on this very subject some years ago. From it, I supply some further suggestions which might be of help. Incidentally, my CP/M (2.2) is NOT from the Tandy stable but I don't expect this to invalidate what follows.

There are two ways of making the necessary adjustments, the first of which (using Install) I propose to ignore as the alternative is so much simpler. This uses DDT which, providing you know the relevant addresses, enables you to make the changes very easily. The unused commands to which David referred (plus the 4 user patches) enables a total of ten Epson commands to be permuted to meet personal requirements. Wordstar's commands ^B, ^D, and ^S are unaffected. Epson's suggested mix is given below.

^B gives TEST UPPER CASE : test lower case) not much
^D gives TEST UPPER CASE : test lower case) difference?
^S gives TEST UPPER CASE : test lower case

LOCATION ADDRESS	WORDSTAR COMMAND	WORDSTAR USE	SUBSTITUTED CODE	ADAPTED FOR FOR:
1. 06DD	^PY	RIBBON	03 1B 2D 31	UNDERLINE ON
	TEST UPPER CASE : test lower case			
2. 06E2	^PY	RIBOFF	03 1B 2D 30	UNDERLINE OFF
3. 06B5	^PA	CHARALTR	03 1B 57 31	ENLARGED ON
TEST UPPER CASE : test lower case				
4. 06BA	^PN	CHARSTND	03 1B 57 30	ENLARGED OFF
5. 06C4	^PV	SAME USE	03 1B 53 30	SUPERSCRIFT ON
6. 06BF	^PT	SAME USE	03 1B 53 31	SUBSCRIPT ON
	TEST UPPER CASE : test lower case			
7. 06C9	^PD	USR1:	02 1B 54	SUPER/SUB OFF
8. 06CE	^PW	USR2:	01 0F	CONDENSED ON
	TEST UPPER CASE : test lower case			
9. 06D3	^PE	USR3:	01 12	CONDENSED OFF
10. 06DB	^PR	USR4:	02 1B 45	EMPHASISED ON
	TEST UPPER CASE : test lower case			

(NB: As you can see, there is no 'OFF' for 10 under this method.)

For those unfamiliar with DDT:

Boot up CP/M and PIP DDT to your Wordstar disk. Type DDT and then 'I' followed by the WS.COM file you wish to alter. Type 'R' to load it and, although this rarely varies for this purpose; note the file length when DDT provides it. For example:

```
DDT
DDT VERS 2.2
-IWS.COM
-R
-NEXT PC
 3F00 0100 = 63 (3F00) - 1 (0100) = 62 pages
          (Note the 62 for later SAVE command)
```

I am interrupting my DDT instructions to draw your attention, (as if you hadn't noticed!), to the different typeface now appearing in this print out. It commenced with the page number on the previous page and will continue until the printer is switched off. It is double-printed (by reversing and reprinting the WHOLE line) but the compressed type itself is not immediately identifiable in the Manual except, possibly, as one of the line space settings from ESC A. Can anyone help?

Back to DDT. Type 'S' followed by the locations given above to make the changes. If the byte revealed is not correct, simply type the correct one and then 'Return' to bring up the next byte. Type '.' when changes for each location have been made and move on to the next one by typing 'S'+location. When finished, exit by CTRL-C and then SAVE the file back to the disk including the proper number of pages, thus: SAVE 62 WS.COM. However, whilst this program can be used for printing to the end of the last paragraph, another program on another disk had to be used for the rest of this item.

In the alternative set-up below, Emphasised now has an OFF setting; both commands are in addresses 5 and 6. The other addresses can be loaded as you wish. My selection is as follows:

LOCATION ADDRESS	WORDSTAR COMMAND	WORDSTAR USE	SUBSTITUTED CODE	ADAPTED FOR FOR:
5. 06BF	^PT	SUPER/ON	02 1B 45	EMPHASISED ON
	TEST UPPER CASE : test lower case			
6. 06C4	^PV	SUB /ON	02 1B 46	EMPHASISED OFF
7. 06C9	^PQ	USR1:	02 1B 4D	ELITE ON
	TEST UPPER CASE : test lower case			
8. 06CE	^PW	USR2:	02 1B 50	ELITE OFF
9. 06D3	^PE	USR3:	02 1B 34	ITALICS ON
	TEST UPPER CASE : test lower case			
10. 06DB	^PR	USR4:	02 1B 35	ITALICS OFF

The ease of using DDT enables wide experimentation with the many codes shown in the Epson Manual. They usually combine CHR\$ values and ASCII characters, both of which have to be converted to Hex before being inserted by DDT.

For amateurs, like myself, the easiest way to convert to Hex is to use the Manual's Table of English Character Codes. CHR\$ values appear in the small square in the bottom right of each character box. Hex codes are found by combining the Hex value at the top of the relevant column with that for the relevant row. E.g. CHR\$(27) is 1B. Where the Epson code is an ASCII character, within quotes, simply find the character in the Table and read off the Hex code as before. It should be noted that, as in the above examples, the byte in the first column tells the computer how many bytes the Epson control code actually contains.

A future article is planned which will provide alternative WS printing programs. This will give Hex codes and locations to enable you to produce a PRINT MENU which gives the correct codes.

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