

NATGUC

NEWS

Volume 9, Issue 1.

June 1987

OFFICIAL JOURNAL OF THE

National

Amstrad, Tandy

& General

User Group

INFORMATION ON THE GROUP

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

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

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

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

Public domain software libraries are maintained, in five separate collections: Model 1, Model 4, CP/M, Amstrad and MS-DOS. Names of the appropriate librarians are available from the Secretary. There is a copying charge of £1.00 per disk or tape. (also see Vol 8, Iss. 10)

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

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

Newsletter Editor/Publisher

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

P.R. Officer

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

Secretary

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

Treasurer

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

CONTENTS

Information on the group	2
Adverts	4
Editorial	5
Reader's Forum	8
Scripts to Pure ASCII	15
MEMDISK	18
More on the XCL8er Board and Upgrade	21
And More, Faster and Better the H.I.Tech Way	29
CED - An MSDOS Public Domain Editor	34
BASICally Better	36
FORMAT/CMD and the DCT	38
Nostalgia	45
Notes from the P.R.O.	49
Treasurer's Notes	51
Sex Notes	52
Note on the Megabyte RAM Board	55
A Request for Words of Wisdom	59
Local Club News	60

PUBLIC WARNING. Please wear Toe-Tectors whilst reading this issue.

ADVERTS

FOR SALE:- Model IV manuals complete with TRS-DOS 6:01:01 disk: £7.00 + £2.35 for P&P. 2 off disk drives complete with cases and power supplies - These are TEAC FD50A's (40T, S/S/ D/D) and are EG400's as supplied for the Video Genie: £20.00 each, purchaser to arrange delivery. Model I, RS-232-C software, comprising, manual + 6 off cassettes in folder: £5.00 + £1.30 P&P. MACRO-MON, machine code monitor/debugger for the Model I, complete manual and disk: £5.00 + £1.30 P&P. CASIO FX-720 Personal Computer (same as the Tandy PC-4, but with added function key), system includes 4K & 2K RAM modules, and FA-3 cassette interface, all manuals and cases, still in boxes, as new: £90.00 - Purchaser to arrange delivery. Enquiries for the above to:- Gordon Collins, Editor.

FOR SALE:- EPSON FX-100 printer 160 CPS, 15" carriage. Upgraded select panel - 16 print functions, IBM/APPLE compatible, 2 spare ribbons. Very good condition:- £250.00... TONY GERRARD, 11 Forge Valley Way, Poolhouse Farm, Wombourne, Wolverhampton. WV5 8JR. Telephone: Wombourne (0902) 896311.

FOR SALE:- Unwanted Video Genie, equipment and some model I/III software. Make an offer! all reasonable offers considered. You pay carriage. Will sell separately.

VIDEO GENIE, with 48K RAM, Sound board, and GNOMIC ROM (lower case built in).

CROFTON 9" monitor.

CULMANA twin disk drives, in box with power supply.

GNOMIC DP 1000 expansion box with density doubler, disk and centronics ports.

GNOMIC RS232 serial box.

Video Genie printer port.

Software:

SPACE INVADERS on cassette.

TEXPRO word processor on cassette.

DATA WRITER, model 3, on disk.

POWERDOT II. model I/III on disk.

MODEM 80. model I/III on disk.

AJEDIT. model I on disk.

POWERMAIL PLUS. model I/III on disk.

PAGEFILE 2.1. model I/III on disk.

Contact: The Rev. R.S.Wilson, Greenside Vicarage, Ryton, Tyne & Wear. NE40 4AA.

Phone: (091) 413 8281.

EDITORIAL

To all the people who sent in articles for the Newsletter, thank you very much, from me, and I am sure that will be echoed by all of the membership. Look at the size of the Newsletter this month. I have returned all disks that were sent to me, even ones sent with no stamps on the envelope, I hope that you now have them back.

Thank you for all the telephone calls and letters, I have now replied to all letters. I detect from the telephone calls and letters received, that there is a new enthusiasm within NATGUG, we seem to have made the Model 1's awake from an hibernation. This is now being written on 4th June 1987, that is before you have received Volume 8, Issue 11/12, it is at the printers at this time, as promised. (arrived today 5-6-87, yes I do get sent a copy, it is my way of knowing when it should have been received by the membership)

Update. Model 1/111 Library Listing. The data has now been compiled and printed out on fan fold paper, those who have requested and paid for a listing, should now have received same. Your committee came to the conclusion that it would be uneconomical to have a number of copies printed. A further point being that any list, when printed, would very soon be 'out of date' by its very nature. Another point is that of the advertised cost of the listing, £1.49. This does not cover the cost of printing that list, it is 22 pages long. Please be advised that as of now, the price of the listing is £2.00. The listing is now kept as a (at the moment) 49.5K file in LeScript format, which hopefully will be kept up to date. In the last Newsletter, (Vol. 8, Issue 11/12, page 23) members were advised that a copying charge of £1.00 was now being asked for per disk or tape. Could we please ask that this £1.00 be sent as a coin, taped to the disk or tape that you send, thank you.

Update. As promised: re Molimerx For those members who had a letter from Mr. Harding of Molimerx, or for those that heard through the 'grape vine', of his closing down on the 30th June 1987, your Secretary wrote to Mr. Harding, he replied as follows:-

....I'm sure that it goes without saying that if I could help the Group, I would. I still well remember the meetings back in '78 and

'79. And how long ago was it we gave free tapes to the Club ? Lovely old days - I only stopped lecturing to members when I realised they knew more than I did !

Anyway, I am afraid that it is simply not possible to hand on either documentation or masters. Believe me I would like to make money on either and when you think that we have 5-600 programs it could be not inconsiderable. We had our solicitors get counsel's opinion before sending out the Newsletter and apparently it is just not on. With all best wishes for the groups future - Yours sincerely, A.J.Harding. (The Committee have not as yet, left it at that)

For those members who have never ventured to purchase items from across the 'pond', I can assure you, from my own experience, that it is very easy when using plastic money. Remember for ACCESS, use the word MASTERCARD; for BARCLAYCARD, use VISA, and include an expiry date.

Update. BLANDFORD '87. Please make a note in your diary for Sunday, 16th August 1987. More details to follow.

Update. Vol.1, Issue 6 Newsletter. Thank you members, your committee is now in possession of a copy. All members who requested back copies should now have received these.

Update. Swindon Oct. '87. The Wiltshire Hotel has agreed to quote an all-in price to those people wishing to stay over until the Monday, please ask when booking.

Update. The promised article about the Model I Double Density Adapter Kit has arrived. This is three pages of A4 paper from an American Magazine, Computer Digest, Dec. 1985, which includes schematics and photographs. This article, for which we have permission to distribute, shows how to convert a Tandy Double Density Kit, to operate as a PERCOM Doubler. The committee have decided that this would be too involved for us to publish in the Newsletter, so would those people who are genuinely interested, please send your request, to me please, Editor. Together with a large S.A.E., and include two 20p coins (40p) taped to some card, (this to cover the cost of photocopying) we will hope to return a good photostat copy. No S.A.E., no return. Thank you Nat. for the trouble you have taken.

There does appear to be a large number of people within NATGUG who have said to themselves, "I could not write an article good enough for the Newsletter". Three articles which have appeared within the last/this issues, were written by members who had said just that. I defy anyone to be able to pick them out, so come on, lets all have a go If you feel that there is another 'force' beyond your control, that is stopping you from submitting something, and that I am, maybe, able to correct, please, I need to know ! Members are asking for write-ups/advice on software that other members use, good or bad reports on that software will be published.

Another syndrome that is happening, is that members write to me asking if articles (no theme is given) would be acceptable for publication, I am sorry I don't know. Everything is acceptable, please. Possibly after being in this post a little longer, I will form ideas about what the membership does specifically want in the Newsletter. For the moment, please send everything in.

It has been pointed out to me, that I should tell the membership (but I thought I had somewhere) that I use LeScript to produce the Newsletter, those that then use LeScript, can send their submissions in, in that format, on disk. As said before, any format is acceptable, but obviously, if sent on disk, then this saves me a lot of typing.

Scripts!t on Model IV. For those members who have recently asked about using European characters, part of an answer to a letter in May '87 80 Micro, page 12, (which also carries a whole load of letters about Scripts!t), suggests the use of a program which appeared in 80 Micro, Jan '85, page 60.

Some facts and figures. Research figures suggest that there are 325,000 Model 4's, 4P's and 4D's alone, worldwide. Tandy are still selling somewhere between 500 and 4,000 Model 4D's per month. Recently Tandy (USA) officials, insisted that they plan to provide service to TRS-80 owners indefinitely. Misosys expects to sell 5,000 units of LDOS 5:3 by the middle of next year. Logical Systems expects to sell 100,000 units of LS-DOS 6:3 by fall '88. .. Dennis Brent of Powersoft, "The Model III/4 is an excellent computer ... We're still going to be here, and we will support you. The technology for 5.25" disks isn't standing still. Kao Corp., and several other companies, are working on

floppies with capacities as high as 50MB. Toshiba now has a 4MB floppy drive.

Can any member confirm the meeting of a group in the grounds of the Northwick Park Hospital, LONDON ? Details to me please.

To those members who have expressed an interest of late in Model I enhancements - an advert in issue 40 of MICRO MART, page 39. Hartlepool Computer Services Ltd, tele: (0429) 869988, are offering Tandy Model I's @ £40.00, and expansion interfaces @ £45.00. In the same issue (page 44) is an advert (0444) 414484, for Winchester disc drives 6,66Mb @ £75.00. Yes I would like one, if some member could say that they would interface with my Model IV please, or what other problems, if any, would there be ?

Your Committee has received from Mr. E. A. Russell of Tandy U.K., the following, "..... as far as I am aware, there would be no problems in your reprinting articles from discontinued Micro Computer News". Details of NATGUG have been circulated within Tandy U.K.

Thank you again for reading NATGUG Newsletter and for taking an interest in us. Gordon Collins, Editor, **.

READER'S FORUM

THIS IS WHERE YOU ARE INVITED TO ASK ALL THOSE QUESTIONS THAT YOU HAVE NEEDED ANSWERS FOR, OR TO MAKE ANY COMMENTS, OR ???

Dear Sir, I was amazed that there was bare mention in the April Newsletter of the Swindon Demo of that 1-meg Model I board. Since we are also hearing that, "the Model I's are still very strong", how could such epoch-making news be treated so casually ? I'm surely not the only one who can hardly wait to hear whether, and at what price it can open up a new epoch for them. I hope the next issue doesn't pass without more details about that 1-meg board.

As a Model I user, could you tell me why my RS232 board, running under Smart Terminal, seems to feed text from my Microwriter on to my Model I screen all right, and also to get the text onto the disk O.K.,

but fetches back nothing but (at most) a carriage return when I try to load it into Powerscript or list it from the DOS ? Or rather, never mind why -- just please tell me how to make it work right ! (Note: It's not just a matter of saving in ASCII.) Anon

(The above and following letters, were sent to the committee during my publishing in the Newsletter, about "Reader's Forum", so I am going to respect my promise of anonymity for this issue only - unless requested otherwise. Therefore would any members able to help with the above, please send any replies, ref:- NI. to me please, Ed. **)

And so, in part, to answer the first paragraph of above. This has not been the only request for more information. At the demonstration at Swindon there was, handed out, an A4 paper, this gave more details as to what the board would do, with an invitation to send enquiries with an S.A.E. to :-

Mr. F. T. Harris, 15 Cholmeley Crescent, LONDON. N6 5EZ

Included on that paper was the following, "The kit will be available at a price of approximately £160.00. I have asked Terry to send more information for publication in the next Newsletter. At this moment he has a MODEL IV of mine, for adapting a board to suit this type of computer. How is it going Terry ? Ed. **

Follows an edited version of the letter received :-

Dear Sir, being a Model I user, the content for me in NATGUG is now almost NIL !!

Now with so many different models constantly being marketed, I feel that I've been left far behind, at the starting post of some antiquarian race !

Let me reiterate. I'm a Model I user. Basically I'm an avid writer, which is just one of my pastimes, therefore the computer was sought just to extend that particular hobby, but now I have superseded that aim. I have more than I will possibly need to fulfil this chore. This has now taken many years to acquire, and I may add, a considerable amount of time, patience, and above all money. Added to this, for me

there was no financial return, not in the real sense of that word, but I suppose I feel there is just reward for perseverance.

Therefore it amazes me to see so many users constantly up-grading their equipment? Together with the accompanying software? No, I'm not jealous (well, maybe a little), and it's not a case of sour grapes. I am now at a stage when I need expert tuition, but in everyday practical terms. I think that I would be correct in saying that the Model I was one of the most popular and successful (and above all profitable) computers ever produced and marketed by Tandy (or Radio Shack).

QUESTION Where are they now? All of them? Models and users alike?Anon. ref:- TAX

Dear Editor, I have been interested in computers now for three years, ever since my son gave me his Spectrum with dk'tronics keyboard and twin microdrives when he switched to a Memotech (and now an Atari ST).

Last year I bought the company's Tandy Model I, c/w TRSDOS 2.3, manual, Visicalc, a Tandy disk drive that spoilt disks at random, and Line Printer III. The company replaced it with an ICL network.

Late last year I had the chance to buy another Model I, this time with two Tandy disk drives which spoilt disks at random and a Line Printer III, from another tobacco company which has changed to Burroughs computers. Burroughs were the Tandy agents in the early 80's and supplied about a score of Model I's to industrial firms in Malawi (all with Visicalc) and some I's and III's to the University. They no longer represent Tandy, and have managed this year to convert the University to Burroughs machines. I bought a Cumana twin 40/80 track disc drive from Arc Electronics before they stopped supporting the Tandy Model I due to lack of sales, and this has made a tremendous difference to the Tandy which has had no disk problems since - even on the oldest disks.

Programs found on the inherited disks were TRSDOS 2.3B, Newdos 2.1, Newdos 3.0 (which I have never seen mentioned anywhere so I don't know how it differs from Newdos 2.1, and anyway I haven't managed to

reclaim it yet), and Newdos 80V2; no manuals but I did get the "cue cards" for the Newdos 2.1 and 80V2. SUPERZAP was used to recover some of the discs and AJEDIT was found, a word processor which I have not seen commented on in the back issues of the NATGUG Newsletter, which I have just finished reading.

Word processing is one major use for the Tandy if I can find a word-processing program that I like. I bought Scripsit from Blandford, and I find that Ajedit has advantages and disadvantages compared to Scripsit, and neither are as easy to use as Tasword on the Spectrum. (although 64 characters across the screen is easier on the eye, on the Tandy, than on the TV set with the Spectrum). I have written to Geoff Smith to ask if his modifications to Scripsit will do for my version 1.0 (if they are still available). I may buy Electric Pencil as well from Blandford, to see if that suits me better.

The main purpose in writing is to let you know that, after comments by the previous editor in the Newsletter, asking where the new owners of the cast-off old Tandys were, there is at least one person who is starting where the founders were eight years ago. Despite the fact that all the interesting items in the newsletter are in the early issues, I enjoy reading it. I do find it annoying that no answers were given to problems posed in the past by readers; presumably once somebody had the answer to their problem it was no longer a problem and so there was no need to write it up for publication.

Both the keyboards I originally had are version 1.3 according to the test program by Ken Grey in the Journal, but one has the ALPS keyboard and they are Upper case only, so I imported a keyboard (number 2274 but version 1.1 - the ALPS one is number 120226) with lower case, from Blandford which when I looked inside has such a maze of wires added on that I quickly fastened it together again. I would like to convert the other two to have lower case, so I need to know if Eric Hartley is still in business and can supply his add-ons (lower case and RS232).

I use Visicalc a lot, and I need a good, low price database. I bought Versafile, but it is not what I want, I would like a similar program to Masterfile on the Spectrum which I find excellent. I would welcome recommendations.

Next project for this vintage mechanical engineer is to learn some electronics and the plan is to use one of the Model I's to control the wet and dry bulb temperatures in timber drying kilns. I've seen this being done in South Africa using Hewlett-Packard computers and sophisticated sensors, whereas I propose using the Mullard humidity sensor from Phillips washing machines. Perhaps one of our members has had experience of using a Model I on this type of application? (perhaps some of my queries will be answered)

I have borrowed a manual from Burroughs which is a photostat without a cover, and I have copied it for myself. It has an introduction by somebody called Jerry Heeps, and I would like to know if this is the out-of-print Technical Reference Manual or whether I should keep on looking for one of these, as I expect to have to do my own maintenance in the future.

I have carried out the mods to ScripsIt given in the Newsletter to make it compatible with Newdos80 and I use it on 80 track which gives me plenty of space for letters. It prints out very well. I do have one small problem though, I can COPY drive 0=80 to drive 1=80 without any trouble, but DIR and FREE on drive 1 tell me that I have only 35 tracks, and will not let me SAVE on to drive 1 if the 35 tracks are full. If I put the disk back into drive 0, DIR and FREE agree that it is 80 track and I can then SAVE. There must be an easy answer, if somebody can tell me.

Further thoughts on the Model I. I know that I am only a beginner not very knowledgeable on computers, but I have wondered for some time why the Model I cannot be modified by adding extra memory and the ROM switched out so that it can use CP/M. The Amstrad PCW 8256 and it's bigger brother also use a Z80 (although a later faster version) and only have a minute ROM. I now gather from the very interesting article in the last Newsletter that Terence Harris and Ian Linehan may be doing just this. I look forward to more on this project and will support it wholeheartedly.

Yours sincerely,Anon. ref:- MAL

THIS COMMITTEE HAS ASKED FOR ANY MEMBER TO PLEASE WRITE TO THE NEWSLETTER, WITH ANY REQUEST FOR WHATEVER INFORMATION IT IS THAT THEY

REQUIRE, WE WILL DO OUR BEST TO SUPPLY THAT INFORMATION. IT DOES HELP A GREAT DEAL, IF WE CAN CLOSE DOWN ON THE FIELD OF INFORMATION/ITEMS THAT THE MEMBERSHIP WANTS TO SEE IN THE NEWSLETTER. PLEASE COMMUNICATE WITH US. (I DON'T THINK ANY OF US BYTE). Ed. **

A member wishes to know if there are any others that would wish to start a Model 1 user group based in London. All replies sent to me will be forwarded. Please refer to:- "Model 1 User Group, London"

Dear Ed.,

John Kilpatrick advises I write to you re my problems on TRS-80 Model 111 CP/M and Hi-Res Graphics.

Mapper 111 board producers, Omikron Systems, went bust leaving me (second owner) with Single Density support but some Double Density software: Tarbell, Electric Webster, and Commx. All lack manuals.

Did anyone out there finally get DD support and/or appropriate manuals. If so Please contact me, I'd be ever so grateful. If the general reply is no, then does anyone have contacts with Tandy user groups Stateside ??

Graphics - I've got BASICG & manual but I need a board. Has anyone a TRS-80 graphics board they want to sell ??

Yours sincerely,

Tony Gerrard, 11 Forge Valley Way, Poolhouse Farm, Wombourne, Wolverhampton. WV5 8JR

Does anyone know the control codes for a Tandy Lineprinter VI to make it print in CONDENSED MODE when working with Lotus 123 V2.01 ? Any answers please to the PRO, John Kilpatrick.

Dear Gordon,

Question 1. Is there a means of accessing a BASIC reserved word list in the Model 4P (Model 4 mode) ? i.e. the equivalent of memory locations 5712 - in Model 3 mode.

Question 2. Is there a method of increasing the memory capacity above 18K when using VISICALC in Model 3 mode ?

Solution 1. In order to make use of many of the programs in "BASIC FASTER & BETTER" by Lewis Rosenfelder while in the Model 4 mode it is necessary to replace the instruction "CALL 0A7FH" with the instruction "CALL 76A4H" followed by "CALL 29F7H". These two instructions also allow the routine listed in the TRSDOS 6 manual (under USR heading) to be made relocatable.

Comment 1. Ref: "Latest Update to TRSDOS 6.2" on page 8, fifth paragraph of the January '87 Newsletter. The writer quotes that the command "DATECONV" is for converting pre 6.3 system discs (not for data discs). This is incorrect, in fact the reverse is true. To quote from the documentation (page 14) that accompanies LS-DOS 6.3, "DATECONV/CMD - Converts pre 6.3 version data (non-system) disks to use the new time/date format If the conversion of a SYSTEM disk is attempted, an error message will be displayed. To convert this type of disk, you must first use BACKUP "

Comment 2. Ref: "Windows on the Model IV" on page 13, same issue. There appears to be a missing section of code in the listing - lines 96-111. This code is associated with the DISPICHR label. Line 95 appears to be misprinted in that OPCODE D9 equates to SOURCE code EXX. This error maybe associated with the missing lines of code.

..... I am trying to discover how to implement some "foreign" language characters and the £ sign into SCRIPSIT. I haven't as yet completely solved this problem. Would the solution, when complete, be useful to anyone else ? Or does any other member have a clue ?

Barry Thrippleton, c/o, Merz & McLellan, Amberley, Killingworth, Newcastle upon Tyne. NE12 0RS

Herewith those missing lines referred to above, Ed. **.

```

94                               ;
95 A06F D9      DISPICHR:EXX    ; Save BC, DE, and HL
96 A070 F5      PUSH AF         ; Save Print character

```

```

97 A071 DD7E04      LD A,(IX+4)    ; Get current line
98 A074 67           LD H,A         ; Set cursor line
99 A075 DD7E05      LD A,(IX+5)    ; Get current column
100 A078 6F          LD L,A         ; Set cursor column
101 A079 F1          POP AF         ; Retrieve print character
102 A07A 4F          LD C,A         ; Set print char. for @VDCTL
103 A07B 3E0F        LD A,@VDCTL
104 A07D 0602        LD B,2         ; Set "POKE" A onto screen at HL
105 A07F EF          RST 28H        ; Do it
106 A080 C226A0      JP NZ,ERROR    ; Go if Error
107 A083 08          EX AF,AF       ; OK - Save print character
108 A084 7D          LD A,L         ; Get current column
109 A085 3C          INC A          ; Move it on one
110 A086 DD7705      LD (IX+5),A    ; Reset it
111 A089 DDBE03      CP (IX+3)      ; Is it over Last column
112 A08C DAAEA0      JP C,DISPIXIT; No - Exit back to caller

```

SCRIPSIT TO PURE ASCII

Some of the new printers can set both the left and right margins and also the top, bottom and page length. This means that they have some of the power which we normally associate with Word Processors. In fact, the ability to print justified text in proportional mode is superior to many of the current programs. Scribes was written before the days of intelligent printers and can only work in Monospace mode. Some of the other programs will print proportional characters, but cannot justify the right margin and print proportional at the same time.

If a file is printed using the printer format controls these will probably clash with the word processors controls, and this makes it preferable to leave the formatting to the printer, except where page numbers and headers are required. Model 100 users have a Text mode which will produce ASCII files, but not format the text. This lends itself to these new printers, and TED, which comes with TRS-DOS 6:3, can also generate a text file but has no print facility. Again this is all that is required with the new printers, as the file can be printed later.

Scriptit is very useful in generating the text file, but it does not save in ASCII unless instructed to, and uses its own markers for Carriage Return and paragraphs. One way round this is to save the file in ASCII via the S,A mode in Scriptit, then to print the file later. The S,A saves the file with CR as ODH, the paragraph marker becomes OEH, which unfortunately is translated by the Epson into Expanded type.

The paragraph command in Scriptit should force a line feed and insert five spaces to conform to the accepted standard for correspondence, but the same effect can be produced by ENTER and either a manual Tab or five spaces. This might be considered before the text is written, but it is time consuming to go through a file afterwards to change all the commands, especially as Global Replace cannot be used. An alternative is to use a simple routine which converts all the 8DH or 8EH which Scriptit uses, into ODH which is the ASCII carriage return. If the file has been saved in ASCII mode, the program will work just as well, but in this case only the paragraph markers will be converted.

The Paragraph marker also causes a problem in converting Scriptit files to SuperScriptit using the ASCII/SCRIPTIT option. It is preferable to change all the OEH to ODH before converting, otherwise the Paragraphs lose their extra line space.

This program might have other uses as it replaces one character/code with another. It uses the INPUT\$ in TRS-DOS 6 Basic which can be used to get a character from the keyboard without using string space or as in this case to get a character/s from a file. INPUT\$(1,1) gets one character from the file assigned to buffer 1. The program inputs one character at a time and if necessary changes it before writing to a new file.

If the files are kept on Memdisk the process is speeded up, but if the two files are too large, the old file should be on floppy and the new one written to Memdisk. The file can be printed from Memdisk, but if a permanent copy is required, it should be saved to disk before switching off the computer. The converted file will work in Scriptit just as well as the original and therefore it is not necessary to keep both versions.

From time to time it may be necessary to print a file which exceeds the capacity of Scripsit, or TED, and this can make life difficult, especially when the printer is doing the formatting. It is possible to use APPEND to join several smaller files in ASCII, to form one long file, which can be as long as the disk space will permit. I have had files in excess of 220K on my double sided disk. This can be printed with a simple Basic program or using LIST (p) from DOS.

```

1 'this program converts Scripsit TXT files to full ASCII including
paras
2 'it works best if both or the output file are on Memdisk.
3 'this requires TRS-DOS 6
4 'lines 5 and 6 are only required because I cannot remember the name
of programs - D.Trayler - 10/05/87
5 GOTO 100
6 SAVE "SCMOD/BAS":END
100 INPUT "FILE TO MODIFY ";FI$:INPUT "OUTPUT FILE ";FO$
150 OPEN "I",1,FI$:OPEN "O",2,FO$
200 WHILE NOT EOF(1)
210 I$=INPUT$(1,1):IF EOF(1) THEN CLOSE:END
220 IF (I$=CHR$(141) OR I$=CHR$(142) OR I$=CHR$(14) )THEN
PRINT@2,CHR$(13) ELSE PRINT@2,I$;:PRINT I$;
240 WEND

```

This program is written for the model 4 and I have tried to write an LBASIC version for use on the model I/III. As I use neither at the moment I cannot check that it works.

```

1 'this program alters the paragraph marker in Scripsit files to a Line
feed
2 'the file must be save in ASCII using S,A
3 'if the Scripsit files are not in ASCII then CHR$(14) should be
changed to CHR$(142) or add a second line at 215
10 ON ERROR GOTO 50
15 GOTO 100
50 IF ERR=62 THEN RESUME 240:ELSE ON ERROR GOTO 0
100 INPUT "FILE TO MODIFY ";FI$:INPUT "OUTPUT FILE ";FO$
150 OPEN "R",1,FI$,1:OPEN "R",2,FO$,1
170 FIELD 1,1 AS I$:FIELD 2,1 AS O$
200 FOR N = 1 TO LOF(1): GET 1

```

```
210 IF I$=CHR$(14) THEN LSET O$=CHR$(13):ELSE LSET O$=I$
220 PRINT O$;:PUT 2
230 NEXT
240 CLOSE:PRINT "DONE":END
```

(In the above listings please read the 'pound' sign as an hash sign.
Ed **)

This will generate a file with a LRL=1 which will print, but not load back into Scripsit. The file should be copied to another disk or, to the same disk under a different name and forcing the LRL to 256.

COPY filename/TXT to filename/ASC (LRL=256)

When doing this type of job, it should be remembered that Printing to the screen is a relatively slow process, and not strictly necessary. By deleting the PRINT O\$ in 220 the program will speed up, but the screen will stay blank. As you could be working on the wrong file, it is best to accept the small delay and watch the screen for typos and spelling errors.

It is possible to modify the programs, so that they count the characters and the spaces. The spaces are an approximation of the number of words, but this only works when there are no tables, and preferably no indents at the start of the paragraph.

MEMDISK

The TRS-DOS 6.3 Basic seems a worthwhile improvement, and now has those useful extras that we have come to expect in LDOS. The arrow keys to advance to the next line in a listing, and the single keystroke commands for Editing etc. The ability to copy lines is very useful, and although I use Scripsit, the text processor TED is also useful.

All in all a more useful upgrade than the advertised feature of extending the date. The LDOS version also boasts an Input@ command like DOSPLUS IV.

When model 4 Basic was introduced, it seemed to have more disadvantages than advantages, as I got more familiar with it the situation changed. The latest version seems to offer the best of both worlds. I like the way that I can get back to DOS from Basic, by typing SHIFT/1, <ENTER>; without having to type SYSTEM. (Members could also look at a utility called 6:2 PLUS by Micro-Systems Software, the authors of DOSPLUS IV. This contains BASIC enhancements designed to run with TRSDOS 6:2. I also find that having backed-up the BASIC files to LS-DOS 6:3, they still run. Ed **)

The only problem is one that is not of LSI's making, and in fact they have been trying to avoid it. The Ramdisk driver that I use for my 512K expansion will not work with 6:3. According to 80 Micro, I am not alone and a new driver is supposed to be available. In the meantime, I have to switch back to 6:2 to use the extra memory, this can be rather a bore. Once you have got used to a Ramdisk which will take all the system files, application programs and data files, a standard 128k machine seems so s l o w

This led me to trying to cram as much as I can in the normal Memdisk, this is limited to 60K +, which will just take the normal system files. If you want to use some of the memory for the programs, you need to compromise somewhere. It also takes time to set up the Memdisk, especially where you cannot use a straight backup command. Copying all the files for Superscript with all the selectivity that must be used, can take best part of half an hour.

A simple way would be to load the whole lot as one single file. There was a program for the ESF Stringy Floppy, that could take a snapshot of the memory and load it back complete with the cursor in the original position. It was like a time-warp in a game because you could resume exactly where you left off, even though some days had elapsed. Don't ask me how it's done, because I just used it and prayed that it would work each time.

Then along came disks and away went Exatron, it appeared that the Amstrad got all those sort of programs. Still that does not help the model 4 user who has 64K, but only limited use for it. This is where SLMEM came in. It was written by Clifford Knight (author of Scripald), if you really get what you pay for, this must be the king of the

freebees. SLMEM, which stands for Save and Load Memory, is a program that saves the contents of the memdisk as a disk file and can reload it at a later date.

You still have to format the Memdisk in the normal way, but you only copy one large file instead of all those individual files. Thus it is possible to do the whole job in about four minutes. One advantage is that it saves you trying to remember which files you had last time, and there is no limit to the number of files that you can keep. You could have a limited DOS file and the required Superscript files. Another could have Multiplan set up, yet another with your database or word processor and the relevant text file.

I tend to use it in a JCL which sets up the Memdisk and runs SLMEM. The JCL then makes the Memdisk into the System disk, the former drive 0 can then be used for a data disk as drive 2. The bad news is that you cannot buy a copy, because Clifford felt that the distribution cost would exceed the possible returns. Clifford deserted to the MS-DOS ranks because he felt the need to earn enough money to buy little luxuries, like food and clothes. The good news is that he sent me a copy before he left.

(PRO-ESP from MISOSYS, has utility programs which work in much the same way. I have one file which contains all the system files, BACKUP/CMD, FORMAT/CMD and DISKCOPY/CMD, with 3K free, which is loaded using a JCL file, this also software write protects and makes the upper 64K of memory into the 'system disk', all in 31 seconds. Ed **)

Most people feel that free gifts are rather expensive in the long run, and so it might be better to price it at £99. If anyone wants an official 'private' copy, I will try and oblige. To make it clear it is only of use to a person with a 128K, model 4, with disk drives. It is no use for model 1/111 or 100 users, or 64k model 4, and certainly not to tape users. This is not a promo for Disks or Model 4's, but a fact of life about the way the program works.

The preceding two articles were submitted by:-

Derek Trayler, 88 Grosvenor Drive, Hornchurch, Essex. RM11 1PW.
040-24-47661.

XLR8 - CPU & Memory Upgrade For The Model 4

For a number of months I have been considering whether I should upgrade my Model 4P with one of the many memory boards now available. They have been on the market for some time now, prices have tumbled, and they should be thoroughly debugged; furthermore, there have been a considerable number of articles written discussing the merits of what is available. During my search for the best option, Roy Soltoff, through Misosys Quarterly drew my attention to another contender in the Model 4 memory upgrade market, but this time with a considerable difference. H.I.Tech in Houston are marketing a CPU and memory upgrade for the Model 4 called an XLR8.

The board appears to have great potential, mainly because of the CPU upgrade the board provides. The upgrade involves replacing the Z80 with the HITACHI HD64180 as well as providing an additional 256K of memory. The XLR8 is new on the market, therefore there has been little feedback from users, so I thought it was about time I helped out in that area. The board was advertised as a plug in, no soldering required. If the XLR8 was to be a disaster I could always revert back to normal without major surgery.

Please note my experience is based on a gate array Model 4P, operating LS-DOS 6.3, however, the XLR8 will fit any model 4 and run with CPM 2.2 (you must specify your operating system when ordering, both cost extra).

The board was ordered at the beginning of DEC 86, and following a further letter and a phone call, (It appears my order got lost) the board finally arrived in MAR 87 in an oversized not to well packaged parcel. The package contained the XLR8 board, an umbilical cable, a manual and a disc containing the necessary software to obtain the best from the new board.

XLR8 Board

First to describe the main features of the XLR8. The circuit board is designed around HITACHI's new high speed, low power HD64180 8 bit microprocessor. The HD64180 has maintained compatibility with the

Z80 instruction set. There are only a dozen new instructions which allow full utilisation of the enhanced features of the HD64180. Although the HD64180 can access 512K of memory, the XLR8 only contains 256K. There are no facilities for on board expansion. The main XLR8 features are:

1. HD64180 microprocessor running at 6.144 MHz
2. 256K of high speed DRAM
3. On chip memory management unit
4. Two channel DMA controller
5. Internal wait state generator
6. Two channel 16-bit programmable reload timer
7. Programmable dynamic RAM refresh addressing and timing
8. Interrupt controller with 12 levels of control
9. Twelve new instructions

Optional

10. Two channels of RS232 communication
11. Expansion port

The XLR8 board appears a well constructed and compact card; fully populated except for the large socket for the umbilical cable and three smaller sockets for additional RS232 chips. Further expansion of the board to utilise some of the HD64180 additional facilities is possible through the provision of 3 on board IDC connectors (an expansion cable is available from H.I.Tech). The large IDC provides access to the XLR8 bus and of the two smaller ones, one provide access to the two RS232 ports, and the other can provide the board with +12V and -12V required for RS232 drivers, which, as indicated above are not fitted. The board is designed to fit in the Model 4P modem slot.

HD64180

The HD64180 is a new device, therefore I think it would be useful to highlight some of its main features.

Hardware Features

1. Operating frequency up to 8 MHz
2. On-chip memory management unit, (MMU) supports 512k bytes of memory and 64k bytes I/O address space
3. Two channel direct memory access (DMA) with memory - memory, memory - I/O and memory to memory mapped I/O transfer
4. Wait Input and wait state generator for slow memory and I/O device interface
5. Programmable dynamic RAM refresh address and timing
6. Two channel full duplex asynchronous serial communication interface (ASCII) with programmable baud rate generator and modem control handshake signals
7. Clocked serial I/O port (CSI/O) with high speed operation (200k bits/sec at 4 MHz)
8. Two channel 16-bit programmable reload timer
9. Versatile interrupt control manages 4 external and 8 internal interrupt sources
10. 'Dual bus' interface compatible with all standard memory and peripherals LSI
11. On chip clock generator

Software Features

12. Fully compatible with CPM and CPM Plus
13. Twelve new instructions including multiply
14. On-chip I/O addressing relocation register
15. Sleep instruction, IOSTOP mode and system stop

VLSI CMOS Process Technology

16. Low power operation - 75 mW at 6 MHz
45 mW SLEEP mode
25 mW IOSTOP mode
19 mW SYSTEM stop/
17. VCC = 5V (+/- 10%) fully TTL compatible

Manual

The manual provided with the XLR8 contains 31 pages and discusses the general description of the XLR8, the installation procedures for each of the three Model 4's, the software at sufficient level to get you started, and then at a more detailed level. I/O pinout and the installation of the additional chips required for RS232 is well documented, however, the manual states the RS232 sockets require fitting; my board had them already fitted. I considered the final section, the programmers reference, insufficient as a reference, however, it does give you an idea of the additional facilities provided by the HD64180. I found it necessary to obtain the HITACHI HD64180 reference manual, but that was only because I have a lot of other devices 'hanging on' my model 4 and needed to change my drivers and check timing wait state functions.

XLR8 Software

The disc provided with the XLR8 contains all the software necessary to fully utilise the speed and memory facilities provided by the XLR8, however, because the additional 256k of memory is accessed by bank switching a number of these programs must reside in low memory, therefore, some of the operating systems utilities (hard disc driver, comms, etc) must be moved to high memory. That is not a problem, but you will probably have to re-configure your system. Space in low memory for other programs which could utilise the additional memory such as PRONTO, DDUTY and RAMDISK is limited. The following is a brief description of the software supplied.

FIXALL

Resides in low memory

Only needed when running at full speed

Used to slow the CPU during keyboard access. (Keyboard PAL is too slow to cope with maximum speed)

SET180

Used when required to change the CPU refresh period, wait state and I/O wait state

FIXBANK

Resides in low memory

Provides new bank driver to access additional memory

RAMDISK

Uses low memory

Emulates a disc drive in the additional RAM

RAMDISK is more flexible than MEMDISK, other than enable, disable, format and not format you are presented with the option of selecting which bank you wish RAMDISK to start, and how many contiguous banks it should use. This allows the installation of, for instance, RAMDISK, PRONTO, DDUTY or any other programs which normally utilise internal ram, providing there is low memory space available. Performance of the XLR8 is impressive, but with the system in RAMDISK, providing you don't mind waiting for the system to be setup in RAMDISK, has to be seen to be believed.

CFGRD64

A simple JCL to set up part of the additional memory as the system

DIAS

A simple HD64180 disassembler

BANKSTAT

Presents the status of the internal ram i.e. what is available.

Installation

As the manual suggests this is very easy if you have a standard Model 4, and not difficult, just awkward, if you have a hires board and/or facilities to fit external drives. Removal of the Model 4 case is exactly as described in the manual. To be able to lower the bottom part of the PCB pan I had to remove the carrying handle internal metal

strengthening brace, the rear CRT screening cover and the disc drive cable (In my case a small PCB). I could now lower the PCB pan to gain access to the main PCB. The XLR8 board replaces the Z80, therefore the Z80 needs to be removed and the XLR8 umbilical cable plugged into the vacant Z80 socket. If you have a hires board fitted the Z80 is under the hires board. I found the umbilical cable was obstructed by one of the hires board supporting pillars and therefore stopping the hires from sitting correctly when refitted. With a Stanley knife I removed a small part of the pillar to give the cable a clear run.

The manual suggests that the existing ram chip speed should be checked. To be able to run the HD64180 at maximum speed the ram chips must be 150ns or better, however, it would have been nice to warn that TANDY fit 200ns ram chips as standard. I will now have to strip the machine down again and fit faster chips if I want to run at maximum speed.

With the Model 4P the XLR8 slides into the vacant modem slot, and now the most difficult part, when closing the main PCB pan the umbilical cable running to the XLR8 needs to be plugged into the 40 pin socket on the XLR8. Unfortunately the socket and cable are not in line. The pan needs to be offered up a number of times and the cable forced to line up with the socket. A final task before plugging the cable into the socket is to attempt to squeeze it as flat as possible. Plugging the cable into the socket is a bit of a juggling act, with the PCB pan 3/4 close space is limited and great care should be taken to avoid bending any of the header plug pins.

Reassemble in the reverse order of stripping and the system should boot with your normal boot disc. Don't worry about the length of time it takes to look at the boot disc, the HD64180 boots in the slowest mode (approximately 75% of the normal Z80 speed). At this stage the Model 4 should behave no different from before the modification, except it is slower.

Initialisation

To make full use of the XLR8, some of the software delivered with the XLR8 will need to be utilised, first, bump up the speed. The HD64180 contains an internal register which controls the CPU wait

state, I/O wait state and the refresh period, and without going into too much detail, the value in this register defaults (at boot) to the slowest value. SET180 provides a user friendly interface to the resetting of this register to obtain maximum speed for your particular configuration. (There are 4 settings for each of the three delaying functions). Increase in performance can be noticed immediately by the faster screen functions.

Hard Disc

Setup of my winchester caused some concern. Once the XLR8 was installed, obviously I wanted maximum performance, and this was too fast for the hard disc. It took a little time to realise the cause of the problem. During initialisation I had reduced the I/O wait state too far. A little experimenting and the hard disc was up and running. My disc will happily work up to the fastest but one position for I/O wait states.

Clock

I have always found date stamping a useful facility, however, keying in time and date on system boot is tedious. When I bought my Model 4P there did not appear to be a clock readily available, so I built my own based on the MM58174, and patched TRSDOS to pick up the time and date on boot. The MM58174 is a very slow chip and during a clock read/write the Model 4P (fitted with the Z80) had to switch to the slow CPU speed (2 MHz), returning to high speed after the read/write. The HD64180 does not appear to respond to this original mode of switching, (probably because it has its own clock) therefore the external clock must use the external wait line to slow the clock read/write (this will require some additional hardware). My reason for including this section is because most commercial clocks for the Model 4 use similar technology, and, therefore may not work unless they are modified. (Mine now works without any problems).

I/O Ports

To provide the versatility that the HD64180 is capable of does require a controlling mechanism to which the user can interface. The HD64180 provides a series of on board ports which can be accessed to

provide this interface, however, nothing is easy, these ports are mapped into the model 4 I/O map, taking up ports 0-3F Hex. Although these port addresses can be relocated to any contiguous port address within the model 4 port map, it would be pointless, all the supplied software is based on the internal ports being at 0-3F Hex. Port addressing may cause some problems if you have any external hardware using those ports, and, I suggest, if practical, move the hardware to between 40H-7FH. (The system uses all ports above 7FH). If this is not practical, the hardware and the HD64180 can still work together, however, the following must be observed. The HD64180 uses a 16 bit address when placing an I/O address on the bus, although only the lower 8 bits are available on the external Model 4 expansion bus. If the upper 8 bits are set to 0 the internal CPU registers are addressed, otherwise these ports are disabled, therefore, if addressing an external port the driving software must ensure the upper 8 bits are non-zero, if not, both internal and external ports are accessed (and chaos may result). The means of ensuring the upper 8 bits are set is not difficult but it would be too long to explain here. Full details can be found in the HITACHI reference manual.

Performance

I should have checked the performance of my Z80 before removing it, but I didn't, so I can't give a comparison. If anyone would like figures please send me the benchmark test and the time it takes your machine to run, (I would be interested in the comparison) and I will be happy to run the test. Please bear in mind I am running at 30% less than maximum. (I have only got 200ns RAM fitted)

Conclusion

For the short time that I have used the XLR8 I have been impressed by its performance. Extra memory is always a benefit, and once you have got your working procedures organised to utilise the extra memory, it is a real asset. Low memory restrictions imposed by all the driving software does detract from the ability to utilise the additional memory to full advantage. Wouldn't it be nice to install PRONTO, DDUTY and use the rest as RAMDISC, however, only two of the three listed above will fit in my installation. Should I wish to run at maximum speed I would need to install FIXALL, reducing my low memory

space even further. To someone who is considering expanding the Model 4 memory, taking the additional cost into account, the XLR8 is certainly a Model 4 upgrade I can recommend.

The XLR8 is available from:- H.I. Tech, Inc., PO Box 25404,
Houston, Texas 77265, USA. John Coyne (04203) 7165

FASTER AND BETTER THE HI-Tech WAY

I have now had on test the H.I Tech Model 4/4P Accelerator Board since February 1987 and wondered whether a note or two about it might be useful for others. This is an internal speed-up board with extra memory which according to the 80 Micro adverts will take the old 8 bit Model 4 into the future.

PRICE ----- @ 299 dollars (£145 approximately at current levels of exchange it is not cheap. Does it do the job? Well, writing as an entirely non-tech man (John Kilpatrick also got one and may give the techies the detail they require), I suppose the answer is --- it depends upon what you want it to do. For my money it is worth it and is recommended to those who may have a need. The recent adverts in 80 Micro says that the board "will extend the life of your Model 4". I looked up some old 80 Micro's to see what the original full colour page adverts said when the board was first advertised - but as usual I couldn't find it when I wanted. My recollection is, however, that the advert made a great play of being able to both speed up the processor and give accessible internal memory and so make the Model 4 a real contender against the new 16 bit machines.

ORDERING ----- The board arrived at my home after I charged it up to Visa by means of a telephone call direct to the advertiser in the States. They were very helpful on the telephone and sounded as though they were a reputable company. It took a long time in coming though!! I had to telephone the States 3 times to "chase it up" and got promises of action each time (with lots of apologies). Eventually, I got a bit uptight and they promised to send another board forthwith on the assumption that the first was lost. As you can guess it was about two or three weeks after that promise that I got two parcels through the

post, within the space of a few days (and hence why John Kilpatrick is happy !!!). Somewhat surprisingly Customs and Excise charged VAT and Customs Duty differently on each package (although they appeared identical on the outside and were identical on the inside !!) raising a charge of £22 on one of them which obviously put the price of the board up quite a bit.

INSTALLATION ----- Not knowing anything about printed circuit boards I took the board along to the last Swindon meeting and John kindly offered to install the board into my Model 4P. In John's expert hands the fitting of the board seemed quite easy ! For a total non-expert like me, however, I was grateful for his help. If you know how to take the outer casing off the computer you should be able to fit the board yourself. Since the Board has been installed I have had no trouble with it at all and it is happily invisible to the user of the machine.

THE MANUAL ----- The instruction manual which came with the machine is 31 pages and includes chapters on the function and design of the board, the method of hardware installation, details about the software which comes on disc with the board, notes on optional installation of 2 extra RS232 ports (what purpose would they serve ??) and a programmers reference section (which I don't understand), although it looks well written.

THE SOFTWARE ----- In both my parcels came discs with TRSDOS and CP/M compatible software for use with the board. I believe that H.I. Tech now offers only one choice of software with the board and makes a separate charge of 10 dollars if you want more than one set of compatible DOS files. The manual itself says it is valued at 10 dollars - but I can't believe you have to buy the manual as well !! Once the board is installed the software is very easy to use. I have not used the board with CP/M (but I believe John has) and therefore can only comment about the use of the board with TRSDOS. The software files are very easy to install onto your normal boot discs and by judicious use of an AUTO DO file and a SYSGENING of the disc (as per detailed instructions in the manual) the board becomes operational without user involvement. The way in which I have got the board set up gives me an automatic boot to a system disc in logical drive 5 together with a number of useful utilities (like DOSTAMER, BACKUP FORMAT and

LSQFB) together with about 150k RAM disc. All my favourite s/ware programs (e.g. SCRIP PRO, MULTIPLAN, VISICALC) (with judicious adjustments) reside on the system disc. As my Model 4P had 128k internal memory before installation of the board I still have that memory available which allows the large programs using 128k to run with the above RAM disc configuration.

UP & RUNNING ----- I have the choice of "overwriting" my top 64k of memory and adding that memory to the RAMdisc if I wish. This gives a maximum optional 319k of system RAM disc of which 250k is available for "on line" program files. I also have the choice of leaving the systems files in Drive 0 which would then give me a free 319k available to read and write files to. The benefit of this does not seem to override the extra speed of having the systems files resident on the RAM disc. As those who have used MEMDISK will know, there is a noticeable increase in speed of accessing system files if they are held in RAM. The difficulty that I have found is that "user program" files still have to be accessed from a physical drive and therefore, unless access to the program overlays was small, the increase in speed was not all that noticeable because of the many physical disc accesses as the program ran. With a user program file and the system files on RAM disc the increase in speed is very noticeable - particularly when copying files or data or "backing up". (I suspect a combination of RAM discing and chip speed)

SPEED ----- SCRIP PRO which is the Tandy word processor I use is atrocious for going to disc, (either for system overlays or program overlays or to save program files) is a whole new word processor with this board. I suspect that a basic program which uses disc access for record retrieving and dumping would also be remarkably improved. They do say that RAM discing beats a HARD disc for speed - except when you forget to copy the data to a physical drive before turning the machine off !! The board is not, though, just about RAM discing, although it does perform well in that department. There are, I hear, other boards that have 1 MEGA byte memories. The sales pitch on this board is that there is a replacement microprocessor installed on the board. The board comes with a Hitachi HD64180 chip which takes the place of the Z80 chip which normally sits in the Model 4. The Z80 is simply unplugged from the mother board inside the computer and the new board is plugged into the place where that chip came out of. (What can I do

with a Z80 chip on its own ?), This chip, so the manual says, doubles the speed of the CPU processing and moves the speed of the Model 4 to 8 Megahertz. In a sample basic test that I ran this increase in processing power is not as remarkable as it suggests. On my test the speed of processing a simple basic set of calculations in a FOR NEXT loop was increased by about a third only. Anyone any idea why speed only goes up a third, when the chip runs twice as fast ? Paging through SCRIP PRO documents, however, was noticeably faster. As far as processing speed goes all I can say is that it certainly speeds things up in word processing and copying files, but whether the speed is worth the price will depend on the application. I would not pay £150 merely for the increased speed, but with the combination of a large RAM disc and the easy installation the board, it is a very attractive proposition. As I said the board comes with a choice of software, in my case both TRSDOS and CP/M. I believe LDOS is now also on offer, but NEWDOS 80 is not mentioned.

NEWDOS 80 ----- When the board was installed at Swindon Laurie Shields gave it a look and when I discovered that all my NEWDOS 80 programs would not work he kindly sorted me out. On booting NEWDOS 80 the machine gives a "lost data" error message. I am led to believe this is because the chip is working too fast for the Model 3 ROM image to boot in. Laurie sat down and wrote a boot loader routine for me to run from TRSDOS and lo and behold ! I can now get NEWDOS 80 to boot up. Thanks Laurie. There is, still however, one possible problem with NEWDOS 80. It appears to bomb out of some of my (previously reliable) NEWDOS 80 basic programs. I wonder if this is the same problem and the basic isn't getting loaded in. Any suggestions please ? When the second parcel arrived I rang Hi-Tech in the States and told them that Laurie had written a piece of code to get NEWDOS 80 to boot. They told me that someone in Canada was writing the software for NEWDOS 80 to run with the board but it had not yet been finished. By the time you read this it may be on offer with the board. I did mention your name Laurie, but they didn't seem to want any help !

SUMMARY ----- On balance I think that I have spent my money well. The board works and does give the 4P that extra versatility. My justification of the expense, is that I run TRSDOS wordprocessing within my office and do not want to spend a fortune in getting into

MSDOS yet. The addition of the board to my internal memory and the internal drives, (80 track) gives me a pretty mean machine which is difficult to find elsewhere. The 4P has 319k internal memory, 1.5 MEGA byte on physical drives, runs at 8 mhz and is a portable at a (as new) price of £800 or thereabouts. It runs some tried and tested software and with the shell programs like DOSTAMER is user friendly. I think Hi-Tech are justified in saying that the board prolongs the useful life of the Model 4. There are a couple of caveats though. Clearly, all software can be stored on the ramdisc with suitable adjustments as to which programs should be "on line, but DOUBLE DUTY will not run with the RAM disc installed. If tried the error message, "too many IO drivers in low memory" is given. - Any ideas how to get round this? Although the manual clearly states that the on board memory could be configured to be "user" memory it gives no hint as to how this is accomplished, nor any detail of where the drivers are loaded. It would be nice if I could have SCRIP PRO and MULTIPLAN running and at the same time have PRONTO available at the touch of a button. This would mean trying to find out how to install PRONTO into one of the memory banks otherwise used by the RAM disc and then be able to load it by switching out the application program as normal. Any ideas anyone? This is my first write-up for the magazine and I hope these notes may be of help to someone out there. Is anyone interested in some of the word processing techniques that I have picked up since getting involved with computers? Or is this old hat? Does anyone know where one can get hold of a good set of tried and tested business models for MULTIPLAN. I have one book that I picked up but none of the models are of much use to me.

Finally a comment about the company H.I.Tech. Although there were delays in getting the boards, I have never yet met another firm who would send a second board out without being sure the first one was genuinely lost - and all on the basis of a telephone call. I was impressed by their friendliness and trust and they get my vote as a reliable source.

Stuart Ranson, 6 Winchester Gardens, Andover, Hants. SP10 1BE
(0264) 51388

CED - A MSDOS Public Domain Command Editor

When MSDOS was in its infancy, a mere 3 or 4 years ago, there was very little good public domain software, in fact compared to the programs we had available on the TANDY range, there was very little good software - programs such as dBASE had been crudely ported to the 16-bit environment, instead of being re-written, and often ran slower on the MSDOS machine. Now however, we are reaping the benefit of the greater processing power in our spreadsheets, wordprocessors and languages etc. Codeview, the debugging environment for Microsoft C is really amazing and I'm afraid that you will never have WYSIWYG desktop publishing such as Aldus Pagemaker on your M4, its a bit like trying to win the LeMans with a Mini-Cooper S - just not enough horse power. Additionally the 'hackers' have had time to delve into the mysteries of the operating system and in the last year there has appeared some very interesting and useful utilities both commercially and in the public domain. One of these is CED - an acronym for Command Editor.

CED was written by C.J. Dunford and put in the public domain with the specific injunction that you may copy the program for yourself or others but you may not charge for such copies or in any other way sell the program - i.e. its real PD. The initial function served by the program is that of a command line editor - i.e. similar to that found on the Beeb and that written for the TRS80's by Peter Knaggs. However its actual functionality goes way beyond that and I'll just borrow the purpose section of the docs to illustrate.

- Complete command line editing facility.
- Recall of previously issued commands for re-entry.
- Command synonyms, which may include "chaining" of a series of commands.
- Parameterization of synonym commands.
- Recall of parameters for previously issued commands.
- User-settable buffer sizes for all functions.
- For programmers, a facility to add new "resident" commands to the DOS shell.

Installation can be as simple as typing (its less work to put it in autoexec.bat) the filename CED, whereupon it integrates itself into the DOS and becomes memory resident.

The command line editor is all that you might expect, the DOS F3 copy to end-of-line etc. is removed but replaced with logical cursor key-pad alternatives and extensions. The program keeps a record of each command that you have used in the form of a circular stack, that is accessed via the (UP) and (DOWN) arrow keys. If you retrieve a command and just reuse it, it is not added to the stack. If you retrieve and edit before use then the newly edited command is added to the stack. The size of the stack can be altered by the user. There are in fact two separate stacks, one for DOS and one for compatible programs such as DEBUG.

The next major function is parameter recall (PCALL). Many programs let you type extra information after the filename of a program, this information (parameters) being passed to the program at the beginning of execution. For instance you might want to enter your editor and specify a path and filename for the editor to load:

```
EDIT C:\assembl\mac\workfile.asm
```

The parameter takes quite a bit of typing and if you are doing some assembler development work you might need to type that 20 times in an hour. The command CED PCALL EDIT stores the parameters associated with EDIT so all you only have to type the parameters once and thereafter just type EDIT.

Another very useful aid comes under the title synonyms. This allows you to define brief 'synonyms' for often used commands. At its simplest this is d for DIR, c for copy etc. But can also embrace quite long command strings as well, so for instance you can change directory and invoke a program with passed parameters all with a single (or more if you want) letter command. The synonym can also contain substitution parameters (%1 etc) like those found in BATCH. CED provides ways for you to set up PCALL and SYN sequences in a configuration file that can be read from the autoexec.

The final function allows you to add new resident commands to the DOS. This is provided via a bogus DOS function OFFH. This does of course pre-suppose that you can write your own machine code (or C~~++~~-code) to carry out the new commands. Examples are given in the DOCS on how to set up a new command.

In summary this is an exceptionally useful utility which goes a long way towards making life at the Command Interface almost pleasant !

Geof Smith 01-950-6345.

BASICALLY BETTER

I bought my Video Genie in 1982, and last year "upgraded" to The Model 4P when they were being sold off by TANDY. During this time I have written a number of programs for my work, as a clergyman. I have used BASIC, but always realised its limitations. The "garbage collection" routines which from time to time stop the programs in mid track have always been a pain in the neck.

From time to time I have looked at Machine Code, and "C" but never got into them. Last year when I bought the 4P I wanted to translate some of my old programs for use in the model 4 mode and began the task. There was no problem with the actual translation of the code but I got quite a shock when I tried to run them. I don't quite know what happens to the 4P's 64K memory, but when BASIC is loaded plus some 20K of program code, the amount of memory for data storage is very limited. Worse still the garbage collection routines on the 4P seemed to be occurring every few minutes, probably a result of the small available memory.

I began to think of the possibility of using "C", but good compilers are not cheap. This was when a colleague introduced me to ZBASIC. I phoned ZEDCOR in the states who put me in touch with an English supplier, and since then my programming has taken off. I'm well into the translation and updating of a CASHBOOK program, which I'll probably make available in the Model 4 library when it's finished.

ZBASIC is called an "Interpiler" by the publishers, a cross between a BASIC interpreter and compiler. You can write programs in BASIC using either the built in Editor or, much better, any word processor which allows you to save in ASCII. From ZBASIC you can RUN

the program as in any BASIC, but ZBASIC first compiles the program in memory before running it. As it compiles it checks for syntax errors which you must correct before it will execute the compiled code. Since you are running compiled code the program runs a lot faster than normal BASIC.

But this is only the start of the advantages. Once your program is running properly you can save the compiled code to disk, and from then call it up from DOS ready as a /CMD program. In any ZBASIC program you have to declare all variables carefully, preferably at the start of the program, and memory is reserved for them. There are no garbage collections and no long pauses in the operation of the program.

You can choose whether or not to use line numbers in your programs, but ZBASIC happily responds to labels. This is a truly liberating experience if you have never programed without line numbers. You can call all your routines and program sections by reasonable names and GOTO or GOSUB them. You can build up your own library of routines on disk and insert them at will into your programs.

ZBASIC verisons are currently provided for a number of computers including IBM PC and compatibles, Apple IIe and IIc, Macintosh and Macintosh Plus, TRS-80 and compatibles, Atari 520 ST, CP/M 2.2 or 3.0. For each machine there is a core of BASIC commands which are the same for every machine. The idea is to make for as much compatibility as possible. To this end, for example, there is one set of file commands for ALL machines. And when addressing the screen you can use ZBASICS device Independent coordinate system in which the screen is divided into 1024 points across and 768 points whatever the computer. This use of common commands for different machines means you should need only a minimum of alterations in the source code for a program to me made to run on a variety of computers.

There is a good set of BASIC commands with strengths and weaknesses. For instance it is possible to define LONG FUNCTIONS and to use LONG IF's which allow much easier programming than in MICROSOFT BASIC. However the PRINT USING function is not as comprehensive as in the TANDY 4P's BASIC. ZBASIC has excellent handling of numbers and you can define the accuracy of both single and double precision numbers

with double precision up to 54 digits. There are some BASIC GRAPHIC commands like BOX, CIRCLE, FILL etc, which will work in Low or High resolution modes. The graphic commands are not as extensive as in TANDY BASICG but at least they are there.

You can CHAIN programs carrying over common variables, and in the TRS versions you can load program OVERLAYS. In computers like The Apple MAC there are many enhancements, but of course using these will destroy program transportability.

The manual supplied is an example of clarity. It is not a BASIC tutor, and you will need to have some knowledge about the rudiments of BASIC programming, but is well laid out as a reference manual 1.5 inches thick.

ZBASIC can be bought in England through:-

TULIPS ENTERPRISES LIMITED, Studio 7, Intec Two, Wade Road,
Basingstoke, Hampshire. RG24 6NE. Phone (0256) 463754,

at a cost of about £79.00. This may seem expensive but is much cheaper than the normal "C" compiler, or as cheap as a good Editor Assembler. If you want better performance from you computers but don't want to get involved in learning another language like Assembler or "C" then this could be for you. I have a demo version on my disk, which we are told is for "passing on to your friends". Obviously it will not save to disk, but will show you some capabilities of the program. I will happily send a copy if you send a disk, with suitable packing and return postage. Perhaps in NATGUG we can build up library of ZBASIC source code.

Stoker Wilson, Greenside Vicarage, Ryton, Tyne & Wear. NE40 4AA.

FORMAT and the DCT

At a long ago Swindon meeting, I was asked if I could explain two 'patches' which changed the floppy disc FORMAT utility of TRSDOS 6.2.

More recently I have been asked if I can advise the equivalent changes for TRSDOS 6.3. As this may be of general interest to members my reply is in public form.

To explain the detail, I must first describe the Drive Code Table (DCT) which is a block of memory reserved and used by the operating system for the logical control of disc drives. The DCT is a table with eight entries, one for each of the possible logical drives 0 to 7. Each entry is ten bytes long, and Logical Systems Inc. (LSI, the creators of TRSDOS 6 and LDOS) have described the use of each byte when the logical drive is a floppy disc. The LSI explanation is in both the TRSDOS 6 technical reference manual and LDOS manuals, to which I refer you for their description. I find a diagram easier to understand.

You can view the DCT as in-use on your TRSDOS or LDOS system with the DEBUG utility. The table is at:

0470H - 04BFH Model 4 TRSDOS 6
4700H - 474FH Models 1 and III LDOS

Drive Code Table entry - When used for a Floppy Disc drive.

+ 0 Vector to Z80 code which operates the physical drive

+ 3 Flags for Drive Specification

<u> </u> <u> </u> <u> </u> <u> </u> 7 6 5 4	<u> </u> <u> </u> <u> </u> <u> </u> 3 2 1 0	= Data Bit number
		Step 00=6 10=20
		Rate 01=12 11=30/40
		1-Density 0=Sngl 1=Dbt
		1-Drive delay 0=1, 1=0.5 secs
		1-Write 0=Enable 1=Prot
		1-0=Floppy drive, 1=Hard drive

$$+ 4 \overline{1 \quad 1}$$

Flags for Additional Drive Specifications

```

|_|_|_|_|      |_|_|_|_| = Data Bit number
7 6 5 4        3 2 1 0
| | | |       |-----|
| | | | 0=Std FDC   3 2 1 0 Set ONE only
| | | 1-Drv sides 0=1 1=2 |-----|
| | 1-Density capability    1-Drive select mask
|     0=Sng only 1=Dbl possible
| -Reserved (keep 0), (6:2 only @CKDRV)

```

$$+ 5 \overline{1 \quad 1}$$

Current head position within drive
FFH = Drive has not yet been accessed

$$+ 6 \overline{11}$$

Number of cylinders less one 27H = 40 tracks -1
4FH = 80 tracks -1

$$+ 7 \overline{11}$$

Allocation information

```

      |
  +---+---+---+---+---+---+ Disc physical
  |   |   |   |   |   |   |
  +---+---+---+---+---+---|
      |
      |           I-Sectors per track less one
      |           Uses 09H S/den 11H D/den
      |           I-Not used for floppy discs

```

$$+ 8 \overline{1 \quad 1}$$

Additional allocation information

Disc logical

I-Sectors per granule less one

I-Granules per track less one (Single surface)

$$+ 9 \overline{1 \quad 1}$$

Cylinder number containing disc directory

The use of DCT bytes +0,+1 and +2 is consistent whatever physical device is being used as the logical drive controlled by the table

entry. I must emphasise that the description of the remaining bytes given above applies only when the DCT entry is used for control of a floppy disc drive. You should be aware that they are defined differently for control of a hard disc drive or for "memdisk".

Question 1 LSI published a fix to TRSDOS 6.2.x, FORMAT/CMD which corrected a problem which could occur when you wanted to format both sides of a new (unformatted) disc. If the last successful disc access on the drive to be used was to side one of the disc then FORMAT would lockout track zero of the new disc. TRSDOS would then refuse to initialise the new disc because it must put the BOOT/SYS on track zero, which of course it cannot do because track zero is locked out.

Why ? If you will look at the DCT diagram above, you will see that there is a data bit within byte +3 (the drive specifications byte) which specifies the active side as 0 or 1. This bit will have been set to one for the last successful access to side one of the previous disc in the drive to be used. As the TRSDOS utility FORMAT/CMD contains no instruction to reset this data bit to zero before the format begins, the first track formatted on the new disc will be side one of cylinder zero. When FORMAT/CMD verifies the format it has carried out, it will be unable to access side zero of cylinder zero, which was not formatted, and cylinder zero will be locked out as faulty.

You may appreciate that if a disc is to be re-formatted, the FORMAT utility will have reset the data bit for access to side zero of the disc as it reads the disc name for confirmation that you mean to re-use that one. Also, the data bit will have been reset if the last successful disc access was to side zero of the drive. Thus the problem only shows in the circumstances which LSI described.

The problem will be overcome if the format program always starts specifically at side zero of cylinder zero. This will be achieved if data bit four of the drive specifications byte within the DCT is invariably reset to zero before the format begins. The fix published by LSI for FORMAT/CMD of TRSDOS 6.2 meets the requirement by adding the Z80 instruction:

RESet 4,(1Y+3) at a convenient point, before the format is carried out, when the 1Y index register is pointing to

the DCT. As this instruction is not already in the 6.2 FORMAT/CMD, it has to be added, hence the full published fix involves intercepting the activity of the Z80, performing the new instruction and directing the Z80 to resume.

The fix given - which should be considered mandatory - is:

TRSDOS 6.2.x FORMAT/CMD.UTILITY

X'32A4'=CD 16 3A

X'3A16'=FD CB 03 A6 C3 59 35

TRSDOS 6.3.x FORMAT/CMD already contains the required instruction.

Question 2 If the command line 'FORMAT :x (Q=N)' is given, the disc is always formatted single sided. Changing four bytes within FORMAT/CMD program lets me format double sided by default.

Why ? Again, reference to the DCT diagram shows that there is a data bit within byte +4 (additional drive specifications) which specifies the number of sides as 1 or 2. If the data bit is reset to zero, a single sided disc will be formatted, which is what FORMAT/CMD does with the Z80 instruction:

 RESet 5,(1Y+4) which is always done during the preparation to format. The data bit is subsequently set to one only if you specify the format parameter SIDES=2.

If this Z80 instruction were to be removed, the data bit would be unchanged. A new disc would be formatted, by default, to have the same number of sides as the last disc successfully accessed in the drive to be used. A re-formatted disc would keep the number of sides previously formatted, since TRSDOS will establish the bit as it reads the disc name for your confirmation.

BUT - If your previous successful access was to a double sided disc, and you specify the parameter SIDES=1, FORMAT/CMD will not know that the removed instruction has not been carried out. It will assume that it has already reset the data bit for a single sided format, so will NOT reset it again, and you will get a double sided disc even though you wanted single sided. This would not happen when

re-formatting a disc, which would keep the same number of sides unless you have specified SIDES=2. Also, if you have not successfully accessed a disc in the drive since the computer was last reset, the number of sides will depend upon the default state of the data bit when the DCT is initialised by TRSDOS. No warranty given !

The fix given - which should be considered optional - is:

TRSDOS 6.2.x FORMAT/CMD.UTILITY

At File sector 0AH Byte 79H - Load address 32A7H

**Change FD CB 04 AE
To 00 00 00 00**

TRSDOS 6.3.x FORMAT/CMD.UTILITY

At File sector 0AH Byte 87H - Load address 32ABH

**Change FD CB 04 AE
to 00 00 00 00**

I feel that for those that would like the default format to be double sided, a better method would be to invert the logic of FORMAT/CMD. Currently it always resets the data bit for single sided format, then sets it only if the SIDES=2 parameter is specified. Why not always set the data bit unless SIDES=1 is given ?

To achieve this we must not only reverse the SET and RESET commands, but must also reverse the action of the SIDES = parameter. The following fix for TRSDOS 6.3 ONLY is offered for anyone who is willing to test it and report back. Again it should be considered optional.

TRSDOS 6.3 FORMAT/CMD.UTILITY

At file sector 0AH Byte 87H - Load address 32ABH

**Change FD CB 04 AE Default to one side Reset
To FD CB 04 EE Default to two sides Set**

At File sector 0AH Byte F8H - Load address 3318H

Change FE 31 28 11 FE 32 Detect parameter '1' or '2'
To FE 32 28 11 FE 31 Detect parameter '2' or '1'

At File sector 0BH Byte 05H - Load address 3325H

Change FE 02 Is two side required ?
To FE 01 Is one side required ?

At File sector 0BH Byte 09H - Load address 3329H

Change FD CB 04 EE Change to two sides Set
To FD CB 04 AE Change to one side Reset

Hopefully someone who can understand LSI manuals will give this a thorough test, and next month's issue will contain this fix in TRSDOS patch format.

(Quite separately from the above research, I wrote to Roy Soltoff with regard to changing the first appearance of "FD CB 04 AE" of FORMAT/CMD to "00 00 00 00". Roy replied, "Here's a better way. If you change FORMAT'S handling of sides so it initializes to sides=2 and changes it to sides=1 if the parameter entry was (SIDES=1), then FORMAT will always do 2-sided unless told otherwise. Here's the patch for both LDOS 5.3 and LS-DOS 6.3". Ed **)

. FORMAT53/FIX

D09,D6=EE:F09,D6=AE

D0A,49=01:F0A,49=02

D0A,4F=AE:F0A,4F=EE

. EOP

. FORMAT63/FIX

D0A,8A=EE:F0A,8A=AE

D0B,06=01:F0B,06=02

D0B,0C=AE:F0B,0C=EE

. EOP

NOSTALGIA

The latest issue of the News has arrived (Vol 8, 11/12). Firstly I would like to congratulate the editors (present and past) on the legibility of the print. I can read everything now without having to resort to the magnifying glass. Not that I intend to criticise the past issues as, after all, we have to do our best with the available resources. And this is what brings me to the subject of this letter.

Model 1 has been mentioned quite a lot in the last issue. What is all that about Model 1? I have almost forgotten its existence even though it has not been that long ago. This however has made me put the fingers to the keyboard. I thought that on my retirement I would become a frequent contributor but couple of factors conspired against it. One is that my garden, though not particularly large, has not been touched for about fourteen or so years so the hay-making took rather a lot of time (especially as the top of the garden is higher than the chimney pots) and, secondly, that here in Isle of Harris I am completely cut off from the computing community and my only sources of information are different groups' magazines and the Personal Computer World.

During my army service I have spent some five years running so called input control. IBM punch machines and verifiers. One of them was 011 but I don't anymore recall whether this was a punch or verification machine. 80 column cards hand fed. I had a senior machine operator and eight operators. The cards were sent to the computer centre where they were first checked for batch control totals, then they underwent an edit check run and finally the update run. Clearing the rejects from all three runs was one of my responsibilities. The update run rejects were either no traces or compatibility errors. The compatibility errors were the ones which could produce some problems. We held the interpreted copies of records in our office but, as these were designed for us and the 'customers', they did not contain all the information. In those days of very tight coding things like negative numbers etc were used to denote that something may have happened but is no longer valid. I used a straight (uninterpreted) print with a thick coding book to investigate why something, which on the first sight appeared perfectly logical, was

considered by IBM 730 to be incompatible with the information held. Sometimes I had to take a trip to the computer centre to consult the specialists there and that was the nearest I managed to get to the computers, big brutes that they were, silently spinning their tapes back and forward - in their air conditioned, dust-proof rooms. I wonder why the staff servicing these monsters always spoke in whispers in the computer rooms ?

Towards the end of my service (in 1968) I have passed programming aptitude test and was to be posted for a year's programming course but I was also required to waive the right to terminate my service for five years. But enough was enough and, after twenty two years of it, I decided to try whether I could provide myself with a roof over my head and three meals a day by my own effort and without tax payers' assistance.

In 1980 (?) I have seen ZX80 advertised. Anyone remembers those ? I bought one - 1K memory and integer maths only. Still, it fired my interest but proved to be quite inadequate to do anything useful. And this brings me to the almost forgotten Model 1. What a fuss it was trying to buy one. The Tandy store would accept only certified bank draft and the keyboard did cost some £400. I still recall vaguely the frustrations with the tape (I bought a Minisette recorder and this improved the matters a bit) and then it was a big decision to take - Aculab or disk drives. Disks drives meant buying an expansion interface (another £300+) and the drives - miserable as they were as far as the volume was concerned. I finished with three of them (drive 0 over £400, and the other two over £300 each). I must say that I did not experience that much trouble with the connectors between the keyboard and the expansion interface and never had to resort to gold coated ones. Occasional wipe with a cotton bud moistened with the disk cleaning fluid kept them working. A bigger problem was the refrigerator and this used to freeze the computer occasionally until I bought couple of filters. The disk drives gave trouble at times too. On one occasion one of them refused to read in spite of cleaning etc so I lugged it to a Tandy store in London - where the thing worked perfectly. My face was red but I have received the best bit of advice from the kind salesman - 'Occasional shaking sometimes does them good'. After that any reluctant drive was lifted at one end about 1/2 inch and dropped and this always did the trick.

Drive cleaning was another thing. Firms advertising cleaning products were categorical 'protect your data, clean the drives weekly'. In those days I probably did clean them too often. Now I cannot remember when I have cleaned the drives in my Model 4 last time.

However much is said about the paperless office, computer without a printer is still half a tool only and so it will remain until such a time when everybody has a computer and modem, or we will be able to exchange miniaturised disks. So it was with a great thrill that I installed Line Printer VII. It was a horrible thing - awfully rough-formed characters and no descenders. My model 1 ROM had a lower case character set (being a later model) but there was something to do with loading the lower case driver but I no longer can remember what it involved. This however disappeared once I got the floppy drives. Line Printer VII was followed shortly by Line Printer VIII which was really quite nice machine but only accepted 8" paper. In turn the Line Printer VIII gave way to Epson FX100 and this one is still working perfectly after some three or four years.

My first project was a data base program to sort out the house contents insurance. It was a long program in Basic, untidy, undocumented spaghetti junction but it did everything I wanted. It had a search facility by even a substring of an item description, locations, inflation adjustments by type of the item and all sorts of prints. The second program was another Basic effort to do the accounts. Another rough thing and so long that I had to split it into two parts - the daily transactions and end of month or year routines. The whole thing, if loaded, left no memory to run data. In those days I had no idea how to create overlays and I don't even remember whether we could do it under TRSDOS. I still remember that, when using NEWDOS, one could retain all the variables to be used by the called program.

My Model 1 and all the bits, which went with it, went in exchange for twin drive Model 4 in July 1983. An early model it must have been as the serial number is 000212. Well, there I was a proud owner of a 'real' computer at last. One can understand this feeling when comparing Model 1 with Superbrains, Kaypros and other makes - most of them long since deceased. But the snags of Model 4 soon started appearing. There was still no access to the vast volume of CP/M

software and Tandy was very slow producing their own. Anyone remembers SuperScript? It used to freeze sometimes and you lost your data disk on re-booting. You could not get out of the text creation without saving the file and, if the file got corrupted in the memory that was that. The disks held a miserable under 200K of data and it was quite a while until TRSDOS permitted formatting 80 track double sided disks. CP/M+ was very late in coming out and this has proved to be the greatest disappointment of the lot. Mine is sitting somewhere in Pickfords store in Oban. Tandy hard drives were very expensive and all this taken together prevented Model 4 becoming the real workhorse which it could have been. Montezuma CP/M arrived too late to give the machine a real boost of sales in UK. By that time the 16bit computers were really established and a sophisticated, memory-hungry software was flooding the market. I bought a 16bit co-processor but this was rather a disappointment. It could run MSDOS programs but was not IBM compatible. Now it lives somewhere in the attic but it may get resurrected once I have more space in my computer room. It does after all produce an additional RAM disk of 256K if nothing else. But to those of us who already had Model 4 Montezuma CP/M became a real liberation. Finally we could run dBASE II, SuperCalc, Sage Accounts and what have you. And, some time later, we could even get a 20MB hard disk at a reasonable price. I have bought three of those, one for myself and two for the office (where I was just about finishing my working life) and they have proved to be very reliable.

As, after retirement, I was still involved with the program maintenance and enhancements for my old office I have also bought (to have a standby computer) Model 4P with two 40/80 switchable drives. A sweet machine this has proved to be - whatever I may have said in the past about an early model bought also for the office. I am afraid this has gone now as I bought an Amstrad PC with colour and 20MB hard drive. I was trying without any success to sell the Model 4. There is however still quite a demand for 4Ps. So here I am still with my Model 4, double sided dual 80 track drives and hard disk and an Amstrad. Model 4 is not used that much - a bit of work for my old office and still Sage accounts. Amstrad is now becoming a workhorse with most of the stuff being transferred.

So much for the nostalgia. I shall always think of Model 1 with sentiment - providing that something will recall it to my mind. After

all I have learnt my computing on it and it did provide all the excitement which a new experience always creates. It was a good machine and it could do a great deal. Any failings are now forgiven and these again were due to an incomprehensible Tandy policy of providing non-standard disk format, own operating system, 64 column screen and only 48K of RAM.

And what I can say about Amstrad ? Well, the keyboard is ropey (it does not feel right), the screen character set is horrible, you cannot get a high resolution card for it, it has some expansion slots but there is nothing to put into them and GEM is a lot of rubbish. The only couple of times I tried to use GEM it froze the machine. But for all of that it is a very fast computer and it runs IBM software with no trouble at all. I have dBASEIII for it, the unimproved version, and it is a pleasure to work with it. The only snag I have found so far is that in spite of MODE LPT1:,,P command my printer sometimes cannot keep up and freezes. dBASEIII however has the decency to report the error and asks whether to Ignore, Abandon or Retry. Pressing R puts everything right. Incidentally MODE LPT1: command does things to printer like setting number of lines per inch, characters in the line and the flag 'P' tells the computer - 'hold the horses, my printer is flagging'. Would now be the right moment to think about FX1000 ? I wonder what the boss would say to that idea and what the heck I could do with a still working FX100 ?

Well, in spite of jumping on the 'me IBM too' band wagon I will still remain a group member and I also will continue the membership of the CP/M group. After all we do look after the MSDOS users, don't we ? Breaking off completely with Tandy would feel like a betrayal of Model 1 memory (I wonder who's cursing it now ?).

ANON.

Notes From The PRO

Reference the Secretary's comments about Model 1 users. There are a large number of them still in existence & being used, in my own group we all have & use Model 1's, NATGUG is interested in ALL Tandy users, their views, problems & interests. For everyones information the Blandford Bulletin board runs on a Model 1 ! NEWDOS will run with

the Tandy Doubler & any MEMBER can ask us how to do it, but if you don't want to join, well, in all fairnes how can we help ?

Members using Model 100's may like to know that there is a program that runs on both Model 1's & 3's that enables programs to be loaded to & from disks just as if they were part of the 100, it was published in 80 Micro during the time when they had a special section called C Notes, it is on page 171 of the January 1984 issue. If anyone has problems, I have typed it in & got it running for both a Model 1 & 3, but I no longer have a 100, to try it out on, I sold that to help buy my Model 4P.

More notes on the THE XLR8er.

There is an article in the June issue of 80 Micro from another user of this board, so until I have had the opportunity to read it I will not add much to my last comments, except to say that under CP/M it appears to have more advantages than TRSDOS, because you don't have to load a lot of system files into memory first. You only have 256K of ram disk, but Monty's Window will run while programs are loaded in ramdisk.

Another firm are advertising an HD64180 board in the June issue of 80 micro, they also suggest that most DOS's can be run, so I am going to write to them & find out if they have cracked the Model 4Ps, Model III mode yet, because our little program will not run basic programs properly, doesn't seem to be able to read data files, CMD files seem OK, but as yet I have not had the time try it out. It might be to do with the way 'wait states', are set up first, look out for the next heart stopping instalment.

I was very pleased to read the secretary's comments about NEWDOS, I still think you can do more with it than any other DOS, LDOS users will disagree most violently I don't doubt, but then I started using NEWDOS in 1979 & by the time LDOS was available I was well established, & couldn't see any advantages in trying to learn another operating system to run the same programs. The things I can do with Montezuma's CP/M on the 4P are about equal, as well as setting 80 odd different disc formats, as a result I can format a disc that can be read by an Amstrad 8256 using a 5 1/4" second drive & pass programs to & fro as long as they are compatible with CP/M+.

I had a lot of trouble with edge connectors on my Model 1 in the early days, & eventually solved them with gold plated edge connectors which can still be obtained from America, the firm that sell them are:-

E.A.P. Co., PO Box 14, KELLER, TEXAS 76248, U.S.A.

Their phone number is 817-498-4242, in case you may want phone an order using a credit card.

It is notable that although the 4P has still the same sort of edge connectors for the printer I have never had any trouble with them, probably if I ever use the 50 way bus connector I shall do.

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

TREASURER'S NOTES

We now have all back issues of the Newsletter available. I think I have supplied all those who were waiting for the unavailable issues. If I am wrong please tell me. I would like to thank David Washford for all the photocopying that has made this possible. Indeed I would like to thank David for his total dedication to the job of Secretary. He was not keen to take on the job and I feel very responsible for talking him into it. Thank you David. (I echo that, Ed. **)

CP/M library list are now available - see elsewhere in this issue.

Model 1/III library list (24 pages) have now been sent out to all those requiring them. If I am wrong please tell me. Model 1/III library lists will in future cost £2.00. This is to cover the high cost of photocopying.

I hope at some time in the future we will have some Model 4 and MSDOS list, but I would imagine that, as yet, there is not much in these libraries.

The mailing list for this issue was printed from the membership database and not from Gordon's Powermail. John Bodsworth will mail

direct, those who have paid their subscription to Dec '87. I shall mail with a further reminder, those whose subscription runs out on 30th June '87. The database is quite up to this, whereas Powermail needs flagging from the database to perform the same task. Those then who are a little late with their subscription will receive the Newsletter a few days late.

I think, also we shall have to consider charging foreign members an increased membership fee, this to cover the higher cost of postage. I do not include our two African subscribers as we have UK forwarding addresses for them both.

I look forward to meeting as many of you as possible at Blandford on Sunday 16th August. I shall endeavour to have supplies of Model 1/III Library lists, maybe back issues of the magazine and disk mailers available for purchase. This will depend on adequate space in my car. It has to carry me, the Hon. Editor and probably one other, plus all our gear.

Roger Storrs, Hon. Treasurer.

SEX NOTES

I must start this month with a humble apology for a terrible error last month when I said that Dave Holman was running the 3.5" format Amstrad library - sorry, Dave, sorry, readers. I don't know where the 3.5" format bit came from, and it is totally incorrect - Dave is reporting on the Amstrad 1512 and will look after PD software for that machine - but in the more normal 5.25" format. Regrettably we do not have a 3.5" librarian at this moment in time. Please accept my most sincere, and humble, apologies.

Thanks are due to Richard Marks for the work that he did back in 1984 to index the first five years of our Newsletter; aided by a day in which I was dying from a common cold - and therefore unfit to do anything else - I have typed in entries for the later issues and we now have a fairly comprehensive NATGUG NEWS INDEX, up to and including the last issue, Volume 8, no 11/12. Thanks to tuition from Ariela, who was so very tactful in pointing out my rather stupid programming clanger,

the Group can now make this available in hardcopy form, and publish an annual update each July. I deliberately say hardcopy since the database file is around 90k ! The printout is 27 pages long, hence the cost of £2.00 per copy - orders to our Treasurer, please.

I'm very pleased to announce that the much requested reprint of Dave Holman's CP/M tutorial is also now available at £2.00 (for 34 FULL SIZE pages) this is very good value - again, all orders direct to the Treasurer please.

SWINDON looms nearer and nearer, and I for one am getting quite excited at the prospect of meeting so many friends again - but please, make my life a little easier and let me know NOW what you would like to have talks on or demonstrations of. As Gordon has said, the Hotel is prepared to offer a concessionary rate for those wishing to stay an extra night (Sunday), apart from that I understand that the rates will be the same as in March; if you can't wait for the next issue to get more details then ring the Wiltshire Hotel on (0793) 28282. Looking at our membership list, it does seem that around 200 to 300 of you have not yet attended one of these weekend endurance tests - if this applies to YOU, then might I enquire as to whether you realise just what you are missing ? This is where you find out which word-processor is best for you, how to get Visicalc to do really clever tricks, why the Amstrad 1512 might be better than your present machine. And you find out these things, and so very much more, not just from the "lectures", but more from talking to real live users who are pleased to help and advise. The preliminary schedule includes getting Newdos to read & write Trsdos 6,, more dBase II, communications, more 'C', MS-DOS applications software, hi-res graphics etc.,etc.

(Can we also find out how to get TRSDOS 6 to read & write that other, now obsolete DOS ? I hope David will not mind me including, that if you are attending Swindon - you are arn't you ? - then if you have a specific query, please let David know sometime beforhand, someone can then aproached to come along prepared with the answer. Don't be disappointed on the day. Ed. **)

Before Swindon we have BLANDFORD. Yes, thanks to Blandford Computers, all members are invited to spend the day there on Sunday August 16th. Yes, we do know that August is prime holiday time - but

did you know that Bournemouth & Poole are only 15/20 minutes away and thus give you an ideal opportunity to give both yourself and your family a good day out ! The meeting will start at 10.30am and finish around 5.00pm, so there's plenty of time to drop the boss and/or the kids off for the day and pick them up afterwards. The main theme of this meeting will be modems and how to get the most from one, but all the other usual activities will be taking place as well.

In preparing the Index, I noticed that over the years I had frequently asked for information about various pieces of software - I never, not ever, had a response ! So I still don't know whether Banner Machine or Crayon compare with Dotwriter, whether Plannercalc is better or worse than Visicalc, or what Datagraph does for Visicalc. Now come on, someone out there knows at least one of the answers and could write a review for the Newsletter. And what about Profile Four Plus - allegedly directly useable with either Superscript or Visicalc; again, SOMEONE must be using it and could write an appraisal.

When you send your renewal in at year end, (this month if your subscription was only paid up until June '87) let's hear about YOUR choice of three favourite pieces of software. Game or utility, business or pleasure, just give us three titles together with the model computer that you use. The information will not only help us plan future meetings, but is expected to shed more light on what keeps the oldies going or why the newies are so much preferred.

Most of our appeals for help have been answered in one way or another, and we're very grateful to all those who came forward. Surprisingly enough, to me at any rate, the one area still awaiting respondents must be the cheapest to fulfill - I asked if Members who regularly took a Computer Magazine (yes, there ARE others apart from NATGUG Newsletter) would undertake to report regularly on issue content as well as maintaining an index for other Members' benefit. This paragraph is therefore a repeat of my earlier appeal - do YOU take PCW, or Byte, or ?

I haven't included a Model 1 article this time as I understand that we're in the novel situation of a space shortage ! However please be reassured that there will be more; Tandy have given us permission to reprint articles from the discontinued Microcomputer News series.

(Space shortage !!! Not true, I have not run out of paper yet ! I did advise David, at sometime, that the LeScript file I was building to make up the Newsletter, had then dropped the figure of 84992 free bytes to 3846, which may have printed 40 pages. This Newsletter has been output by merging 5 files with a total count of 135K. Ed. **

More on the Megabyte RAM Board

In December '86 Ian Linehan had installed the Winchester interface hardware (on the RAMBOARD that was subsequently shown at the Spring SWINDON meeting) so that from about then, he was able to dispense with his previous Winchester interface and run his 20 MB NEC Winchester from the RAM board HD interface hardware. The WD1002 controller is not part of the RAM board. The controller interfaces to LDOS via (patched) RS software. Since approximately February '87 Ian has been running the full megabyte RAM board on his LNW whilst "polishing" the interfacing and Clock software for it. This is possible because his Core LDOS 5.1.4 patches enable the LNW (or any similar architecture) 64 K system to ignore the RAM board on command. On May 14th 1987 Ian and I installed the second RAM board on the first of my Model 1's. We had hoped to make a temporary installation on a Video Genie 1 on the same day, but a flaky disk drive and an elusive problem that was eventually identified as a bad cable-to-connector junction used up most of the day and kept the VG in it's box.

At the end of May Gordon Collins went well beyond the horizons of a dedicated editor and generously loaned us a Model 4 to develop patches enabling the board to operate under TRSDOS 6. To this end we await the arrival of PRO-create from Misosys and the Model 4 technical manual from Os House and I have started to build a third RAM/Winchester system to try on Gordon's MC. It happens that June and July are very hectic months for me and this year seems worse than usual so progress on the third board is not noticeable yet. (How did Terry know that I had asked him the question in my editorial ???

Roy Barber kindly sent me a copy of a review of the Alpha-Technology Supermem board in 80 Micro in which Hardin Brothers writes, "I expected something more than a 3 by 5 inch printed circuit board with 10 chips soldered on it, a couple of wires hanging off the

side, 16 memory chips and five pages of loose-leaf instructions I usually use Supermem and RAMDrive to create a 448 K RAM disk. I back up my system disk to it and set the RAM disk as the new system disk. This process (run as a job control language file) takes about two minutes". The price for 1024 K is 399 dollars with a further 49.95 for the Alpha Technology RAMDrive software. This totals about 280 pounds at the moment.

Our Winchester-Interface/RAM system is intended to enable the addition of an expansion board to ANY Z80 based microprocessor system running at CPU clock speeds up to 4 Mhz. The design uses a method intended to allow any of the RAM expansion to act as system ram in which opcode could run. The system consists of 2 high quality double sided, through hole plated boards with silk screen identification for all components. The boards are, a Z80 Interface board (2 1/2" x 2 3/4") and the main board, (7" x 8"); software interfacing it to LDOS 5.1.4 as described below; together with 20 (at present) pages of information on circuit diagrams, component lists, construction and setting-up instructions, software and hardware notes. The notes describe how the FPLA/ROM controller is programmed to enable others to design alternative FPLA programs for other machines. The connection of the board is electronically independent of any individual machine interface and only requires that the host Z80 be removed, the small interface board plugged into the Z80 sockets and the Z80 inserted into the Interface board which is connected to the main expansion board by two ribbon cables. The expansion board then only needs 5 volts at approximately 1 amp.

A fully populated board allows;
1 Megabyte of RAM,
WD100X Winchester-Interface,
Z80 CTC - for mode 2 Interrupt support,
battery powered Real time Clock,
Alternative boot ROM socket - 2732 or 2764

Apart from the essential control logic the design allows for variable sizes of RAM up to 1 megabyte and the omission of the other features such as the CTC, BOOT ROM, RTC etc. Link selection permits power-on determination of the following power-on functions:

New boot ROM enable/disable
 New boot ROM size select
 Host machine standard/mode 2 interrupts
 Reset on *NMI enable/disable
 *MI gated *RESET signal
 Standard or WD1002 *WAIT signal
 IEI input for CTC daisy chain
 Control port addressing range (any 16 byte page)
 New/old RAM select

Additionally, the control functions of the RAM and optional alternative BOOT ROM are software selectable as follows:

32/64K bank switching mode
 New/old BOOT ROM enable/disable
 Disable whole board
 Enable RAM at 1, 2, or 3 predefined address blocks

Hence the RAM board can carry a crystal, 60 semiconductors including 2 PLAs, more capacitors, some 20 resistors, together with commensurate numbers of pin sockets pin headers and jumper links unless the components are soldered directly to the board.

The packaged software consists of:

RAMDISK - emulates 80 track double sided double density
 OUTLOAD - loads high resident drivers into a RAM page
 patches to LDOS 5.1.4 to enable the RTC
 " " " " " mode 2 interrupts
 " " The RS Hard Disk Package (WD)

My RAMDISK system has now been running routinely for a month on a TANDY Model 1 which has a Level 2 Keyboard with lower case mod, Tandy Expansion (neither has gold-plated edge connectors), Gnostic DD board, 1 TEAC 40/80 switchable drive, 1 TOSHIBA 2S 80T floppy, a NEC 20 MB Hard drive, WD1002 HD controller all powered from a single ASTEC switch-mode PSU. Apart from the PSU mods, there are no changes to the TANDY basic architecture. The RAM board lies loose under the Expansion pcb and psu cabling to KB and expansion. The interface board protrudes slightly through a hole cut in the underside of the KB. I routinely use linked

sequences selected from a suite of 20 sizable fortran programs (up to 32 K) which have run for up to 3 hours so far and given the requirement will run for longer. The programs are linked through a JCL file which extracts the appropriate programs from partitioned data-sets providing them with standard keyboard entry as needed in a Zshell environment. When data checking is complete the program sequence reads data from 4 files and then creates and operates on up to 21 files (two of the scratch files may exceed 300K). At the close of processing 7 files of OP, one of which can be up to 40K are written out to the TOSHIBA for printing on a Sakata SP-5500 controlled by a JCL file running on a MAX 80. Thus the new expansion ram system gets a thorough work-out. The ramdisk is a joy when building and re-modelling PDS's and with it I was able to reorganise a PDS of /CMD and control files, that had grown to 709K, into 3 smaller PDSs. This involved copying, appending and purging 70 of 150 members and is an undertaking I had avoided previously even with the facility of Hard Disk, it took about 5 hours on the RAMDISK and operating under control of a long JCL file. Ian's RAMDISK software sets up a "DD DS 80 track" RAMDISK and loads 270K of operating system and utilities in 40 seconds on my 1.77 Mhz Model 1. Other software sets and initialises the real time clock and a very nice software feature of Ian's, OUTLOAD (OL), loads system modules into a page unused by the ramdisk. With the ramdisk (set as drive 3), two floppies, 4 Winchester partitions and with a diskdisk on one partition then all of the 8 OS slots available for backing storage are in use. Snags are that the Real-time clock, which works for Ian, screens rubbish for me. I haven't found time to change the clock chip which I expect to restore me to RTC British Summer time (the Max 80 gives GMT) - meanwhile the unpatched LDOS 5.1.4 TIME and CLOCK software stays in use. The FDC seems to have become more sensitive to poor floppy disk media, pre-CREATEing files a little larger than their expected size overcomes this. At present Basic, Fortran and Visicalc crash the OS when OL is in operation although the Operating System, various Misosys utilities and Scripsit run satisfactorily (at present OL requires *KI RESET, tho' that has nothing to do with some opcode crashing the system, which is probably a problem with port addresses). Similar difficulties arise when the RAMDISK is defined as the system drive but not otherwise. Similar problems arise, I believe, with the 128K Model 4; where I've just seen a discussion of @EXMEM in the Winter 1987 11 version of the Misosys Quarterly that indicates that @BANK resides in high memory and contends with languages such as BASIC which use a high

memory stack. (what will the Winter 1987 issue be called ?). I have been writing this and backing text to the ramdisk as I go along. It is quicker and even quieter as only SYSTEM access is needed to the HD (but no longer when OL operates at spec). Now THAT you may say is foolhardy. Well, not so foolhardy because Ian has provided a very neat feature so that if the system does crash - and it hasn't done so for the last three weeks - but retains it's power supply - given an auto-ed config file then all you do on re-booting is to invoke RECOVER :d and there is all your data and configuration back in about 1/40th of the time required to set-up the RAMDISK in the first place. At 11.23 I'll just REBOOT and RECOVER :3.

And at 11:23:40 here we are all back, and that included 20 seconds of reconfiguring the system as well as KB entries for and re-loading of Scripsit and this Text file from RAMDISK. The RECOVER should be and apparently is instantaneous.

We have had five enquiries about this Winchester-RAMDISK package. If we get sufficient firm orders to enable us to have 15 boards produced we will go ahead and have them manufactured. The price is 160.00 pounds.

16th June 1987. Terence Harris and Ian P Linehan,
15 Cholmeley Crescent, London. N6 5EZ

A request for words of wisdom.

I have installed 80 track double sided disk drives in my 4P. I have put the old 40 track drives into a spare box, with power supply, and followed the instructions in 80 Micro to connect the external drives to the 4P. However so far I have not been able to access drive 3. I understand that TANDY use the normal drive three line for side select. Has anyone made this modification and got all four drives working who could advise me.

Contact: The Rev. R.S.Wilson, Greenside Vicarage, Ryton,
Tyne & Wear. NE40 4AA. Phone: (091) 413 8281.

LOCAL CLUB NEWS

BOURNEMOUTH

Meets first and Third WEDNESDAY at Kinson Community Centre at 7.30pm.
Telephone Rabe on (0202) 730617

CHELMSFORD

Meets first WEDNESDAY of each month at 7.30pm. Contact Richard Creak,
Woodhouse, 59D Little Baddow Road, Danbury, Chelmsford, CM3 4NT
(0202) 411725

MILTON KEYNES

Meets alternate Sundays, October to March. Contact Brian Pain on (0908)
564277

NORTH-EAST LONDON

N.E. 1100y 77 Old Church Road, Chingford, LONDON. E4 6ST. Meets first
Monday every month.

WILMSTON

Meets second Wednesday at:- 3a Gainsborough Street. Contact John
Gardner on 0787 79504.

OXFORD NEW WEEKEND

The next meeting is scheduled for October 16th-18th - make a note; NOW!

BLANDFORD 16th August 1987. (More information to follow)

For both above contact David Washford on (0373) 72739.

If your club is not mentioned above then its your fault, not ours !
For your FREE advert, write with details to:- Gordon Collins, Editor.