

# **NATGUG**

## ***NEWS***

Volume 7 Issue 2

August 1985

**OFFICIAL JOURNAL OF THE**

**National TAS-80**

**& Genie Users**

**Group.**

### INFORMATION ON THE GROUP

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

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

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

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

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

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

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

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor.

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## EDITORIAL

You should shortly be receiving booking forms and programme details for the Swindon workshop, on the 25/26/27 October. The emphasis will be on CP/M and sessions on Dbase 2, BDOS assembly language programming and the C language will be included.

"Anon.", in this issue, didn't get very much out of the one workshop he attended (I think he is referring to the MK weekend last summer). I feel that our workshops are extremely good value for money: two nights full board in a good hotel, and all the lectures and other activities, for around £60. A commercial organisation running this sort of thing would charge very much more. As for questions at the end of the sessions, most lecturers prefer to keep things informal, and answer questions as they arise, during the lecture. Many members get a lot more out of informal discussions in the systems room, or during the meal times, than they do during the lecture sessions, as "Anon." points out. As for sessions on the various accounting packages, this is very difficult to do, as no one member is likely to have all the packages available, and be familiar with them all. The best we could do would be to get different members to do a short session each on one package, and then have a general discussion. Perhaps "Anon." could do a session on the Sage package. This is now available on the QL, by the way, for under £100! I believe it was written in C.

The recent Blandford workshop was excellent, as always, in spite of the weather. I would like to thank Os House and his staff on behalf of those attending for making it a very pleasant meeting. It was at Blandford that I asked David Washford to explain the meaning of "Oggy, Oggy, Oggy", given in this issue. I suppose it's something to do with "Tiddy Oggy", which is the cornish vernacular for a cornish pasty.

Leon Heller

## PROBLEM SECTION

Has anyone out there converted the Model III program "Trader" to work on a Model I. The program looks as though it would suit my needs well, and is discounted at Tandy stores right now. But Tandy say it won't work on a Model I (presumably it's in basic but with peeks and pokes that crash it). A patch or modified listing would be much appreciated.

Also, does anyone have a patch to Newdos 80 v2 that enables JKL to work with graphics characters on an Epson FX 80 - I really miss my Microline 80 for its ability to do proper screen dumps, but couldn't stand the lack of true descenders, so got rid of it.

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or leave message)



## Model 4P BOOT ROM

After rummaging around inside the 4P's lower RAM I have managed, by a round about route, to get the Boot ROM to reveal itself. This was achieved by tracing the BOOT command which, after switching the display to 64 x 16, does a RST 0 to get the system initialised. I used the following inelegant little program segment to look at the Boot ROM:

```

XOR  A
OUT  (84H),A      ;this switches display to 64 x 16
DI
LD   A,1
OUT  (9CH),A      ;this switches in the Boot ROM.
LD   HL,0         ;source pointer
LD   DE,5000H     ;destination pointer
LD   BC,1000H     ;there's 4k of code to move
LDIR                ;move Boot ROM code to RAM
RST  0            ;reboot system

```

After rebooting I had a look at the code in RAM addresses 5000H-6000H and came across some interesting messages. For instance one which says "Dynamic RAM Test Press <Enter> to Begin And RESET To Exit". Curious at this I looked further and found out how to test the RAM. It turns out that you only have to press "." (full stop) and RESET, in that order, and then follow the prompts. The Boot ROM also has a version number which can be displayed by resetting with the "V" key down.

Regarding TRSDOS 6.2 I got fed up with the way the HELP facility works. It tells you what you want to know and then wipes it away before giving you back the DOS prompt. Annoyed at having either a) to write down what it was showing me, or b) to get the manual out anyway I patched it so that when I exit HELP it now leaves the display for me to copy. Anybody who feels the same way can do this with the following patch:

PATCH HELP/CMD (X'2B39'=18 4A)

Keith Taylor  
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## MODEL 4P ETC

In January we bought Model 4P and DWII for one of our units to prepare a program for visit by the Colonel-in-Chief. I will not mention the fact that the unit concerned ordered another twenty Dysan diskettes on top of the twenty I got for them in the first place - well not to a great length apart from saying that they thought that once a disk is written to that is it. At least that was what they must have thought because forty S/S D/D 40 track diskettes is about enough for 1,000,000 words.

With the M 4P I got them Superscripts and I must say that the temp they hired for the job (for some ten or so weeks) experienced no trouble with it. The problem with the visit programs is that there are many cooks - many too many to my mind. The CO is responsible for the program but he gets his directives from us and then everybody along the chain of command wants something added, altered etc till the thing finally reaches the Colonel -in-Chief's secretariat.

The visit successfully over the equipment came to me to hold and look after until required by another unit for the next visit. Only I have decided that no unit is going to get it and that I am going to use it for budgeting and odd letters I wish to write myself instead of using the typist. She cannot read my writing which does not surprise me at all as I cannot read my writing either.

After playing with Model 4P for about a week or ten days I must say that I definitely prefer Model 4. To give credit where due 4P's screen though small has excellent resolution so there is no problem in reading the screen. I find the keyboard a bit soft though after using mainly VT102 and Model 4. VT102 has a very positive hard keyboard and Model 4 keyboard is more springy than Model 4P's.

The screen is a bit lopsided and really shakes on disk access and the drive 0 plays about a bit. I don't like switching on with the disks in the drives and so I get a three language message about no disks. I load the disks, reboot and pronto a message on drive 0 'Disk error'. So I re-boot again and normally it works. I wonder whether the machine has been shaken up whilst it was being brought up from Scotland as I have not heard anything about disk errors from there.

I found a couple of funnies with Multiplan too. At present I use my own copy and, as I don't like carrying disks about, I have made a copy (good old SU). The copy boots and works perfectly on my Model 4 but, if I try to boot on 4P, the silly box tries to load the ROM image. So I boot from VC and then swap the disks. Also I find that I cannot get 'e' in text on Multiplan whilst I get it on Model 4.

Of course the Multiplan runs even slower on 4P than it does on 4 but this probably is due to the fact that my 4P has not got the extra RAM. I will remedy that shortly or at least it will be remedied shortly - I hope. Anyway as I will be retiring next year (my successor has already arrived) and cannot leave my programs I am buying CP/M version of Multiplan for 4P. I wonder how that will perform.

I must say that WS, VC and dBASEII run reasonably and, I would say, faster than the TRSDOS programs.

Whilst I have some reservations about the Model 4P and, in retrospect, I am glad that I did not swap over I really like DWII. It is a noisy devil but in comparison with LQP02 (which I bought in 1982 for over £3,000 including sheet feeder) it is a demon for speed. I am using pitch 12 wheel and the print is very nice too - but does anyone know of a wheel with "f" on it? I am really tempted by it myself though I would not like to get rid of my FX100 and my study just does not have enough place for two printers. DWII has gone down in price to some £500 and it is an excellent bargain. One can get cheaper daisy wheel printers but they are not capable of working for hours on end non-stop, nor can they take 6 copies.

DWII has two switches on the front panel Off/On Line, and pitches (10,12 and proportional). As the cleaner flicks the duster round the place and I have not got a cover for DWII yet I find sometimes that the printer suddenly double spaces (not having done so the night before). This happens when the 10 pitch is selected on the switch and pitch 12 wheel is used (the cleaner has been at it again).

So whilst I would not change my Model 4 for 4P and I would not recommend 4P for any work other than short use I must say that I do like DWII and I would say 'hurry chaps - whilst the stocks last.'

Anon.

## OGGY OGGY OGGY

First things first this month. THANK YOU HELEN for a first class lunch and first class hospitality - if and when you see Os, please also thank him for another marvellous Blandford weekend! For the benefit of those who missed it, the 1985 Blandford Workshop was attended by close on 75 - and I doubt if many of them had time to notice that the weather wasn't at it's sunniest (they were too busy trying to work out the re-named rooms! ). A full day of talks was accompanied by the usual Systems room, where Ariela, Colin, Dave, and Laurie were as besieged as ever, and where also young Carl was upsetting people with LDOS not only in high res but also in full colour as well.

On behalf of NATBUG, a warm thanks also to Mr Matthews of Dorchester who is contributing another volume of BYTE mags to our library. Mr Matthews is distressed at having missed two issues of 80-Micro, and if anyone can spare their copies for Dec 84 or March 85 then he would be delighted to receive them - Brian or I can supply the address.

Now it is time to take a LONGVIEW of things - remember how I have previously enthused about DotWriter? Well, the next best thing arrived last night - a Prosoft program called Longview which in one fell swoop overcomes my only problem with VisiCalc. My major use for a spreadsheet is for projecting sales and profits, so my usual VC file is for 26 columns by 40 lines; whilst it is wonderful to watch re-calculations rippling down the screen, it is a right pain having to break the spreadsheet up for printing out on my Epson MX80. Even a 132cpl printer couldn't cope with it, so you can imagine how overjoyed I am today to be able to print out all 26 columns - on the MX80 and in full size too - thanks to LONGVIEW.

LONGVIEW provides the means to take a VisiCalc file, turn it sideways, and then print it out using DotWriter. Three fonts are provided, each in a standard and a Wide style, and my 26 columns printed out on 2 1/3 72-line pages! Perhaps my biggest surprise was in just how quickly it all happened. I should think that we've all had utilities that perform miracles - if you can afford the electric to keep the computer switched on long enough! Well, Longview took exactly 55 seconds to prepare an 8-granule Visicalc file - on my Model 1. To say that I'm impressed is pure understatement !

LONGVIEW comes on a 35-track SD disk containing all the programs for operation on either a Model IV, or Models I & III. At \$29.95 (dollars, not pounds) it obviously doesn't include either VisiCalc or DotWriter, but is definitely the most Value For Money software that I've ever purchased. As a matter of interest, it was authored by the same Mr Mason who wrote DotWriter - hence the link between the two programs.

The last time I mentioned Prosoft and The Tesler Software Corporation it wasn't in any form of admiration! in fact I am still pretty sore that they won't upgrade my Version 3.0 Dotwriter. However one must respect the fact that as a software house they are still supporting the Tandy community and therefore

I feel that the Tandy community might care to support them (subject to assurances on upgrade policy! ). Send them your Access or Barclaycard number (airmail) and you'll receive your copy in a little over ten days : Prosoft, Box 560, No Hollywood, CA91603, USA.

Finally, an explanation of Oggys: This page started as Notes from the Westcountry, where I've been brought up to shout OGGY OGGY at every possible opportunity - in my other career. Sorry, but that's all there is to it !  
David Washford

### TEAC Drives and Model III:

Having experienced considerable trouble with one of my Shugart Drives SA400 in my Model I TRS80, I decided to buy two TEAC Drives (EG400 FD50A) from Lowe's in Matlock at the modest price of £75 each. One was for myself and one for my son, Roy, who has both a Model I and a Model III. The new TEAC drives worked excellently on both our Model I's (they were tested thoroughly at Lowe's whilst I waited.)

However, it proved impossible to make the TEAC work on the Model III. Leon Heller when consulted suggested that it was probably due to the slower speed of the TEAC compared with the in-built Model III drives. My son re-set the speed using SYSTEM (Drive=2,Step=3,Delay=ON). Again it did not work. He then played about with the settings of the dip switch block in the TEAC, and by very persistent trial and error, found he could make it work by setting the switches as follows:

- 6. (DS3) --- OFF
- 5. (MX) --- ON
- 4. (DS2) --- ON
- 3. (DS1) --- OFF
- 2. (DS0) --- ON \*\*
- 1. (HS) --- ON

The switch setting of 2 - (DS0) differs from that shown on the leaflet supplied with the TEAC drive and implies that it is necessary to set the switch to ON for drive 0 as well as for drive 2 in order to get drive 2 to operate on Model III. Fairly comprehensive tests show that all three drives, 0 and 1 (in-built in the Model III) and the external new drive 2, work quite normally and happily together with this dip switch setting. All's well that ends well, but why should this be so? Incidentally, if one uses this switch setting with the normal (faster) configuration, the disk drive will not work - so slowing down the drive is essential.

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### THOUGHTS FROM 1984 (Written in 1984 and not submitted)

It is encouraging to see that someone somewhere does read my contributions and also to get a reaction or a comment sometimes. But I don't think that the comment on ProPascal in the July issue was absolutely fair to the authors (two very charming gentlemen at 37 Gwendolen Avenue). The manual, though not intended for a novice, does say how to print. In fact of my collection of books on Pascal (which includes N Wirth 'Algorithms + Data Structures = Programs', IR Wilson/AM Addyman 'A Practical Introduction to Pascal - with BS 6192', S Leestma/L Nyhoff 'Pascal Programming and Problem Solving', S Eisenbach/C Sadler 'Pascal

for Programmers', K Jensen/N Wirth 'Pascal User Manual and Report', P Grogono 'Programming in Pascal', N Graham 'Introduction to Pascal' and BS 6192: 1982) only, and only, the ProPascal manual shows on page 11 - 60 (para 9.1.5.1 assign) how to do it. One simply assigns the file to 'LST:' and then carries out a normal 'write' procedure. Mind you, it took me several days before I managed to send a few characters to the printer but this was entirely my own fault. I just didn't think of looking in the manual (I hardly ever do) and it was only in sheer desperation that I started reading it.

I think that this 'assign' business is a very clever trick. The standard ProPascal procedure for displaying on screen is 'output' which one does not have to specify. One just says write() or writeln() - this latter just does sound silly to me and it was putting me off Pascal for a long time. Nevertheless writeln or no writeln, one can use tricks like "Display or Print D/P?" (the variable logically being DP:char). Then If DP ="P" THEN WhatYouCallIt (being a procedure) which assigns output to LST:. One has only to remember to assign output back to CON: after finishing the printing (another procedure).

I agree that string manipulation is not as easy as in Basic but then my RM Cobol (Model III version) has none at all and I managed to program happily with it until I got bored with all those long winded instructions. As far as the string array is concerned ProPascal permits setting up of these but all the elements in the array must be of the same type. Below is source listing which has been compiled and works:

```
PROGRAM Test;
{ Creates array of 10 strings and then displays them.}
{ Each entry is terminated by CR but only first ten char
  are accepted.}
```

```
TYPE Name = String[10];
```

```
VAR Names: Array [1..10] OF Name;
    Count: INTEGER;
```

```
Begin
```

```
    For Count := 1 to 10 DO
```

```
        Begin
```

```
            Writeln ('Enter your text', Count);
```

```
            Readln (Names[Count]);
```

```
        End;
```

```
Write (CHR(1AH));
```

```
For Count := 1 to 10 DO
```

```
    Begin
```

```
        Write (Names[Count]:16);
```

```
    End
```

```
End.
```

A very simple program but I was trying to see whether I could create and display a string array. When it comes to mixing the types of variables one has to create records. The record thing, which Cobol also uses in Data Division but in much more precise manner and with plenty of scope for compilation errors, is a good thing altogether. It permits creating arrays and files of non-compatible types of variables. Lets assume that we want a file of employees and the details we want to record are Works No., Name, Date of Birth, Type of Employment and finally Salary. The variables involved are strings, integers and real numbers (single precision). In Basic, if I still can remember it, one can tackle this in two ways ie either by converting numbers to strings and

placing the information in one multi-dimensional array or having two arrays (one for strings and the other for numbers) linked by the index variable. In Cobol one would define a record in the Data Division which would look something like that:

```

01 Employee.
   05 Worksno                PIC 9(5).
   05 Name.
      10 Firstname           PIC A(10).
      10 Secondname          PIC A(15).
   05 Birthdate.
      10 Day                  PIC 9(2).
      10 Month                PIC X(3).
      10 Year                  PIC 9(4).
   05 Employment             PIC X(12).
   05 Salary                  PIC 99999V99.

```

Furthermore such a record has to be edited before being displayed or printed. The editing is done by either insertion or suppression as Salary-edited PIC ZZ,ZZZ.99. Decimal point replaces V (which marked the decimal point position), ',' will divide nicely thousands from hundreds etc and Z means - replace with blanks if zero. There are many more editing symbols and one has to move the values from non-edited to edited variables before print or display. Here one has to be careful in deciding the names of variables. If using different variable-names for the same item one has to make sure that one does not perform calculations on the edited items. One can use the same variable names within different levels 1 (01) records as 01 employee and 01 employee-edited. The moves are much easier due to MOVE CORRESPONDING function but on the other hand when referencing a variable name used in two records one must specify to which record one wants to refer. In other words the variable must be made unique by qualification such as Salary OF Employee or Salary OF Employee-edited.

In Pascal (God forgive me for talking about the things I know nothing about) we would do a similar thing by using TYPE and RECORD by specifying:

```

TYPE First = String[10];
    Second = String[15];
    Employ = String[12];
    Date = Record
        Day: 1..31;
        Month: (Jan, Feb, Mar, Apr etc.etc);
        Year: Integer;
    End
Employee = Record
    Worksno: Integer;
    Firstname: First;
    Secondname: Second;
    Birthdate: Date;
    Employment: Employ;
    Salary: Real;

```

End

and then we would have to have a variable (VAR) say  
 VAR Clerk: Employee;

Neither the manual nor any of my books are very clear on the method of creating string arrays. But this is the story with most of the text books and manuals.

I must admit that comparing with Basic learning Pascal is heavy going. I have yet to come across a book which does explain the language in a simple manner. I would not recommend to anyone without a doctorate in abstract maths 'Algorithms + Data Structures=Programs'. To start with a normal person would fail to

understand the notations which vary between Greek and Chinese characters. No doubt they have their standardised meanings known to those who are in this particular kind of magic circle. But on the other hand, one can do much more in Pascal than in Basic, or at least do it with less program writing. The compilation is a pain in the 'neck' but then most of them are. RM Cobol one is vicious apart from being even slower than ProPascal. One error in an identifier in the Data Division does create a compilation error every time this same identifier is referenced in Procedure Division. And, depending on your luck and the state of your eyes, one correction can clear several compilation errors or, if you don't see the original mistake, you wear out the nails scratching your head. The difference between RMCobol and ProPascal compilers is that RMCobol is one-pass compiler and normally carries on from the beginning to the bitter end marking warnings and errors. On the other hand ProPascal is a three-pass compiler and generally bombs out on finding the first error. Compilation can be a very long process for those who cannot type or don't know Pascal well. (Count me in on both counts).

Pascal also permits creation of the libraries (in Pascal) which can be linked to the programs and make life easier and two obvious candidates are procedures for assigning output to LST: or CON:. Procedures from the library when called by the main program are referred to as External.

Having acquired CP/M, which I consider was the best thing I have done with my Model 4, I now have quite a choice of good software. As basically I have always been a user of a computer and programs, having treated this combination as a tremendous help in the tasks which otherwise I would have had to perform with pen and paper, calculator or typewriter, I feel that with this acquisition I have burnt my 'metaphorical' bra. I am now out of the shackles of Tandy and suchlike program suppliers. In the August issue of 80Micro I saw a letter which probably defines best the division in the computing community. The author of this letter claims that the users of programs run CP/M whilst the programmers opt for machine specific DOS. I expect that the programmers in this context are those who program as a hobby or with the intention of selling their programs through the vendors of machine specific programs.

Few more words about customisation of SAGE Accounts. If any of you read my bits on SAGE you may remember that I said that the program must be on drive A: and data on drive B:. Well I was quite wrong. The accounts program does not have to reside on drive B or A:. It can sit happily on any drive. The data disk can also sit on any drive and this is where the program control comes in. In the program control module there is a bit about disk designation. This tells the program where the data disk is located. Better arrangement than that of the WS which likes to sit on drive A: and, if you put it on any other drive then you must have the overlays on the disk containing the text being worked upon. I have done the monthly update of my accounts now. This consisted of printing the trial balance, the nominals and the final accounts. Bank account cannot be included in the run from (Number) to (Number) and must be printed separately using the Bank/VAT reconciliation module. The same applies to sales and purchases accounts. Then I run configuration which clears the data disk ready for the next month's postings. I was surprised to see that the transaction file, though empty, did remain at the same size as it was before reconfiguration. I did not print out the audit trial, as I print weekly (after shopping on Saturday) all the transactions, and these prints would be a sufficient audit trial. One must remember however to retain one disk

containing end of last month's trial balance. This disk is placed in the drive housing the accounts program (the program asks you to do so) and the last month's trial balance is used to calculate this month's totals which are printed as well as the total to date. I am still amazed at the way the program leads one by hand all the way. You just don't have to know what to do next. Just choose an item from the menu and follow the instructions on the screen. Even when it comes to printing, the program reminds one to switch on the printer and press <enter>. And every function can be terminated at any point by ESC.

I just received the August journal and I see that one of the workshops came in for quite a criticism. I tend to agree with the author (though I did not attend the workshop in question) especially as far as the money question is concerned. Though £60 should not mean much to me (having spent this year to the end of August £1898.24 on the bits and programs for my Model 4) I do want to feel that however little or much I spend I get value for my money. From my only appearance at one of the workshops I feel that there is one very important element missing and that is a good argument after any case studies or lectures. One is shepherded in and then out after a call for questions (whilst the supervisor is meaningfully looking at his watch) and there is never any discussion - or at least there wasn't any when I attended. And yet there is nothing more instructive than a discussion, or a good argument for clearing one's mind. It was just so very much as I imagine a day in a big comprehensive to be. I am probably being unfair again trying to judge on two days experience at one workshop. I must say however that I have learnt more at the fireplace in the 'digs' (thanks to Laurie) than I did during the two days of official instruction. I am trying hard to think what I really wanted to find at the workshop and I find it rather difficult to formulate my motives for attending. Obviously I was interested in use of computers in accounting and industry but, I think, my main motive was to meet other members of the Group. And what kind of workshop would I attend in future? Subject to there being less lectures and more time for discussion any workshop on accounts, Model 4 adds on or modems. In general I would expect more than one product to be available, these products to be demonstrated in use, details of suppliers and prices to be provided, and the session to be finished with a full discussion of pros and cons of each product. I would certainly not attend any workshops which combine NATGUB with QLUG. After all what have I in common with this wonder which appears to be full of bugs. I read a lovely review of the 'Quill'. Apparently you can type a full line before it appears on the screen and the thing, having been written in C, does not not know how long the string is and has to count the number of characters before doing anything. Just imagine a block move!!! Give me WordStar at any time. It may be antiquated but it is still the best wordprocessor I have come across (I own the Scripsit, Superscripsit and also DECTYPE in the office - deadly slow - and I thought the Superscripsit was cat's whiskers until I got WordStar).

Month later - would you believe it, I found what I thought was a bug in SAGE accounts? On the update - they call it re-configuration - I got BDOS error on drive A: (that is where the blank disk goes in) then error on drive B: (that's where the data disk goes). This condition was caused on a supplier account in debit. Pressing enter continued the configuration but on completion the supplier's account had the character 'e' in the column where the type of transaction and the transaction description are shown. Furthermore the beginning of the accounts' file was either distorted or lost altogether. I tried to simulate this condition on an account consisting of three nominals and one supplier with a DR balance and the same thing happened every



time. Of course, as you would expect, I rang the very much publicised 'hot line'. Actually the name should be a 'cold shoulder line'. After you state your name a lady with a strong Yankee accent asks you which company do you represent and, if you don't represent a company the hot line is engaged. Finally I was quite rude (which generally, as those who know me would say, does not require any effort on my part) and I told her that I was a registered user No so and so and that my company had nothing to do with her and that I was not going to 'bl....' well tell her. I got through and a very polite young man told me that this one was new to them and would I ring them in a couple of days' time when they were going to tell me the answer. I have not followed this however as I did find the cure myself. The disk used for temp file on re-configuration must be sysgened.

I have now dBASE II and I must say it is a powerful program. I had a difficulty with installation to start with. The installation which my supplier provided was shifting the line with cursor one character to the right and any consecutive fields of one character only were not visible. The funniest thing was happening in 'BROWSE' or 'EDIT'. The first insertion or deletion was taking place two characters to the right of the cursor after which the thing settled down and everything worked normally. It took me eight hours until 4 am until I hit by trial and error the correct installation. Anyway the thing works now and I am delighted with it. I know there are many more relational data bases on the market now but dBASE II will do me just fine. All I want now is a spreadsheet under CP/M and then I can forget all the TRSDOS, NEWDOS80v2, LDOS, DOSPLUS etc. I have them all and I don't want them. The simplicity, power and reliability of CP/M is just overwhelming. And they say it is a 'user un-friendly' system. Whatever 'user friendly' may mean CP/M is easy to use!! None of this 'copy 0 1, nftm' etc. Just pip c:=a:\*. \* and you get copied all from drive a: to drive c:. In fact Tandy has a very good product in the Model 4 as far as the 8 bit machines go and they have failed miserably to capitalise on it. They just did not provide any support for the thing. Still the CP/M road is opened to us and so Good Bye Tandy specific DOS and Tandy programs. All the CP/M programs I wanted are easily installed on Model 4. I have my accounts, data base, word processor, Propascal and the spreadsheet will make full house.

If you take 80MICRO you should have seen the description of MicroMerlin which will transform the Models 1, 3 or 4 into 16 bit machine. It runs 8088 chip at 5 MHz and comes with 128K RAM etc. etc. It runs CP/M-86 or MS-DOS and so what. What has IBM to offer which we cannot do on our Model 4s? The 16 bit software is very expensive whilst the 8 bit software is going down in price. I bought my dBASE II for £315 (plus VAT of course) and this is over £100 less than I would have had to pay for it before the IBM PC appeared on the scene. And anyway what the hell matters the windowing and concurrency. Who in their senses does want to run more than one program at the time? All the new gimmicks - first the mouse, then windows, then concurrency, then touch sensitive screen and lately speech input - to get the money out of the suckers who want to be up to date. And whilst 16 bit may be a flash in the pan - I have seen a supermicro (32 bits) advertised which can take 2,000 peripherals - the 8 bit and CP/M will do very well for a small firm or single user with the well proven programs going cheaper for quite a long time yet.

Couple of nights ago, after about half a bottle of whisky, I have complained about no NATSUG. Well it arrived today and I see that there is yet another Anon, the person who was rung up about Model 100. Well I liked that, I liked it very much and this just about defines the Tandy personnel these days. There is

nothing wrong with the makers not making computers - couple of days ago I inspected 256KB memory board from Nat Semi before it was put into my 11/23. There are about twenty chips or maybe more on that board and they were made all over the world - mainly in the Far East. So no blame to Tandy for not making computers, they are only doing what the rest of the business does - designing them and getting them done on the cheap in the Far East. The only trouble with Tandy is that they would do much better had they decided to stick to making computers and hiving off the merchandise part to other people (maybe Japanese?). Tandy just cannot sell computers!

I have just treated myself to 30 double density, double sided Dyan diskettes. Not really that I needed them as I have about three hundred of them by now (most of them purchased from Tandy though I also have some Datalife) but I thought I would get some just in case. In fact since I started using diskettes some 3-4 years ago I have never discarded one yet. Many of them were re-formatted over and over again and they still behave well. Only in one case I had a bit of trouble with the disk so I slid the jacket open, reversed the disk, re-sealed the jacket and the diskette works like new. Nevertheless I bought them and whilst I cannot comment on the disk quality the jackets are the most miserable pieces of paper that I have ever seen. Why I ask? Why put a disk which is considered to be the best of the kind into something which is no better than the paper used for Sunday magazines? Talking about quality though, I have formatted some of my three or so years old, single sided, 40 track double density disks as 80 tracks double sided and they read and write with no problem at all. I use them on my Cumana slim-line, double drive - the new addition to my bits and pieces of equipment. This unit gives 720K per drive so my Tandy has now almost 2MB disk storage. No manual came with my drive but I have discovered that depending on the configuration this drive will read either 40 or 80 track disks. And not that expensive - just over £400.

anon.

#### INTEL HEX FORMAT

In *last* month's instalment of his CP/M series, Dave Holman mentions the hex file produced by the CP/M assembler, ASM.COM. ASM generates an Intel hex file, as, optionally, does Macro-80, and a number of other assemblers. A description of the Intel hex format might be useful to some members.

A file consists of a number of data records, commencing with a colon, and terminated by a carriage return, line feed pair. The file is terminated by an end of file record.

Data record

byte

```

1  : delimiter/start of record
2-3 no. of bytes in record (max. 64)
4-5 MSB of start address
6-7 LSB of start address
8-9 C0 - data "record type"
10  data bytes
last two bytes - checksum of all bytes except delimiter, CR and
LF
CR,LF record terminator
```

End of file record

byte

1 : delimiter  
 2-3 00 - no. of bytes in record  
 4-5 MSB of transfer address  
 6-7 LSB of transfer address  
 8-9 01 - record type  
 10-11 checksum  
 CR, LF record terminator

Intel hex format files allow different parts of the file to be loaded at different addresses. It's a pity Tandy didn't adopt this format for TRS-DOS machine-code files, as it's much easier to use, if less efficient in terms of storage, due to the use of ASCII hex, rather than binary. Motorola have a somewhat similar format for use with their processors, called S-format.

Leon Heller

#### BASIC OVERLAYS

I am very interested in the question of Basic overlays, having a number of accounting programs which, because of their size, need them. I was, therefore very interested in Tony Endersby's programs in the April issue. Up to now, however, I have not been able to make them work, mainly because my model 4 seems to have the relevant addresses in different places and doesn't like having them changed!

I have written to Mr. Endersby direct, but I would be glad to know whether Tandy have been up to their tricks again. I am led to think that they have, because like another of your correspondents, whose name I have mislaid, I tried to patch Superscript with Tony Cottingham's patch to eliminate the double space problem. It refused to patch SCR64, for the simple reason that it does not exist in my version. Eventually about an hour's work with Superzap and I found the relevant piece of code. I can't tell you where because it was in an extent, and since Superzap cannot read a TRSDOS directory I was reduced to hunting sector by sector. I suppose I should be able to work it out, but my ability to read the directory only amounts to being able to find the sector on which a file starts!.

Returning for a moment to overlays, the answer to Jon Silver's letter in the June issue is, if I understand Mr. Endersby correctly, that CHAIN will only chain ASCII programs, whereas his will, or should, chain binary ones. This speeds up the whole process enormously, or perhaps I should put it the other way round - after Newdos with its ability to merge anything, TRSDOS is painfully slow.

On the subject of CHAIN, the handbook shows the syntax as follows:

CHAIN (MERGE)filespec (,line)(ALL)(,DELETE line-line)

Further down it refers to the "MERGE" option. So far I have been quite unable to make it DELETE without merging something, even if only a one line rem put in specially. Can it be done? (Oh for the happy days of Newdos and CMD"F"!)

On balance, however, I am very pleased with my Model 4. It has not, so far, broken down, rebooted, or any of the naughty things my Model I used to do, and it is much quicker.

One final point. Is there a patch to allow the use of the spooler with Superscript? I put a spooler in the spare bank and Superscript ignored it completely.

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Dorchester,  
Dorset.

### Another Rat Deserts the Sinking Ship!

When I wrote about my struggles with the model 4 in the May Natgug news, I really thought that I'd be sticking with my model 1 for at least another year. However, a funny thing happened to me last week; I found a second-hand IBM PC at a price I could actually afford, and am now the proud owner of a 512k CPU with twin 360k floppies and a colour monitor. The outfit does have a few odd features; the keyboard was made in Taiwan, and has all the function keys in a row along the top of the board, and the monitor has a fairly large hole in its casing, where someone put down a cigarette. It all runs on 110v, and I've got a big transformer humming under my desk.

While this may sound a little bizarre, it all works perfectly. Accordingly, I'll gradually be transferring my files and basic programs from the TRS-80 to the IBM, and selling off software and hardware as I replace stuff with IBM equivalents. A first advertisement should be somewhere in this issue.

The only serious problem I've had was setting up the RS-232 link between the two computers. I first tried this using the Tandy communications package, and was unable to pick up any signals at the IBM end. I next tried the Scriptit P,S command. Again, nothing. A quick trip to my local Tandy shop got me a null modem, which I believed to be the answer. Zilch. Finally I realised that I hadn't checked out the IBM end, and tried a different communications program there. This worked the first time I tried it. I've now found that the easiest way to transfer data (especially Scriptit files) is to use the Scriptit P,S command at 1200 baud. The only flaw is that this mode doesn't seem to support Geoff Smith's Scriptit enhancements; the escape sequence characters are sent as they appear on the screen. The moral to draw from this is that it's usually cheaper to try software solutions before blaming the hardware. If anyone else has this problem, the trick is to avoid using the communications program on the IBM DOS samples disk; it's only designed for use with modems, and won't handle direct communications! I now use a program called PC-DIAL, a public domain program distributed by Spectronics Ltd. Hypercross, the Molimerx direct transfer package, will only work with double-density disks, and is useless with SD model 1 disks.

I'm still using the TRS-80, and will continue to do so for a while longer, and intend to let readers know of any problems and interesting developments I encounter. I suspect that MS-DOS hardware will soon become much more common, and a lot cheaper; software prices should then fall, making 16-bit machines a much better proposition for home use, and a possible alternative to QL's, Amstrads, and BBC's as Tandy replacements. Readers may need to be told about pitfalls and bad programs before they take the plunge.

Finally, a note of apology. After the May issue I received three letters commenting on my Model 4 experiences. Unfortunately one of these letters seems to have gone missing before I could reply, and I have no idea who sent it. Sorry about that, whoever you are.

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

## CPM - A NEW USERS TUTORIAL PART 5

Part 5 already, in fact I am typing this only minutes after finishing part 4. In this part I will be discussing MBASIC and some other BASICs, changes from LBASIC or TRSDOS BASIC. Also I will take a little look at the BIOS and BDOS of CPM. Firstly though I want to look at some Public Domain (free) utilities that can be found on the disks of the CPM User Group.

These utilities are the result of a number of people around the world wanting to improve on the CPM Operating System. They are similar in origin to some of the utilities that I found that I needed when using TRSDOS on the Model I. The first that I will mention is SD.COM. This is the SuperDirectory program and is the latest in a line of improvements to the DIR command. Some of these are still around, for example XDIR.COM and MDIR.COM. SD is an excellent utility, and will produce a directory which is sorted and shows the size of files and free space on the disk. An example of the display is shown below.

```
Directory for Drive A, user Ø
-CATALOG.ØØ2  2k : CRC      .COM  4k : MODEM7  .COM  1Øk : MODEM7  .DOC
SD            .COM  4k : SW      .COM  12k : TEXTFILE.TXT  1Øk : VERIFY  .COM
VERIFY       .COM  8k : WS      .COM  2Øk
Drive A, user Ø contains 78k in 1Ø files with 88k free.
```

If you are lucky enough to already own a copy of this program then try typing

```
A>SD //
```

This will display a list of options available within SD. They include, all users, all disks, making a file out of the directory, sending the directory to the printer, sorting by extension and wildcard characters \* and ?. I have found this utility so useful that I now have a copy on all my disks.

The next major utility is SW.COM, this is SWEEP, and it is a file transfer and display utility. There is no real equivalent in TRSDOS and again I have put a copy of this program on all my disks. That is in fact a little extravagant but as you will see, you may never need to type PIP again. An example of the SW display is below.

```
NSWEEP - Version 2.Ø5      Ø4/11/1984
(c) Dave Rand, 1983, 1984
Edmonton, Alberta
```

```
Drive AØ: 158K in 1Ø files.      8k free.
1. AØ: -CATALOG.ØØ3  2K:
```

```
A - Retag files           : Q - Squeeze/Unsqueeze tagged files
B - Back one file        : R - Rename file(s)
C - Copy file            : S - Check remaining space
D - Delete file          : T - Tag file for transfer
E - Erase T/U files      : U - Untag file
F - Find file            : V - View file
L - Log new disk/user    : W - Wildcard tag of files
M - Mass file copy       : Y - Set file status
P - Print file           : ? - display this help
X - Exit to CP/M         : or, sp - Forward one file
```

The first part of the above display is what you see when you run SW. The display is fairly simple to understand, and the line beginning with "1. AØ:" is the prompt line and shows the first file in alphabetical order on the disk. The replies to this prompt are displayed in the next section which is displayed after replying ? to the prompt. You can move forward and backward within the directory. Single files can be copied or deleted. In fact multiple files may be copied by first Tagging individual files and then

using the mass transfer option. Individual files can be found without having to page through the directory. If a new disk is to be examined then the L option is used. The Squeeze utility is often used by the CPM users group to compress text files and thus save disk space. These files can only be viewed when squeezed by the view option, which will also view ASCII files, but not COM files. The remaining options are obvious and the whole program replaces a number of built in commands of CPM

There are many, many more utilities, too numerous to mention including one to display COM files, LOOKWS.COM; a CRC checker, CRC.COM; a disk file utility, DUU.COM; a file recover program, UNERASE.COM.

All of these and many more are available from the CPM Users Group Library, the address and details of which were in a previous article. In addition to utilities the library contains full blown adventure games, modem programs, business programs and languages such as C and Fortran, all of these for the price of membership and a disk copying charge!!!!

Enough of a plug, lets get back to the BASIC's. The most common BASIC is MBASIC and it is the one that I shall be discussing here. Others that exist are OBASIC, XYBASIC, KBASIC and CBAS2, which is a compiler BASIC. MBASIC is a standard Microsoft BASIC and for those readers who have used the TRS 80 this means there is very little new to learn, for example the editor is exactly the same as the annoying but powerful line editor found in all versions of TRSDOS. Therefore I shall confine my comments to the differences between Tandy's BASICs and MBASIC.

MBASIC is entered with four options, firstly a filename, default .BAS, which is to be run; the number of files to use, F, default 3; the highest address to be used; M, default FFFF; maximum record length for random files, S, default 128. As I have said the commands are much the same as TRSDOS BASIC, the first exception is that the only shorthand recognized are ? for PRINT and ' for REM, and this can make the editing of lines difficult without the use of arrows to page through the program. The command, FILES, will display a directory of files on the drive, wildcards can be used. Files are RUN, LOADED and SAVED in the usual way and can be saved in ASCII or a protected format. To leave BASIC and exit to CPM, the old TRSDOS CMD"S", you simply type SYSTEM, exactly the same as in TRSDOS 6 for the Model 4, no parameters, such as STAT, can be passed using SYSTEM, it will only take you back to CPM. OPTION BASE will allow you to set the base value for arrays, 0 or 1. For random numbers the command RANDOMIZE will initialize the seed value, however it doesn't appear to be truly random!!!! CHAIN will chain another program after the current one and COMMON will pass variables between them. SWAP exchanges the values of two variables of the same type, making sorting an easy thing to program. WHILE and WEND included and provide, as as yet unused by me, method of looping. WIDTH will set the maximum width of the screen WIDTH LPRINT does the same for the printer. Finally there is a WAIT command that waits until a specified port is not zero, any suggestions for use?

There is no PRINT @ or PRINT TAB nor is there a CLS command, these can be got round by various devious means

PRINT CHR\$(26) is the way to clear the screen.

To print at a location on the screen is a little more difficult and requires the use of a Subroutine to achieve it. Firstly the values of the line that the cursor is on and it's position across the screen are loaded into variables. Then the cursor is placed at known position on the screen and offset by the values in the two variables. Complicated??? Don't worry here is a short example for you to try.

```
10 PRINT CHR$(26)           REM Clear the screen
20 PRINT "This is now on the top line"
30 L=3: C=4: GOSUB 80        REM Note that there is also line/column 0
40 PRINT "This is on the 2nd line 5 places in"
50 L=11: C=29: GOSUB 80
60 PRINT "This is on the 12th line and 30 places in"
```

```

70 END
80 PRINT CHR$(27); "="; CHR$(L+32); CHR$(C+32);
90 RETURN

```

Make sure that all Keywords are separated by blanks as they are mandatory in MBASIC. It may take a little bit of work converting your programs across from the old TRSDOS version. Note that peeks and pokes are nowhere near the same and any program using them almost certainly will NOT run.

I am certain that the list of differences and changes above are not exhaustive and I would appreciate any comments about other differences and solutions are addressed to this newsletter so that all may benefit.

The final part of my Tutorial on CPM is about the operating system itself, a subject I am not well qualified to talk about, and so I shall confine myself to the listing of absolute locations and not enter a discussion on how to use them. The operating system is broken down into three main parts the Console Command Processor (CCP), the Basic Input/Output System (BIOS) and the Basic Disk Operating System (BDOS). The CCP is the part of the system which communicates with the user and interprets the commands typed at the keyboard. It also does some processing and is the "heart" of the system. The BIOS is the part which sends information to peripherals and communicates with them. The BDOS communicates with the disks and like the other two parts is totally transparent to the user. These parts reside in the top of memory and can be overwritten by a program, providing they are reloaded from disk afterwards. Low memory is below 0100H is used for certain File Control Blocks (FCB's) and buffers, it should not be overwritten. The lowest point at which the CCP, BIOS and BDOS resides is called CBASE and for a 16K system is at 2900H, this address is incremented by 4000H for each additional 16K, therefore for a 64K system CBASE is at D900H, I think!!! The area in between is called the Transient Program Area (TPA) and is where all of your programs will run, including things like PIP, SD, MOVCPM and DDT.

At this point I could describe the use of the FCB's however I personally let the system control the names and locations of my files and try not to meddle, those of you who know what you are doing and wish to meddle should try reading Rodney Zak's excellent book "The CP/M Handbook with MP/M". However I will explain how to access the operating system from your own programs. To call the operating system you should first execute a JMP to 05H. However as always this in itself is not enough and there are 36 services provided by CPM 2.2, these service calls are numbered, oddly enough 1 to 36. The number of the service call that you require should be loaded into the C register before executing the jump.

The first 11 calls are for the BIOS and are:

- 1 Read Console
- 2 Write Console
- 3 Read device RDR:
- 4 Write device PUN:
- 5 Write LST:
- 6 Direct Console or status of console
- 7 Get I/O status
- 8 Set I/O status
- 9 Print buffer
- 10 Read buffer
- 11 Interrogate Console ready

The remaining calls are for the BDOS and are:

- 12 Return Version Number
- 13 Reset disk system
- 14 Select drive number
- 15 Open file
- 16 Close file

- 17 Search for file
- 18 Search for occurrence of number 17
- 19 Delete file
- 20 Read file sequentially
- 21 Write file sequentially
- 22 Open a new file
- 23 Rename file
- 24 Return logged in drives vector
- 25 Return current logged in drive
- 26 Set DMA address ? ? ?
- 27 Get allocation of free space vector
- 28 Write protect disk (software only)
- 29 Get write protected drives vector
- 30 Set file attributes
- 31 Get disk parameter block address ? ? ?
- 32 Get or set user status
- 33 Read random file
- 34 Write random file
- 35 Compute file size
- 36 Set random record position

The above are only a guide to the use of the call and are presented for you to get some insight as to how the system works, those of you planning to write an M/C program to catalogue all your disks, will not be able to do so from the bare facts I have given him/her. However these calls are well documented elsewhere and perhaps someone could expand on their use in another article. Incidentally there isn't as far as I know a good directory catalogue program for CPM, and I wish I was able to write one as there is a need for it. I am in fact tempted to as the use of service calls makes M/C programming much easier and very transportable throughout different systems.

Well it's over at last, I have come to the end of my series and I am looking forward to a rest from typing. I hope that all of you who are still here at the end have learnt something, if not then either you knew it already, or else I should be out of my job as an instructor. You probably will not have assimilated (there's a big word for 10 at night) all of the points that I have made but if you only learnt the one trick of PIPing files in UPPER case to the same in lower case, then my efforts will have been worthwhile.

I will say again now, as I believe I said in the first article, that I am not a CPM expert, just someone who felt the need for a series of articles, and sat down to write them with the aid of the HELP files and a few books. Any one of you could have done the same, and I hope that some of you will put finger to keyboard and do something, however small and unqualified, for the newsletter. Finally, there is always a finally, I wish you all a Merry Christmas, even though I am writing this in July, and I hope that I will meet some of you at future Workshops where we can swap experiences with this universal operating system, CPM.

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# \*\*\*\*\* DIRECTORY PROGRAM Model 1 + LDOS \*\*\*\*\*

Vernon Blackmore

August 1985

DIRECT is a simple directory program, mainly for use on single drive systems. It enables the user to swap disks just before the directory is read. If the inserted disk is a non-system disk then SYS10/SYS and SYS12/SYS must either be resident or be present on the data disk. On systems with more than one drive the drive number may be entered. DIRECT uses LDOS error codes for errors.

If the available space (in K) is less than KMIN defined below then a warning message is displayed on the screen.

KMIN EQU 05H ;minimum space before warning'  
 \*\*\* define before assembling \*\*\*

GDSP EQU 0033H ;ROM display routine  
 GEXIT EQU 402DH ;LDOS Exit point  
 GDSPLY EQU 4467H ;LDOS message display routine  
 GKEYIN EQU 0040H ;LDOS keyboard input routine  
 GDODIR EQU 4463H ;LDOS directory routine  
 GCKDRV EQU 448BH ;LDOS drive check routine  
 GERROR EQU 4409H ;LDOS error code display routine

ORG 0A000H ;somewhere out of the way!

COM '<Directory program - Vernon Blackmore 1985>'

START LD HL,MES1 ;point to introductory message  
 CALL GDSPLY ;display it  
 MENU CALL LINE ;move down a line  
 LD HL,MES2 ;load pointer to menu message  
 CALL GDSPLY ;display the menu  
 LD HL,MES1 ;use MES1 as an input buffer  
 LD B,01H ;only accept one character  
 CALL GKEYIN ;wait for keyboard input  
 JP C,GEXIT ;BREAK pressed so exit  
 LD A,(HL) ;look at the character in MES1  
 CP 0DH ;is it ENTER?  
 JR Z,M1 ;yes - set drive to 0  
 LD B,30H ;load ASCII '0'  
 CP B ;is A '0'?  
 JP C,M1 ;yes - set drive to 0  
 LD B,39H ;load ASCII '9'  
 CP B ;is A > or = to '9'?  
 JP NC,M1 ;yes, invalid drive no. so set=0  
 SUB 30H ;convert drive no. from ASCII  
 LD (DRIVE),A ;store it away  
 LD C,A ;set C to logical drive no.  
 CALL GCKDRV ;check drive is OK  
 CALL Z,M4 ;drive is OK - continue  
 LD A,0E0H ;load error 'Illegal drive no.'  
 CALL GERROR ;error if drive not available  
 JR MENU ;go back and try again

## Only One Drive?

With talk in the last NATGUG News of 80 track double-sided drives I decided to submit a contrasting article. It could be sub-titled: "How to survive with just one single density drive".

I do boast a twin-drive, double density setup, but with the cost of secondhand Model 1's I invested in a second system for the office. The problem was how to run LDOS + Superscript on one drive, and still have room for files! In the end I ended up with about 30K spare storage, which is adequate for a day's typing. In the evenings I transfer the files on to backup data-only disks or print and erase.

I needed to do two things:  
 (a) Reduce LDOS to its bare minimum  
 (b) Develop a directory program which would allow me to read the directory of non-system disks. The first was relatively easy, and the second is shown as the program opposite. Let me describe DIRECT first:

On a 2-drive LDOS system obtaining a directory of a data disk is easy. DIR is called from LDOS ready, and the necessary routines are read from your system disk in drive 0. If you only have one drive, however, you need to be able to swap your data disk for the system disk. Some LDOS programs (eg COPY allow this; DIR does not. So rather than modify DIR I chose to write my own routine. It's not as fancy (there is no alphabetical sorting of file names), but it is shorter, and in my position brevity is a virtue.

It works on Model 1 with LDOS. It certainly won't work with NEWDOS, but I've not tried TRSDOS. When called it waits for you to insert the disk required: ENTER reads and displays the directory (in 4-across format) + the free space available; BREAK will return you to LDOS Ready - assuming you have inserted the system disk! On multi-drive systems you can type in

```

14 LD A,OCFH ;load error "write protected"
CALL C.GERROR ;disk is write protected"

;
M2 CALL LINE ;skip a line
LD A,(DRIVE) ;get back the drive no.
LD C,A ;set C to logical drive no.
LD B,4H ;set B to obtain free space
LD HL,BUFF ;set pointer to buffer
CALL @DODIR ;get directory information
LD HL,BUFF+10H ;point to end of message
LD A,03H ;load a terminator
LD (HL),A ;put into into the buffer
LD HL,BUFF ;put HL back to buffer start
CALL @DSPLY ;display disk name + date
LD HL,MES3 ;load message 3
CALL @DSPLY
XOR A ;clear A
LD H,A ;clear H
LD A,(BUFF+12H) ;load binary value of 7K
LD (KVAL),A ;store it away for later
LD L,A ;transfer to L
LD A,20H ;load an ASCII space
LD (BTEST),A ;store it in the test byte
LD IX,BSPACE ;point to ASCII buffer
CALL BINDEC ;convert binary in HL to ASCII
LD HL,BSPACE ;put pointer to start of ASCII
CALL @DSPLY ;display it on the screen
CALL LINE ;CR
LD A,(DRIVE) ;get logical drive no.
LD C,A ;transfer to C
LD B,0H ;request directory on screen
CALL @DODIR ;display the directory
LD B,KMIN ;load minimum space for safety
LD A,(KVAL) ;get the actual space available
CP B ;compare: Warning if A < B
JP NC,MENU ;phew! A > or = B so no problem
LD HL,MES4 ;point to warning message
CALL @DSPLY ;display it
JP MENU ;now return for another directory

;
M1 XOR A ;clear A to select drive 0
LD (DRIVE),A ;store in drive select
JR M2 ;jump straight back
DRIVE DB 00H ;store for drive number
KVAL DB 00H ;store for available K

;
MES4 DB '***** WARNING ***** Available space left is only '
BSPACE DB ' K'
DB 00H ;CR terminator

;
LINE PUSH AF ;save current value of A
LD A,00H ;load a CR
CALL @DSP ;send it to display
POP AF ;get back original A
RET

```

the drive number required. DIRECT will check if this is a valid drive, display the directory and tell you if the disk accessed is write protected or not. I've also added one extra facility. With only 30K of data space it is easy to clog up the disk leaving insufficient room for a new file. A warning message is therefore displayed if the available free storage drops below a value defined by KMIN at the start of the program. In my version it is 5K.

DIRECT needs to access SYS10 and SYS12 to work. These must either be resident (using the SYSRES commands) or be on your data disk. I've chosen to make them resident, but putting these two SYS routines on a data disk will only take 3K or so of space.

The program was assembled with EDAS. If you would like to use the program but don't have an assembler then I'll gladly copy the program across for you if you send me an LDOS formatted disk + postage.

#### Reducing LDOS

My second task was to reduce LDOS. I deleted SYS 4,5,7,9,11. SYS6 (the main library) contained far too many functions for my needs. On a day-to-day basis I only needed DIRECT (as opposite), KILL and COPY. Using CMDFILE/CMD I therefore set about removing KILL and COPY from SYS6 so that I could run them as 'stand alone' programs. The CMDFILE blurb (3-13 in my manual) tells me that it recognises library-type files and the in-

dividual modules may be loaded by typing in the ISAM overlay number. It then fails to tell you what the

ISAM numbers are for SYS6 and SYS7! I've typed them out below, as given in "Notes from Misosys" (May, '83). However, you can get the information direct by looking at SYS1 using FED. Records 0 and 1 contain the program name (eg COPY) padded by blanks to 6 characters, followed by two bytes. The first is the ISAM number you may use for

```

***** BINDEC Subroutine *****
:Modified from "More TRS-80 Assembly Language Programming"
:by Bill Barden      see pp155f
*****
BINDEC EQU $          ;> binary in HL, IX at buffer
LD IY,PTABLE          ;point to power of 10 table
BIN010 XOR A           ;digit count set to 0
LD D,(IY+1)           ;get MS byte
LD E,(IY+0)           ;get LS byte
BIN020 OR A           ;clear carry
SBC HL,DE             ;subtract power of 10
JR C,BIN030           ;go if negative
INC A                 ;bump digit count
JR BIN020             ;continue round

;
BIN030 ADD HL,DE       ;restore to positive
OR A                 ;check A for 0
JR Z,BLANK            ;yes - output a space or a 0 ?
ADD A,30H             ;no - so convert to ASCII
M3 LD (IX+0),A         ;store it in the buffer
LD (BTEST),A         ;store away for future tests
INC IX               ;move buffer pointer
INC IY               ;bump power of 10 pointer
INC IY
LD A,E               ;get LS byte
CP 1                 ;test for 3 digits
JR NZ,BIN010         ;go if not 3
RET                  ;finished!

;
BLANK LD A,(BTEST)    ;have we already had a digit?
CP 20H               ;or has it just been blanks?
LD A,30H             ;set A to ASCII '0'
JR NZ,M3             ;digit - so output a 0
LD A,20H             ;no digits yet - so output blank
JR M3

BTEST DB ' '         ;check byte for leading spaces
;
;
PTABLE DW 100
        DW 10
        DW 1

;
MES1 DB 'Directory Program for system and data disks'
      DB 0DH          ;terminating character
MES2 DB 'INSERT DISK. <BREAK> to exit to LDOS, <ENTER> for directory: '
      DB 03H
MES3 DB '      Free space available: '
      DB 03H

;
BUFF DS 14H          ;20 character buffer
END START

```

CMDFILE, the second represents the library: 80 = SYS6, CO = SYS7. Incidentally, you can readily change the name of the function by altering these names in SYS1. So, for example, I have renamed the PURGE utility as ERASE.

#### SYS6 - LIB A

31 APPEND	18 KILL	53 RENAME
32 COPY	19 LIB	63 RESET
61 DEVICE	62 LINK	64 ROUTE
21 DIR	41 LIST	82 RUN
91 DO	81 LOAD	65 SET
66 FILTER	1E MEMORY	A2 SPOOL

#### SYS7 - LIB B

51 ATTRIB	15 DATE	A1 SYSTEM
11 AUTO	14 DEBUG	16 TIME
33 BUILD	71 DUMP	1A TRACE
17 CLOCK	22 FREE	1B VERIFY
13 CREATE	72 PURGE	

Vernon Blackmore  
 11 Mylor Road  
 Sheffield S11 7PF  
 Tel: (0742) 662313

```

=====
REV 1.1      : MENU SYSTEM                TITLE : MENU
=====
SUMMARY      : Provides a menu system for use with LDOS.
=====
DESCRIPTION  :

BASIC program reads input files containing menu layouts.
Allows branching to multiple levels of menus, calls to
system commands (memory permitting) and chaining to other
BASIC programs.

Facility requires 3 input files which are created by
another program, "MENUFAST".

These files are as follows :
MENU/COM      : (Random) : Communication file between
                        runs of Menu
MENU/LKP      : (Random) : Lookup table of Menus
MENU/MEN      : (Random) : Text of menus

Note that the files are created by MENUFAST/BAS from
MASTER/MEN.
=====
SYNTAX       : lbasic run"menu/bas"
=====
SYNONYM      : menu
=====
NOTES        : Details of MASTER/MEN separately specified
                The procedure for creating MASTER/MEN is
                extremely straightforward.
=====
EXAMPLES     :

run lbasic "menu"

Displays a menu, and allows further menus, commands and
BASIC programs to be selected.
=====
COMPONENTS   : MENU/BAS See also MENUFAST/BAS,MASTER/MEN
=====
AUTHOR       : Edward Rashbrooke          : 16 Mar 85
=====

```

```

20 'MENU : Menu Manager
40 'Created : Edward Rashbrooke 30 Jan 85
60 '-----
80 ' Manages various functions through a menu hierarchy
100 '
120 CLEAR 2000:DEFINT A-Z: DIM MK$,LC,TIS
130 ON ERROR GOTO 1580
140 '
160 OPEN"r",1,"menu/com",10
180 FIELD 1,10 AS MB$
200 '
220 OPEN"r",2,"menu/lkp",12
240 FIELD 2,10 AS MK$,2 AS OP$
260 '
280 OPEN"r",3,"menu/men"
300 FIELD 3,64 AS ML$
320 '
340 GET 1,1
360 LC=1
380 IF LC>LOF(2) THEN 1320
400 GET 2,LC

```

```

420 LC=LC+1:PRINT@58,LC;
440 IF MK$<MBS THEN 380
460 OF=CVI(OF$)+1
480 GET3,OF:OF=OF+1:TI$=ML$
500 FOR I=1 TO 9
520 GET3,OF:OF=OF+1:AS(I)=ML$
540 IF LEFT$(AS(I),3)="END" THEN US=MID$(AS(I),5):GOTO 600
560 GET3,OF:OF=OF+1:BS(I)=ML$
580 NEXT
600 CLS
620 BS(0)="s":'exit command
640 PRINT@0,"MENU : ";TI$
660 PRINTSTRING$(64,95);
680 PRINT" "
700 FOR I=1TO9
720 IF LEFT$(AS(I),3)="END" THEN GOTO 780
740 PRINTUSING"% %                                     %";I;AS(I)
760 NEXT
780 PRINT@832,STRING$(64,95);
800 PRINT@15*64,"h=help,r=rst,u=up,m=menu,l=lst,o=exit";
820 PRINT@896,"Enter Selection =>";:PRINTCHR$(14);
840 AS=INKEY$:IFAS$=" "THENGOTO 840
860 PRINTCHR$(15);
880 PRINTAS$;A=INSTR("0123456789rhmla",AS$)-1
890 IF A<0 THEN 800
900 IF A>9 THEN 1240
920 IF LEFT$(BS(A),1)="*" THEN GOTO 1040
940 IF LEFT$(BS(A),1)="+" THEN GOTO 1960
960 CLS:PRINT"MENU : Selection : ";AS$
980 PRINTBS(A)
1000 IFBS(A)<>" "THENCMDLEFT$(BS(A),63)
1010 PRINT@15*64,"Press ENTER to Continue ";:LINEINPUTQK$
1020 GOTO 600
1040 'Menu switching
1060 M$=MID$(BS(A),2)
1080 GOSUB1120
1100 GOTO 340
1120 'Set up common file
1140 LSET MBS="">>" +M$
1160 PUT1,1
1180 IF BP$<>" "THEN LSET MBS=BP$:ELSE LSET MBS=" "
1200 PUT 1,2
1220 RETURN
1240 'Special commands
1260 A=A-9
1280 ON A GOSUB 1320,1360,1480,1500,1660,1700
1300 GOTO 600
1320 'R-Reset
1340 M$="menu001":GOSUB1120:GOTO 340
1360 'H-Help
1380 CLS
1400 PRINT"Menu Manager R1.0  HELP Information"
1420 PRINTSTRING$(64,95);
1430 RESTORE
1440 FOR I=1TO10:READIS:PRINTI$:NEXT
1460 GOTO 780
1480 M$=US:GOSUB1120:GOTO 340
1500 'M-Menu Specification
1520 GOSUB1560:INPUT"Enter Menu Name :";US$
1540 M$=US:GOSUB1120:GOTO 340
1560 PRINT@896,STRING$(63," ");:PRINT@896,"";:RETURN
1580 'Error processing
1595 GOSUB 1560
1600 PRINT@15*64,"a=redisplay,r=restart from master ";
1620 PRINT@14*64,"Error processing : Select restart :";

```

```

1640 RESUME 840
1660 'l-not supported
1680 RETURN
1700 'a=again
1720 RUN
1740 DATA "This facility supports extra options as follows:"
1760 DATA " "
1780 DATA "a = again      : redisplay current menu (after error)"
1800 DATA "h = help      : display general help info"
1820 DATA "l = list      : list current menus (not supported)"
1840 DATA "m = menu      : select specific menu by name"
1860 DATA "r = restart   : restart from master menu (menu001)"
1880 DATA "u = up        : move up one level in menu hierarchy"
1900 DATA "0 = exit      : leave menu system"
1920 DATA " "
1940 DATA " "
1960 'Run another BASIC program
1980 Z$=MID$(B$(A),2)
2000 Z=INSTR(Z$,"+")
2020 IF Z<1 THEN B$=MID$(Z$,1):M$=MID$(MBS,3) ELSE B$=MID$(Z$,1,Z-1):M$=MID$(Z$,Z+1)
2040 GOSUB1120
2060 RUN LEFT$(B$,21)
2080 END

```

```

=====
REV 1.1      : MENU SYSTEM                      TITLE : MENUFAST
=====

```

```

SUMMARY      : Creates files used with MENU system.
=====

```

```

DESCRIPTION :

```

BASIC program reads input ASCII text file containing menu formats. These are then converted into an optimised form for use with MENU/BAS, the menu generating program.

Facility reads "MASTER/MEN" and creates MENU/COM, MENU/LKP and MENU/MEN.

These files are as follows :

```

MENU/COM      : (Random) : Communication file between
                  runs of MENU
MENU/LKP      : (Random) : Lookup table of Menus
MENU/MEN      : (Random) : Text of menus

```

```

-----
SYNTAX       : lbasic run"menufast/bas"

```

```

SYNONYM      : menufast

```

```

-----
NOTES       : Details of MASTER/MEN separately specified
              The procedure for creating MASTER/MEN is
              extremely straightforward and can use any ASCII
              text editor.

```

```

-----
EXAMPLES :

```

```

run lbasic "menufast"

```

Displays a screen showing MASTER/MEN records being read.  
Displays each menu identified.

```

-----
COMPONENTS : MENUFAST/BAS also MENU/BAS, MASTER/MEN

```

```

AUTHOR      : Edward Rashbrooke                      : 16 Mar 85
=====

```

```

10 'MENUFAST : Menu system optimiser
20 'Created : Edward Rashbrooke 15 Mar 85
30 '
40 '-----
50 '
60 CLEAR 2000: DEFINT A-Z
70 OPEN"i",1,"master/men"
80 OPEN"r",2,"menu/lkp",12
90 OPEN"r",3,"menu/men"
95 FIELD 2,10 AS MNS,2 AS OF$
100 FIELD 3,64 AS A$
110 '
115 CLS:PRINT"MENUFAST : Menu system optimiser"
116 PRINTSTRING$(64,95)
120 'main line
130 GOSUB 2000
140 FOR I=1 TO 30000
150 GOSUB 3000
160 GOSUB 2000
170 NEXT I
180 CLOSE
999 GOSUB 10000
2000 LINEINPUT#1,L$
2010 IF EOF(1) THEN I=30000
2020 RETURN
3000 ' processing
3010 REC=REC+1:PRINT#5*64,"Record number : ";REC;
3020 IFLEFT$(L$,2)=">>" THEN GOSUB 4000
3030 LSET A$=L$
3040 PUT 3,REC
3050 RETURN
4000 LSET MNS=L$
4010 LSET OF$=MKI$(REC)
4020 LK=LK+1:PUT 2,LK
4025 PRINT#6*64,L$,REC,LK;
4030 RETURN
10000 'MENUCTL : Check whether facility called from menu
10010 CLOSE
10020 OPEN"r",1,"menu/com",10
10030 FIELD 1,10 AS A$
10040 GET 1,2
10050 IF A$>STRING$(10," ") THEN RUN"menu"ELSECMD"s"

```

```

=====
REV 1.1      : MENU SYSTEM                TITLE : MASTER/MEN
=====
SUMMARY      : Input data file used with menu system.
=====
DESCRIPTION :

```

This is the input file used to define the menu formats to be used with the menu system. It is read by MENUFAST/BAS, and converted into 3 output files. These three optimised output files are used with the main MENU program, which produces the menus to be output.

These files are as follows :

```

MENU/COM      : (Random) : Communication file between
                        runs of Menu
MENU/LKP      : (Random) : Lookup table of Menus
MENU/MEN      : (Random) : Text of menus

```

## FILE FORMAT :

The file should be created as an ASCII text file, using any suitable editor (e.g. led, lscript, wp, scripsit etc).

As many Menus as required should be stored in the file.

LINE	FORMAT (cols shown)	COMMENT
	1.....1.....2.....etc	
	0          0	
1	>>menuname	name of menu
2	menu title	title of menu to be displayed
3	first selection	Text for first selection
4	first command	Command to be executed for first selection

(Lines 3,4 can be repeated for a total of 9 Selections)

5	END upmenu	END of menu, upmenu is the name of a higher level menu
---	------------	--------------------------------------------------------

## SPECIAL KEYWORDS :

A command can be any LDOS command (subject to available memory). It can also be :

\*menuname - to switch to another menu  
+program - to "RUN" a BASIC program

EXAMPLES : See separate sheet

Created	: Edward Rashbrooke	12 Apr 84
Revised	: Edward Rashbrooke	16 Mar 85

```
>>wp/men
WP : Word Processing Menu Selection
Newsprint Menu
*ns
Scripsit Menu
*scr
Superscripsit Menu
*sscr
WP Word Processor
wp
LSCRIPT Word Processor
LSCRIPT
END menu001
```

```
>>profl/men
PROF1 : Profile databases
Account database
dd 2 ald0s078
Customer database
dd 2 ald0s098
Diskfile database
dd 2 ald0s096
Invoices database
dd 2 ald0s096
Inventory Control
dd 2 ald0s068
Inventory Control Demo
dd 2 ald0s078
Portfolio Management
dd 2 ald0s078
Next list of databases
*PROF2
END prof
```

```
>>lang/men
LANG : Language subsystems
Assembler Development System
*asm
C Compiler Development System
*lc
Pascal Development System
*pascal
COBOL Development System
*cobol
END menu001
```



**MENU : WP : Word Processing Menu Selection**

---

- 1 Newscript Menu
- 2 Scripsit Menu
- 3 Superscript Menu
- 4 WP Word Processor
- 5 LSCRIPT Word Processor

---

Enter Selection =>

h=help,r=rst,u=up,m=menu,l=lst,0=exit

**MENU : PROF1 : Profile databases**

---

- 1 Account database
- 2 Customer database
- 3 Diskfile database
- 4 Invoices database
- 5 Inventory Control
- 6 Inventory Control Demo
- 7 Portfolio Management
- 8 Next list of databases

---

Enter Selection =>

h=help,r=rst,u=up,m=menu,l=lst,0=exit

**MENU : LANG : Language subsystems**

---

- 1 Assembler Development System
- 2 C Compiler Development System
- 3 Pascal Development System
- 4 COBOL Development System

---

Enter Selection =>

h=help,r=rst,u=up,m=menu,l=lst,0=exit

## FOR SALE AND WANTED

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Games

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\* Tape programs marked with an \* are also available on disk for an extra £ 2  
All prices are negotiable!

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Complete with expansion interface, 1 disk drive, Percom doubler, Tandy RS-232, speed-up kit, monitor, wooden case with fan to hold keyboard, EI and two disk drives.

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80 cols electrostatic (silver paper). Fast (100 cps) and very quiet. Quite good print, photocopies well.

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Including 1541 disk drive, MPS-801 printer, real RS-232 interface, and some software.

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Peter Tootill (051) 428 2727

### Model 1 Software, Books, etc. For Sale

All software is in good used condition on original manufacturers disks or tapes. Exact condition (eg documentation or lack of it, any faults) is as listed below. Some discs have been labelled for indexing, usually in felt tip on the manufacturers labels.

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11 CLOAD 80 DISKS Oct 82-Jan 83, Mar 83, Apr 83, Jun 83		
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Please add 50p P&P per order for games

### TAPES

All model I. Note that some software runs on other machines;  
@ = Pet, + = Commodore 64, \$ = Atari, ' = Apple, % = Vic, \* = CoCo

COSMIC GUERRILLAS (Kansas arcade game) no instructions		£ 1
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Tape prices include P&P.

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```

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```