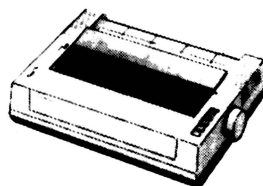
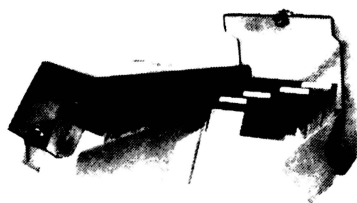
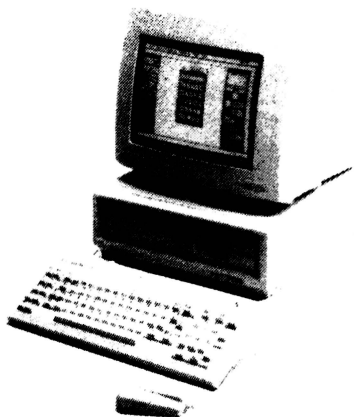


NATGUG NEWS

Volume 9, Issue 3

September 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 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 advisors.

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. (see also 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 issue. 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.

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SWINDON OCTOBER 18-18

Provisional Schedule

FRIDAY

- Noon onwards meet for a pub lunch, and then set up in the Systems Room
 700pm onwards Dinner in the Shelley Restaurant
 1000pm Talk on fundamental MS-DOS by Tony Evetts (This is a repeat of Tony's very successful Blandford talk)

SATURDAY

- 0730 Breakfast
 0930 OPEN FORUM Communications
 1100 Machine language session with Laurie - how to disassemble a modem program, alter it, and reassemble it
 12noon Lunch
 1400 OPEN FORUM Models 1,3,4,4P
 1400 MS-DOS niceties A talk by Paul Ostwind
 1500 OPEN FORUM MS-DOS in all aspects
 1615 Electric Pencil (the MS-DOS version) A review by Brian Pain.
 1700 OPEN FORUM Word Processing
 1800 dBase Questions & Answers by Ariela Taylor
 1900 Dinner
 2100 Review of the day, with Bob Sparring & David Washford. Tell us YOUR views!
 2200 Transputers - an introduction to this new technology by Leon Heller

SUNDAY

- 1000 Programming in 'C' Part 2, by Arthur Wraight
 1130 Screen 6 - an update from its author, Brian Edwards
 1200 onwards Lunch
 1400 Programming in 'C'. More from Arthur Wraight
 1630 VACATE THE SYSTEMS ROOM PLEASE !

This schedule is compiled 8 weeks prior to the event and has to be subject to alteration for all kinds of reason; if you particularly want confirmation on any subject then check with David Washford on Thursday October 15th, between 8.00am and 5.30pm, on 0225 444000.

EDITORIAL

Thank you to all the people who have sent in articles since I sent the last copy of the Newsletter to the printer.

Could I give a plug for John Bodsworth who is doing such a fine job of printing the Newsletter. John's business is printing and although he is rightly invoicing NATGUG for his work, it is obvious he is charging us less than the going rate. John's company is Chiltern Print, Tele:- (05255) 3990. He lives in Toddington.

I have received no information after my request for just a little bit of news about your Local Club. Come to think of it I have received nothing about any of my questions - is anyone out there? I did write in the last issue; "would you also let me know if YOU would be willing to attend a Sunday workshop, if held in the West Midlands sometime next May '88. We do need uncommitted support at this moment, to decide if we should book the venue". Judging from the lack of replies (none at all) you do not want this workshop. Your committee have to make a booking within the next month, no replies of support, no workshop! (13/8/87. Have now received two replies, please see Reader's Forum.)

We have had no reply from 80 Micro or Northern Bytes.

We have had a reply from Roy Soltoff of Misosys, he advises that if NATGUG were to bulk purchase The Misosys Quarterly there would be no saving to members. For users of LDOS, LS-DOS, MS-DOS or any Misosys product, I do urge you to subscribe to this excellent magazine, obtaining it direct from the States. Information for you to be able to do so, has been given in recent back issues. Also request a copy of the Misosys Catalogue and have a look at the value of the Mark III and Mark IV Collections. Roy has given NATGUG permission to excerpt from the following sections of The Misosys Quarterly:- The Blurp, LDOS Information, LS-DOS Information and The Patch Corner. I have replied to Roy with our Thanks.

If any Member has any suggestions, such as alternate venues, or on any other theme, and would like your committee to follow it up, please get in touch with one of us.

BLANDFORD '87. Because of the timing of the Newsletter going to press, a report of this event may not appear until the next issue.

Swindon Oct. '87. See advert last issue.

Our PRO will be at the PCW show on the ACC stand, this to further the cause of NATGUG. Thank you John for giving up your time. If you attend please go and say hello to him.

Sorry no zaps this issue. Due to circumstances beyond my control I have just found out that the Newsletter copy has got to get to the printers early. Added to that, I have a great deal of business work to get through this month. For those articles received and not in this issue, I apologize to the people who submitted them.

I have received another two disks that have had the sleeve 'squashed' onto the disk, the disks just about turned. Please send to the Treasurer for Disk Mailers.

Can I ask on behalf of all the membership, that if any member, having asked for help of any kind, and then subsequently has been fortunate to receive an answer because of his membership to NATGUG, would that member then please give the whole of NATGUG the benefit of both question and the answer? You may be helping someone who is just having the same problem. Or you might see the answer to a problem that has just manifested itself to you. Thank you in anticipation of your co-operation.

I believe there are possibilities of seeing adverts in the Newsletter, this will help with NATGUG's income. I understand that the going rate is 20 pound per page or 10 pound per half page. Should anyone wish to advertise, please for the time being contact the Treasurer.

Without going into any detail. Should you have tried to contact our Secretary at sometime within the recent past and have not found him available, please be patient. David is around, but very busy. For a few more weeks, please contact any one of the other committee members. Thank you.

John, Please see the Editorial for answers to the above. Your reason for not coming to the West Midlands next May I will accept, but please nobody else. Thank you for answering, Ed. **

FROM: Dr. Ronald Welch, Whetstone, LONDON.

Dear Gordon,

My congratulations on the new format of NATGUG Newsletter and the enthusiasm displayed by you and your colleagues. I am particularly interested in the proposal to bulk purchase Misosys and Northern Bytes magazines and if you are successful I would like to subscribe to them through your scheme.

I have no difficulty with 80 Micro which I obtain by placing an order with the local branch of W. H. Smith and I collect it from there in the middle of each month. This is a nationwide chain of stationers but it is rarely on the shelves. The one exception, in my experience is the branch shop on Waterloo Station.

Your sincerely, Ronald Welch.

I thank you for the letter Ronald, also my colleagues and my thanks for your kind comments. I find it very enjoyable working with a team you elected, we all seem to get along well. Hope you have read the updates to the above in the Editorial, any more news will be published. The W. H. Smiths in the centre of Birmingham also have 80 Micro on the shelf.

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

Dear Gordon,

Thank you for publishing excerpts from my letter of 3 May. Thank you also for reproducing the missing lines of code for "Windows on the Model IV". I will give this a try at the next opportunity.

For the sake of completeness I have listed below the hardware/software that I have available and use:-

Hardware: Model 4P with orig. SSDD drives, 128k memory and Hi-res.
Software: TRSDOS 6:2, LS-DOS 6:3, BASIC (01:01:00 enhanced by LSI)
BASICG (01:01:00), EDTASM (version 1 on disc)
and SCRIPSIT (01. 00. 00) for native mode
plus VISICALC for Model III mode.

I am very happy with the 4P having upgraded from a 48k Model 1. The upgrade was basically for reasons of portability while travelling overseas but many of the other advantages became apparent once I started using it. The only area that gives me real problems, to the extent that I no longer persevere, is BASICG (see Part 3 attached).

However all the comments in NATGUG about NEWDOS, LDOS, LeSCRIPT, PRONTO, DDUTY and even DONKEYDOS etc, etc and an almost total lack of comment about TRSDOS, BASIC, SCRIPSIT and EDTASM etc. makes me wonder "what am I missing". Are these TANDY programs no longer used and if not why not ?

On the surface it would appear that I am "too far behind to catch up" or am I using the wrong software or both. I must point out that while here in Zimbabwe my only contact with computer enthusiasts, or even users, is via NATGUG and that additional hardware/software and/or books are just not available to me. It is, I believe, this lack of facilities which has led me to being "so far behind".

Recent articles in NATGUG have referred to "extra memory/higher speed" on the Model 4's and these have prompted me to write two separate but partially overlapping sections entitled "WHAT AM I MISSING ? Parts 1 & 2" and they are enclosed as separate sheets. Part 3 is written in the same vein but refers to BASICG and is also enclosed. Maybe these can be published (as can any of my correspondence) as thought provoking articles although I would appreciate some response to the questions asked.

As a matter of interest this letter, and the accompanying articles, took me 12 hours to prepare and write, 4 secs to save and load and 13 mins to print (on an LPVII). The printing speed is, for

me, the greatest time consumer and it is in this area that I would first like to improve. Unfortunately this cannot be done economically until I leave Zimbabwe. The main reasons being the 80% import duty, the transport costs and the mountain of necessary "official" paperwork required let alone the "approval to import" processing time involved.

In addition to the printing speed and quality the chore of having to count program lines and insert "stops" to allow me to advance the paper to the next page is extremely tedious. This is not a problem with SCRIPSIT which handles page length and top of form satisfactorily. Even though the manuals give a number of methods for handling top of form (ie. TOF from DOS, FFHARD from FORMS and LPRINT CHR\$(12) from BASIC) none of these work with the 4P coupled to an LPVII. Could someone please advise if this is or is not possible.

I do use my computer in the office to maintain a detailed record of our engineering drawings. I originally wrote a BASIC program to handle the input etc. however I found that SCRIPSIT was much easier, quicker and less prone to error or fault and therefore I use it for this application. Currently we have 115 files totalling 500k of data on record. The biggest data file is 36k which the maximum I can load using SCRIPSIT. Is there any way that my "extra" 64k can be used to increase these file sizes? Could I expect an add on board to give me any improvements in this application?

With reference to the attached articles please note I am not trying to be critical of the reports in NATGUG and I apologise now for any hard feelings that the articles may generate in the authors. Perhaps if I don't hurt their feelings too much they may like to correspond direct with me and if they do I would be most grateful.

kindest regards,

Barry THRIPPLETON

[illegible]

"WHAT AM I MISSING"

PART 1. Those extra 64k

To date I have often wondered what I could use the additional 64k for. Prompted by articles in 80 Micro I wrote 2 JCL programs to transfer some selected system files and either BASIC or SCRIPSIT to MEMDISK and thus free the two drives for my own programs and data. The BASICG program is too long to fit into MEMDISK even with minimum system files. I have not tried with EDTASM but I believe my following comments will be unchanged.

After some use the only apparent advantage is to be able to "BACKUP" files between the two physical drives without changing disks. It does not allow any additional memory that I can use (ie max. program size remains at approx. 32k) or improve the loading/saving times except for the time to actually load BASIC or SCRIPSIT from MEMDISK. As I only generally use one of these programs during a computing session, and therefore only need to load it once, the time taken to set up MEMDISK (2. 5 mins by JCL) is all overhead and really wasted.

This overall loss of performance concerned me and I thought perhaps I should leave the system files (all of them) and BASIC/SCRIPSIT on drive zero and transfer my working program to MEMDISK. Alas, I find this method even more time consuming and has more disadvantages than advantages. For example:- a computer lock-up, necessitating a reset, during program developement (especially m/c language) or if you happen to forget to transfer your program to disk before switching off means START AGAIN. This problem aside, loading/saving times to/from MEMDISK are very similar to those to/from drive 1. Thus no real time saving.

In summary whilst I have an extra 64k potentially available I never use it as I have not found an application for it. The BACKUP advantage I referred to earlier is overcome by saving the program twice to different disks.

"WHAT AM I MISSING"

Part 2 Those add on boards.

2.1 Ref Vol 8 Issue 11/12 page 12

I am really confused :- The writer says that the XLR8 board is not compatible with the Model III mode. This means I can expect no improvement if I want to use VISICALC. This is one program where speed and memory improvement would be a real boost. This is so slow and being limited to 18k file size becomes so time consuming that it is quicker to get out the four function calculator, a pencil and some paper.

The writer also says that it is no real advantage unless using your computer for several hours each day. Is this because setting the system up to work takes so long. If this is a problem with one set up per session it must really eat into available programming time if you have a couple of "crashes".

2.2 Ref Vol 9 Issue 1 page 21

The technical aspects of the article is outside my range of understanding however I was particularly interested in trying to understand how these units are used in practical applications and what improvements were evident.

This article infers that to achieve full performance a new set of RAM chips is required !! (How many?, how much ?, how difficult to fit ?, where from ? and what specification ?).

I am a little confused about the need to manufacture external clocks and write special programs to allow the clock on the new board to work correctly. What function does the external clock provide that is not available from the internal clock ? Is it to overcome the "tedious" task of keying in the date/time at BOOT or to improve the accuracy of time stamping in the directory ?

In application the article says that the system boots at a slow speed and then all sorts of other setting up tasks need to be done

before you can start "programming". He refer to use of PRONTO, DDUTY etc. Does it work with LS-DOS 6:3, BASIC, SCRIPSIT and EDTASM or is this other "special" software essential ? What additional programming tasks are required to install this software and what benefits are achieved when installed ?

2:3 Ref Vol 9 Issue 1 page 29

The author refers to the programrs reference section of the manual ("which he did not understand"). Does this mean that without expert assistance the upgrade is of really no use ?

In regard to software the writer infers that to run TRSDOS you have to use CP/M. Is this true ?

With regard to memory size he states that with the board installed you can have up to 250k of "on-line" program files. Does this mean that you can run a program 250k long as a single program or that the files are available from the banks by switching ? If the latter, then this surely means lots of additional programming steps which according to the TRSDOS technical manual should only be done by a person with a "high degree of skill in assembly language programming i.e. a professional". The author also states that because program files still have to be accessed from physical drives any speed improvement is only noticeable when accessing "data" files from MEMDISK. As these files have to be initially loaded into MEMDISK is the double handling, ie. disc to MEMDISK to program, accounted for in any time improvements ?

The writer quotes improvements during "backing up". Is this in relation to backing up from MEMDISK to disc or between two disks ? Backing up from MEMDISK to disc has one disadvantage in that, without making special programming corrections, the MOD flag on the disc directory is not set and the results of the DIR command will be misleading.

As an aside the writer mentions that SCRIP-PRO is "atrocious for going to disc". Is this in relation to the time taken to transfer files or that many errors occur during these transfers ? I never have problems transferring files from SCRIPSIT to disc or vice versa. Where

is the difference ? Also I do not understand his reference to using SCRIP-PRO for system/program overlays or saving program files. How is the word processor used in these applications and for what purpose ?

The add on boards increase the extra 64k to 256k or even up to 1Mb. How can this be used other than as a giant pseudo disk drive ? Surely in the Model 4P a working program (including data) can only ever be approx. 32k long without "DELETE" or "CHAIN MERGE" as the program runs.

With the extra memory comes the extra speed (or vice versa). While using SCRIPSIT I certainly cannot keep up with the computer as is and BASIC programs I write seem to give me instantaneous results thus what is the advantage of the extra speed ?

WHAT AM I MISSING ?

Part 3. BASICG

When I purchased the Hi-res board & BASICG I had a project for which I thought this would be extremely useful. The project, as a matter of interest, was to pictorially represent all the slogans which have been used to cancel (obliterate) the stamps of Rhodesia/Zimbabwe. (Barry has supplied me with a photocopy. Ed. **)

Up to the time I purchased the Hi-res board I had been doing this using the grap4ics printing capability of the printer. I have enclosed photocopies of some of the results achieved.

I tried to emulate these using BASICG. Alas, total failure. I spent a complete weekend (24hrs approx) and at the end was unable to even print 3 unequal but actual sized, empty rectangles across the width of an A4 page. The programming necessary is extremely cumbersome, complicated and massive in size compared with the custom generated character method. The necessity of forever swapping between screens to program and review results was totally frustrating. Also as BASICG always prints sideways on a 10" printer, with a ratio that is almost impossible to calculate, the printing of alphabetic characters

Kilpatrick is going to fly the flag for us at the PCW Show - 23rd to 27th Sept. We now do respond to all inquiries, immediately. ACC who have a regular page in MICRO MART has given us good copy over the last few editions. They made so many mistakes they have had to correct every comment they have made about us. All publicity is good publicity.

My next task is to deliver a right rollicking to all those who have not made contribution to the magazine. This club being National rather than local has only one regular method of intercourse - the magazine. It is essential that we put out a good fat informative publication. Only you out there can supply the material for this purpose. The four of us Gordon, David, John and I are putting vast amounts of our time into organisation. I personally have no experience of running a small business, which is what we are doing. I am enjoying the experience but it is taking up all my spare time. The point is, you cannot expect us to write the magazine as well as run the club. Gordon, particularly, has more than enough to do just editing our little tome.

It was nice to see a good sprinkling of MSDOS material in the last issue. This must be the only way to secure the distant future for us. I have no intention of going MSDOS myself, but I think it fairly obvious that eventually we will all have to travel that road. It would therefore be silly to lose those who are changing over now. So please all you MSDOS owners pen to paper NOW. One other comment, we have discovered that it is a good idea to have a hard copy as well as the disk. If Gordon does have difficulty with a disk and gets some garbage a hard copy enables him to check the accuracy without delay. Anyone wanting to submit three inch Amstrad disks please send them to John, who can convert them to Five inch. He has both sizes of drive on his Amstrad, and can supply Gordon with a readable disk for his model 4.

In my piece on page 51 of vol 9 issue 1 I said we had a CP/M library list. We do not. God knows why nobody picked me up on that. What we do have is Dave Holmans excellent tutorials, reprinted and costing 2.00 pounds each. I am almost able to supply an MSDOS library list but at present it is only eight pages compared with Leighton's twenty four pages. I do feel it will grow frantically over the next few months. 2.00 pounds for this might be considered a little

extravagant on the purchasers part, for the moment. I would not like anyone to be dissappointed. We also have an Index for the NAYGUG Newsletter, which David has sweated blood on and brought up to date - cost 2.00 pounds.

At the present membership level we really cannot afford to put out a monthly magazine of more than 36 pages. We are hoping to attract some advertising from various sources, which hopefully will allow us more latitude. The situation is not too critical for the moment because we do have some reserves and we do get some income from the stock of back magazines and the various sheets sheets we sell. Incidentally anyone wishing to help club finances can do so easily by buying back issues, buying advertising or just sending me a cheque, ever hopeful am I. As far as postage is concerned, the most economical cost effective magazine size is about 100 pages. This costs 24p postage, but we definitely cannot afford this on the present membership size and subscription level. As some of you may know the excellent NORTHERN BYTES is put out at irregular intervals when a full edition is available and the readership is charged per issue. A good idea perhaps to bear in mind, but only really practical for credit card holders. Another possibility might be to publish bi-monthly and aim to produce a 100 page magazine. We are pushing it to afford that too. I understand that our "sister" magazine put out by QUANTA is just not published when funds are low. I am doubtful that the members are told the real reason for these ommissions.

I want us to put out a good regular monthly magazine. One of Gordon's strong points is that when he says the magazine goes to bed on the 20th of the month, then come what may that is what happens. I could not manage that degree of determination. We need more members - a hundred would be great and/or we need at least three advertisers willing to spend 100.00 pounds a year each. If anyone knows of any firm wanting to support us and sell their wares to us please let me know. Please everyone, try to introduce more members.

We shall shortly be taking over Peter Hall's CP/M library. It has not been decided yet who will be the Custodian, but we will endeavour to produce a Library list as soon as possible.

MSDOS STARTER DISK

MSDOS starter Utilities disk. Most are in .ARC form & need to be un-arc'd with ARCE123 or run PKX33A12 to get FASTARCs and their DOCS. If no docs try

1. execute the program without a command tail this often displays a help file. If it doesn't - try F1 or entering ? or h
2. execute with a ? or /? or /h tail

All should work on IBMs & compatibles with DOS 3.1 / 3.2 and probably 2.11. I use almost all of them frequently, if not daily, but neither the Group nor the authors offer any guarantees. Most are fully public domain but if a program is 'shareware' (i.e. the author asks for money if you use the program regularly) do register. It usually gets you the latest version and a clear conscience.

ARCE123 COM quick unarc. Syntax ARCE123 arcfilename

CED ARC command line editor. Re-use last 25 commands

COVER ARC print directory to put in disk cover

DBEDIT ARC use / edit previous commands in dBase II or III (not needed for III +)

DD14 ARC see 2 directories at once & copy/delete/move etc files

DELBUT COM delete everything BUT filename(s)

FILEMGR ARC Dos commands shell - can be memory resident

FREE COM Free space on disk

GLOBAL COM apply command to all directories. eg Syntax GLOBAL del *.bak

KEY-FAKE ARC stack keystrokes for program to use unattended

KNEW ARC back up changed files only

LF COM disable extra line feed send by DOS

LIST60H ARC super file lister with find

MENU ARC Menu for Basic - lists all .BAS files for you to chose from

NERN3 ARC memory resident printer controls. Several printers & info on modifying for any others

NOPRINT COM sent printer output to screen

NSWPPC ARC Dave Rand's NSW for the PC at last. Zoom into .ARCs too

PCWINDOW ARC memoory resident notepad, stopwatch & alarm

PKX33A12 COM Fastarc & fastun-arc. Run this program to unpack them & the docs

RAMDISK ARC Variable size ramdisk from the command line
SCROLLK COM makes the scrollk key do what you'd expect. Clashes with some programs tho'
SD COM Super Directory. SD /w to send to printer. Warning, with DOS 3 it hangs if there is only one file to list.
SDIR50 ARC 2 colun sorted directory listing with DOS commands
SDL ARC sorted directory + all subdirectories
SEARCH ARC Path replacement which recognises OVL files
SETPRINT ARC send control codes and text to printer
TSRCOM ARC MARK & RELEASE memory resident programs. RAMFREE to see how much is free, EATRAM to simulate limited memory systems
UNERASE ARC restore deleted files. Also back up and restore DIR & FAT - like Norton/Mace/PCTOOLS
UNSQ COM Unsqueeze . needed for some DOCs on here. Will also unsqueeze CPM squeezed files
VPRINT ARC direct printer output to file

.ARC files and de-ARcing software

If you look at the MS DOS software library lists you will see that almost all the files have the extension .ARC. Recent converts from CPM or TandyDOS may be unfamiliar with .ARC files but they are definitely one of the pluses of the MS DOS world.

.ARC files are ARChive files. Usually they are made up of of an executable program and its associated .DOC or README file. The archive format is a convenient way to compress files and combine them into one for efficient disk storage and transfer. The nearest CPM equivalents are .LBR files and I don't remember anything at all comparable in NEWDOS or DOSPLUS. ARC files are even more efficient than LBR or squeezed ones. Several compression techniques are used and each file is compressed by whatever compression technique is most effective for the type of file.

The obvious advantages of the .ARC system are economy and convenience. They take up a lot less disk space and, if they are being transferred via modem, a lot less telephone time and it is clearly more convenient to keep all files for a particular application together.

At the moment software in .ARC format has to be de-ARCD before it can be used. There are several public domain/ shareware utilities that do this and if you send for a disk from the MS DOS library you will find it includes one of them too. The most widely used are -:

ARC.COM or .EXE
FASTARC.COM OR EXE
PKARC AND PKXARC.COM
PKXARC33.COM or PKX35A35.EXE
ARCE.COM
ARCE123.COM

The last two will only unARC. The syntax is simply ARCE (or ARC123) filename (where filename is the .ARC file - no need for the ARC extension)

The others also let you make your own ARChives and maintain existing ones - yours or imported. Documentation is included, either as a separate file or generated when ARC.COM or PKXARCnn.COM/EXE are run. An on-line help summary will appear if you just invoke the program without a filename.

They all do essentially the same job - create, maintain and extract from ARChive files, and this includes letting you see what is in an .ARC file without unpacking it, and checking its integrity. ARC provides all its functions in a single .EXE file. (the .COM file unpacks itself when run, into the .EXE and .DOC files). It is the oldest and slowest. There is a rumour of a new version but I've not seen it here yet. FASTARC and the PK arcs are from another source, newer and much faster and the PKXARCs let you annotate the file lists in the .ARC. The latest PKARC also includes a program that lets you create your own .EXE files that unpack into executable programs and their documentation.

A recent and long-awaited arrival on the public domain scene has been an MS DOS version of Dave Rand's NSWP. It does not handle .LBR or squeezed files but does handle .ARC ones. The Z command Zooms an archive to its component parts and lets you view, print or copy them without un ARcing. It has certainly made dealing with library disks much easier. I'm expecting some more utilities for dealing with .ARC

Ariela Taylor, 42 Davenham Ave., Northwood. HA6 3HQ

[illegible]

I have two disks I use for Visicalc, one has Visicalc in SYS13/SYS the other has Lescrypt in SYS13/SYS. I can start off with Visicalc in both program partitions and then by switching disks can change one of those partitions to Lescrypt to print out the spread sheet. This enables me to do one months expenses in one partition while referring to the previous month in the second partition. I can then load Lescrypt to format the spread sheet to fit on my Employers

a Super-Whizzo themselves for the price of a second-hand Genie. (Mine cost 330 pounds in 1981 for the basic keyboard containing just 16k ram, with a lot more for the expansion ram, disk drive controller and printer interface, and disk drives. No doubt many other people are in the same boat). So what was I to do ?

My answer was to leave the Genie lying round in the loft whilst I flirted with other machines, these being in chronological order: a Texas 99/4a; a CP/M machine called an Iotec Iona; a Cortex, based on the TI 9995 processor. If I can be allowed to take up some of your magazine space, I will describe my experiences with these computers and compare them with the Genie.

The 99/4a was an experience to be learnt from, with several important lessons to be remembered. These are: do not believe any of the advertising until you have tried the machine for yourself, preferably by extended sessions at a dealers, or some friend who has already bought the machine. If the dealer won't let you try the machine, don't buy it, it is your money, not his.

The main points about the 99/4a that were misleading were the 16k memory and the 16-bit cpu that comes as standard. The memory (a lot in those days) was in fact screen memory which was accessed as a memory-mapped port and which was used as a store for programs. In order to run the programs, the instructions had to be fetched byte-by-byte (not words) into the scratchpad memory of 256 bytes ! It can be imagined how this slowed up the the computer. The 16-bit processor was 16 bits only for the 256-byte scratchpad area, as there was an external 16-to-8 bit data bus multiplexor built onto the outside of the processor. A sort of Intel 8088 in TTL logic !

Other points to be noted were the claims for easy hardware expandability and the software availability. Always watch for the catch ! In this case the expandability was easy if you wished to pay the price, which was high even bearing in mind the obvious quality of the parts, and if you got in first. The parts were no doubt available in the States at the time of advertising the machine, but I for one had to phone all round the U. K. in order to get the parts that I wanted. Compare this with the Tandy situation at the time, and you will no doubt recall that there were any number of third-party suppliers

selling add-ons, as well as Tandy and Genie selling the official expansion systems.

The software was mainly games, but there were other programming languages available. These were an extended version of the built-in Basic (very powerful), and UCSD Pascal. The Basic was priced at about 80 pounds, and the Pascal weighed in at around 450 pounds. Later on there was Logo, with TI Forth being thrown in for nothing when TI pulled out of the home computer market. There was even a small-C written, but this was left to an amateur (very talented). The software was undoubtedly very good quality, and I never crashed the system or locked it up on TI software. The application modules were mainly menu-driven which I thought was a nice idea for people beginning on the system, as this allowed fewer mistakes. The amount of software in comparison with the Tandy was small, although the adverts for the Texas claimed several hundreds of packages, but again mainly available in the States. I believe that the catalogue that I used most (Molimerx) probably had more programs than the whole of the Texas fraternity had access to, and this was not taking into account other excellent sources of software for the Tandy.

The machine had some very nice points, despite the general design being a botch (due it is said, to internal politics, in order to prevent the original design from being faster than the Texas mini-computers of the day) and the quality was high - much higher than the Genie. I never had any trouble with the machine locking up due to bad connections. The machine was built in a modular fashion, with the peripheral software interface being set out by TI, so that the main computer software did not need to be designed to take account of any future peripherals - they simply did their own thing, as long as they followed the specification laid down for talking to the rest of the system. The hardware was also modular, being paged in and out of memory as required. All peripheral memory was mapped between 4000-5FFFH, sideways rom years before the BBC! Modern machines could perhaps benefit from modular hardware design just as most software is now being designed in a modular fashion.

The best thing about the 99/4a was the full 16-bit processor, the 9900. This is a very powerful processor that was shackled by the computer into which it was placed. It would be hard to find a nicer

processor to work with, as 90% of the instructions work on any of the sixteen 16-bit registers. Imagine a Z80 with fifteen index registers, not two; sixteen 16-bit accumulators; auto-incrementing registers as counters; multiply and divide. All on a processor first sold in 1976. I find when working on the Z80 that I am having to do much more work to produce the same results as with the 9900. It is not very productive when the same few registers have to be used for all the common processes, and I find it a bind to save a register in order to use it for the next instruction, especially when it has just returned a result to be used in the next process. From the above, it can be seen that I like working with the 9900, and although other processors such as the 68000 have built on the experience of the 9900, and have in places advanced on the facilities, the 9900 is still a very nice chip on which to work.

The next computer that I bought was the Iotec Iona, a failed business machine. This was bought secondhand for a very low price, the Teac 55F disk drives costing more than the computer. The computer was built as a business machine running under CP/M, and had the full 64k ram addressable by the Z80, a monitor in ROM, disk controllers to handle 5" & 8" drives, a screen which is 80 x 24, in full colour, being able to display 8 true colours and 8 pseudo-colours at the same time. It uses the ubiquitous 6845 crt controller as in the BBC, IBM etc. The reason why it gives more colours in 80-column mode than the BBC (black and white only) is simply that the 6845 has been used in a different way, and still uses only 4k for the screen memory. A very versatile chip the 6845. With all these powerful features, how did it fail, I hear you ask? The reasons, in my mind, are fairly simple. First, like a lot more computer manufacturers round the early 80's, it was thought that they only had to turn out a computer which ran under CP/M and they could charge the earth, to make a killing out of the gullible businessman trying to find a way to make his business more efficient. Secondly, Big Blue was starting out with the PC, and the businessman went for a machine with big-name backing, rather than one of the many unknown firms. A pity this, as some of the small firms were selling good pieces of equipment. More than the Iotec company went out of business around the same time. While Tandy was not forced out of business by Big Blue and its PC, it must have suffered a big set-back in sales of its machines.

What can I say about a CP/M computer? Apart from the afore-mentioned hardware, it acts like most other CP/M computers. (Boring?). It is very reliable, doesn't throw a thrombie every five minutes, unlike the Genie.

While the Iotec has not got graphics in the sense that the Atari and the IBM have, it still manages to produce a good display due to the 80-column format. I like the 80-column display best, but the 64-column Tandy is quite reasonable, and neither strain my eyes. Both are infinitely preferable to the 32-column 99/4a in standard mode, although there is a 40-column mode in text display because both these screens make the computer look like a toy, even though the working parts are anything but toy-like.

Because the Iotec runs under CP/M, I have access to many pieces of software, as the adverts say. What the adverts miss out is that most of those packages are in the public domain, and whilst I am not going to deride the many people who have donated programs, many of them are not of a professional standard. The professional programs have been, and in some cases still are, very expensive. Most of the people that I know cannot afford these very expensive programs, and so there are many more pirate versions of these programs than there are legal copies. I am not making a case in favour of piracy, but what do the authors of some of the programs expect? Surely by now the big companies have made back their costs on the package, and have made profits many times over? Take for example Wordstar. After about six years of selling this package at 300 pounds plus, the owners cannot say that every package they sell costs 250 pounds to produce with something like 20%+ profits? If companies like this reduced their prices, they would find that they would sell a lot more copies.

I have several languages on the Iotec, three versions of the C programming language; a public domain version, a commercial version of that small-C, and a full Kernighan & Ritchie standard called Mix-C, that Leon Heller recommended to me, and I find it very good. It does not go as fast as Turbo-Pascal in either the compilation or run-time, but it is a very full version and is well worth the 60 pounds for the full package.

I also have Forth and Basic, but the prize of the lot is the UCSD

p-system. I have for years wanted a good version of this, as I first came across the p-System on the Texas. I know that the p-System was produced for the Model 1, but by the time I found out about it, I was too late, as the makers had withdrawn it, saying that there was not enough memory on the Model 1 to write decent-sized programs. They should have tried writing it for the Texas with its convoluted memory map! At least the Tandy has a straight memory map from the screen memory upwards.

I find the Pascal language much easier to use than the other languages that I have tried (although Cobol is said to be easier, but I haven't got into that very much), and I find that the UCSD implementation is very powerful because of the added features such as string-handling and units. It is possible to interface to assembly language in the same way as with Basic and C, so any bit-twiddling can be achieved in that way, should the need arise. The p-System Pascal is not as fast as Turbo-Pascal, at least not on the machines that I have used it on, but it is more powerful in that it is able to run programs that are larger than can fit in memory at any one time. For example, it would be possible to write and run a program of 300k in a machine that only has 64k memory! This is due to the segmentation of the system, which moves program segments in and out of the memory as required. This of course is slow on a floppy disk system, but on a machine with fast hard drives, or ram-disk, then the system can really fly. This system of swapping segments is normal on mini-computers, which is where the p-System originated. I look forward to getting a version to run on a ram-disk.

I bought the package from the new owners, Pecan, who now have an office in Bristol, but I bought the package direct from the States. Unfortunately, the firm knows more about Pascal than they know about CP/M, and my system arrived on 8" disks which were formatted for the DEC RT-11 operating system, even though I was told that they would run on the CP/M system. To cut a very long story short, without any help from the supplier, but a great deal of help from the p-System user's group, I now have a working copy. Should any member of the group wish to install the p-System on their CP/M Tandy's, I would be willing to offer advice on the installation.

The third computer that I bought was the Powertran Cortex, based

on another TI processor, the 9995. This was bought as a kit, which was quite enjoyable to build, and results in a powerful computer. The 9995 is a derivative of the 9900, but has an 8-bit external data bus, but despite this, Texas claim that it has a higher throughput than the original 9900. It has been said by "informed" sources that it will keep pace with the 68000 when comparisons are made on operations that are specific to neither processor. It would seem that nothing responds faster to interrupts than the 9900 series. It can respond to interrupt after interrupt with equal ease, until system memory runs out, whereas the Z80 runs out of duplicate registers after the first interrupt, and it then has to resort to stacking its registers in the normal way like any other processor.

The flaw in the design of the Cortex is again the 40-column screen, as it uses the same VDP chip as the 4a. The machine is otherwise superb, with an extremely fast Basic, much faster than BBC basic, which is no slouch! A built-in monitor and assembler allow the use of machine-code, which can be easily called from Basic. Using the monitor from the system prompt does not affect any Basic program loaded, which sits there until you return from monitor. The disk interface is through a DMA chip (not often seen on small computers), allowing fast access to the disk. Like the Tandy under LDOS, the machine is configurable to use a variety of drive sizes, but unlike the Tandy, (I do not think that I can agree with this bit? Ed. **) it can boot off any size or type.

The point on which the Cortex does not match up to the Tandy is the amount of software available. The Cortex never really took off in the market place, and so not a lot of software got written for it, whereas there is a large amount of software for the Tandy.

There is a thriving user group, with several brilliant members, who have implemented RAM and ROM disks in the 1 Megabyte memory space available. Graphic video mixing cards have been made with the best graphics I have seen on a computer outside a cad-cam package. I use an 80-column terminal on this computer, which makes it look like a much more professional-looking package, but there are no such things as graphics. Not a computer for business, because of the lack of software, but nice to hack about on.

Now onto purely Tandy things. I have been writing this article with Scripsit/lc, the only word-processor I have for the Tandy. No doubt this has all happened before, but I found that I could not save to disk reliably. Sometimes the computer would hang, sometimes it would reboot. This happened when I was using my standard set-up of 40-track, single-side and single-density in drive 0, with 80-track, two-side and double-density in drive 1. Lower-case drivers were enabled, as were the keyboard filters. I run in LDOS. I tried various combinations of disk types, to no avail, until I went back to the original LDOS distribution disk. This is 35-track, single-side, single-density, and when I tried this, I found that it worked OK. Why should this be? I notice that although the Scripsit and the text file are on drive 1, the program first accesses drive 0 before drive 1, even though it knows that the text file is on drive 1. If anyone knows the answer to this curiosity, I would like to hear it.

I would like to mention one fix that I have applied to my Genie since resurrecting it, and that is the keyboard. I found several years ago that the original connector was very fragile, especially when being moved around during memory modifications, and I soldered a ribbon cable to the cpu board, placing the other end (suitably soldered) into the original socket. When I re-started using the Genie this arrangement was found to be unsatisfactory, causing keystrokes to be missed due to intermittent contact, usually at the wrong moment. I decided to make a proper connection by obtaining some connectors normally used on industrial electronic equipment. The same type of connectors are used on the BBC disk drive connectors. By soldering these connectors onto both boards, crimping on the appropriate connectors to a piece of ribbon cable, I am now able to sit several feet away from the monitor, instead of on top of it. The ribbon cable is about 4' 6" long, and I have not yet had any transmission problems with it.

I intend to continue this philosophy to the rest of the connections, between the expansion edge and the disk drive controller. I will solder a ribbon cable to the edge connector and fetch it to an Elektor backplane containing several DIN 41612 64-way plugs. I can then plug into these ribbon cables holding the 41612 socket (they can be bought for crimping onto ribbon cables), and these will be taken to the expansion boards. I have measured up the Genie case, and I calculate that now that I have removed the tape drive, I can fit the

pcb from my Gnomic disk drive controller into the space left vacant. I will then have to lengthen the ribbon cables to the disk drives, but this should present no problems for transmission (have you ever seen the length of the ribbon cables inside a mini-computer ?).

I believe that I could also fit the expansion card currently being developed by Terence Harris and Ian Linehan above the disk drive controller card, thus keeping more of the machine together. I hope that the 1 Meg expansion card proves a viable proposition, because it does sound quite exciting, especially as the software has been developed for LDOS. The only problem then will be to beef up the power supply to cope with the extra current needed. This will probably need a toroidal transformer, but I may be able to pick up a switch-mode psu cheap these days, and this might fit into the original psu enclosure. If not, perhaps I can find another enclosure to put things in. If I do, I will report back on my findings.

I have another query for those more experienced than myself in Model 1/LDOS affairs. I have booted from an 80-track, single-sided disk, but cannot do the same from a double-sided disk. I have followed the instructions given by Ken Arntsen in his letter of June 1985, but no joy as yet. I have found that I cannot do it with any double-sided drives. Any suggestions ?

I have noticed, using a CP/M disk utility, that the double-sided, double-density disk contains information only on the first side of the disk on track 0. Strange !

I had better finish the letter, or it will never even get into the post to have a chance of being published. Hope some of it will get past the editor.

6, Kennerleigh Grove, Leeds 15. LS15 8NQ

So it all got passed the Editor. Phillip it is a long time since I worked on Model 1 LDOS, but try going to BOOT/SYS after reading the Technical Manual and ZAP one of the bytes in the DCT so that the system knows that you have double sided drives, could be DCT+4 and bit 5 has to be 1. Ed. **

THE LAWS OF COMPUTING

Hardware

1. The Maintenance engineer will never have seen a model quit like yours.
2. Any spares required will have just been discontinued and are no longer in stock.
3. Any V.D.U. from the cheapest to the most expensive, will protect a ten pence fuse by blowing first.

Software

1. If anything, can go wrong with a system, It will generally do so when the system becomes most indispensable.
2. Any given program, when running will be obsolete.
3. If a program is useful, it will have to be changed.
4. Any given program, will expand to fill all available memory.
5. If a program is useless, it will have to be documented.
6. Make it possible for programmers to write programs in intelligible English, and you will find that Programmers can not write intelligible English.
7. Constants aren't, Variables don't !
8. As far as we know, our computer has never had an "UNDETECTED ERROR"
9. If Builders were to build buildings the way that programmers write programs then the first woodpecker to come along would destroy civilization.

Any more comments or quotes along these lines will be gratefully accepted.

P. Knaggs, 12, Seymour Road, Chippenham, Wiltshire. SN15 3NH.
(All replies direct to Peter please. Ed. **)

XLR8 - In Model 3 Mode

Further work with the XLR8 has confirmed the problem that John Kilpatrick highlighted in the May/June issue of Natgug, that you cannot boot the model 4 in model 3 mode once the XLR8 board is installed. To those who never use the model 3 mode this is not a problem, everything in model 4 mode appears to work fine. I have one or two programs which I occasionally use in model 3 mode, further to that, I would like to know why it does not work.

Laurie Shields provided me with a clue why the machine may not boot in model 3 mode. The code in the boot ROM for loading the model 3 image utilises the 2 MHz clock for its disc access timing, and, as I mentioned last time, the XLR8 board has its own clock and ignores the model 4s ability to switch between 2 and 4 MHz. Even at the slowest speed the XLR8 is still much too fast for the timing necessary for the ROM to read the modela/iii off the disc. The ROM is a slow device, but that seems to be quite happy at the slow XLR8 speed.

To provide a ROM solution would require a significant amount of work in disassembling and rewriting the boot software to remove this disc i/o dependence. Blowing the resultant new software into an EPROM is easier, but the overall effort to carry out this task requires more time than I have available.

An easier solution, and much quicker to implement would be to load the modela/iii while running in model 4 mode. A little investigation is required to see how the boot ROM carries out this task to ensure a clean transition to model 3 mode.

Without going into too much detail, on boot, the memory management ensures the boot ROM is switched into the bottom 4k of memory, therefore the cpu will start processing instructions from location 0000H in the boot ROM. The boot ROM will then carry out the initial housekeeping routines, i.e. setup the memory into the correct configuration, setup the vdu, set the clock to 4 MHz etc, and then the keyboard is checked for any (predefined) input, in our case key F3 or 3. Then the P,L and N keys are checked to see if a disc swap is necessary after the load, or whether modela/iii should be loaded

regardless whether it is resident or not, or whether modela/iii should not be loaded following a reset. For our purpose it will need to be loaded. ROM will then move a number of parameters, including linkage for DOS i/o, display, keyboard and a work area into RAM at 4000H-4100H. The clock speed is then reduced to 2 MHz (probably to cope with TRSDOS 1.3, all other operating systems seem to be able to work at the higher speed). The actual loader routine is then moved to 4000H-4100H and control is transferred to the loader, which in turn loads modela/iii and transfers control to modela/iii which boots the model 3 DOS.

Concluding from the previous paragraph, to get modela/iii into position from model 4 mode, we would need to do the following:

1. Get a copy of modela/iii which normally loads at 0000H-3800H into memory to load well above the normal model 4 DOS. I used 7000H-0A800H. This may provide some users with a problem. To load modela/iii into high memory a utility which can load a program with an offset will be needed. I used TASMON. You will get an end of file encountered error (22H), it is of no consequence, you will still have a good load in memory. Save modela/iii under another name from this location.
2. Write a small assembler routine which will move modela/iii from 7000H to 0000H.
3. Find out how to set the model 4 to model 3 mode and tuc it to the end of the assembler routine and then pass control to 3015H which will initialise the modela/iii and boot model 3 from drive 0. This little routine is added to the end or beginning of the modela/iii at its high memory location. I loaded the routine at 0B100H, and save the whole lot 7000H-0B112H with a transfer address to 0B100H, (start of the move routine). An hex dump of the routine which will move modela/iii down to low memory and switch to model 3 mode is provided at the end.

The only other problem that remains is that the model 3 DOS must be resident in drive 0 when invoking the new modela/iii. With LS-DOS this is not a problem simply change the system drive to drive 1 and put the model 3 DOS in what is normally drive 0 and invoke the new modela/iii.

One small point, if you have bumped up the speed by whatever means, invoking the new modela/iii will leave the XLR8 running at the previous speed. If you are running at maximum speed you will run into a problem because FIXALL is not there any more, therefore before changing modes reduce the speed to at least one memory wait state from maximum and unhook FIXALL. LDOS, DOSPLUS, NEWDOS80 and MULTIDOS appear to be happy at this speed, however, TRSDOS 1.3 is not, even at the slowest speed I have doubt about its operational integrity.

Please note there is still a problem trying to get model 3 basic to run, it appears to load ok, but as soon as you try to use it you get a syntax error and you have to re-boot to get out. This happens with both LDOS and NEWDOS. It is an area for further investigation.

Below is the assembler listing of move and switch to model 3 mode

```

;
;TRANSFER MODELA/III TO LOW MEMORY
;
      ORG      0B100H          ;start of move routine
GETBOOT  DI          ;stop interrupts
      LD       HL,7000H        ;start of modela/iii
      LD       DE,0000H        ;where to put it
      LD       BC,4100H        ;number of bytes to move
      LDIR                     ;move
      EI                     ;enable interrupts
      XOR      A              ;clear A reg
      OUT      (84H),A         ;switch to model3 mode
      JP       3015H
      END      GETBOOT

```

This is a hex dump of the above.

```
F3 21 00 70 11 00 00 01 00 41 FD B0 FB AF D3 84 C3 15 30
```

John Coyne, (04203) 7165. (for address, see below)

DUMPER - A memory dump & load utility for the XLR8

During my recent discussions with Stuart Ranson, while we were comparing notes on the XLR8, he drew my attention to one of the shortcomings of the XLR8, or for that matter any of the other memory expansion boards available for the model 4. A major selling point of the additional memory is that the operating system can be loaded into this additional memory, freeing the system disc, and providing further improvement to performance. The disadvantage is that all the system files, and any other utilities need to be loaded everytime the system is started up, and that can take some time, several minutes in most cases. As a hard disc user I keep my system on the hard disc and therefore never had a need to carry out a mass copy during startup. I have not been portable since installing the XLR8 therefore this particular problem never occurred to me. However, I will be going portable shortly, (day out at Blandford) and I would like show off some of the XLR8 good points. Getting the system up and running quickly is important, people get bored very quickly waiting for long disc dumps to be completed, so I set myself the task of developing Dumper. The specification to which I developed dumper were:

For a dump to disc, Dumper must be able to find, without additional parameters on the command line, a previously created ramdisc and store it into one file, regardless of size (up to 10 banks). Included in the file should be the disc drive parameters so that after a load the drive can be re-created.

For a load from disc, Dumper must be able to load the previously save ramdisc, exactly as it was when saved, and following the load install the driver and re-created the drive without user intervention.

I have developed Dumper to run with the XLR8 under LSDOS 6.3, it will not run with the Z80 CPU. For those who are interested in performance, with the XLR8 running at one wait state off the maximum, (I still have not installed 150ns ram chips yet):

To create an 8 bank ramdisc and to load all sys files a backup from a normal floppy (approximately 64k bytes) takes 1min 20sec.

To create and load a 252k ramdisc, with Dumper, including contents, takes 35sec.

The load of the file to disc is slow, about 5min to create that 252k file, which is still considerably faster than trying to use backup for the same size file, however, once created it's always available. Any number of different configurations can be saved and subsequently called up by filename.

Dumper only expects one ramdisc to be resident at a time, therefore, if a ramdisc is resident when trying to load, Dumper will abort. Dumper will happily run whilst PRONTO or DDUTY or any other utility using low memory is present, providing there is enough low memory space to place the driver, and there is no bank conflict.

I am prepared to make Dumper available to NATGUG users through the library when I get the instructions tidied up. For immediate requirements give me a call.

John Coyne, 24 York Close, Whitehill, Bordon, Hants. GU35 9PX
Tele:- (04203) 7165

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