

disk

USER

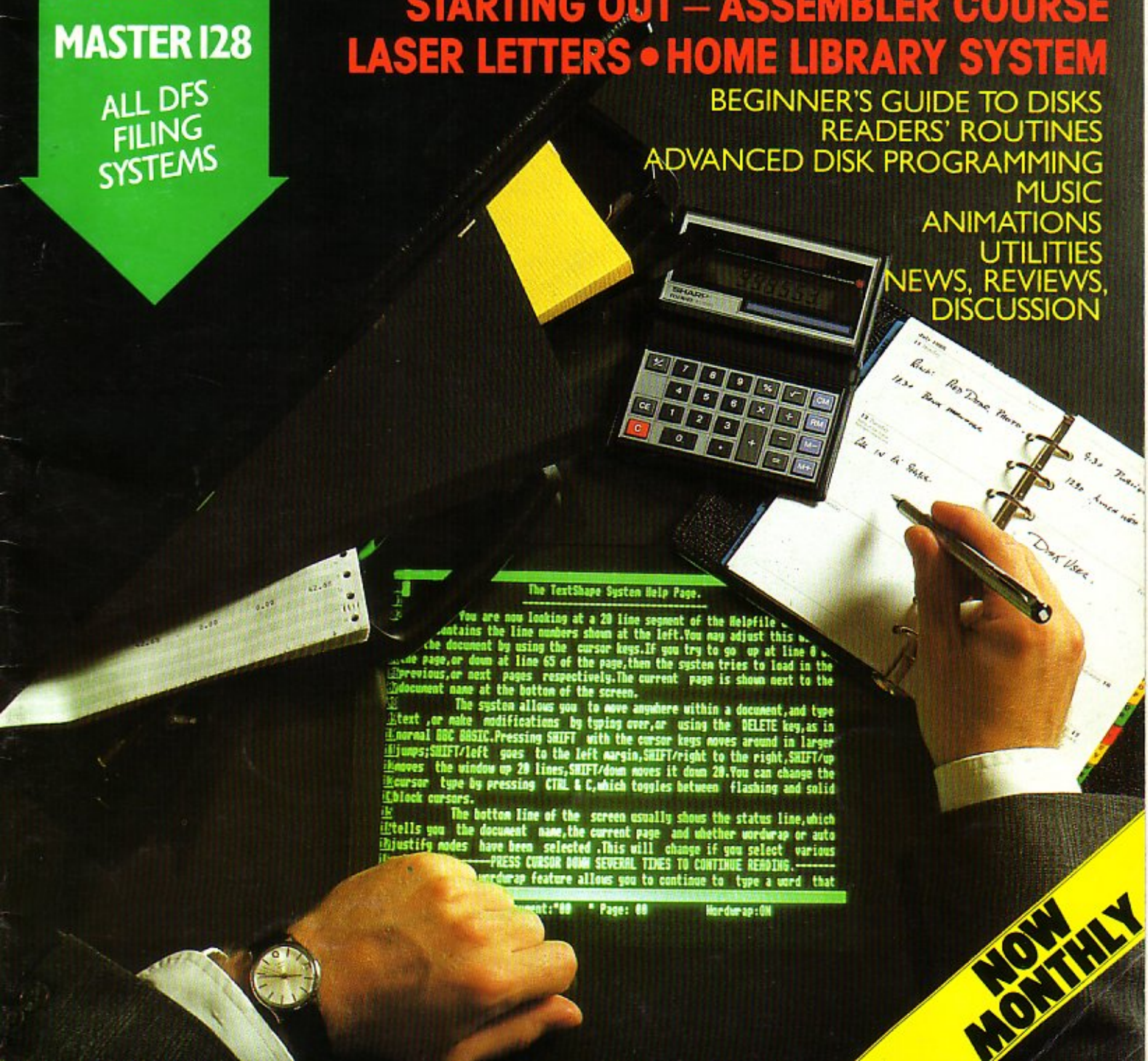
BBC MICRO
MODEL B
MODEL B+
MASTER I28

ALL DFS
FILING
SYSTEMS

BURSTING WITH GOOD IDEAS FOR YOUR BBC

**TEXTSHAPE DOCUMENT PROCESSOR
DYNAMIC DOODLES • ORLOND'S MEANIES
STARTING OUT – ASSEMBLER COURSE
LASER LETTERS • HOME LIBRARY SYSTEM**

BEGINNER'S GUIDE TO DISKS
READERS' ROUTINES
ADVANCED DISK PROGRAMMING
MUSIC
ANIMATIONS
UTILITIES
NEWS, REVIEWS,
DISCUSSION



The TextShape System Help Page.

You are now looking at a 20 line segment of the Helpfile which contains the line numbers shown at the left. You may adjust this window to view the document by using the cursor keys. If you try to go up at line 0, you will go to the previous page, or down at line 63 of the page, then the system tries to load in the previous, or next pages respectively. The current page is shown next to the document name at the bottom of the screen.

The system allows you to move anywhere within a document, and type text, or make modifications by typing over, or using the DELETE key, as in normal BBC BASIC. Pressing SHIFT with the cursor keys moves around in larger jumps; SHIFT/left goes to the left margin, SHIFT/right to the right, SHIFT/up moves the window up 20 lines, SHIFT/down moves it down 20. You can change the cursor type by pressing CTRL & C, which toggles between flashing and solid block cursors.

The bottom line of the screen usually shows the status line, which tells you the document name, the current page and whether wordwrap or auto justify modes have been selected. This will change if you select various modes. ————PRESS CURSOR DOWN SEVERAL TIMES TO CONTINUE READING.———

The wordwrap feature allows you to continue to type a word that

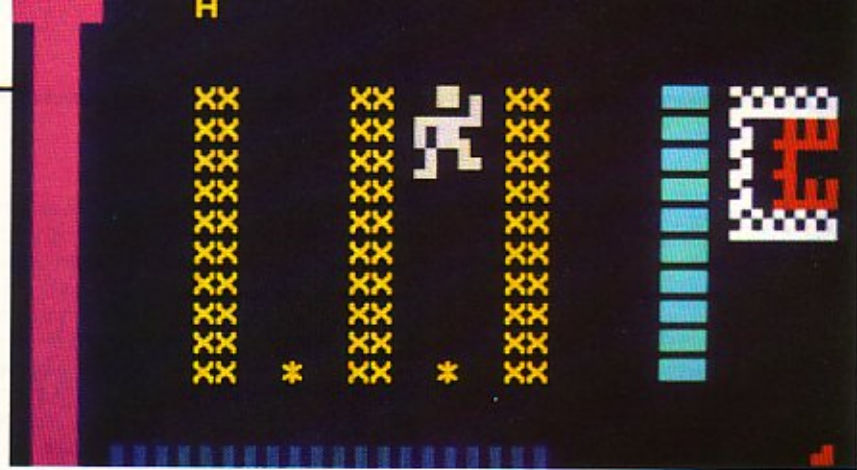
Document: "00" * Page: 00 * Wordwrap: Off

**NOW
MONTHLY**

disk USER

**Disk User Number Ten
August 1988**

Editor: Andrew Brown
Software Consultant: Matthew Fifield
Group Editor: Mark Webb



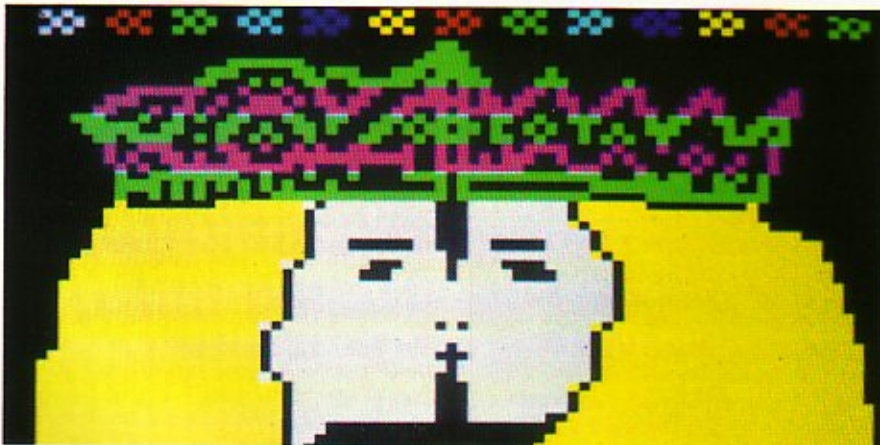
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Pull-out centre section folds into a valuable manual for this powerful document processor	
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A foretaste of what's coming your way soon	
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Massive mode7 arcade adventure, collect the crystals, and avoid the meanies!	
Disk User is supplied on a 40 track disk format and can be run without conversion on a 40 track drive. If you have 40/80 switchable drives then make sure the drive is switched to the 40 option. For 80 track only drive owners, a conversion program is provided – see Disk Instructions	
All files, except for the Dewey datafile, and Textshape, can be copied to and used on ADFS systems	



ELECTRON COMPATIBLE:

100% Electron compatible:

**View File Adjuster
Hexfnd2
Laser Letters Slick Screen
Clear Repton Patch
Dynamic Doodles
Assembler Course**

DISK INSTRUCTIONS

All Users

Please make a **Backup copy** and keep the original in a safe place with a Write-Protect tab on. You should use this copy as your working copy, as many of the programs need to write to the disk, and doing this will diminish the usefulness of the original, and may not be possible anyway due to the 31 file limit imposed by many DFSs.

New Users

If you are a new user **Don't Panic!**, first find out whether you have 40 or 80 track drive(s) attached to your computer (ask someone knowledgeable if you don't know). Then go to your User guide or Welcome Manual and read the chapter on filing systems. In particular find out how to use the *COPY command. Next re-read the section above **All Users**, and then go to the appropriate section dealing with your particular filing system and follow the instructions listed there.

Advanced Users

You do not need help to run Disk User, but do refer to the instructions for the filing system you are using, and **Don't forget to make a Backup copy.**

40 Track Drive Systems

Disk User is supplied on a 40 track disk so will work on any 40 track BBC Micro system (at least, any that

we know of!) straight away. Remember to make a working copy before use.

40/80 Switchable Drives

If you have this sort of drive, you can use *Disk User* straight away with the drive switched to the 40 track setting; don't forget to make a copy for normal use. However, you may wish to copy the disk on to 80 track format, in which case, with a single drive, you should follow the instructions for 80 track systems.

With two switchable drives, or one switchable drive set to 40 track and an 80 track drive (or even a 40 track drive and an 80 track drive), you can easily copy *Disk User* on to 80 tracks; put *Disk User* into drive 0 (40 tracks) and a blank formatted 80 track disk into drive 1 (80 tracks) and type:

```
*COPY 0 1.*<RETURN>
```

Here <RETURN> means hitting the return key. You can set the boot option to drive one by typing:

```
*DRIVE 1<RETURN> *OPT 4 3<RETURN>
```

80 Track Drives

Because *Disk User* is supplied as a 40 track disk, 80 track disk drives have to double-step through the disk. Probably the most convenient thing to do is to copy *Disk User* on to 80 track format. This can be done in two ways.

If your filing system allows double-stepping, we recommend using the

system's own command. As a general rule, built-in 40-to-80 track converters should be used where available; the documentation for your filing system or utility ROM will give full instructions, and we give suggestions for some better-known systems further on.

Not all filing systems have facilities for double-stepping; Acorn's DFS is one such system. To overcome this, a program called CHANGE is supplied on the *Disk User* disk in a section which can be accessed by 80 track drives.

Using CHANGE

Insert *Disk User* into an 80-track drive (or 40/80 switched to 80-track) and type:

```
*CHANGE <RETURN>
```

The program will prompt you to insert a pre-formatted blank 80 track disk when it is ready to write to it (you will have to swap back and forward between the two disks several times if you are using only one drive). Once this is completed, you can use the newly created 80-track version of *Disk User* and keep the original as the back-up.

Our suggestions on how to use *Disk User* on some popular DFSs now follow.

Master 128

This Acorn DFS has a software double stepping mode for a 80 track drive. Set it with the command *DRIVE 0 40 <RETURN> and then

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hit <BREAK>

Disk User will then work without any need for conversion. However this may not allow writing to the disk in 40 track mode; in any case, you should make a working copy, so copy to a 80 track disk.

DFS on Master Compact

The DFS is supplied as an image on some versions of the Master Compact Welcome disk (or is available from Acorn on disk) and this may be used in conjunction with a 5<1/4> inch 40 track disk drive to run Disk User. Please note that we cannot at present supply *Disk User* on a 3<1/2> inch disk (if there is sufficient demand, we may be able to in the future).

Opus DDOS/Challenger 3

If you are using the Opus DDOS disk filing system or Challenger 1.0/DDOS then issue the command

***4080 AUTO <RETURN>**

or

***ENABLE 40/80 <RETURN>**

and Disk User will work without any need for conversion.

Challenger 3

If you have the later ROM version Challenger 1.1 then issue the command

***OPT 8,1 <RETURN>**

to achieve the same result. Disk User will work effectively from the RAM disk. Use

***COPY 0 4 *.* *CONFIG 4=0 0=4**

***OPT 4 3**

to run from RAM disk

Solidisk DFS

With the Solidisk DFS 2.1 and 2.0 you can set a software double stepping mode for a 80 track drive with the command

***ENABLE 80 <RETURN>**

Disk User will then work without any need for conversion.

Watford DFS

The Watford DFSs also have a software double stepping mode for an 80 track drive. Consult your manual for the appropriate FX call or command. Disk User will then work without any need for conversion.

Disk failure

If for any reason the disk with your copy of Disk User will not work on your system then please carefully reread the operating instructions in the magazine.

If you still experience problems then:

1. If you are a subscriber, return it to:
INFONET LTD 5 River Park Estate

Berkhamsted Herts HP4 1HL

2. If you bought it from a news-agent, return it to:

**Disk User Replacements (BBC)
DisCopy Labs 20 Osyth Close
Brack Mills Northampton NN4 0DY
☎ 0604 760261**

After eight weeks a replacement disk can be supplied from DisCopy Labs for a service charge of £1.00. Return the faulty disk with a cheque or Postal Order made out to DisCopy Labs for £1.00 and clearly state the issue of Disk User that you require. No documentation will be provided.

Please use appropriate packaging, cardboard stiffener at least, when returning a disk. Do not send back your copy of the magazine, only the disk please.

ADFS Users

All files on this disk work with the

ADFS. If any problems should arise, examine the program listings and remove DFS only operating system commands (e.g. *DRIVE 0) and replace with the ADFS equivalent.

Note:- Disk User 10 fills a 40 track disk. Any software that may need extra disk space to save information must be copied onto a blank disk. ie Textshape and Fastlife.

Editorial/Technical Enquiries

You can make telephone enquiries about *Disk User* on Wednesday and Thursday afternoons on 0733 53355 (please ask for *Disk User* Editorial). Enquiries in writing to the following address: **Disk User, 6C Belgic Square, Off Padholme Road, Peterborough PE1 1XF.**

Disk User AUGUST '88

All change - 40 track to 80 track convertor.

Files:-

CHANGE - Machine code file.

To use type *RUN CHANGE

<RETURN>

Disk User - Disk magazine title page animation (yes we know it goes in backwards!).

Author: Abbas Files:-

P.RUNDISC - BASIC program A.DISC

- Machine code file

Disk Menu - Easy selection of the software.

Author: Matthew Fifield Files:-

DUMENU - BASIC program

Dynamic Doodles Demo - Something to look forward to.

Author - D.F. Catlin Files:-

DRIVER - Machine code file RIBBON

- Data file

Theme Music - Groovy tune to get you in the mood.

Author: Ian Waugh Files:-

LOADER - BASIC program Theme - Data file

Textshape - High quality, high power wordprocessing.

Author: Peter Scott Files:-

T-SHAPE - BASIC program TSHAPE2

- BASIC program TSHAPE3 - BASIC program HELP - Help file

Orlond's Meanies

Author: Terry Blunt Files:-

ORLONDS - BASIC program code - Machine code data - Data file

View to Superfont Adjuster - Helpful utility for View users.

Author: Dov Rosner Files:-

Adjust - BASIC file

Fastlife - Life working at blurring speeds.

Author: Nathan Williams Files:-

Fastlif - BASIC program fastcod - Machine code

New animation - Improved menu makes presenting letters easier.

Author: Abbas/J.C. Kenney Files:-

ALFABET - BASIC program I.MENU

- Data file K.ALPHA - Data file

Trendy Screen Clear - Flash! bang! wallop! special effects.

Author: Richard Walker Files:-

SCRNASS - BASIC program

Laser Letters - Put your name or any other words in lights!

Author: Andy Goodsell Files:-

LASER - BASIC program

Auto sequencer - Automatic presentation of Abbas' masterpieces.

Author: J.C. Kenney Files:-

AUTO - BASIC program

Dewey - A datafile for TRACER users.

Author: C.R. Woodings Files:-

I.DEWEY - Data file for use with TRACER

Starting in assembler - Part 2 of the series.

Author: Dave Stiles Files:-

HEXFND2 - BASIC program

Repton Map Printer Patch - Correct the bug with these amendments.

Author: Richard Hanson Files:-

E.REPMAP2 - *EXEC file

Note:- Instead of typing in the alterations to the Repton Map printer printed in discussion use this file. All you need to do is load in the 'REPMAP' program from issue 4 of Disk User. Then insert this month's disk into the drive.

Type *EXEC E.REPMAP2

<RETURN>

Then save the patched version of REPMAP. Now simply RUN the program and it should work perfectly.

DISK NEWS

Acorn News

Acorn have appointed a new distributor to help their drive into specialist markets. In particular, the Dorset based distributor, *Hugh Symons Distribution Services* will be using its nationwide dealer network to target industrial, medical, and music technology applications.

A recent survey in *Computer Trade Weekly* ranked Hugh Symons third amongst UK microcomputer hardware distributors, and growth is currently exceeding 50% per year.

Details can be obtained from:
Geoff Storer, Hugh Symons
Distribution Services, 223-227
Alder Road Poole, Dorset, BH12
4AP. ☎ 0202 745744

Modem Has It All

Dacom have recently announced a new modem called the *Quadplus* offering pretty much everything that is possible on a modem today.

All the commonly used standards, **V21, V22, V22bis and V23** are supported. The Quadplus' principal claim to fame though is its the availability of MNP Class 5 error correction. Widely recognised as a standard, MNP5 allows data compression as well as error correction, giving error free transfer, up to an effective 4800bps.

Two levels of security are provided to minimise unwanted *hacking*, both simple passwords and a full dialback protocol being catered for.

Needless to say control is by the industry standard *Hayes AT* command set giving wide compatibility with existing (mostly PC) software packages.

Further details from the sales desk: Dacom Systems Ltd, 26-27 Heathfield, Stacey bushes, Milton Keynes, MK12 6HR. ☎ 0908 322322

Hyperdriver competition

Thanks to all those who have entered the Hyperdriver competition already. We hope you can bear with us because we have decided to extend the time limit on the competition. We originally put the almost impossible time limit of June 1st on the Hyperdriver competition in the June issue and we've decided to extend it into the Summer months. The new deadline is the 15th August 1988 with the winners announced in

the November issue (out in October).

The Winner will receive:

HyperDriver ROM Pack, View Book & Disk, Viewsheet/Viewstore Book & Disk, Sidewriter Disk.

Four Runners up will receive:

HyperDriver ROM Packs
 Four Third-prize winners will get:
View Book & Viewsheet/Viewstore Book

Four Consolation prizes of:

Sidewriter Disks

All you have to do to win is to think of a really brilliant idea for what you could do with *HyperDriver*, and then print it out using the NLQ printing program supplied in this issue.

What we are looking for is imagination, dazzling wit, and deathless prose; oh and by the way it's got to be poetry. So, whether your metier is metre, rhyming couplets, doggerel, or the epic poem, get slaving over a hot word-processor and send us the results post haste.

What we don't want are copies of commercial work plagiarised, it's got to be all your own work, and please not *too* long, after all Beowulf has already been written; just one page worth should be quite adequate.

If you don't possess a printer, but still want to enter the competition, we will accept handwritten entries, but on condition that they resemble **as closely as possible** what you think HyperDriver's NLQ font looks like.

The editor's decision is final. No employees of Argus Specialist Publications or their suppliers are permitted to take part.

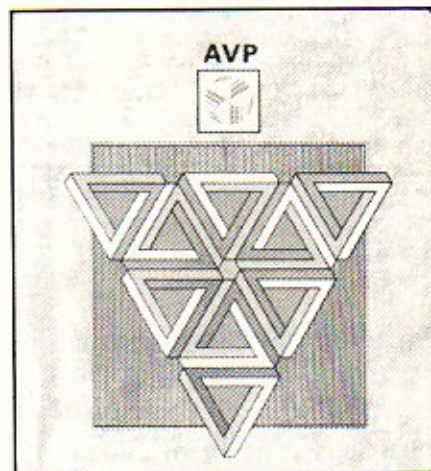
Key Ideas

An interesting new consortium of educational software publishers has been formed by Cambridgeshire Software House, 4Mation, LTS and Sherston Software. Called Judgevalid Limited, from LEA's point of view the main significance lies in the fact that they offer a discount service whereby orders can be placed for any combination of their collective titles - minimum order is 50 copies.

Further information on the consortium and KEY IDEAS - their free magazine - from

KEY IDEAS, PO Box 2, Inkberrow, Worcs WR7 4JY

or any of the four software houses concerned.



Guide to Educational Software

AVP have published their latest catalogue of educational software, all available through them. The catalogue is 96 pages long, and contains descriptions and prices of software divided, loosely, into subject areas. A number of colour pages are included to give an idea of what the software is like, and a comprehensive index is included for browsers. The catalogue not only lists BBC software, but also IBM compatible, and RM Nimbus packages. However it is gratifying to note that even in this day and age most of the software packages listed are for the BBC Micro. Also worth noting is the fact that AVP also publish other catalogues, including, Primary Computer programs, and Audio Visual and Computer Supplies.

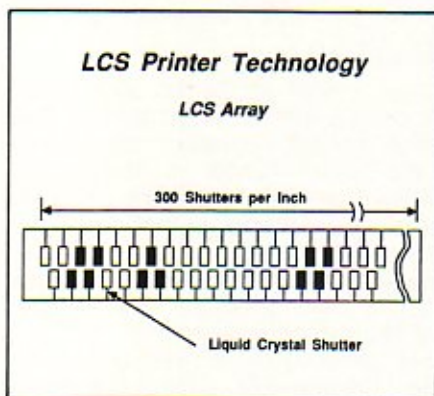
Details from:
AVP, School Hill Centre,
Chepstow, Gwent. NP6 5PH

New Printer Technology

Data Technology Corporation (DTC) have announced the latest addition to their CrystalPrint family of page printers. The CrystalPrint WP uses technology very similar to that employed in digital watches to achieve the same printing resolution as laser printers, 300 dots per inch. Also claimed is the ability to achieve the full resolution across the page without any distortion at the edges as in laser printers.

It is worthwhile taking a little time to examine the Liquid Crystal Shutter

(LCS) engineered by Casio, as there is a good chance it will figure largely in the next generation of printers to hit the market. The LCS consists of an array of LCD's, 300 per inch positioned between the light source and a lens. Each one can be on, or off under control of software, giving the full resolution. The advantage is that there are fewer moving parts, and therefore the cost of manufacture is less. This is important, as it allows a page printer to be positioned in the market alongside high-end dot-matrix, and daisywheel printers.



This is precisely what DTC have done with the CrystalPrint WP. As standard the printer comes with only 128K of memory, and Diablo 630 emulation. Print speed is six pages per minute, and running costs are claimed to be comparable with laser printers. Memory is upgradeable to 256K, and various font cards, and printer emulation cards, such as Epson FX85, and HP Laserjet, are also available. It is expected however that the printer will sit on a desk and do heavy duty wordprocessing, but not be used as many page printers are, for Desk Top Publishing.

For DTP there is the series II, or VIII CrystalPrint machines. The sales literature we were sent quotes a market survey suggesting that growth in this part of the page printer market will be fastest, increasing by more than 30 per cent every year. We agree with this but, in the UK market there is strong competition from Epson and others, so our prediction is; look out for laser printers at less than £1000 by the end of the year.

**DTC, 4 Sixty Acres Road,
Prestwood (Great Missenden),
Bucks. HP16 0PD.**

Show Roundup

If you weren't at the Micro User show May 13th to 15th, then you didn't miss a lot. At least not a lot of new products, but all those who

came enjoyed themselves, and as usual there were loads of good bargains to be had, from cheap printers to disk boxes by the dozen. The editorial staff was there on the Friday, and we had a very enjoyable day talking to our readers on the A&B and Disk User stand.

New Disks

Centec Disk Supplies introduced a new range of coloured reversible disks at the show (wow). 'These disks are the same high quality as our normal reversible disks, but have coloured jackets....'(sic). I could go on but the rest of the press release consists of much of the same gibberish. My plea to people like Centec is; whatever you do, make sure your press releases are written in English, and preferably by professionals who know what they are doing. For those people who cannot bear to wait a second longer: **Centec Disk Supplies are at Unit 3, The Metro Centre, Bridge Road, Orpington, Kent. BR5 2BE. ☎ 0689 77737**

New Adventure

Time and Magik, the adventure trilogy

from Level 9 on the Mandarin Software label, made its debut at the show. The package comprises of: Lords of Time, Red Moon, and Price of Magik. Featuring mixed screen mode graphics with four colour scenes vertically over 80 column text, the programs will run on: Master 128, B+128k, B+64k (with sideways RAM), and Model B (with sideways and shadow RAM). It will run in text only mode on a standard B+ 64K, and Model B with sideways, or shadow RAM. It will NOT run on a standard Model B.

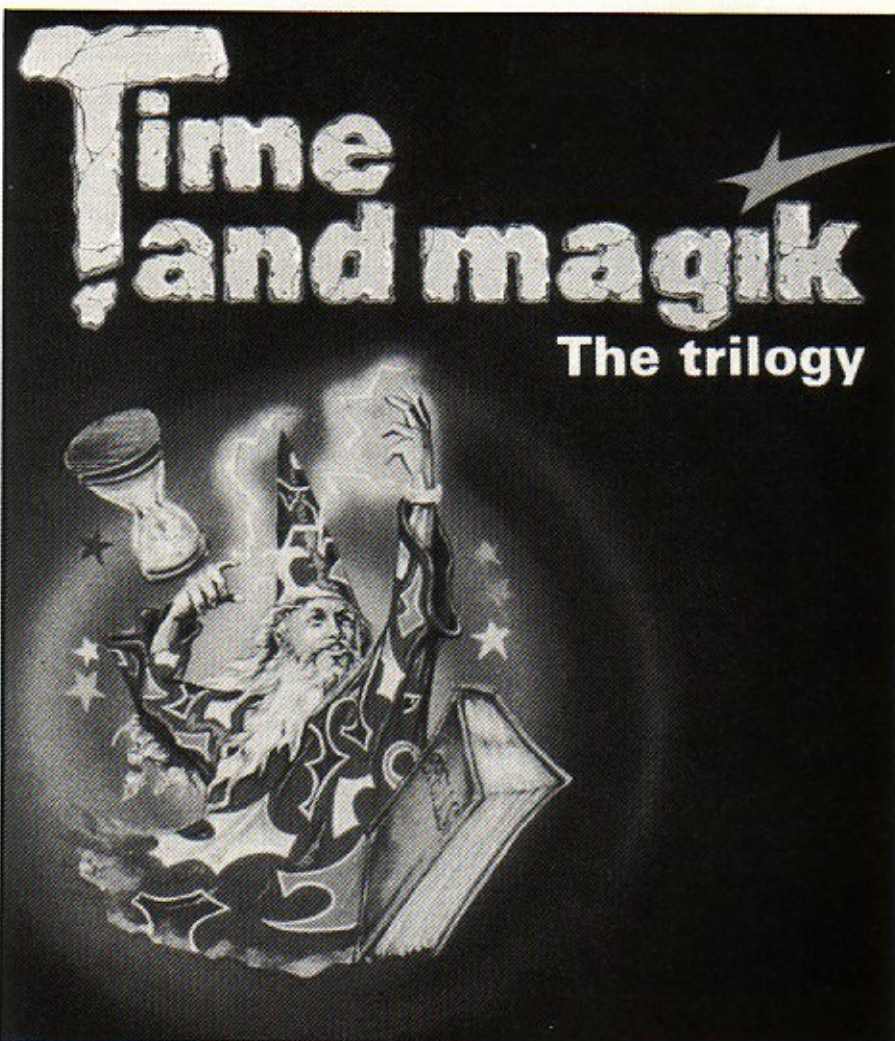
Enhancements to the programs include up to 60,000 words of text, 700 locations, five fold increase in vocabulary, and RAM save/undo. For those who get stuck, cluesheets are available upon request.

Details from:

**Mandarin Software, Europa
House, Adlington Park, Adlington,
Macclesfield, SK10 4NP. ☎ 0625
878888**

Computer Security

Also making a debut at the show was *Computerlock* a combined security lock and data encryption



device. Computerlock comes in the form of a ROM which has to be fixed inside the computer. Once installed it announces its presence at switch-on with a display of the legal owner's name and address. The user is then requested to enter a six digit number to gain access to the machine. Failure after three wrong attempts is greeted by a loud siren noise for a minute. Further wrong numbers generate longer noises to deter the thief.

Also part of the ROM are sophisticated data scrambling routines for data files of any type and length. There are two levels of encryption, and they state that it is impossible to decode the files. Strong claims indeed, but the one weak link in their reasoning can be explained as follows. Most thefts from schools and public places are by youngsters, usually no more than 13 or 14, and the motive is not financial, but revenge, and whether the machine works or not is irrelevant, it gets taken anyway. Computerlock costs £25.00 and is available from:

Computerlock, 7 Ganners Grove, Leeds, LS13 7PW. ☎ 0532 693393

Premier Dealer Award for Watford Electronics

Mr Nazir Jessa, MD of Watford Electronics, was recently presented with Panasonic's top dealer award.

Eighteen months ago, when Panasonic announced their printer range, Mr Jessa "saw a good product and a company which would provide the kind of support we need in order to give the best possible service to our own customers. I acted quickly, contacted Panasonic and haven't looked back since".

Dealer Conference

Acorn held its first series of dealer conferences around the country during May and June, starting off in Cambridge where some 50 delegates attended.

In addressing the audience, Harvey Coleman, Acorn's managing director, outline the company's plans and marketing strategy.

Ian Laurence, sales and marketing director at Acorn, highlighted some of the new target markets for the Archimedes range. Details of further support services, such as

training courses and the SID online information database.

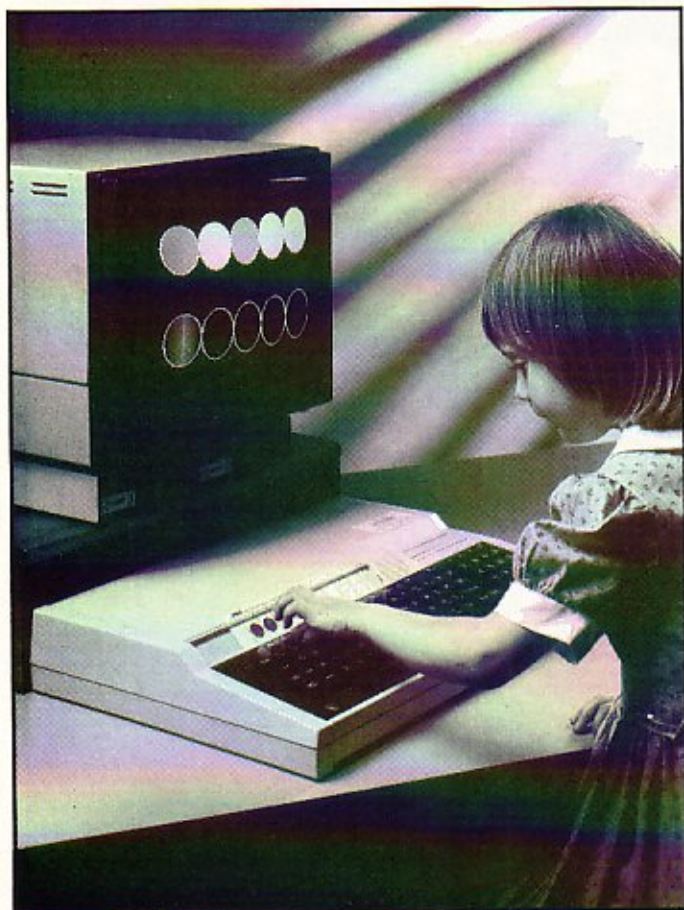
Acorn User Show Cancelled

The oldest Acorn Computer show, which started life at the Hammer-smith Novotel but transferred successfully to the Barbican centre, has decided to call it a day. No reason has been given by the organisers. However Redwood Publishing, publishers of Acorn User magazine, are said to be looking to do an Acorn show of some sort later in the year.

Life at 40

Citizen's HQP-40, 24 pin, 80 column dot matrix printer with options for seven colour operation and automatic sheet feeder is the latest addition to their range. The price of the standard model is £499.

The colour option consists of a new motor which you have to install yourself and a ribbon with black, red, blue and yellow inks. Prices: Font cards £35. Emulation cards £50. Ribbon £8. Colour kit £50. Colour ribbon £20. Sheet feeder £150.



Numbercopter from ESM contains eight programs for Early Learners. ☎ 0223 65445.

DABS PRESS HyperDriver: Printer Power

Possibly the most significant purchase you can make...

HyperDriver is an amazing new companion ROM for all Epson-compatible printers, unleashing their power, without the need for complex programming. Over 80 star commands provide all printer functions from within any language or wordprocessor. New commands may be easily added. Invaluable is the on-screen preview facility. For VIEW, a special printer driver is provided in the ROM, which supports the on-screen preview facility and microspacing! If you haven't got an NLQ font, don't worry, a beautiful proportional NLQ typeface is built into the ROM. It is also possible to print using the BBC Micro character set, including any characters you have defined. Here's what Beebug said in March 1988: "A million good design features...an ingenious blessing". **HyperDriver** costs just £29.95 (ROM) or £24.95 (SWR) and includes a 100 page user guide and examples disc. **Real Value!**

Dabhand Guides available: (Books £12.95, £17.95 inc. disc)
ViewSheet & ViewStore: A Dabhand Guide by Graham Bell
352 pages - *Highly recommended* Beebug review, May 1988
Master Operating System: A Dabhand Guide by David Atherton
NEW: C: A Dabhand Guide - 512 pages. Covers C programming on Archimedes, BBC, Master, and Master 512. Price £14.95.
Software for your BBC and Master
MOS Plus - Goodies on ROM for the Master 128 £12.95
"MOS Plus is an excellent Product" Beebug March 1988
Master Emulation ROM - Master features on a BBC £19.95
"The whole system feels like a Master" Beebug March 1988

Prices inc. VAT and p&p in UK. ACCESS/VISA accepted by post/phone/mailbox. Products available from most dealers. Free catalogue on request. Add £2 for 3.5" discs. Add £2 (£10 air) if outside UK. Official and trade orders welcomed.

DABS PRESS (AB) 76 Gardner Road Prestwich Manchester M25 7HU
Tel: 061-773 2413 • Prestel 942876210 • Microlink 72:MAG11596

COMPETITION

Competition... Competition... Competition... Competition...

Textshape will undoubtedly encourage the odd masterpiece of humour, science fiction or biography from our talented readers so here's an open invitation:

Send in your work for distribution to other readers in future issues

We'll exercise some editorial control but would very much like to use our modern media to distribute entertainment of all kinds to our readers. Any other ideas?

Meanwhile

Meanwhile here's this month's competition.

What you have to do

Write a brief (no more than 200 words) science fiction essay, roughly following these suggested themes:
what you think you'll be doing with your computer in the year 2000AD
how you think the world of home computing will have changed
what is a computer of the future going to look like

Prizes

The top two essays in the judgement of the editor will win:

1st prize

Spellmaster - the fastest spelling checker for the BBC Micro - from Computer Concepts

2nd prize

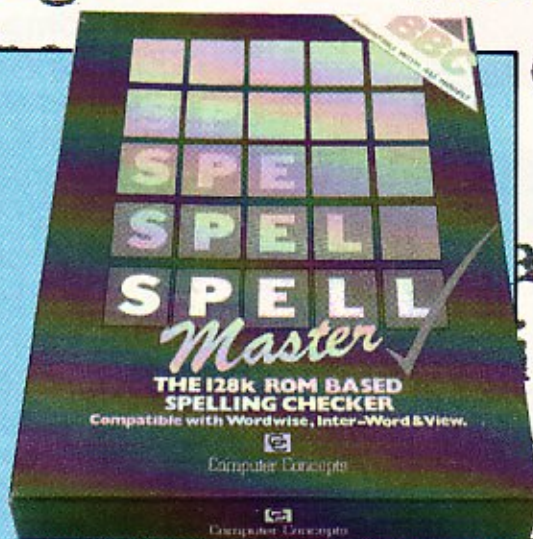
A major new edition of Collins English Dictionary

Enter

Send your *Textshape* sci-fi essay competition entries to:

Sci Fi Disk User 6C Belgic Square
Padholme Road Peterborough
Cambs PE1 1XF

Entries to arrive by 15th August 1988.



Spellmaster can be used with all the major wordprocessing packages for the BBC Micro and can be successfully employed with Textshape. It is the fastest - a staggering 10,000 words per minute - spellchecker because the dictionary is held in ROM, not on disk. Commands like CHECK, FUZZY, CROSSWORD and ANAGRAM can come in handy for word puzzlers and writers alike. You can also create your own user dictionary for special categories of vocabulary. All in all a powerful piece of software worth nearly £60.00.

The Collins dictionary has 1,800 pages, over 170,000 references and 15,000 encyclopedic entries. It's an essential companion for the budding writer. And with Textshape on your BBC Micro, that's just what you are.

Abbas

COLLECTOR'S ITEMS

Animate the alphabet with computer artist Abbas. Every month he animates a letter. Just choose this month's letter from the alphabet menu to see the action.



Instructions on how to use the menu for other letters were given in Disk User number seven. Letters A to J are available on back issues (see SERVICES this issue).



NEXT MONTH

September issue – OUT AUGUST 19 1988



GRAPHICS GALORE – screen editors, drawing tools, special effects, don't miss this special issue

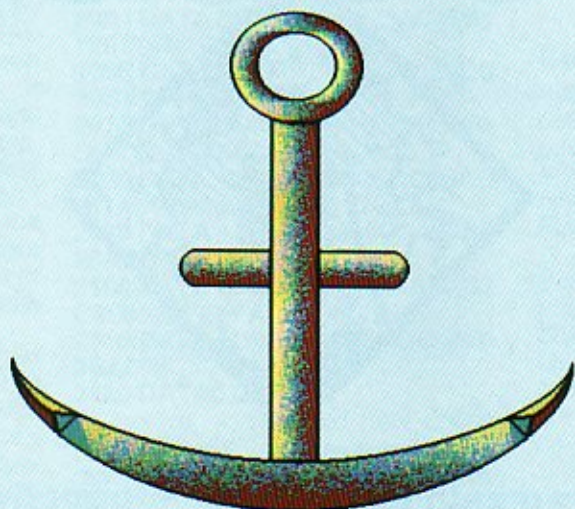
Oodles of Doodles – our highly original graphics generation technique comes of age



All Assembled – final part of the series
PLUS Games, Advanced and Beginners Programming and Readers Routines

ANCHOR

it NEVER lets go



The complete memory resident programmer's assistant Calculator, Notepad, Monitor, ASCII Table and more Instantly available – just press <CAPS LOCK><SHIFT LOCK> together
No more irritating disc swapping. Integrated programming environment. Anchor for BBC Master/B+128, or BBC B/Solidisk SWR. Powerful debugging/memory management facilities. Pop up/Pop down, over your favourite applications. This is it, the program you always promised yourself.

Have you ever wanted a reliable helper, someone to sit by your side night and day. Someone who never complains or goes to the pub for a drink, or asks for money?. Well here is the answer to your dreams. Now you can do all those things that were just too much bother, and still be better organised. Now when the telephone rings in the middle of your latest meisterwerk all it takes

is a second to jot a note down, or do a quick calculation, and hey presto you can get back to work straight away.

Fully Documented

Anchor comes complete with a desktop-published, and laser printed manual that will help you get the best out of Anchor's more powerful features. Complete with worked

tutorial examples for beginners, the manual is a valuable reference work in itself.

Availability

Anchor is available now in both Master/B+128, and BBC B with Solidisk SWR versions. Please follow instructions at the foot of this page for ordering.

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 for the BBC Model with Solidisk sideways RAM (DB93)

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(please tick box of choice)

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 80 track

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DISCUSSION



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Helping hand

You may have noticed that we have updated our returns service and it is Disk User policy to make sure that every purchaser ends up with a working disk. If anyone has an outstanding problem ie a disk wasn't returned, please give us a ring at the editorial office (0733 53355) and we'll sort you out a new copy. See Disk Instructions for an explanation of the new returns service.



Machine code mixup

I recently attempted to utilise the BASIC compression program on Issue 3. Trying *SHRINK produced "Bad command" and *LINCMP had no effect. I would find the facility very valuable (if I could make it work!) as I have written a suite of scoring programs for my bridge club and the size of event which can be scored is limited by the space available for variable arrays.
M.Tracy, Bristol

This one is easily solved but does bring up the very difficult to understand process of assembling a machine code program. Dave Stiles' "Starting Out" series has done a good job in describing it so I hope you've been following Mr Tracy. In the meantime here's a step by step on the process which occurs when

assembling a program:

1. Most machine code programs start life as BASIC programs with assembler instructions (eg LDA#8) embedded in them. These instructions appear between the [and] square brackets in the listing. At this stage the BASIC program is referred to as the "source" program.
 2. When you RUN the BASIC program the assembler instructions are passed to the assembler (which resides in your BASIC ROM). The assembler interprets the sequence of instructions into a list of hex numbers, storing them in an area of memory.
 3. Sometimes the BASIC source program will automatically save the memory containing the hex numbers to disk, sometimes it will instruct the user to do this when it has finished storing them.
 4. The hex numbers are now safely on disk and the new file is known as the "object" code. This is the file you use by typing *RUN, */ or sometimes simply * <filename>.
 5. On completion, you are left with two separate files, a BASIC source program which you can edit and a finished (usually uneditable) machine code object program.
- In the case of our BASIC compression program, you will need to LOAD and RUN the LINCMP program in order to assemble the instructions into memory. You will then be prompted to save a memory area as SHRINK, the machine code object program. Once done, *RUN SHRINK will stir the machine code into action.



Booting up

I've had problems with the boot file on issue six of Disk User for some time, short circuiting it by CHAINing the menu. Other disks work fine so what's gone wrong?
K.Thompson, Lancs

We changed the way we did things a little in that issue's boot file and came to regret it! The new memory locations we used clashed with some ROMs so we returned to the tried and tested after that issue. Our advice: copy the !BOOT file from a working copy to issue six.



Repton Map Printer

As you will have noted from previous correspondence, a number of people have had problems with the Repton Map Printer. Our thanks for all your suggestions and printouts. Superior Managing Director, Richard Hanson, has come to the rescue and we are grateful for the following helpful letter:
(note the short listing is also on this month's disk)

Printing THRU TIME

I was very interested to see a REPTON 3 Map Printing program in the December/January issue of Disk User.

I recently tested this program by printing out some maps from Superior Software's newly-released REPTON THRU TIME screens. It produced beautiful map printouts for the screens from the NOW era. Regrettably, it made a complete mess of it (to put it politely) when I attempted to print maps from the PREHISTORIC era. Some lines were printed incorrectly, the printer went from graphics mode into text mode, then back to graphics mode, etc.

The map printing program had already become a great favourite of mine because it's extremely useful for assisting with Superior Software's customers' queries. When a customer writes to me saying that he is perplexed by a particular REPTON 3 screen, the appropriate screen map can be printed out and then annotated with a solution to his dilemma (provided there isn't a competition in progress of course).

So, after it was discovered that the map printing program was faulty, the Superior Software technical team (374 people, a rusting robot, and a very intelligent chihuahua dog) was set to work upon fixing the program. After careful study of the program a small bug was detected, examined, and eventually laid to rest. The bug occurs due to the Printer Ignore character on the BBC Micro which is set by the ★FX6 command.

By default, the Printer Ignore character is set to a "linefeed" (CHR\$(10)). This means that whenever a CHR\$(10) is about to be sent to the printer, it is intercepted and suppressed by the printer driver routines. This is useful because some printers do an automatic "linefeed" when they receive a "carriage return" (CHR\$(13); it is therefore important to be able to prevent the "linefeed" characters from reaching the printer.

However, when the printer is operating in a hi-res graphics mode it is essential that the printer does receive all the CHR\$ values, from CHR\$(0) to CHR\$(255). The map printing program did not allow for this. Some screen maps are printed correctly, but this is purely due to chance.

The program can be modified by making these amendments to the original "REPMAP" file (change or add the following lines:-

```
70 DIM MCode% 1885, oscli% 100
1000 DATA 20DB1FEAEAA90720E
E99A91F20EEFFA908,2353
1050 DATA A91620EEFFA9074C36
0C60A200BD6E1920,1648
2040 DATA A906A20A20F4FFA900
8570A90C8571A916,1910
2050 DATA 8572A9208573A045B1
7291708810F9AD0E,2061
2060 DATA 028D010CAD0F028D0
20CA9048D0E02A90C,1012
2070 DATA 8D0F02A9164CEEFF4
C0000EA088D030C8A,1530
2080 DATA 489848AD030CC90AD
017A906A20020F4FF,1794
2090 DATA AD030C20000CA906A
20A20F4FF18900320,1313
2100 DATA 000C68A868AAAD030
C286020EEFFAD010C,1593
2110 DATA 8D0E02AD020C8D0F0
260,598
2120 DATA 0,0,0
```

As before, you should now CHAIN the "REPMAP" file which will save a machine-code file "RepPrt", which can then be run with the command: *RUN "RepPrt".

The only other change required is that the printer must not output automatic "linefeeds" now. Most printers can easily be set into this alternative mode by flicking a DIP switch; these switches are usually accessible at the front or back of the printer. Refer to the printer's manual for the details.

Readers may be interested to know that Superior Software has now sold more than 100,000 copies of the REPTON series of games collectively. When it comes to Repton, it seems that our customers just can't get enough. Did I hear some whispers about Repton 4? Well, who knows? You'll have to wait and see...



Back to BASIC...1

Although I had a slight problem using HIPAGE with BASIC 1, I bypassed it by using the HIFONT file already assembled on the disk and now have quite a useful cyrillic script font.

All did not run smoothly at first. Superfont Test and Printer both had this curious line

file\$=file\$

Other programs I have purchased from Services, such as Skywatcher and Statistics - both excellent - have demonstrated similar problems.

Is this legitimate syntax? My manuals and computer all insist on

file\$=OPENIN(file\$)

Is BASIC II more tolerant?

J.P. Leigh Stoke-on-Trent

The nonsense line you quote is caused by the problems of BASIC 1 and 2 incompatibility. We addressed the issue in depth last month and will return to it from time to time for new readers. In the meantime we'll continue to vet software for BASIC 1 compatibility as far as possible. Incidentally the brackets around the second occurrence of file\$ are not strictly necessary and this is a matter of programming style.

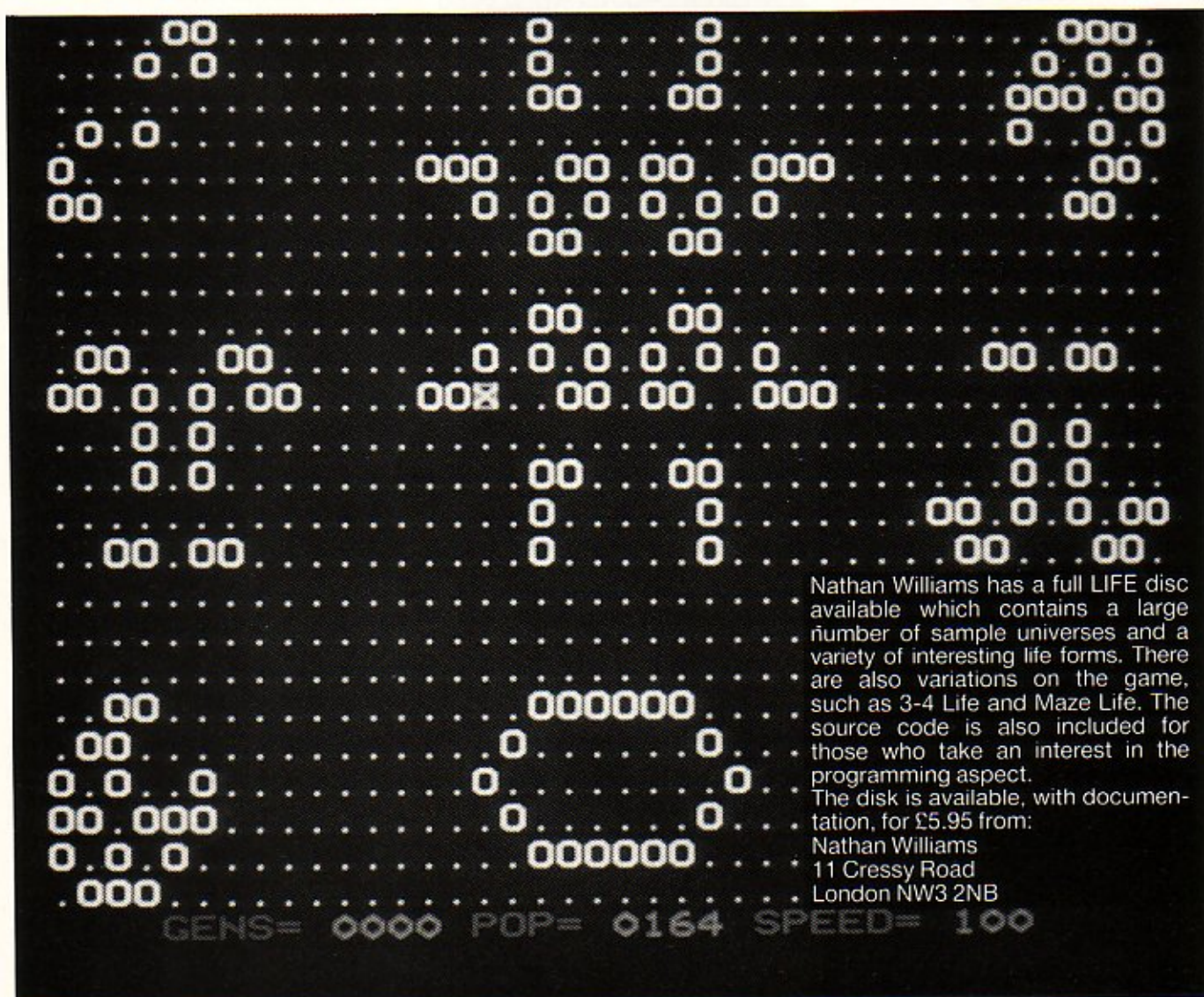
Cyrillic superfont created by Mr J.P. Leigh

Chapter 4 Глава Четвёртая

Небо	- Sky	Вид	- View
Лес	- Wood	Дерево	- Tree
Трава	- Grass	Дорога	- Road
Человек	- Person	Сын	- Son
Доч	- Daughter	Сестра	- Sister
Деревянный, -ая, -ое	- Wooden	Хороший, -ая, -ое	- Good,
Nice		Молодой, -ая, -ое	- Young
Другой, -ая, -ое	- Other	Синий, -ая, -ое	- Dark
Большой, -ая, -ое	- Big	blue	
Близко	- Near	Вдали	- In the distance
Рядом	- Alongside	Совсем	- Quite
Есть	- Is	Его	- His, him
Кругом	- Around		

FASTLIFE

Fastlife is an exciting "super-fast" version of our Superlife program



Nathan Williams has a full LIFE disc available which contains a large number of sample universes and a variety of interesting life forms. There are also variations on the game, such as 3-4 Life and Maze Life. The source code is also included for those who take an interest in the programming aspect.

The disk is available, with documentation, for £5.95 from:
Nathan Williams
11 Cressy Road
London NW3 2NB

To design patterns on screen there is a cursor represented by a flashing X which is moved about with Z, +, X and /
RETURN places a cell at the cursor and SPACE clears it.



Fast life has a much smaller universe than Superlife and as a result there is no need for scrolling or hi-res mode. The other options are controlled with the function keys:

f0 will at any time return you to normal lo-res edit mode
f1 will animate the screen
f2 decreases speed. This only works in edit mode
f3 increases speed. This only works in edit mode
f4 advances the universe by one step
f5 clears the universe ready for a new one
f6 Whenever you enter life mode the universe is saved in memory. This key restores that saved universe. This is useful when designing shapes a shape can be designed and then watched and then restored to be

edited or watched again.

f7 allows you to load a universe
f8 allows you to save your universe
f9 displays a help screen

ESCAPE gives you the option to quit or return to the menu however it should not be pressed while in life mode as the computer will not respond until you press f0. OSCLI commands can be executed simply by typing *.

Files for Fastlife are prefixed with "F.". So if the name of a file is "F.Univers" it can only be used with Fastlife. You needn't type in the prefix, only the "Univers" part.

SECTOR ZERO

Three readers routines, plus programmers patch



Slick screen clear

This month's Star Routine comes from 16 year old Richard Walker who gets £25 for his neat implementation of a screen dissolving routine.

The program offers an attractive way of clearing the screen in all modes; text or graphics, and even Mode 7, although in the latter the routine works too quickly to be of any real use.

It is very simple to use and can be used as a stand alone program, or can be easily added to existing programs.

The version presented is *scrnass*, which consists of the assembly language source code and a couple of examples to demonstrate the routine. To create the object code type: ***SAVE SCRNCCLR 900 A00 900** after running the source code. The object code can then be ***LOADED** into memory (by default at &900) and then called with **CALL &900** when required, or called into action off disk at any given moment with ***SCRNCCLR**. As I said it is very simple to use, because it is fully automatic, the screen memory addresses being calculated from within the program.

I hope you find the routine suitable for inclusion, as you would make a young programmer (with a liking for T-Shirts) very happy. Hopefully there will be a game (fairly) soon.



Laser Letters

Running a close second for the star routine is Andy Goodsell with a clever way of drawing on-screen

letters.

Here is a procedure written for the BBC Micro that simulates a laser beam etching letters onto the screen. The procedure is called with the variables (**L\$,X1%,Y1%,X2%,Y2%,CSIZE%,D3%**) where:

L\$ is the string to be printed **X1%** and **Y1%** are the x,y co-ordinates of the laser source

X2% and **Y2%** are the x,y co-ordinates of the bottom left start point of the string

CSIZE% controls the character size printed. The procedure will inform you if this is too large. Alternatively if you set **CSIZE%** to zero, the procedure will calculate the maximum size across the screen. **D3%** is a flag that controls the 3D effect. When set the 3D effect is on.

The procedure uses a call at **&FFF1** to split each byte of the next letter to be printed as 0's and 1's over **&70** and the subsequent 7 bytes. Each location is tested and a grid formed

in **G\$** which is eventually used to *Laser* the character.

The routine can be used to good effect with any fill routine.



Animation Add-ons

Last but certainly not least is Mr J.C. Kenney who comes up with a fully error trapped version of the animation menu, and a program to call the animated letters in sequence.

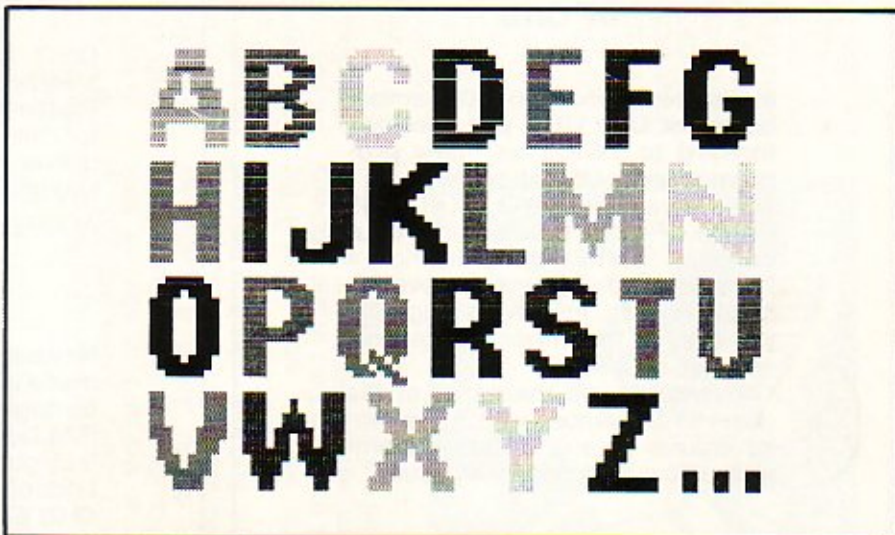
Auto, uses **OSCLI** to ***RUN** the animated letters sequentially in alphabetic order. The change to the next letter follows pressing any key. The **ON ERROR** routine is used to end the program if **<ESCAPE>** is pressed or an error (such as the next letter file not being present) is detected.

ALFABET, uses the fact that all the animated letters published so far have at least two features in common which are utilised in this menu program:

The letters use **OSBYTE &81** to read a key. The ASCII value of the key pressed is loaded into register **X**;

The letters have an execution address of **&7a00**.

Alfabet runs the previously ***LOADED** animated letter using **USR(&7A00)** which returns (amongst other things) the content of the **X** register which is decoded and used by **OSCLI** to ***LOAD** the next letter program. The error handling routine ends the program if **<ESCAPE>** is pressed and reports any other error, singling out *File not found* for special display.



Superfont souped up

Lastly, this month programmer Dov Rosner is wearing sackcloth and ashes for not making Superfont fully BASIC I compatible, but he's come up with a quick remedy, plus help for VIEW users. PS look out for **LOADS** of good stuff from Dov, coming soon at a Disk User near you.

It has come to my attention that Superfont as published in Disk User No.7 is not fully BASIC I compatible. In fact there are only two changes to be made. Enter the disk with the expanded SuperFont files. Now follow these steps:

```
LOAD "test"
290 file%=OPENIN file$
SAVE "test" LOAD "printer"
210 file%=OPENIN font$
SAVE "printer"
```

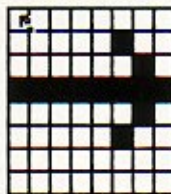
Also, despite being compatible with View, There are a few errors in Superfont when used with View. To fix this, I have provided the Adjust program on disk. View users only should use this program to transfer VIEW files that they wish to print to Superfont format. The procedure is simple: Prepare a text file with View. Each time you want to start a new line you **MUST** hit <RETURN>

twice (Always type twice as many <RETURN>'s as you really need). Save your file, then CHAIN "Adjust" and enter the View text filename and the SuperFont filename to be

created. When finished, load the new file into the Superfont Printer Driver for printing. The resultant file will not load back into View so use your old copy.

CHARACTERS DESIGNER FOR SUPERFONT!

88	□	81	▲	82	○	83	●	84	≈	85	▼	86	▲	87	▲
88	□	89	▲	89A	○	89B	●	89C	≈	89D	▼	89E	▲	89F	▲
98	□	91	▲	91A	○	91B	●	91C	≈	91D	▼	91E	▲	91F	▲
98	□	99	▲	99A	○	99B	●	99C	≈	99D	▼	99E	▲	99F	▲
A8	□	A1	▲	A1A	○	A1B	●	A1C	≈	A1D	▼	A1E	▲	A1F	▲
A8	□	A9	▲	A9A	○	A9B	●	A9C	≈	A9D	▼	A9E	▲	A9F	▲
B8	□	B1	▲	B1A	○	B1B	●	B1C	≈	B1D	▼	B1E	▲	B1F	▲
B8	□	B9	▲	B9A	○	B9B	●	B9C	≈	B9D	▼	B9E	▲	B9F	▲
C8	□	C1	▲	C1A	○	C1B	●	C1C	≈	C1D	▼	C1E	▲	C1F	▲
C8	□	C9	▲	C9A	○	C9B	●	C9C	≈	C9D	▼	C9E	▲	C9F	▲
D8	□	D1	▲	D1A	○	D1B	●	D1C	≈	D1D	▼	D1E	▲	D1F	▲
D8	□	D9	▲	D9A	○	D9B	●	D9C	≈	D9D	▼	D9E	▲	D9F	▲
E8	□	E1	▲	E1A	○	E1B	●	E1C	≈	E1D	▼	E1E	▲	E1F	▲
E8	□	E9	▲	E9A	○	E9B	●	E9C	≈	E9D	▼	E9E	▲	E9F	▲
F8	□	F1	▲	F1A	○	F1B	●	F1C	≈	F1D	▼	F1E	▲	F1F	▲
F8	□	F9	▲	F9A	○	F9B	●	F9C	≈	F9D	▼	F9E	▲	F9F	▲



<CR> to finish , ESC to abort

COMING SOON

TWO FOR THE PRICE OF ONE

In the November and December issues of Disk User you can look forward to **TWICE** as many programs for the **USUAL** price.

The November **TWO FOR THE PRICE OF ONE** disk features **educational software**, including a Computer Aided Learning development program. Inside the magazine we talk to the major educational software houses.

Adventures are the name of the game in December with full blown adventures to suit all tastes crammed onto our second **200K** issue.

disk USER

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TEXTSHAPE DOCUMENT PROCESSOR

TSHAPE2
TSHAPE3

HELP
T.!BOOT
*RENAME T.!BOOT!BOOT
*OPT4,2

When the files are copied over, type
*RENAME T.!BOOT!BOOT

This OPT command makes the com-
puter *RUN <TXT 1> the machine
code !BOOT file on pressing <SHIFT-
BREAK>.

Basic use of the system

Textshape is a *what you see is what you get* document processor, known commonly as a *WYSIWYG* system. The document consists of a number of pages, of which the current text page displays 20 lines out of 66 in memory. The section of text displayed is shown by the line numbers at the far end of the screen.

Textshape allows you to move the cursor to any position on the page using the cursor keys, and enter text. If you make a mistake, the <DELETE> key operates just as in BASIC, or you can move the cursor and overwrite the mistake. <RETURN> moves the cursor to the left margin, down one line.

The cursor can be changed by pressing <CTRL-C> from steady to flashing block versions. If you want to move the cursor in fast leaps around

Full 'WYSIWYG' document processor, with multi-file editing, on screen justification, and block commands

Peter Scott is the well-known author of hit computer games such as Hunkidory and Omega Orb.

Although better known for his sprite designs, we are sure you will agree that Peter has nevertheless designed a powerful wordprocessing tool in the Textshape System.

Loading the system

Selecting *Textshape* from the Menu will cause the file T.!BOOT to be *RUN. This will load in the Textshape system, and after a short pause the program will ask you for a file name. Simply press <RETURN> if you are using the system for the first time. This feature is explained under the *Multi-file* processing section. The system will then present the blank text page ready for use.

Note: we recommend that to get the best use out of Textshape you copy the relevant files to a fresh disk. These are:

T-SHAPE



mand mode. Otherwise, don't redef-
ine the <BREAK> keys, or the cursor
and <COPY> keys.

A text file is 81399 bytes long, and usually starts at &29CD. This will help in identifying the files on a disc, if their origin is unknown. A textfile is held in the form of a 76 character wide, and 66 lines deep file plus an extra byte. Other wordprocessing systems may expect a carriage return at the end of each line, which TextShape doesn't do.

You may find it useful to hold a buffer containing helpful paragraphs on disk, as well as a series of function key definitions with useful phrases on them. For example, your address could be a buffer file, and standard paragraphs could be held, saving much typing.

If you have any problems running the TextShape system, then please check that your BBC computer has an Acorn DFS or closely compatible filing system. Other ROMs or boards may interfere with the programs; that can't be helped with a RAM based word processor. The system should work without problems on BBC B, B+64K, B+128K and Master computers.

monly used search/replace, on a function key.

These definitions can be loaded and saved, as in BASIC, by *SAVE fcnkey B00 BFF, and reloaded by *LOAD fcnkey, in command mode. In this mode, don't enter other *LOAD or *SAVE commands.

Safe commands in command mode

All *FX's except any to do with <SHIFT> <CTRL> function keys, the cursor keys, memory clear, on BREAK, *FX18, *FX4, *FX20. All non-destructive DFS commands ie NOT *COPY, *COMPACT, *BACKUP. Note that *BASIC will leave the system, and enter BASIC.

Be careful when editing with word-wrap and justify modes engaged. All editing at the end or start of lines should be done without these modes on, as if you delete a space, for example, the system senses a joined-up word, and will wrap it to the next line.

If you want to work without the system trying to load in the recovery program when BREAK is pressed, enter the command *KEY10 in com-



command fail. To get your text back before the helpfile was selected, press <CTRL><F0> and then enter TEXT. Deleting this file after each <CTRL><F9> is a good habit to get into.

The BREAK key

Pressing <BREAK> will have no fatal effect. The system will simply try to load in a recovery program. If you don't have the main system disc in the drive, place it in before pressing <BREAK>. You will be asked if you wish to restart the TextShape system. Pressing <N> will leave the system, and probably destroy your text.

Pressing <Y> will give a further prompt asking whether you want to recover the text held before <BREAK> was pressed. If so, press <Y> and the system will load back the main program, with your text held uncorrupted. <N> will present a totally blank page on loading of the main program. <CTRL><BREAK> clears memory and also quits the system.

Multi-file use

On loading the system initially, you



are asked for a document name. This is for the multiple file option. Allowing you to work on a document of up to 100 pages (filing system permitting) without use of the load and save text options. This advanced feature puts Textshape ahead of other BBC word-processors, and in a class with PC based systems.

You may have noticed that pressing cursor up or down at the extremes of the page (line 0 and line 65) invokes disc usage, usually with a *File not found* message. At the bottom of the screen, the document name you entered in the first loader program is displayed, along with the current page number (initially 0).

Pressing cursor up at page 0 of the document will try and load in the file called "<document name>00". ie if the document name was NOVEL, then it would try and load in the file NOVEL00. Pressing cursor down at the bottom of page 0 will save the current text as <document name>00 and try and load the next page (<document name>01). In the example, this would save the text as NOVEL00 and try and load in NOVEL01. If no file of this name exists, the

<SHIFT><F0> : Indent text

This puts a control code onto the start of the current text line, meaning that the spaces following it won't be justified away. This can be used for indenting text, whilst still using auto-justify mode.

<SHIFT><F1> : Un-justify text

This command will reverse the justification of text performed by <CTRL J> auto-justify mode or by <SHIFT><F5> block justify, on the line the cursor is currently on. If massive gaps are apparent, then a couple of de-justifies may be required.

<SHIFT><F2> : Re-justify line

Sometimes, the justification process can leave strange gaps in text, in places that appear wrong. Selecting <SHIFT><F2> will re-do the line the cursor is currently on.

<SHIFT><F3> : Change colour

This option will cycle through the



<SHIFT><F4> : Insert and delete lines.

If you miss out a line, or want to get rid of a few lines, then this option is useful. Move the cursor to the line where you wish to insert or delete, and press <SHIFT><F4>. Then, cursor up will delete the line, cursor down will insert a blank line, and RETURN quits this mode.

<SHIFT><F5> : Block justify

This option will justify a block of lines, between those you are asked for, producing the same result as the <CTRL-J> command.

<SHIFT><F6> : Centre line

This command centres the current line, between the left and right margins. There is a short delay before centring takes place.

<SHIFT><F7> : Count words

This command centres the current line, between the left and right margins. There is a short delay before centring takes place.





to worry about the word being split between one line and the next. The system will wrap the word down to the next line.

This is toggled on and off by pressing <CTRL-W>. You may want it switched off when editing near the edges of the screen.

Pressing <CTRL-J> activates auto-justify mode. This will justify the text after wordwrap, so the right and left hand margins are straight with letters, and no untidy spaces are left at each side. It is advised you only use this feature in conjunction with wordwrap as, otherwise strange results may occur.

the page, you can simply press <SHIFT><arrow> key together. <SHIFT><up> moves the text window up 20 lines, <SHIFT><down> moves it down the same amount <SHIFT><right> moves it to the rightmost margin, and <SHIFT><left> moves it to the far left of the screen.

Insert and delete

If you make a mistake on the current line, such as leaving out a letter, or putting too many letters in, then the letter insertion mode is used to correct the error. Pressing <COPY> enters this mode. Anything you then type is inserted in the current line. <DELETE> rubs out as usual, and <SHIFT><DELETE> moves the text to the right of the cursor to the left by one character. Press <RETURN> to leave this mode.

Wordwrap and auto-justify

You will notice, on loading the system, the bottom right of the screen says **Wordwrap:ON**. This is the feature allowing you to continue typing a word when the cursor is at the far right of the screen without having

system clears the text ready for use, as a blank page.

The basis of this feature is that you can move between up to 100 pages of any document simply by pressing cursor up or down at the extremes of the current page. For example, if the document name was **NOVEL** again, pressing down at the bottom of page 5 would save the current text as **NOVEL05** and try to load **NOVEL06** from disk. If the file does not exist the text area is cleared ready for user input.

Similarly, pressing up at the top of page 7 of **NOVEL** would save the current text as file **NOVEL07** and load in the file **NOVEL06**. So in use, from the start, simply keep typing the document, pressing down at the bottom of each page, and over 5 pages you would have 5 files called **NOVEL00**, **NOVEL01**, ... **NOVEL04** on your disc.

Loading any textfile containing two numbers at the end is taken to be a new document and page number. For example, loading a file called **TFILE35** would change the document name to **TFILE** and page number to 35. Don't lock any of these files using ***ACCESS**



as then saving would be impeded.

Useful hints for Textshape

You have probably already seen that function key <F1> produces the string :..... The reason for this is to aid indentation of paragraphs. There is already the <SHIFT><F0> indentation feature, but this can produce jagged indentation, of varying number of spaces depending on justification.

At the start of each paragraph, press <F1>. Then enter text into the paragraph in the normal way. When you have finished entering the whole page, select search and replace (<SHIFT><F9>), press <F1>, <RETURN><RETURN> and <G>. This replaces all of the :..... strings with spaces, giving perfect indentation.

Function keys can be defined by entering *** command** mode, and defining the keys as you would in BASIC (ie ***KEY2Hello** would make <F2> print *Hello* when pressed. They can also contain control codes, such as | for <TAB>, |C for <CTRL-C> and so on. The control codes |@, |A, |B etc. are the same as <SHIFT><F0>, <SHIFT><F1> etc, allowing you to access commands, such as a com-

Selecting this option produces an estimate of the number of words on the current page.

<SHIFT><f8> : Set typing margins

The text you enter is printed between the block markers illustrated at the top of the screen by the solid blocks. This option will allow you to change the width of the page for the text you wish to enter. Text already there is unaffected: this option only allows you to alter the text you want to enter. Therefore, you are advised to decide what width the text is to be before entering anything.

<SHIFT><f9> : Search and replace

When you have entered a page of text, you may realise you have spelt something incorrectly, or wish to change a name or any other word. To do this, the search and replace option should be selected.

You will be asked for the text string to search for. Enter this exactly as you want to find it. On pressing <RETURN>, you will be asked for the string to replace it with. This must be of the same length, or shorter. Then, you are prompted to press <G> or <S> for a *global* or *selective* search. A global search replaces all occurrences of the search string with the destination string on the current page. The selective option will go through the current 20 line window, moving the cursor to each occurrence of the search string, and pressing <Y> will replace it, <N> will skip past it to the next occurrence.

<CTRL><f0> : Load text

This option will load in a text file from



disk. If you select the wrong type of file ie another program, you will be informed. To read the help file summary of the instructions, load the file called *HELP* from the program disk.

<CTRL><f1> : Save text

This command saves the current 66 line page, with the name you give. One proviso is that the name should not exceed five characters to allow the multi-file editing features to work.

Buffer commands

The buffer is an area of memory where you can store up to 10 lines of text, and manipulate it back onto the main page. The next four commands deal with the buffer.

<CTRL><f2> : Load buffer

This command will load in a previously saved buffer.

<CTRL><f3> : Save buffer

Select this command to save the current buffer text.

<CTRL><f4> : Put buffer

This command will put the buffer at any line in the current page. Be careful about putting the buffer over the edge of the document, as the system won't allow it. Text under the buffer is overwritten, when this command is invoked.

<CTRL><f5> : Use buffer

On selecting this option, you are asked if you want to *Get*, *Move* or *Blank* the buffer. Pressing <G> will get an area of text, between selected lines, into the buffer area. Pressing <M> will move the text up to cover the block of text outlined.

<CTRL><f6> : Embedded commands.

This command allows you to enter printer control codes. The computer will ask for the decimal codes, and insert them at the cursor, continuing until <RETURN> is pressed, with no number. The codes are shown as a reversed *C* on the screen, and take up



one character. It should be remembered that they don't send an extra character to the printer to cover the space they take up, so be careful about the format of your text with control codes in it.

<CTRL><f7> : Dump text to printer

You will be asked for the start line and end line for this command, and the text between those lines is sent to the printer.

<CTRL><f8> : Set TAB ruler

The ruler at the top of the screen, showing the margin limits, also has lines on it indicating the TAB positions. Pressing the <TAB> key moves the cursor to the next one. These can be set by selecting this command.

<CTRL><f9> : Load helpfile

This command saves the current text-file, under the name *TEXT*, and loads in the help file from the program disk, called *HELP*. Don't use the filenames *HELP* or *TEXT* for your text, or lock the *TEXT* file, as that would make the

TRANSFER

Taking your disk files one step further

Disk User programs can be so useful that you'll often want to transfer them to their own disks and use them separately, without title page or menu. To do this successfully you'll need to learn a little about BBC BASIC and the DFS (Disk Filing System). In Disk User we don't believe in referring you to the manuals so here's an explanation of how such a transfer can be achieved.

Let's take the *TEXTSHAPE* program as an example this month. The relevant files on Disk User are: **T-SHAPE, TSHAPE2, TSHAPE3 and T.!BOOT**

Make sure you have a blank formatted data disk ready to receive the file. Insert Disk User and type ***COPY 00 T*** and press the RETURN key. Follow

the keypress prompts on the screen until the > prompt returns. Now

COPY 00 T.

and press the RETURN key. Follow the keypress prompts on the screen until the > prompt returns. Now

COPY 00 T.

(the character after the T is the minus sign)

and press the RETURN key. Follow the prompts.

!BOOT

With our new disk installed in the drive we can add the !BOOT file and *RUN option to the disk. You do this by typing:

***RENAME T.!BOOT \$.!BOOT**

***OPT 4,2**

Give it a title

You can now type

***TITLE TEXTSHAPE**

and press the RETURN key. Now type

***CAT**

and press the RETURN key and the screen will display the title *TEXTSHAPE* with the files !BOOT, T-SHAPE, TSHAPE2 and TSHAPE3. To get going just press SHIFT and BREAK together and release the BREAK key while still holding down the SHIFT key. This is known as *booting* the disk. There should be plenty of room on your new disk to start wordprocessing your letters, reports and more ambitious literary works!

Brief details are also given on screen when you select *TEXTSHAPE* from the Disk User menu.

Disk User is now monthly. You can order one from any newsagent. Watch out for Disk User on the third Friday of every month. The publication dates for 1988 are:

Jul 1988

Mon	Tue	Wed	Thu	Fri	Sat	Sun
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Sep 1988

Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

Aug 1988

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Oct 1988

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Nov 1988

Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4

Dear Newsagent

Please reserve me a copy of Disk User for the BBC Micro Monthly.

Name

Address

.....

.....

.....

Thankyou

Signed

DISK DATA

Wordprocessing is the most popular use of a microcomputer. Word processing packages are best sellers for every machine around the world. The BBC Micro is well equipped for wordprocessing of all types so read on...

BUSINESS

Wordwise Plus

Computer Concepts

Forty column on screen with 80 column preview, embedded commands for formatting and printer control. Number of documents in memory at once (size dependent on memory available). Unique easy to learn programming language which allows automation of mail merge and database like facilities.

Support

Spellmaster Computer Concepts

Large ROM based dictionary for fastest checking speeds on a BBC Micro.

Wordaid Watford Electronics

Continuous Processing ROM and various utilities *Norwich Computer Services*

Getting Into Wordwise Plus *Disk User Services*

View

Acornsoft

Eighty column on screen, embedded commands for layout, printer driver for taking advantage of printer facilities. Macros and mailmerge.

Support

Viewspell, Viewsheets, Viewstore, OverView Acornsoft

Viewspell boasts a large disk-based dictionary and facilities for word puzzle enthusiasts. *Viewsheets* and *Viewstore* can both output data suitable for incorporation into *View* documents. *OverView* allows data transfer in memory.

View Professional

Acornsoft

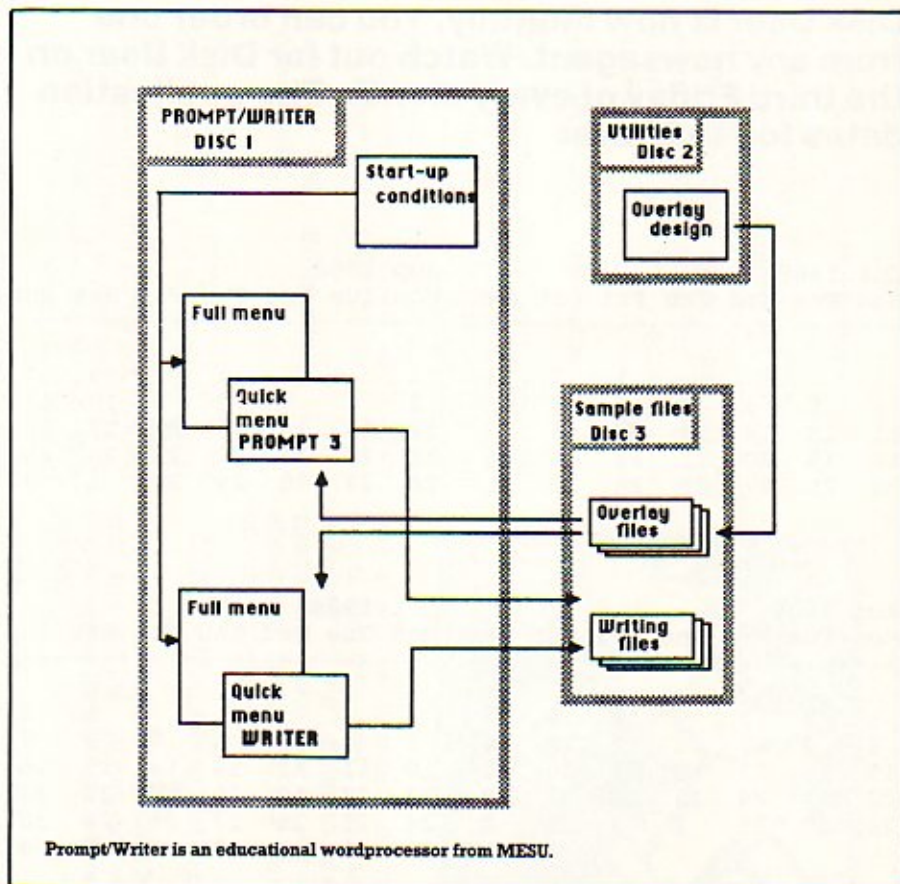
Known as *Pipedream* on *Archimedes*, *PC* and *Z88*, *VP* offers most of *View* but in a column and row format reminiscent of a spreadsheet. Indeed spreadsheets can be incorporated into documents and there

are database style "lookup" facilities. There is also a command language for the automation of tasks in batch files.

Wordpower

Ian Copstake

Eighty column with all standard



HOME LIBRARY SYSTEM

Use this handy electronic library system to
organise your book collection

Historical origins

The *Dewey Decimal Classification* to give it's full name is the standard way of cataloguing books, as used by libraries all over the world, and in your local library as well. The Dewey system is named after it's creator, American librarian *Melvil Dewey*, who first formulated it back in 1873 for application in the Amherst College library. The system is constantly under review, and by the 1970's had undergone 18 revisions.

Structure of the System

The Dewey System is based on the *decimal principle*. Subjects are divided into ten groups, each group being allocated 100 numbers. For example Religion is allocated the numbers 200-299. Within this group each subject is allocated 10 numbers, Christian church history being given the numbers 270-279.



To check this out copy the I.DEWEY file onto your *Tracer* disk. !BOOT the disk and select SEARCH from the main menu. From the SEARCH menu select DEWEY as the file to look through, and type in 270 as the word to look for.

You can see from this that practically any subject can be described by a three digit number, although it is possible to have very long numbers. Also the structure provides both a short hand identification facility, and a powerful tool for locating subject matter, thus aiding both the casual browser, and the professional librarian. As the main basis of dividing subjects is by discipline, then it is possible for a particular subject to appear in several places, which far from confusing matters actually makes searching easier and more comprehensive.

```
Editing DEWEY
535 Records in File: 46 Spaces Left
```

	Subject	Number
HISTORY:	CENTRAL EUROPE	943
HISTORY:	GERMANY	943.1
HISTORY:	WESTERN EUROPE	944
HISTORY:	WESTERN GERMANY	944.1
HISTORY:	FRANCE	944.4
HISTORY:	ITALY	945
HISTORY:	SPAIN	946
HISTORY:	RUSSIA & USSR	947
HISTORY:	ASIA	950
HISTORY:	AFRICA	960
HISTORY:	NORTH AMERICA	970
HISTORY:	CANADA	971
HISTORY:	UNITED STATES	973
HISTORY:	SOUTH AMERICA	980
HISTORY:	NEW ZEALAND	993
HISTORY:	AUSTRALIA	994

```
RETN→Next Line:TAB→Next field:ESC→Menu
CTRL-A=Insert Line:CTRL-D=Delete Line
```

To help identify individual books many libraries add a book number to the Dewey classification. Usually these are derived from a further set of tables called the Cutter-Sanborn tables. In addition to all this there is an index to the Dewey System, which provides an alphabetical cross referenced list of all the subjects.

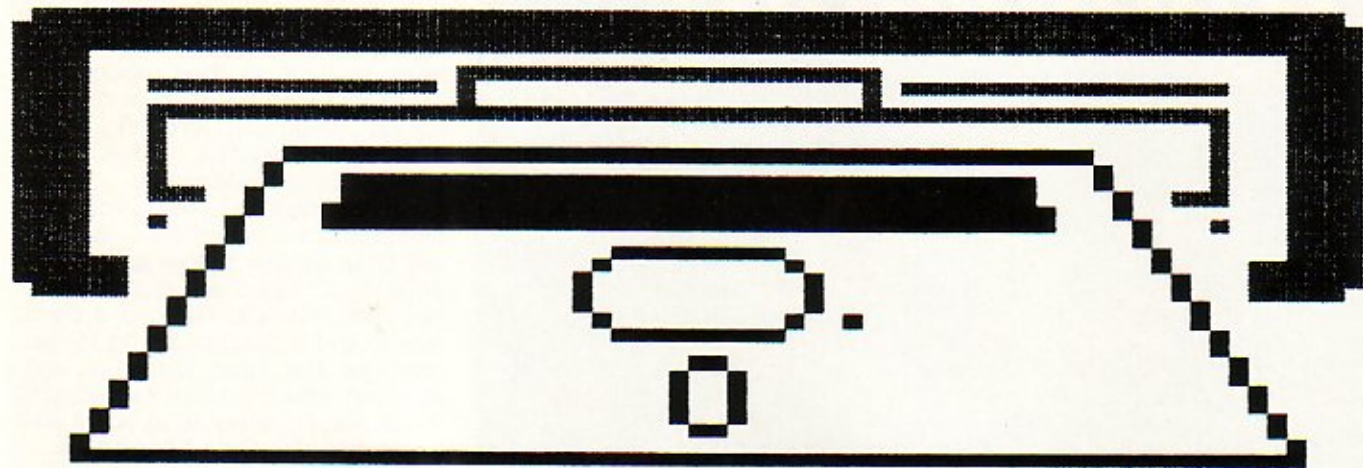
Applications for the Dewey System

Anybody who has a library will be able to use the Dewey system directly, and gain the benefits of an internationally recognised way of organising books. This means schools, user groups, clubs, etc. Furthermore it can be adapted to fulfill other filing needs where a large

amount of information has to be logically organised. For example a well known Fleet Street photographer uses a cut down version of the Dewey system to catalogue his vast collection of slides. The advantage of the Dewey system here is that it is very economical in terms of storage, just three digits, but allows very powerful search and cross referencing facilities. Of course the same technique can be adapted to a collection of geological specimens, or pressed flowers for example.

Editors Note We are hoping to bring out a full bibliography of *Disk User* in the near future, in the *Tracer* format. We are therefore asking any reader who has done this, or is contemplating this to get in contact. There may be some money in it!

U
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FLOPPY FUN

A new blockbuster and an old friend from Superior Software



amongst us. Hack and Slay merchants (no not those nice gentlemen who come to mow the lawn every week) will be delighted, as it allows them to fulfill all their macho fantasies of killing every other muscle-bound meathead around before rescuing the beautiful, made of india-rubber, princess Mariana.

The scenario is familiar, you must overcome ten swordsman, and the evil Drax himself before gaining the prize. Each opponent is more difficult than the last. There is a demo mode, and a practice mode to help you use the large piece of ironmongery which you are expected to wield. Me, I'd rather sit at home with a nice cup of tea and a good book.

To make one serious point, I would like to question the dubious nature of the packaging, which fea-

Reaping the Repton Reward

First of this months blockbuster releases for the BBC Micro is *Repton Thru Time*. Yes, the little green reptile is off again, on his umpteenth adventure.

This time Superior Software have engaged Mark Botterill from Impact Games Club to produce a set of forty new screens for the slip of a saurian to negotiate. Repton must fight his way from the mists of Pre-History, via Egypt, Victorian England, and the present day, to outer space and the future. This is a clever strategy, as in one fell swoop, Superior have given us prequel to sequel, and several steps in between. The game play is, well Repton, and none the worse for that, but it would be nice for Superior to give us a *completely* original game. After all there must be plenty of resources available.

This leaves us the question; where does Repton go next?. Could it be *Repton has a Sex-change*, or more likely, going by the great success of the series, *Repton is arrested for Tax evasion*. Who knows, we certainly don't, but for more Repton info see the *Discussion* pages this month.



Savage Swordplay

Secondly we have *Barbarian*, licensed from Palace Software, by yes, you've guessed it, Superior Software. *Barbarian* goes back in time, in this case to a time of swords and sorcery, dragons and damsels in distress.

This game is, not to put too fine a point on it, for the less sophisticated

tures Maria Whitaker, of page 3 fame, wearing next to nothing at the feet of the Hero. this is the 1980's, and to suggest that violence brings rewards in that fashion is irresponsible, remember Hungerford?

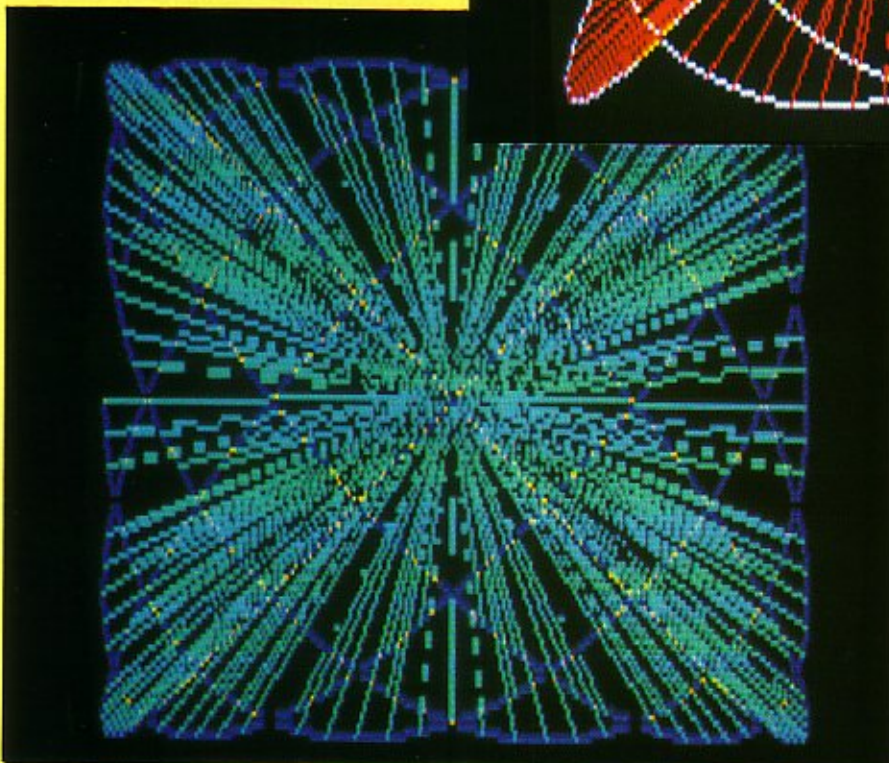
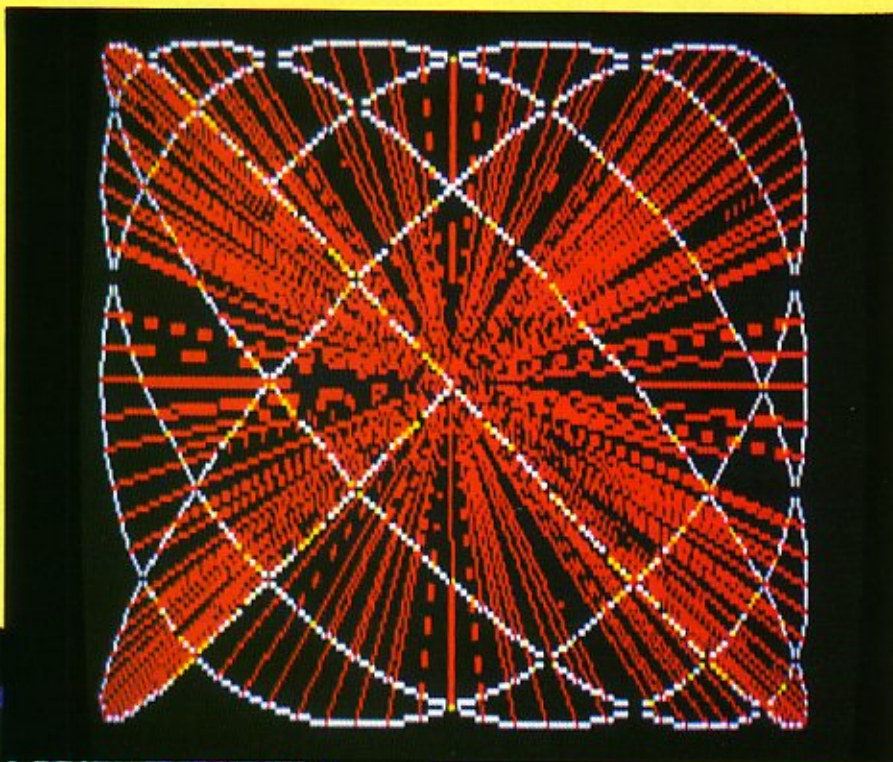
Superior Software Ltd, Regent House, Skinner Lane, Leeds. ☎ 0532 459453.

DYNAMIC DOODLES

SLOW Basic commands transformed into FAST machine code vector graphics.

We at Disk User are kind souls, normally; so when we run a program that we think is first class in our magazine we usually let you have the whole lot straight away. This month is different. We were so taken with *Dynamic Doodles* from Des Catlin that we devised a fiendish plan to torture our readership with curiosity and longing. We are going to show you just *one* of Mr Catlin's creations every month until you can't stand it any more and beg us to reveal all.

This month we are kicking off with a look at just one of many patterns created with dynamic doodles. Ribbon a winding snake like thing blazing across your screen, and all the time our theme music is pounding away in the background.



Ingenious

Dynamic doodles is an ingenious way of transforming BASIC source code into a set of interrupt driven graphics commands. It really is a graphics *Turbo-charger* taking ordinary BASIC code and running it with the speed of machine code graphics. To be more specific, it is the equivalent of an *assembler* program for graphics. What is so exciting about dynamic doodles is that everyone can now have the opportunity of creating high speed graphics of the sort usually associated with professional programmers.

The full suite consists of a machine code driver with full source code, together with *EXEC files, and BASIC programs used to create the example doodles.

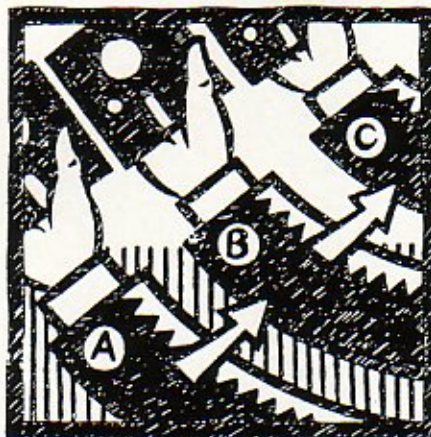
STARTING OUT

Build yourself a useful machine code utility and learn about assembler in the process

The first part of this article examined the shell around the actual assembler source code. This second part looks at building the source code itself.

Procedure ASMBL was included in the original listing merely as a dummy procedure; the real one should now be inserted in its place. To do this; copy the **HEXFND1** program from last month onto a separate disk, now copy the *spooled* file **HEXFND2** onto the same disk. Now type **LOAD "HEXFND1"**, followed by ***EXEC HEXFND2**. To complete the job **SAVE "HEXFND"**, and you have the final program. The procedure, which assembles the mnemonic instructions into binary machine code, is called twice; first with an argument of 0, then with an argument of 2. The value of this argument is given to the assembler controller **OPT**, which is a function that defines which pass the assembler performs and whether or not the program is listed to the screen at each pass.

The value for **OPT** ranges from 0 to 3. **OPT 0** and **1** are both first assembly passes, but only one of them is used for any given assembly. If the odd value is used then a listing of the machine code will be displayed on the screen as the code



assembles, whilst the even value suppresses the listing; **OPT 2** and **3** do the same for the second assembly pass. The listing option is seldom used for the first pass, except out of curiosity as to just what happens in this pass. The listing option can be a very useful debugging aid in pass two, however.

P% is used by the assembler as the program counter, and is initialized to the program start address (**F%** in this case) before the assembly starts. This is necessary for both passes, so it is included at the beginning of the procedure **ASMBL**. The assembly starts with the open square bracket, which together with its closing one tells **BASIC** that the

code inside is not **BASIC**, but assembly mnemonics, so it had better switch on the assembler. The assembler then needs to know which pass to perform, so **OPT** is assigned the pass value; in this case **PASS%**, the argument passed into the procedure.

The first line following this contains the program label **FIND**. The label is preceded by a full stop; this is necessary for all label declarations in assembler, but must not be used when the label is used as an argument to a mnemonic (ie **JSR find** is correct). The instruction in assembler code is known as an opcode, whilst its argument is known as an operand.

The back-slash following the label is the assembler equivalent of **REM**. Everything following this will be ignored, but unlike **REM** this only applies up to the first colon encountered on the line. As in **BASIC** the colon is a statement separator, allowing several statements to appear on the same line, but for clarity only one instruction per line is presented in this program. The back-slash may be used to *comment out* an instruction, as the **REM** in **BASIC** is sometimes used. However, if a second statement on the same line (following a colon) is to also be

commented out then a second backslash will be required immediately in front of this instruction as well.

Micro Macros

It has been written in various magazine articles that macros are not possible in BBC BASIC assembler. BBC BASIC does, in fact, have a macro facility. A *macro* is a piece of code which, like a sub-routine, is used several times; or it can be switched in and out of various assemblies at different times to produce variations on the basic program, as described later.

The basic difference between a sub-routine and a macro is that the macro code is actually inserted in line in the code each time it is called for, whereas the sub-routine is only coded up once. The usual reason for wanting the code in line several times is that it is given a different set of arguments to play with each time. It is also used to reduce code execution time, gained by not using a sub-routine call and return, when this is more important than saving code space.

The program line **OPT FNset-addr** in **ASMBL** shows a second use for the **OPT** command. **OPT** is quite happy to appear anywhere in an assembly and, providing the correct value of **PASS%** is assigned to it each time, it will produce the correct code. In this instance the value of **PASS%** is sent to the function **SET-ADDR**, which returns the same value to **OPT** after the function is completed.

In this way the function call can be used to generate macro code, since assembly code can be generated within any function as required. **SET-ADDR** is called with two other values, in this instance the base address constant **MESSAGES%** at which message strings are located, and **MSG%**, the address of a variable in which to store this address for later use.

An examination of **SET-ADDR** will show just what it does with this information. Since the assembler always requires to know which pass it is on, **OPT PASS%** appears immediately inside the assembler opening bracket. The purpose of this macro is to place the passed two-byte address **ADDR%** into the variable located at **STOR%**.

This code may seem a little trivial to turn into a macro, but if you've forgotten the **#**-symbol and the order of storing the high and low bytes of an address (all of which which varies between different processors) as often as I have then you

would appreciate the logic behind it! The macro can be stored on disk as a standard routine, **EXEC**'ed in when required, and called at any point in the program.

Send a Message

Back to the line following the macro call. The purpose of the macro was to set up the base address of the various message strings ready for them to be sent to the screen. If the message space took up more than 256 bytes then it would be necessary for the address of each message to be stored in this way, but as the messages are necessarily short in this program only the base address **MESSAGES%** is set up. A variable index pointer is then used to access each individual message.



The index pointer used is the processor register **Y**, which is loaded with the value by which the start of text **MSGFIND%** is offset from the start of **MESSAGES%** (see procedure **PARAMS**). Since **MSGFIND%** is the first message, its value just happens to be the same as **MESSAGES%**, so the value loaded into **Y** is zero. Good policy again; if another message is added then it may no longer be the same address for both. Later on a similar declaration will be used for **PAGE1%**, which actually is offset from **MESSAGES%**.

The line **JSR print** is a sub-routine call to a routine which prints out a message. There are two labels to this sub-routine, **PRINT** and **PRINT1**. The routine actually begins in the middle of the block of code, at label **PRINT**. It starts by loading the accumulator with the first character it is to print from an address composed of the contents of locations **MSG%** (lower byte) and **MSG%+1** (upper byte) added to the contents of register **Y** to form the actual address of the character.

After loading the first byte of data a check is made for the string

terminator, the carriage return character, to see if the last character has been printed. The null character is often used for this *terminator* code, but in this instance one of the strings has to send a null value to the screen as part of the **PAGE1%** message.

If the last character has been sent then the sub-routine is terminated, otherwise it branches to **PRINT1**, where the character is sent to the screen via **OSASCII**. The message index pointer (register **Y**) is then incremented to point to the next character before falling into the **PRINT** entry point for the next character to be fetched and tested.

Which String?

Returning to the main program, function **SET-ADDR** is used again to set up the value of **PAGE**, which is where the search starts from in the completed program. I did investigate the use of an **osbyte** call which returns the value of **OSHW**, the 'high water mark' of the operating system. This does not always correspond with the value of **PAGE**, however, and the idea was dropped.

The next thing to do is get the search string from the keyboard. Registers **X,Y** are loaded with the address of the parameter block **PARM%** before calling the **OSWORD** function which deals with the keyboard input (**OSWORD 0**). During this call the carry flag will have been set if the **ESCAPE** key was pressed, otherwise it is cleared. A test for this must be made on return from the call, and the escape acknowledged if necessary by the **OSBYTE** call **&7E** which follows the test (**&** is used to indicate that the value is a hexadecimal one).

Since the program user has obviously changed his/her mind about the search if the **ESCAPE** key was pressed, the program terminates by jumping to **OSNEWL**, the routine which prints a new line on the screen. In theory this should be programmed as a **JSR** followed by an **RTS**, but why not combine the two to save a byte?

If the **ESCAPE** key was not used then the program assumes that a search string has been entered. If the answer to the 'INCLUDE?' query was 'YES', then the code contained in macro function **INCLUDE-KEYS-1** commences a check for various control keys; if not then the code would have been excluded from the assembly. This is a use of macros which I mentioned earlier, whereby code can be included or excluded from an assembly at will.

The first code line in the macro checks the **INCLUDE** flag, and returns from the function without gen-

erating code if the value is FALSE. Note that the THEN is compulsory in checking this flag, as **IF INCLUDE = PAS%** is not trapped as an error, even though it does not have an operation to perform.

In Control

The **INCLUDE-KEYS-1** code, if generated, makes a check for the value of the first character entered. This is used to indicate whether or not the first thing to be searched for is a BASIC keyword (or some other value outside of the normal ASCII printable range).

If the first two or three characters in **INBUF** are some form of code then the result of the code conversion is put in place of the last byte of the control coding in the input buffer. The start of the buffer is then adjusted accordingly during the actual search by starting the search string from this character instead of from the first character of **INBUF**.

Register X is used to hold the offset to the start of the input buffer during this decision-making. Thus if the input string in **INBUF** is @E, then E is replaced by the single byte code whose ASCII value is &C5, and the offset will be set to one via register X.

If the first character in **INBUF** is an '@' character then the code immediately following the test adds &80 to the ASCII value of the second character in the buffer to convert the character to one in the range of 128-255. The buffer offset in X is left at 1 and the program then jumps to **SAVE-CTRL** where the character is stored back in the buffer and X is put into variable **OFFSET** for later use.

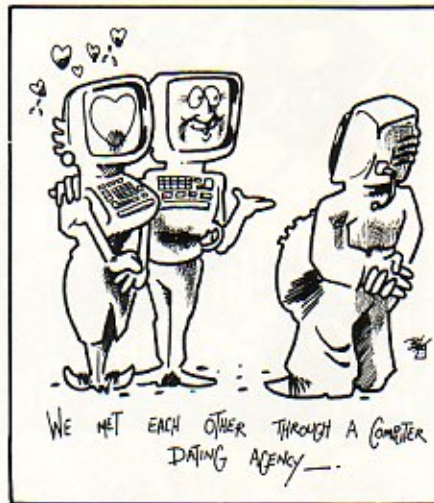
However, if the first character in the buffer is a colon then the next character is taken to represent an Electron keyword. The program code following the check for this colon makes sure that the character is an upper case one before checking to see if it is below the alpha range of codes. If it is then it is adjusted to bring it to a value which is in a range contiguous with but below the alpha characters. If this were not done then another 49 character codes would have to be held in **ELKTAB** in memory, most of which could not be used.

After this possible adjustment the value of the code is normalised to zero by subtracting 60 from it to turn it into an index pointer. Thus the lowest keyword value will now be represented by zero, the next by one, and so on. The result of this is then put into register Y and used as a table pointer offset to fetch the keyword value from **ELKTAB**. This

value is again placed into the input buffer at **SAVE-CTRL** with register X still at 1.

The final piece of control checking code is for checking a dot (full stop). This prefix is used to denote that the next two characters form a hexadecimal byte. If the character is not a dot, then control goes straight to **SAVE-X** with register X set to zero, otherwise X is set at 2 and the hex conversion takes place.

The first character after the dot is converted to the upper nibble of the hex byte by sub-routine **HEX** followed by four shift lefts. The value is temporarily saved in **OFFSET**, which is not doing very much at this point, and the second nibble obtained and converted. The two nibbles are then added together to form the byte, and **SAVE-CTRL** does the rest.



The sub-routine **HEX** is placed at a convenient point just above this section of code, and merely subtracts the value of ASCII '0' from the character before checking if it is a letter. If the character is a letter then it is 'upper-cased' and seven subtracted from it to put the final value into the range &00-&0F. Note that no error checking is done on the code; if you enter R instead of E then that is just too bad!

Look for it

The label **SEARCH** is the start of the program-search loop. The variable at **LINE%** has already been set up to point to **PAGE** at the start of the program, and thus to the first BASIC line. After each line is searched for a match, the program will loop back here, setting up a new start of line address at **LINE%** first.

Taking a one-line program comprising a single **REM** statement, the program is organised as follows:

- Byte 0** 1st line carriage return (&0D)
- Byte 1** high byte of line number (&00)

- Byte 2** low byte of line number (&0A)
- Byte 3** total number of bytes in line (&05)
- Byte 4** first keyword (**REM**, &F4)
- Byte 5** 2nd line carriage return (&0D)
- Byte 6** end of program marker (&FF)

Line numbers are stored in two bytes of binary, and range from &0 to &7FFF, which is the reason why line numbers only go up to 32000-odd. The search routine starts by checking that the first byte of the line number is not &FF. This value is used in place of the highest byte of the line number to indicate the end of program, and if encountered then the search program calls a halt and returns to the user.

When the end of the program is found the program terminates by setting up a window on the screen in which further work may be done without losing the line numbers displayed at the top. The bottom line of the window is set up depending on the screen mode value, as discovered by peeking location &355; note that this will not work across from the second processor. The mode value is used in register Y to index the page length table **MODES**, the resulting value being inserted into the **PAGE1** window set-up string.

The top of the window is a compromise; if too many lines are listed then when the window scrolls the bottom ones are lost. This could be modified at the expense of memory space by using an **OSBYTE** call to obtain the current line number and substituting this in the **PAGE1** string, as for the lower window boundary. **PAGE1** is printed as a string, and the print routine is jumped to directly rather than as a sub-routine call, in order to save memory by omitting the end-of-program **RTS**.

Assuming that the end of program is not yet come upon, the relevant test will have landed at **CONT**. Here a check is made to see if the first character in the buffer is a carriage return, in which case forget the search as the user obviously did not enter anything to search for! This was not included in the code-checking macro as it would then not have appeared in the short version of the program.

If the buffer is not empty then register Y, which is used as an offset pointer to each BASIC line, is set to 3. This avoids the opening carriage return and line number bytes, and is shortly incremented to the first text character or keyword of the line before it is used to look for a character.

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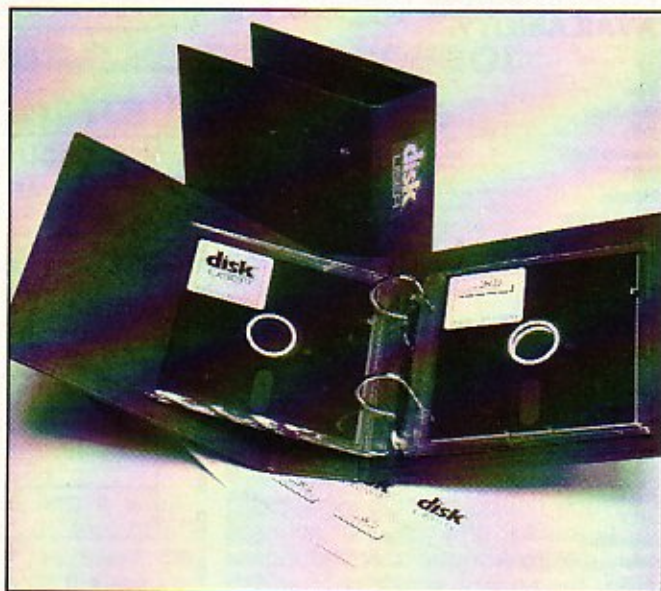
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Wordprocessors for the BBC Micro range in type and complexity. How does a wordprocessor actually go about its task?

When you load a BASIC program and list it or edit it by copying a line or deleting a line, you are performing a crude kind of wordprocessing. The BASIC program is loaded from the storage device (floppy disk) into the memory of the computer. The BASIC program in the computer is now independent of the storage device. Any changes you make to the program apply only to the computer's memory. If you wish to retain a copy of the new version of the program you must save it to the storage device.

You can use the same name for the new program as for the old or choose a new name. If you use the same name the new version will take the place of the old. If you use a new name the new version of the program will appear on the storage device in addition to the old version.

Text processing

When you use a wordprocessor,

more often than not you carry out a procedure akin to that described above for the BASIC program. In the case of wordprocessing, text is loaded into the wordprocessor, edited and then resaved.

The text you type into a wordprocessor is "pure" ie the ASCII number codes which represent the alphabetic characters for the sake of the computer, which can only handle numbers. The text you save however is likely to contain a number of extra characters invisibly introduced by the wordprocessor. These characters are used to denote the end of a line of text, a tabulation mark or page break.

The wordprocessor user need not know what characters the program is introducing but should be aware that a text file is usually not just text. A wordprocessor generally has an option to save the text minus any special codes and this option should be used if pure text is required.

More from your media

Because the BBC Micro's memory is unable to hold more than a few pages of text, wordprocessor designers have introduced "continuous processing". On some wordprocessors it is an option you can turn on or off, with others it is introduced via a support utility.

The Textshape document processor in this issue takes this approach by default. It means that the disk is used as "virtual memory". In other words, the program uses the surface of the floppy disk as though it were a bank of RAM chips, storing and restoring data from it as required. The real memory of the computer is used to store a single page of text at a time, for editing operations and as a buffer between disk and text.

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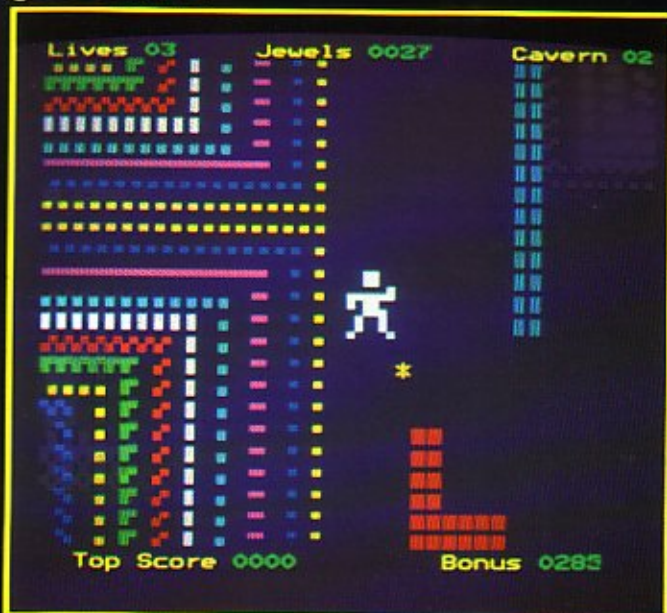
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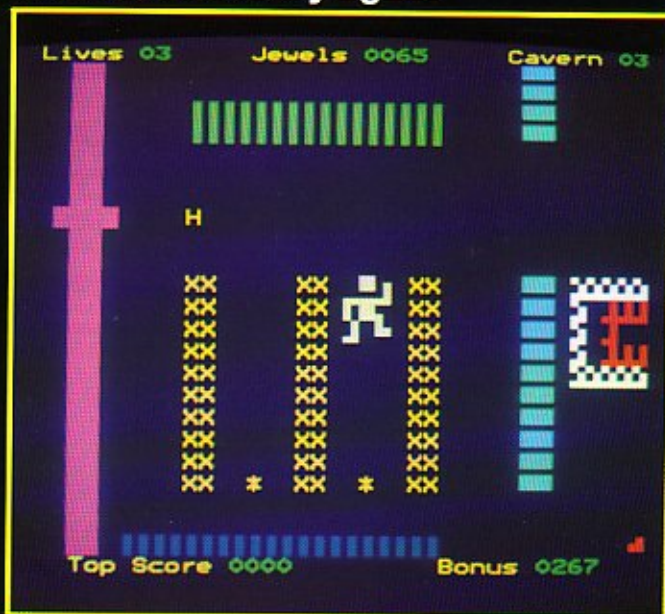


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