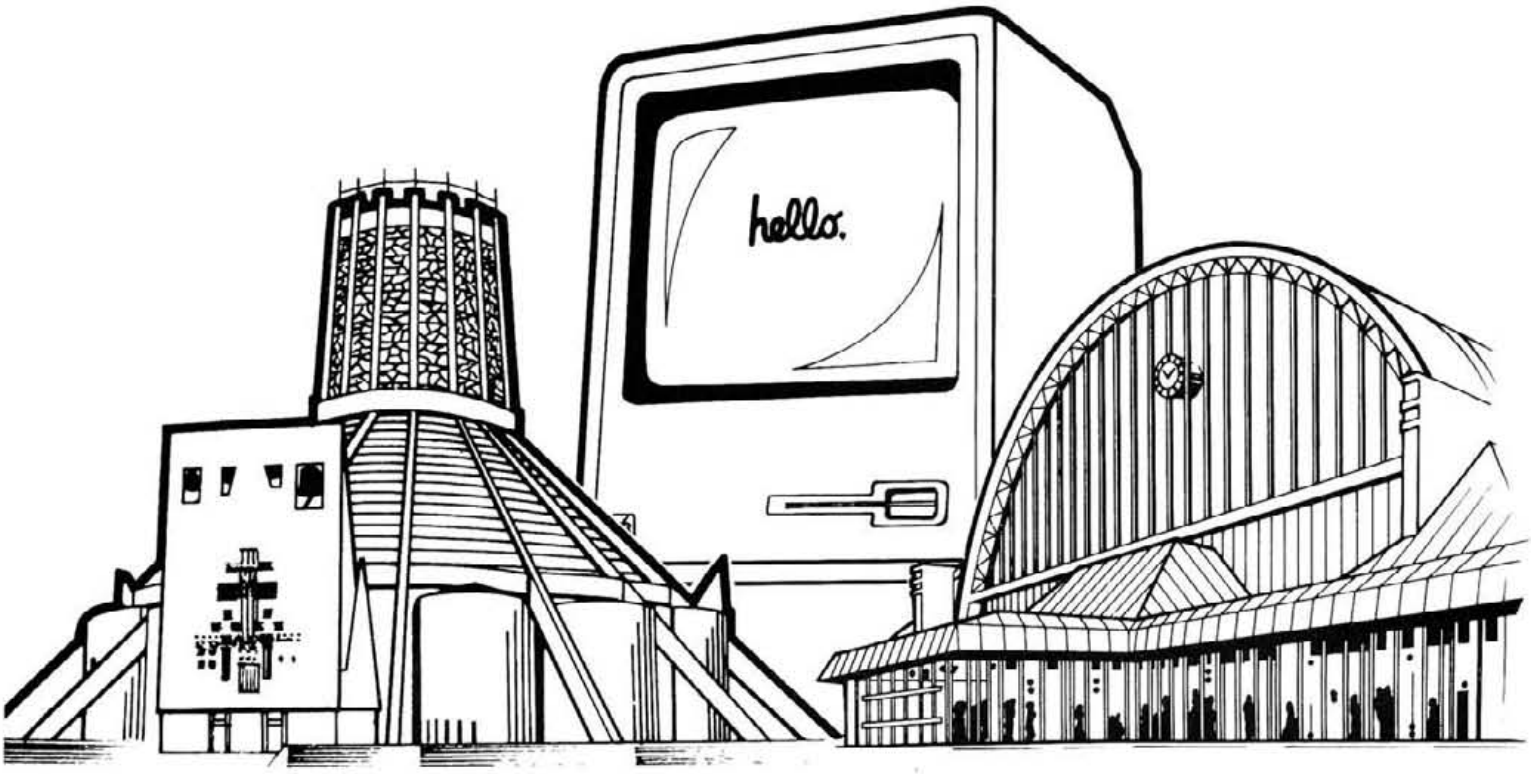
APPLEWORLD ISSUE

Apple2000

THE NATIONAL APPLE USERS GROUP

OCTOBER 1986 VOLUME 1(2)



All you need to know about Desktop Publishing can be said in two words

Computer City

Computer City can offer you the best advice, the best deals, the most professional service, and the best selection of software. We have the highest standards and we love our work. With centres both in Widnes and in Liverpool University, we are all set to open our new store in Manchester.

As long-established printers, our sister company **"Design and Display Associates"** used Apple computers to good effect. So much so that, 5 years ago, we decided to go all out with **Apple** and become dealers. Success breeds success, and we are now the longest-established Apple dealer on Merseyside and No. 1 in the North West.

With this combined experience and expertise in the areas of printing and computers, **Desktop Publishing** became a natural market in which we would lead the way.

Desktop Publishing is the latest and most exciting development in office automation, equal in importance to the evolution of the typewriter, the calculator, and the photocopier.

It's going to give you the power you need to effectively and efficiently create the image you want. You no longer have to rely on others - you can do all this yourself, giving you more flexibility, time, productivity, and security.

The **Desktop Publishing** system is simple enough for anyone to operate, but that's not the point! The point is that it enables you to produce work that a professional printer would be proud of. We know this is true because we sell our systems to printers, graphic design studios and advertising agencies - as well as to people like yourself.

Learn to get more miles from your **Macintosh** at the UK's first **Desktop Publishing** demonstration and training centre here at **Computer City,** where our experienced team can evaluate your needs and advise you on the best combination of available hardware and software to meet your requirements.

We can't say more here. Visit us. Write to us. Give us a ring. Find out what we're all about!

Computer City

Business Centre, 78 Victoria Road, Widnes, Cheshire ☎ 051-420 3333
University Centre, 5 Alsop Arcade, University of Liverpool ☎ 051-709 5959

Educational and Overseas enquiries welcome

CONTENTS

Editorial		2
Club News		3
Special Offers		3
AppleWorld		4
Ike	I knesovich	4
Reckoning with the Force	Ewen Wannop	6
Not another spreadsheet template !	Richard Daniels	8
News		10
Resolution 64 Card - A Review	Dave Ward	12
Applebits a Computer Glossary	Ewen Wannop	13
Disc Zaps and all that (Part 5)	Ewen Wannop	14
The Chameleon - A Review	Tony Game	16
Omnis Conversion - // to Mac	Keith Chamberlain	17
Letter Quality Printing - Appleworks	Paul Ross	18
DMP Utilities - A Review	Harry Gardiner	20
Cirtech //e CP/M Plus Card	Chester Kemp	22
Rescue Raiders - A Review	Tom Wright	24
Using AppleWorks Enhancements	Harvey Nyman	25
The Graphics Department - A Review	Tom Wright	26
Scroling the High Resolution Screen	Graham Keeler	28
Apple Elbow - A Health Warning !	Tom Wright	29
Apple Announces IIGS Preview	Jim Panks	30
Apple III News		33
Keypad for //e - A Review	Colin Holgate	33
ZBASIC - A Review	Terry Cymbalisty	34
Omnis SIG News	Odette	36
Letters		37
MacCHAT	Norah Arnold	40
Letters		42
At the EXPO !	Irene Flaxman	43
Stella - A Review	Nick Hunter	44
Fractal Programs - A Review	John Arnold	50
Apple2000 20MEG SHD - A Review	Ivan Knezovich	52
Network News		54
MacNosy - A Tutorial	Steve Jasik	58
Book Reviews	Irene Flaxman	62
Local Group News	Tom Wright	65
The Back Page	Jim Panks	68

Advertisers

Please support our advertisers and let them know that you are a member of Apple2000

Computer City	Front Inside Cover
Apple (UK) Ltd	5
Keyzone Limited	7
Blyth Software Ltd	11
Rosco	13 & 17
Comtec	15
DMS Electronics Ltd	21
Cirtech (UK) Ltd	23
Etcetera Ltd	25
C.I.Cayman Ltd	33
Holdens Computer Services	35
Bidmuthian Technologies	38 & 39
MacSerious	48 & 49
Bit 32	60 & 61
MacSoft	63
Celtip Computers	67
Elite Software	Back Inside Cover
P & P Micro Distributors	Back Cover
DarkStar	Insert
MGA	Insert

Vol 1: 2 **October 1986**

Apple2000

P.O.Box 177, St Albans, Herts AL2 2EG

[redacted]

Apple2000™ is a trading name of BASUG Ltd, a non-profit making independent company limited by guarantee.

The front cover artwork and Apple2000 logo design are by Stefan Mucha.

The contents of this journal are copyright of BASUG Ltd and/or the respective authors. Permission is granted for non-commercial reproduction providing the author and source are properly credited and a copy of the relevant journal is sent. The opinions and views expressed are those of the various contributors, and are not necessarily supported by BASUG.

This journal is published bi-monthly by BASUG Ltd as a benefit of membership in February, April, June, August, October and December. The copy date is the 5th day of the month preceding publication. Advertising rates are available on request.

Apple™ and the Apple logo are trademarks of Apple Computer Inc. Macintosh™ is a trademark of McIntosh Laboratory Inc and used with the express permission of the owner. Telecome Gold™ is a trademark of British Telecom PLC. The FORCE™ and Apple2000™ are trademarks of BASUG Ltd.

Printed by Target Litho, Cottenham, Cambridge. (0954) 51189

Apology

Due to a typing error, the telephone number of C.I.CAYMAN was incorrectly shown in the August Issue. We apologise for any inconvenience caused.

The correct number is [redacted]

December Issue

Articles for the next issue include:
Elite Softwares 'Format-80 Scientific'
AppleWorks Tips and articles
A Users View of the Apple IIGS
Inside the GS - A Technical Look
Apples Accounting package for the Mac.
Apple /// News
More Special Offers
AppleWorld Report
MacChat - The Macintosh News & Views Area
Plus all the usual tips, letters and news.

EDITORIAL

This issue starts with a bang - we have first hand news of the new Apple IIGS which was released World-Wide on the 15th September after much rumour as to its exact specification.

We have news of the Apple World Show in London at the end of this month, it is being sponsored by Apple and will be the largest Apple Show in this country. Apple2000 will be there with everyone that is anyone on the Apple scene.

We launch the Apple][GS Club which is our response to the new machine and which will be a Special Interest Group.

The FORCE has changed into the most powerful Apple Information System in the UK with COMPUSERVE - like facilities. It now includes a Macintosh Developers Area and the Apple // has an area to keep you all informed of the latest news.

New changes to the magazine include the use of better quality paper to enhance the readability and we have also started to use copy readers in an attempt to improve our content quality. New page layouts and the added ease of using a MacPlus and Hard Disk are all helping in our effort to provide you all with Value, Information and Quality.

The new image went down well and I am pleased that so many members wrote, telephoned and told me so - it does make the effort worthwhile when you hear that it is an improvement.

We would like to hear from any member that may be interested in helping us with the various services we offer, we need members with a couple of hours a month to do tasks that will allow the committee some freedom to organise new and better things. If you have some time to spare why not drop me a line or phone Sheila ?

In this issue we hopefully have covered a very wide audience with articles and tips on varied subjects from Spreadsheets to Printer Utilities - A badge has been designed for contributors, we are waiting for it to be delivered and all those that have contributed from this issue will receive one in due course. We are planning some other special things for regular contributors !

I hope to see you all at the Apple Show at the end of the month.

Jim Panks

Jim Panks

Apple have left the // range virtually untouched for two years - why? The answer is now apparent - they have spent two years developing the fourth generation. The Apple IIGS is a proud son of the Apple][.

Many of our members have been waiting for a machine that improves the basic design and facilities of the Apple][range yet lets them use the equipment that they have bought over the years. I can reveal that not only is the IIGS almost fully compatible with][software it will also run with][cards and drives. This will please all those involved with the old][range, USERS, Dealers and manufacturers alike.

Just after the launch I spoke to one manufacturer who had started to look towards the IBM and Amstrad for salvation; he thought that the][was dead and that any new machine would use an entirely different hardware system. However Apple have come to the rescue and allowed him to stay with the Apple machines - he can still manufacture old cards whilst designing new and more powerful ones for the new processor. Apple have really scored - they will keep loyal all those who have been involved with the old][and allow a wide range of third party equipment to be developed in a short time.

On the software side the news is even better - already Appleworks is being released to work faster and use the extra memory of the IIGS - Apple expect forty new packages to be released by the end of the year - the field is wide open. Over 200 companies are already writing new programs or updating old packages to take full advantage of all the extra features; just think of your favourite WP program running faster, with colour and real pull down menus and larger disk based files!

I was shown a package in late Beta Test stage that was a full colour version of MacPaint; it really demonstrated the ability of this new machine in the graphics field. However, many members do not want graphics they want business programs - I saw an excellent WP program which uses colour to good effect and looked great in black, grey and white. The last bit of good news is that Apple have invited us to be involved with producing a compatability chart showing what works and in which mode - we will hopefully have comprehensive details prior to the GS being distributed.

ABOUT.....

Next Issue.....

Copy Date 5th November

Contributions

Any Apple related articles, tips to The Editor at the P.O.Box. Articles prefered on (any Apple format) disk with hard copy .

The Editorial Team

Managing Editor	Jim Panks
Assistant Editor	Graham Attwood
MacChat Editor	Norah Arnold
Advertising Assistants	Sheilah Hirst - Julie Panks
	Ivan Knezovich
	Keith Chamberlain

Club News

What's been happening ?

There are two kinds of volunteer, the one who does not know any better, and the one who knows he's volunteered when somebody asks " where's that column then ? ", this month I'm one of the latter and you're stuck with me again folks.

Our new name, the introduction of colour, and the new paper stock appear to have met with almost universal approval. The system error which resulted in some members learning of the new name before receiving the last issue of the magazine was beyond our control and left us relying on users of The Force and BABBS to spread the word as far as possible. As I said in the last issue we hope to provide you with some pleasant surprises in the future and will try to keep you informed.

A wide range of topics was covered during the July committee meeting with plans for the PCW show as one of the major items, we hope that visitors to the show will have been pleased with the display. Ivan Knezovich accepted responsibility for co-ordinating reviews of Macintosh material and investigations were initiated to prepare for replacement of the aged Apple //+ which is used to run BABBS. Norah, Ewen and Ivan are pursuing ideas for a new BB service for Mac users. The treasurer's report again confirmed that control of the group's finance still looks good, various aspects of expenditure, fund raising and pricing policy receiving continued close examination.

No committee meeting was scheduled for August but the majority of the committee spent most of Sunday 17th thrashing out standardized format procedures for the magazine.

Graham's work on the preparation of pens, badges and sweatshirts has produced some attractive items, not least of which is a special version of the enamel badge for contributors of articles and reviews to this magazine. Force users will have already seen the menus which have been introduced by John Lee and Ewen (with more changes to come), and BABBS users will be aware of Tony Game's continuous efforts at improving the U.K's best Apple BB.

By the time you read this column the mystery surrounding whether or not Apple intend to launch a new something at some time in the future should be cleared up for Apple][fans. The PCW show will be history and hopefully more of us will have had the chance to meet (and recruit more friends to Apple2000).

I hope to see you all at the Apple World Show at the end of the month.

Tom Wright.

Special Offers

Micol Basic

Did you read Dave Wards review of Micol Basic in the last issue ? If you did and found that it is the answer to your needs then we can help you.

Apple2000 will be anouncing shortly that it is the sole distributor in the U.K. for all Micol products and as a **SPECIAL OFFER** to our members we are offering the latest version (Version 2.0) at a special price until 1st Novemebr 1986.

The US price is $89.95 - we can offer it to you at an amazing all in price of **£50** plus **£2.00** postage and VAT. This is a **SAVING of £15** on the US price and the normal retail price in this country. So you can save over half your membership by rushing your order off to us.

Software Library Disk Prices DOWN

Better value on bulk disk prices has allowed us to **REDUCE ALL** software library disk prices.

As from 1st October 1986 the disk prices will be:

5.25 Disks - £3.95 inclusive of P&P and VAT

3.5 Disks - £5.95 inclusive of P&P and VAT

Bulk order rates still apply - that is order 10 disks and receive 10 in a plastic library box for the price of 8 !. Our disks are full of outstanding software and we have the best choice in the U.K.

Hard Disk for SCSI Mac

Apple2000 have negotiated a special deal with a well known hardware supplier and manufacturer which allows us to offer to members only a 20MB Hard Disk for only £699 plus VAT.

We will pay the postage and you will receive a top rate hard drive which really sets the Mac going. We have tested this drive and have found it to be quick and reliable it is covered by a one year warranty.

Macintosh Special Release

New to the Special Release Software Library and the first for the Macintosh comes a package full of useful Spreadsheet Templates.

Chris Burridge has provided two types, one for Excel and one for Multiplan. The areas covered are StockMarket Investment, Budgets for Electricity etc, Petrol Economy Calculator and a Company Balance Sheet.

This is excellent value at only **£8.50** and will provide some clues to getting the best from your spreadsheet.

In under four weeks the largest ever Apple Exhibition and Conference will be in full swing at the Business Design Centre in Islington, London.

The dates for your diary are Wednesday October 29th to Saturday 1st November 1986. Apple (UK) are running the exhibition which will have many areas of interest for all Apple Users.

The first public showing of the new Apple IIGS will be the highlight of the show for many, although on the Saturday (1st November) we will be enthralled by one of the founders of Apple 'Woz' Yes Steve has kindly agreed to rush over from the States to give us an insight into the world of Apple. His address will be the opening of the User Day - Apple have given over the conference to User Groups and we have a top line up of experts for you to meet, question and obtain advice from. The exact format of the day is not known yet but it will be a day for everyone.

On Wednesday October 29th the main theme will be on Education with key speakers from the U.K. and leading Colleges in the US, including Drexel University. This should be interesting if the AUC conference in April was anything to go by.

Thursday October 30th is set aside for Desktop Publishing and should attract a large gathering. Apple lead the PC market in this field and I for one will be very interested to see the experts perform.

Friday October 31st brings us to the Business Conference which will include speakers from major corporations and will examine how to overcome specific problems. This is in line with the Apple theme of solutions for business.

The show will be attended by all the major suppliers of Apple equipment and Ashton Tate are expected to release 'DBASE' for the Macintosh at the show. Other interesting items at the show will be a release version of 'HabaWrite', large screens for the Mac, software for the new machine ? and many of the old favorites. The new generic devices that Apple are turning too will kick off with the new Hard Disk. This will be shown for the first time and should provide interest for both][and Mac Users.

We hope to have supplies of the latest version of Micol Basic for sale and we will be offering it at substantial savings to members. Planning of our stand is well under way and we plan to give both old and new members a warm reception - so pop along have a chat and see the special bargains we will be selling to members.

The Apple2000 stand will be a joint venture with the local groups taking part - this will hopefully give the whole USER GROUP area a new image.

We look forward to seeing all our members at the show - see you there.

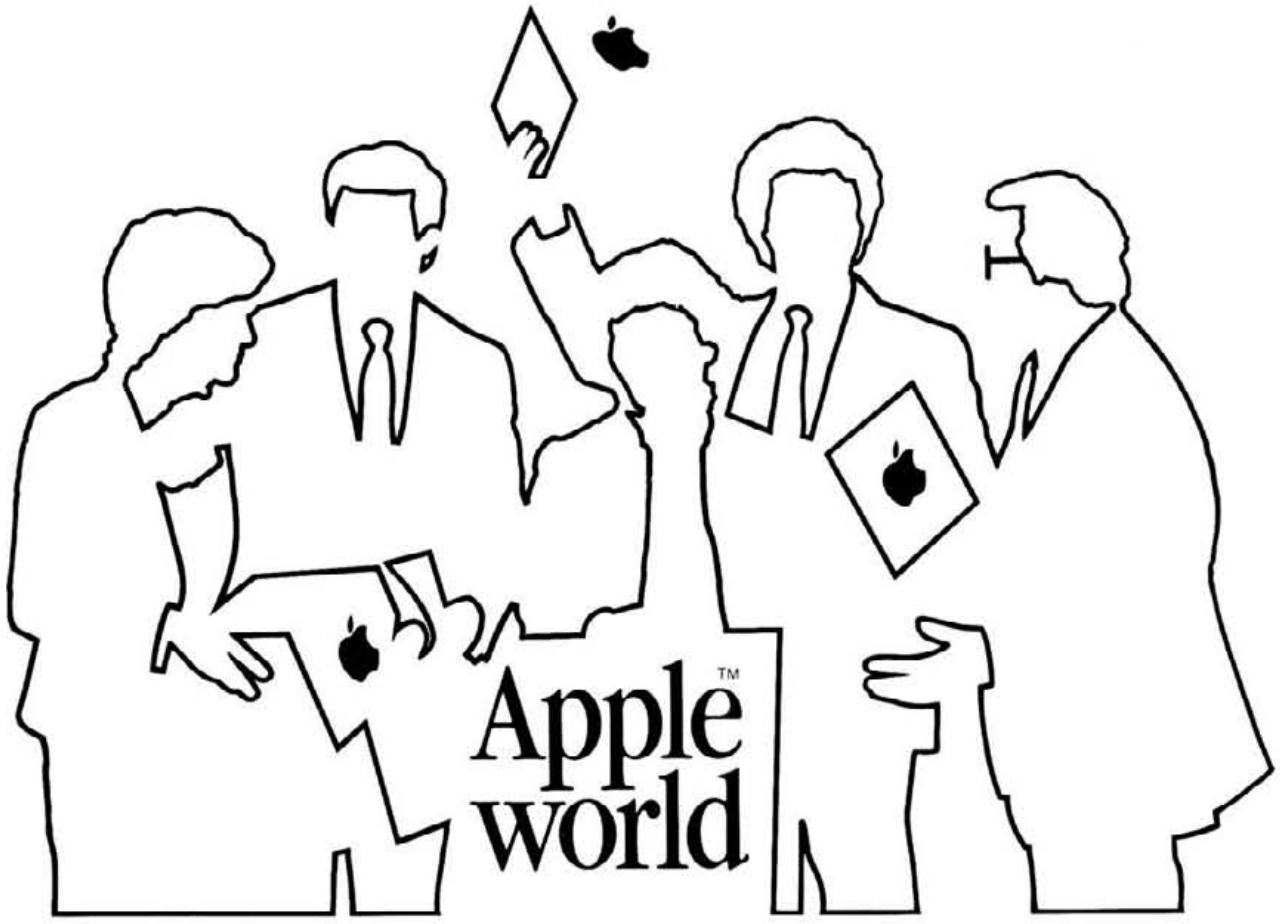
IKE
from the
WEST COAST of
WORCESTERSHIRE

Recently I was shown by my wife an Agony Aunt letter from one of the weekly television magazines, concerning husbands with computer occupations. The letter implied that computers had changed her husband into a bore, made him ratty and reduced his interest in the family. Without repeating it, the issue discussed involved the whole family and can be typical among individuals, male and female who are engrossed in the new technological revolution. To put it simply, its WE they are discussing.

How many times in the past have you heard your wife or companion say " Not @#&*# ` computers again ! " With a guilty conscience I must confess that I sometimes over indulge in my computer hardware and software, forgetting that there is more to life than just Apples. *GASP !* Yes it is true ... there is life after Apples. I found out the hard way when I was forbidden to include my silicon pet with the holiday luggage. After settling down into the holiday routine I soon began, like a junkie without a fix, to suffer from withdrawl symptoms. Every free moment was agony, even Jeffery Archer proved no placebo for my keyboard itch. I even tried crosswords and puzzles but they just added to my frustration. By now different pieces of software were fighting for pole position in my RAM areas, unfinished reviews were crowding my internal clock and adventure games were offering me endless clues. At the limit of my endurance I almost resorted to an overdose of Spectrums, (foreigners use them as door stops you know !) but I had visions of being driven away in a C5 with doctors mumbling under their breath *"Amstrad, Amstrad ... give him a shot of Amstrad"*. Breaking out in a sweat, my knees trembling I juggled the options. I had my Access card, all I had to do was find a computer shop that stocked the forbidden fruit, or if the worst came to the worst, buy a return ticket home. It was no use, my situation was hopeless. I took stock of the situation; at my feet a huge pile of Heinekins (Boy have I got news for them!), to the north sweet home, in between *DIVORCE* ! Well that was that. Resigned, I just had to face the music, life without an Apple.

At first it was like being on another planet. People were everywhere, having fun, playing, discussing the weather and some, just laying motionless, recharging in the sun. I felt lost, and then as my senses slowly adjusted to this new freedom, the holiday spirit overpowered me and I lost all contact with rainbow coloured Apples. And Holiday I did !

I returned home, cured of a bad habit, recharged and full of life. For a while all was well and even the neighbours got their first ever glimpse of me out in the garden sun. But you see I had this column to write ... and a deadline to meet ... and ... Oh well, I might as well admit it, I am a computer addict and there seems little chance of a permnanent cure unless someone opens a rehabilitation centre for silicon junkies.



You've got just 4 days to discover the power to succeed.

October 29th, 30th, 31st and November 1st are the days. The Business Design Centre in London is the place. And Apple™ World is the event — the most important personal computer event ever held in this country.

Whether you're now using a Macintosh™ or an Apple™ II™ in business or education, you'll find a mind-boggling amount designed to fascinate you.

All of the major software developers will have a stand to demonstrate their products. The very latest solutions for business, communications and education will be on display. And products that you've read about — like Apple's DeskTop Publishing System — and perhaps considered buying, will be on show.

We'll also be using the exhibition for the public unveiling of the revolutionary new Apple II product. We can't say anything about it here, except that you'll see it in action at AppleWorld . . . and be impressed.

To get in on AppleWorld, contact your local dealer. He'll give you more information about registering for the most important Apple event this year. Or dial 100 and ask for Freefone Apple.

After all, as an Apple user, you're already part of the Apple world.

Apple
The power to succeed.

Apple and the Apple Logo are trademarks of Apple Computer Inc. Macintosh is a trademark of McIntosh Laboratory Inc., and is being used with the express permission of its owner.

Communications

RECKONING WITH THE FORCE

Spreading Your Wings

Ewen Wannop

The Menus

Big changes were promised on the **FORCE**, and when you read this, we will already have had the new menus working for over two months. I cannot give you a definitive guide to these menus, as they will keep changing as we add further facilities.

The general structure should be simple enough to follow. When you log on to the system, you enter the menu 'shell'. Unless you leave the menu with a <Q>uit command, you will have the menu sitting underneath the surface at all times.

You will see a menu when you first reach it, or you issue a command that it does not recognise or you give the global '**MM**' command. If you have left the menu shell, then simply type '**MM**' at the usual Force prompt '>' to re-enter.

These menus as I have said, will be constantly changing and improving. We want to keep the **FORCE** as up to date and active as we can. We need to know from you what you would like to see in the way of features. Leave us a message at the '**Feedback**' prompt.

Update

Those of you who have been struggling to use the Editor after my piece last time, may like to know that it really is easier if you prepare what you wish to send beforehand. Upload as you would a message. There is one pitfall here though, the command to switch the Editor from Input to Edit mode, is a single carriage return! This means that any material you upload, must have no returns on their own. Replace with a space and then a return (note: Appleworks treats a line like this as an empty line and changes it back to a single return). The same rule about lines longer than 100 characters also applies.

To upload follow this procedure:

>ED <CR> **INPUT** [enter your File send routine and upload] **<CR>** [to return to Edit] EDIT **SAVE** *FILENAME* **<CR>** **>**

That is all there is to it, and with the command '**F**' you will see the new file added to your list.

Some of you have been concerned at your storage charges. As I said last time, you can remove any files that you wish other than your '**NUMB**', '**PARAM.INI**', '**C_ID**', '**C_DO**' files or any bracketed with asterisks like this ***MAILSAVE***. However this last one CAN be deleted if you wish. It is generated automatically if something happens while you are entering a message. For instance, as is not unknown, the line is dropped by BT out of the blue! This file holds the text that you had entered up to that point.

To retrieve the text, start the message . You will be informed of the number of lines recovered, and you may then continue. Not all your message may be recovered, as it saves in chunks of ten lines at a time. Once you have used the file, or if you dont want it any more, delete and save the storage charge: **>DEL *MAILSAVE* <CR>** .

On the subject of storage charges, some of you will have noticed a difference between the blocks shown at the '**F**' command, and the blocks given at the '**STORAGE**' command. There is an overhead of 1-2 blocks for a normal mailbox, and a further 7-9 if you have Telex facility. You should be charged a minimum of 2-3 blocks for a basic mailbox.

Delete your own files to keep the storgae charges down, but let the **SYSOP** know if you need any further help in this, tell him which files you would like left behind.

Showing your Files off

What use is it having a File in your mailbox you may ask, well, normally you are the only person who can see these files, if however you have some good programs you wish to share, you can arrange for others to peek into your mailbox in a very controlled way.

As you will appreciate, the security on the **FORCE** depends on the password system. To get access to your mailbox you must use your unique password (You do have a unique one don't you, and you do change it regularly as well ..). But suppose you wanted someone to be able to get access without knowing this password. Well it is possible, and it has its own built in protection.

You will need to use the secondary password function. This is what you will see and what you should do: **>PASSWD - LONG <CR>**

Do you wish to change your owner password? **<N> <CR>**

Do you wish to allow other users to attach to your ID as owner if they know your owner password? **<N> <CR>**

Do you wish to allow other users to attach to your ID as non-owner? **<Y> <CR>**

Non-owner password (hit RETURN for none): *<password>* **<CR>**

Enter it again: *<password>* **<CR>**

Now your mailbox is setup. You can of course remove this facility any time you like by saying '**N**' to non-owner password. By entering a **<CR>** only when prompted for the non-owner password will allow people to **<A>**ttach without a password. Once you have prepared your mailbox this way, all you need to do is tell your friends this secondary password. All they then need to do is to **<A>**ttach to your ID in the following way:

>A *BSG999 password* **<CR>**

>WHO *>A.N.OTHER* (**<S84-4>***BSG999*)

Now for all intents and purposes, we have logged on to your friends mailbox, but cannot as yet do anything useful. We find that access rights are still preventing us from doing anything other than issue a **<F>**iles command to see what files are present. To return to your own mailbox issue **>AL** at the next prompt. Make sure you type '**WHO**' to check you have returned.

Back to you as owner now. Having setup the password for outside users, you must enable things for them to be able to see at the '**TYPE**' command. First use the Editor to upload as Files all the programs, messages or other things you wish to put on show, and save them with a suitably descriptive filename. You will now need to change their protection level so

that others can get access. When you did an <F> command, you will have seen that after various other bits of information, there were three letters following all your files 'D W R'. These refer to you as owner having the rights to <D>elete <W>rite or <R>ead these files.

We are now going to change the protection level to allow others similiar access: **>PROTECT** *filename* **7 7 <CR> >F <CR>** *filename* **001 6/19 9.07 ASC D W R d w r** . You will notice that we now have three more letters, this time in lower case, at the end of the file entry. These are the non-owner access rights that you have just allowed by means of the **PROTECT** command.

Now anyone from outside can <D>elete, <W>rite or <R>ead that particular file. To protect it from them once more: **>PROTECT** (or **PROT**) *filename* **7 <CR>**

Let me explain those numbers. The first number refers to YOUR rights, and the second number if it exists, refers to non-owner access. The number is made up of adding the following together:

Right to DELETE = 4	Right to WRITE = 2
Right to READ = 1	All rights = 7

So:**>PROT** *filename* **7 1 <CR>** allows your friends to read that file only, probably what you would normally wish. If you want them to be able to write to a file, you must have a suitable empty file which has access of:**>PROT** *emptyfile* **7 3 <CR>** allowing read and write from outside. Well that is it, you can share your programs with all your friends.

MAC users will need to use **BINHEX** to prepare a suitable ASCII file, Apple II users should use one of the many text generators or simply make an 'Exec' type of file listing. In this way, your friends need only download those programs that they wish. It is a good idea to put up an explanation file to describe what is available, and most importantly their length, so they know how long they will take to download ...

Finally just to recap, to actually see a file you need to: **>TYPE** (or **TY**) *filename* **<CR>**

Postscript

This is the second in a series of articles. If there is a specific subject about the FORCE you would like covered, please send me a message on the FORCE, either through Feedback to the SYSOP box, or to my own mailbox BSG005.

For other problems or enquiries, mail to John Lee the SYSOP or Seth Proctor for ACCOUNTS. No need to enter their mailbox number, just give the appropriate title. See you on the FORCE .....

THE WORDSMITH

The creative writer's magazine.

Published bi-monthly and costing only £6.75 per annum, **The Wordsmith** allows writer's to keep up with the 'electronic age'.

Send your cheque for £6.75 to:
The Wordsmith, The Old House, Church Road,
Kennington, Ashford, Kent TN24 9DQ

HERE'S THE SOLUTION. NOW, WHAT IS YOUR PROBLEM?

DON'T WANT TO SPEND ON ADDITIONAL PRINTERS?
Keyzone solid state, manual, automatic, buffered, multi port Data Switches P.O.A.

CABLE LENGTH?
Keyzone Centronics Data Flow Booster with PSU £40
Keyzone Serial RS232 Data Flow Booster with PSU £50

PRINTER PORT?
Serial RS232 to Parallel Converter with PSU £65
Parallel to Serial RS232 Converter with PSU £70

SEX?
Serial RS232 25D Gender Changer (shielded) M/M & F/F £10
Centronics 36 pin 3ft. ribbon cable M/M & F/F £10

SURGE & SPIKES?
RS232 Serial 25D Surge Protector (shielded) M/F £20
Surge Cube 2 way adapter £ 8
Surge Cube 3 way adapter £12

RS232 CROSSED WIRE?
Multi Link switch selectable Serial cable £24

SPECIAL CABLE?
24 hours custom cable-making service available P.O.A.

KEYZONE LIMITED
U14, Acton Business Centre
School Road, London NW10 6TD
Telephone: 01 965 1684/1804
Telex: 8813271 GECOM G

keyzone

ACCESS VISA AMERICAN EXPRESS

MANUAL & AUTOMATIC DATASWITCHES AND BUFFERS
FULL TWELVE MONTHS GUARANTEE

"PRINTERSHARER" Several Micros to one Printer
"PRINTERCHANGER" One Micro to several Printers
"PRINTERCROSSOVER" Two Micros to two Printers

PARALLEL PRINTERSHARER SOLID STATE MANUAL

Model	Pins	Ways	Price
BPS3	26	3	£60
BPS3C	WITH INTERLINKS		£75
BPS6	26	6	£110
BPS6C	WITH INTERLINKS		£140
APS2	36	2	£75
APS3	36	3	£85
IPS2	25D(IBM)	2	£70
IPS3	25D(IBM)	3	£80

PARALLEL PRINTERCHANGER SOLID STATE MANUAL

BPC3	26	3	£60
APC2	36	2	£75
APC3	36	3	£85
IPC2	25D(IBM)	2	£70
IPC3	25D(IBM)	3	£80

SERIAL PRINTERSHARER/CHANGER

SR232	25D	2 way	£55
SR233	25D	3 way	£65
SR234	25D	4 way	£75
SR43	5DIN(BBC)	3 way	£40
SR292	9D(Mac)	2 way	£52
SR293	9D(Mac)	3 way	£59
SR2C	5DIN(//c)	3 way	£40

AUTOMATIC PRINTERSHARER

APS2A	Parallel	36 pin	2 way	£110
APS3A	Parallel	36 pin	3 way	£115
IPS2A	Parallel	25D (IBM)	2 way	£95
IPS3A	Parallel	25D (IBM)	3 way	£110
SR234A	Serial	25D	4 way	£245

PARALLEL PRINTERCROSSOVER SOLID STATE MANUAL

BPX	26	2X2	£70
APX	36	2X2	£95
IPX	25D(IBM)	2X2	£85

SERIAL PRINTERCROSSOVER

SR23X	Serial RS232-25D	£70
SR432X	Serial 5 pin DIN	£45
SR29X	9 Pin D. (Mac)	£62
SR2CX	5 Pin DIN (//c)	£45

PARALLEL PRINTER BUFFER/SHARER

	Input	*Output*	
PB64	Parallel	Parallel 64K	£140
PB64-2	Above with 2 way switch		£185
BF64U	Universal – 64K expandable		£220
BF64D	Parallel	Parallel 64K expandable with 2 printer ports	£249
PB256	Parallel	Parallel 256K	£190
PB256-2	Parallel	Parallel 256K with 2 way switch	£235

MULTIPORT BUFFERS

BF64MD-PP	4 Parallel input 2 parallel output with 256K buffer	£345
BF64MD-4S	4 Serial input 2 Serial output with 256K buffer	£415

ACCESSORIES

KSM101	Serial to Parallel Converter with PSU	£65
KSM104	Parallel to Serial Converter with PSU	£70
KSM108	Dataflow Booster Centronics with PSU	£40
KSM109	Dataflow Booster Serial RS232-V24 with PSU	£50
KSM110	Multi-Link Serial Switch Selectable Cable	£24

CABLES (6ft. Long)

KPC104R	Ribbon cable 36 pin–36 pin	£12
KPC104F	Flex cable 36 pin–36 pin	£16
KPC105	Flex for IBM 25 pin–36 pin	£15
KPC106	Flex (25 lines) 25 pin–25 pin	£14
KSC101	Flex (12 lines) 25 pin-25 pin	£12

Add postage: Switches & Buffer £3·00 each, & cable £0·75 each + 15% VAT

KEYZONE LIMITED
U14, Acton Business Centre
School Road, London NW10 6TD
Telephone: 01 965 1684/1804 Telex: 8813271 GECOM G

keyzone

VISA Access

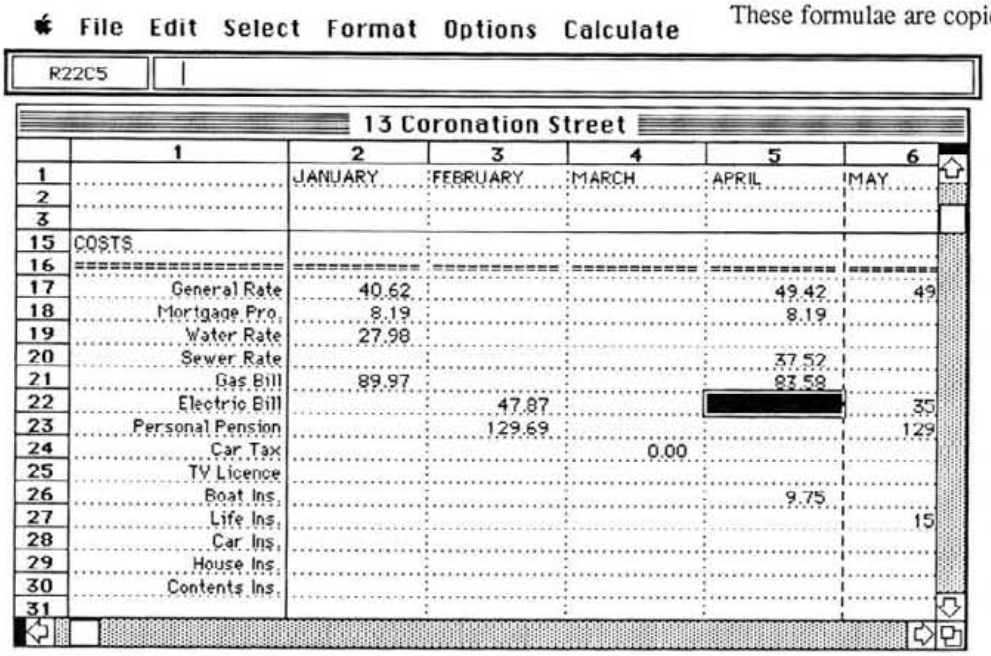
Not another spreadsheet template !

By RICHARD DANIELS

I like many other householders have the unpleasant task of paying bills which are issued on an irregular basis and therefore result in uneven outgoings throughout the year.

The Banks and Building Societies offer Budget Accounts which allow you to even out your expenditure against income and in some cases charge you for that service.

With the aid of my Apple and a spreadsheet package I felt I could produce a template to indicate my expenditure against income and to check that if expenditure exceeded income at any time it could calculate the necessary adjustments that would have to be made. This spreadsheet used in conjunction with a Building Society or Bank account can monitor its balance.



	1	2	3	4	5	6
1		JANUARY	FEBRUARY	MARCH	APRIL	MAY
2						
3						
15	COSTS					
16	==========	==========	==========	==========	==========	==========
17	General Rate	40.62			49.42	49
18	Mortgage Pro.	8.19			8.19	
19	Water Rate	27.98				
20	Sewer Rate				37.52	
21	Gas Bill	89.97			83.58	
22	Electric Bill		47.87			35
23	Personal Pension		129.69			129
24	Car Tax			0.00		
25	TV Licence					
26	Boat Ins.				9.75	
27	Life Ins.					15
28	Car Ins.					
29	House Ins.					
30	Contents Ins.					
31						

Figure 1: Layout and spreadsheet headings

The principle of the spreadsheet is that it represents a bank account with its income in the form of Twelve monthly payment. The outgoings or expenditure are in the form of payments of bills for gas, electricity, water, rates, car expenses and insurance etc.

The spreadsheet template is prepared with the spreadsheet set for manual calculation with headings for income and expenditure forming the left hand column and the income and expenditure periods in months forming the headings on the top row. These headings should be fixed to keep them on screen at all times.

To simplify the display the spreadsheet is divided into three separate sections, Income, Expenditure and Account Balance .

Each of these separate sections have their own formulae and the Account Balance inter relates the two.

The operation of the spreadsheet is simple, income is credited to the account initially as in opening a bank account with a single payment and from that point on, is transferred from the previous months balance after deducting the expenditure.

Cell	Formula
R[6]C[3]	=R[+34]C[-1]
R[11]C[2]	=R[-5]C+R[-4]C+R[-3]C+R[-2]C
R[35]C[2]	=SUM(R[-18]C:R[-2]C)
R[40]C[2]	=R[-29]C-R[-5]C

These formulae are copied to adjacent right hand cells.

As previously mentioned, the account or spreadsheet is initially set up by inserting an account balance and from last years paid bills or an estimated amount, figures can be put in the appropriate spreadsheet cells corresponding to the date for payment making an allowance for a single years inflation and any known change of circumstances. By calculating the total yearly expenditure and dividing by 12 you can calculate an approximate monthly income required to balance the account. Insert this or a slightly higher figure in the account credit column under each month and then with the formulae entered calculate the spreadsheet. As new bills are presented and paid new amounts can substitute those previously recorded to provide an accurate balance.

It is very likely that on some months expenditure will exceed income and therefore place your account in the red and overdrawn. For this reason I wanted some form of forecasting and semi-automatic adjustment. It is easy with most spreadsheets using the IF statement to check a value in a particular cell and automatically make adjustments but not many spreadsheets can make any further alterations. I was already using Microsoft's Multiplan for this spreadsheet and reading through their manual I found a section describing the use of Iteration. On further examination I found this was exactly what was wanted, a routine used in conjunction with the IF and other statements to check a value of a particular cell and if not meeting a pre-defined condition, such as being a negative number, incrementing that value with a pre-defined amount.

File Edit Select Format Options Calculate

R57C3

13 Coronation Street

	1	13	14	16
1		DECEMBER	C/FORWARD	SUM
2				
3				
26	Boat Ins.			=SUM(RC[-14]:RC[-3])
27	Life Ins.			=SUM(RC[-14]:RC[-3])
28	Car Ins.			=SUM(RC[-14]:RC[-3])
29	House Ins.			=SUM(RC[-14]:RC[-3])
30	Contents Ins			=SUM(RC[-14]:RC[-3])
31				=SUM(RC[-14]:RC[-3])
32				=SUM(RC[-14]:RC[-3])
33	Bank Charge	5.82		=SUM(RC[-14]:RC[-3])
34		="=========="		
35	TOTAL COSTS	=SUM(R[-19]C:R[-2]C)		=SUM(RC[-14]:RC[-3])
36				
37				
38				
39		="=========="		
40	ACC. BALANCE	=R[-29]C-R[-5]C		
41				
42				

Figure 2: Formula for iteration calculation

After this value is added to the spreadsheet, the spreadsheet would re-calculate. It will continue this process until the cell meets this pre-defined condition.

The use of this function can be seen in the Extra Required heading where it is used to check whether the account balance is negative and if so, it adds £10.00 to that cell.

Cell	Formula
R[9]C[2-13]	=**IF**(**AND**([+31]C>10,RC>9.99), RC-10, **IF**(R[+31]C<0.01,RC+10,RC))

This formula is copied over to adjacent right hand cells.

This would then be included in the total income and consequently would increase the balance by that amount. This operation would be continued until the balance is positive.

As an alternative, instead of using positive/negative as a check point, any value can be substituted such as the minimum account balance required by some banks to avoid paying bank charges.

Two further columns are added to the end of the spreadsheet, the first showing a carried forward (c/forward) figure and a second which indicates the total of all expenditure items and income, a sobering thought!

This article details only one account spreadsheet and this simple template can be adjusted in many subtle ways to increase its efficiency and to simplify its display of information such as the use of the Window function and I would be pleased to hear through this magazine any alternative suggestions.

This spreadsheet used in conjunction with a Building Society or Bank Account can monitor its balance.

This spreadsheet was originally prepared on an Apple // using Multiplan version 1.06 but has now been transferred to run on a Macintosh and despite the arrival of deluxe spreadsheets such as Excel, Microsoft's Multiplan is large and powerful enough to calculate humbler day to day tasks such as working out personal accounts.

File Edit Select Format Options Calculate

R22C5

13 Coronation Street

	1	2
1		JANUARY
2		
3		
4	INCOME	
5	="=========="	="=========="
6	C/FORWARD	71.81
7	ACC.CREDIT	150
8	Addition	
9	Extra Required	=IF(AND(R[+31]C>10,RC>9.99),RC-10,IF(R[+31]C<0.01,RC+10,RC))
10		="----------"
11	Balance	=R[-5]C+R[-4]C+R[-3]C+R[-2]C
12		
13		
14		
15	COSTS	
16	="=========="	="=========="
17	General Rate	40.62
18	Mortgage Pro.	9.19
19	Water Rate	27.98
20	Sewer Rate	

Figure 3: Formulae for balances and totals

The Editor would like to hear from any member who has any useful spreadsheet templates or tips. These will be used in a new series of articles on Spreadsheets in our new look Magazine !

Spreadsheet templates are required for Appleworks, Multi-plan, Excel and Jazz. If you use any spreadsheet for any type of work send it in NOW.

Coming next issue a full article of useful tips on using a spreadsheet.

NEWS

The /// Magazine.

We have received information from The /// Magazine, 3201 Murchison Way, Carmichael, CA95608 (tel:916-485-6525) that there is still a magazine for Apple /// Users. It is monthly and you can subscribe from the U.K. for $60. Subscription allows you also to purchase Pair Software at a lower price. They have sent details of the software but we can not photo-copy it, they have printed it in brown !

NEWS

cachebox

A new intelligent printer buffer has been launched in the U.K. by those profilic manufacturers of Apple add-ons Cirtech.
The Cachebox sits between the computer and printer and is compatable with most computers, printers and plotters. There are three models: Parallel, Serial (RS232) or Paralell & Serial with either 256k or 512k memory available. The prices range from £198 (Parallel 256k) to £328 (Parallel & Serial 512k).
We have received one for review and this will appear in the December issue.

For more details contact:
Cirtech (UK) Ltd,
Currie Road Industrial Estate,
Galashiels,
Selkirkshire, Scotland,
TD1 2BP
Tel: 0896-57790

Bag of Tricks 2

P&P Micro Distributors have announced a revised version of Bag of Tricks. The new version contains four programs called TRAX, INIT, ZAP and FIXCAT
If you need to modify, analyse or restore data on your 5.25,3.5 or hard disk then this is what you need.

The program will work under all operating systems on the Apple //. Comprehensive instructions and 'tutorials' to help the beginner are included in the manual.

Price is £40..00 + VAT from P&P Micro Distributors Appointed Dealers.

NEWS

Great news for Macintosh users...
...Even better news for Omnis users

If you're not yet an Omnis user, you can't fully appreciate the combination of power, ease of use and adaptability that makes Macintosh work for your business. The latest Omnis news gives you even more reasons to ask your dealer to show you how Omnis works for business.

If you're an Omnis 3 user, the even better news is that all these enhancements are compatible with your existing software and all you pay is the upgrade price.

OMNIS 3 PLUS

A major revised and enhanced version based on user comment, that's totally compatible with Omnis 3.

What's New

- ★ Text fields can be merged with word wraparound
- ★ Reports in any font available for Macintosh
- ★ The clipboard can be used for easy transfer of data with other Macintosh packages including accounts, word processing and spread sheets
- ★ Automatic linking to any other program for Macintosh
- ★ Expanded data files

Plus

- ★ Over 60 other new features
- ★ Complete new documentation

And

Omnis 3 Plus is completely compatible with Omnis 3. Registered users can obtain upgrades from their dealers for just £50 + VAT

SALESPRO

turns sales leads into action

SALESPRO produces individual salesperson action reports and management analysis to maximise returns from sales enquiries.

Multi user (2-5) including Omnis 3 Plus	**£1890 + VAT**
Single user including Omnis 3 Plus	**£1150 + VAT**
Add-on for registered Omnis users	**£995 + VAT**

MAILMASTER

runs the largest lists

A comprehensive mail management program for any business with a host of user definable features. Will handle any number of records, limited only by storage.

Single user including Omnis 3 Plus	**£490 + VAT**
Add-on for registered Omnis users	**£99 + VAT**

ACCOUNTS WITH OMNIS FLEXIBILITY

A comprehensive and customisable suite of accounting software is now available through designated dealers only (call Blyth Software to get in touch).

Prices, depending on level of customisation required from £245 each for sales, purchase, invoicing, stock. £345 for nominal.

LOW COST MULTIUSER

Omnis 3 Plus and Apple Hard Disk 20 will provide a multiuser system with full record locking for up to five years without the need for a file server.

All the software you need - Omnis 3 Plus and MacServe (V2.1) at a special price of £995 + VAT from your dealer.

That's five good reasons for being an Omnis 3 user. Five good reasons for talking to your Omnis dealer today.

BLYTH SOFTWARE

Blyth Software Limited. Mitford House, Benhall, Saxmundham, Suffolk IP17 1JS.
Telephone 0728 3011. Telex 987015

Omnis is a registered trademark of Blyth Holdings Ltd.
Macintosh is the trademark of McIntosh Laboratory Inc.

Resolution 64 Card

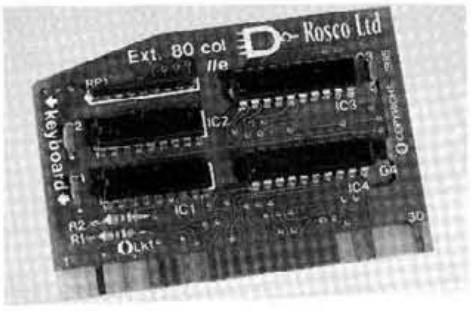
A review by Dave Ward

Hardware : RESOLUTION 64 - an 80 column card for the Apple //e and enhanced Apple //e with 64K bytes of memory.

Supplier : ROSCO Ltd.
289 Birchfield Road
Birmingham B20 3DD

When asked to review the Resolution 64 extended 80 column card for the Apple //e computer I said that I would be delighted to do so. Unfortunately, when the card arrived a few weeks later I had a number theory program running on my machine which had run about 10 days of an estimated 35 days! Luckily I knew an Apple //e owner who had not yet purchased an 80 column card, mainly on cost considerations, and asked if they would mind if I tried it out on their machine and as compensation try it themselves for a few weeks. Four days later I received a message requesting that I return and collect the card . Being a little surprised I returned to collect the card and was told that it did everything that they required and so they had purchased one of their own and therefore had no use for the review card!

The Resolution 64 card is about the smallest Apple card I have ever seen. It is certainly smaller than any other 80 column card with or without the extra 64K of ram memory. The card measures just 8cms long by 5.5cms and has only 4 chips on it. The card and manual are packed in a rather large foam polystyrene box in a cardboard outer.

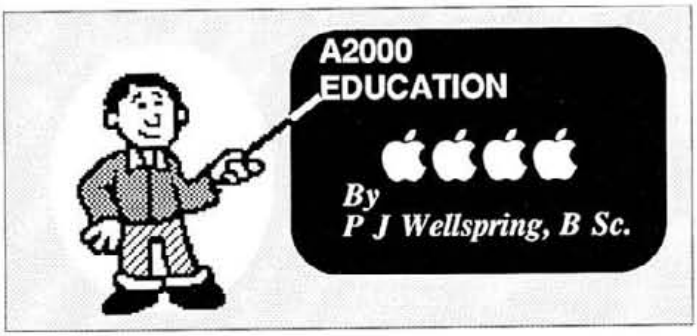


There are two reasons for purchasing the Resolution 64, one is that many of the programs for the Apple //e require that you use 80 columns and secondly some of these programs have been enhanced so that they can make use of the extra 64K bytes of memory on board. For instance AppleWorks can only be operated in 80 columns and provides a desktop of just 10K if the extra memory is not present. However, AppleWorks recognises the Resolution 64 and automatically provides a desktop of 55K bytes! ProDOS too recognises the extra 64K bytes of memory and automatically configures this to a ramdisk of about 60K.

Soon after the introduction of the Apple //e computer in 1983, double hi-resolution graphics were made available to machines with an extended 80 column card. Since then many graphics packages and certain adventure games support this feature, making the installation of an extended 80 column card well worthwhile. Resolution 64 supports double hi-resolution graphics. The only problem occurs if your Apple //e has a revision A motherboard, apparently these are as rare as 1933 pennies, but should you have one (revision A motherboard that is) the manual informs you clearly how to proceed. This, by the way, is a problem with all 80 column cards for the Apple //e computer.

I have tested the Resolution 64 in both an Apple //e and an Apple //e enhanced. As far as I can tell there is no difference between Resolution 64 and two other high quality extended 80 column cards. The 80 column screen produced by Resolution 64 is crisp and flicker-free with Pascal, CP/M, AppleWorks, AppleWriter, Zardax, Format 80 and many others.

The Manual is well written and clearly describes the installation and features of the 80 column card. For a mere £55 you cannot go wrong! In view of the miniscule size of the card perhaps the next revision will result in a reduction in height so that the card will fit flush with the top of the slot enabling us to use slot 3 !!!



Apple & Education

In this country Apple have never been as dominant in the educational field as they are in the States. There has been a lot of competition from the 'BBC' and of course many education authorities have insisted on buying British even when an extraordinarily high proportion of the parts are made in the Far East. But there are several reasons why some teachers have chosen the Apple route and have stayed with it. 1. Its a hardy, reliable machine. 2. Most of the software is upwardly mobile. (i.e. if you buy a newer machine the program still works). 3. There's a great deal of supporting hardware. 4. There are several user groups with educational sections.

OK, but what do they do with one when they've got one? The main usage is obviously in the classroom but an Apple will happily run the timetabling, maintain the accounts and the student records, prepare hand-outs and OHP's whilst keeping an eye on temperatures and pressures in the lab. It's a versatile beast!

In the future this column will be devoted to examining some of the new software and hardware available, looking into different ways the computer can be used in schools and colleges and putting forward some of your ideas and thoughts on the education scene.

Humour

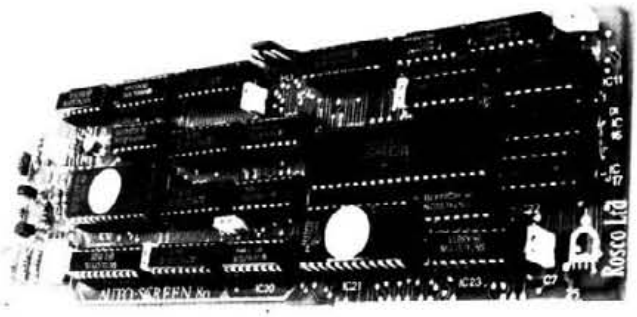
APPLEBITS a Computer Glossary

Ewen Wannop

BOOT.
To boot a machine, is to kick it into submission when it fails to start first time.
BACKUP.
To give a copy of the original copy protected disc to a third person, to keep for you in a remote place.
SOFTWARE.
So called because the discs can be sat upon without breaking.
HARDWARE.
So called because they hurt the foot when Booted.
ENHANCED.
A term applied to the updating of a machine so it will not run your present software.
COPY PROTECTION.
So called because it protects you from even the remote possibility of copying the master disc. When the disc is then sat upon (see Software), it costs you an excessive amount in Customs duties.
UNIDISC.
So named because it is unclear if it takes 5.25 or 3.5 inch discs.
MACHINE LANGUAGE.
The language used to address a malfunctioning computer.
HARD DRIVE.
So called, because when it goes wrong it is very hard to retrieve the lost data.
DATABASE.
A name given to an adventure game that is impossible to solve.
KEYPAD.
Something where you keep your little bit on the side.
WIMP.
A person who keeps mice for a hobby.
PORT.
A glass of this speeds up your typing while on-line to the Force.
BAUD.
A name used to describe a juicy piece of Clip Art.
APPLEWORKS.
What we all hope for in the morning.
BUG.
What software writers introduce to programs to keep you on your toes.
FANFOLD PAPER.
So called because it fans all over the place instead of folding neatly.
SINGLE SIDED.
A double sided disc with only one notch.
TRACK.
The groove cut in a disc surface by a worn disc drive head.
DISC BOX.
A plastic box overfilled with discs you will never use again.

ONE WAY OF GETTING AN 80 COLUMN DISPLAY INSTANTLY

ANOTHER



AUTO-SCREEN 80

It's amazing the lengths to which some people go and prices they pay to get a sharp 80 column display on the Apple][,][+ and Eroplus. Rosco now have the complete answer - **AUTO-SCREEN 80.**
The on-board softswitch will instantly take you from the 40 column screen to the 80 and back again, without any lead changing. The display is sharp and pleasing to the eye. Upper and lower case characters are available in normal and inverse, and the card is compatible with all 80 column applications.
All this plus a comprehensive manual, 12 months warranty, customer support and a price tag of a mere £44 goes to show **AUTO-SCREEN 80** is the complete answer to the 80 column problem.

DEALER HOT LINE
(021) 356 3828

VISA
Access

Rosco Ltd,
289 Birchfield Road,
Birmingham B20 3DD.
Tel: (021) 356 7402.

DISC ZAPS AND ALL THAT (Part 5)

Let your fingers do the walking .. the Prodos Directory.

By EWEN WANNOP

As you will have already seen, Prodos is considerably more powerful than its predecessor DOS 3.3. It has a greater flexibility built in to itself, and has very few rigidly defined values in its disc structure. This allows devices of very different kinds to be easily attached. Most devices will however follow the normal structure that we see on a standard 5.25 inch disc. I have not yet had experience of a 3.5 inch Unidisc drive, so the following notes refer mainly to the structure of a 5.25 inch disc. The required information is there however, for you to see how any other device is handled.

If you are using a DOS 3.3 disc zap, such as DISK MANAGER from the library, you will need to translate the Prodos block numbers into DOS 3.3 sectors. Refer to article number 4 in the August issue of Apple2000.

Blocks 0-2 on a Prodos disc are unique. Block 0 is the boot image needed to load Prodos. Block 1 is reserved for, but need not contain, a boot image for SOS on an Apple ///. Block 2 is always the first block of the Prodos directory, and contains all the pointers necessary to define the disc structure. The first block of any directory, whether the main Volume directory or a Sub directory, is also unique in its construction. It may also be the only block, if required, to save disc space.

Each block of any directory has the first four bytes 0-3 reserved for pointing to the other blocks in that directory. The first two, 0-1 point backwards, and the second pair, 2-3 point forwards. If either of these pairs is zeroed, then it indicates the end of the chain. So the first block will always have the first two zeroed, and the last block will always have the second pair zeroed. A directory with only a single block, would have both pairs zeroed.

You will find that in every case where a block number is to be pointed to, there will be a pair of bytes. This allows block numbers up to 65535. Remembering that blocks have 512 bytes of data, this gives a possible volume of 32 megabytes. Quite ample for most purposes!

The next $27 bytes of the first block are rigidily defined, and describe the Volume Directory Header. This is then followed by the file entries, which are usually $27 bytes long, but as you will see may be of any length. These bytes are defined as follows. For convienence I will refer to their offset from the start of the block, ie. the first byte of the entry will be offset $4.

OFFSET $04 Storage type and name length. The top four bits describe the entry type, in this case $F as it is a volume directory. The bottom four bits are the length of the Volume name, this means a maximum of 15 characters.

$05-$13 Volume name of length pointed to by previous byte. Max 15 bytes. Garbage fills the rest of the entry. All volume and filenames are entered with the Hi-bit off.

$14-$1B Reserved. Usually zeroes.

$1C-$1F Date and time of creation. Zero if no date was written. The bytes are a packed form of the date. Each bit has the following representation:

BYTE 0-1 yyyyyyymmmmddddd year/month/day
BYTE 2-3 000hhhhh00mmmmmm hours/minutes

These bytes should be read with the highest bit to the left, so the y/m/d has byte 1 as the yyyyyyym part and byte 0 is mmmddddd. The sequences of bits should be read as a two byte HEX number. 4th July 1986 at 6 minutes past noon will therefore look like this:

In decimal 86/7/4 12/6
In binary 1010110/0111/00100 00001100/00000110
In Hex $ACE4 $0C06

This gives four bytes 0-3 of $E4 $AC $06 $0C

$20 Version number of Prodos under which the disc was formatted. Under Prodos 1 series, this has a value of 0.

$21 The minimum version of Prodos that can access this volume. Usually zero.

$22 Access byte. The bits refer to the access rights to the file. If set, the bits are as follows:

Bit 7-Volume may be reformatted.
Bit 6-Volume may be renamed .
Bit 5-Volume directory has changed since last backup .
Bit 1-Volume directory may be written to.
Bit 0-Volume directory may be read.

All other bits are reserved

$23 Entry length of file entry in the directory.Usually $27.

$24 Number of entries in each block. The header is included in this count. Usually $0D.

$25-$26 The number of active entries in the volume directory. The Volume header is not included, but any subdirectory entries are.

$27-$28 This points to the first block of the volume bit map. Usually block 6.

$29-$2A The total number of blocks on this volume. On a 5.25 inch disc, this will be $0118 or 280 decimal. It is used while computing with the disc map.

Using the value gained from the 'entry length', usually $27, we now see the filename entries ranged sequentially through the block. Remember that a block is two sectors long and should be considered as one long block of $200 bytes. You will need to wrap the entries from one sector to the next to span the break. Each filename entry is structured in a similiar way to the Volume directory header. I give the offsets in this case from the start of the entry.

OFFSET $00 Storage type and name length. The bottom four bits are the length of the following filename. The top four bits refer to the type of storage of this entry:

$0 Deleted entry, may be reused.
$1 Seedling file, only one block.
$2 Sapling file, 2-256 blocks.
$3 Tree file, 257-32768 blocks

$D	The file is in fact a subdirectory .
$E	This is a Subdirectory Header.
$F	This is a Volume Directory Header.

$01-$0F Filename. 15 byte max.
$10 Filetype. There are a potential of 256 file types....

Some 30 are defined between the SOS and Prodos systems. The main ones are:

$04 - TXT file in ASCII	$06 - BIN file
$0F - DIR Directory file	$1A - AWP Appleworks file
$FC - BAS A/soft Basic file	$FF - SYS Prodos Sys file

$11-$12 Pointer to either the data block of a seedling file, or the first index block of any other file. If a subdirectory entry, then it points to the first directory block.

$13-$14 The total number of blocks used by the file including any index blocks. If a subdirectory then the total number of directory blocks.

$15-$17 Three bytes to give the position of the end of file. This is the length of a sequential file in bytes. This gives a maximum size of 16 megabytes to a file. This will not give the correct length of a random access file.

$18-$1B Creation date and time encoded as before.

$1C The version number of Prodos that created this file.

$1D The minimum version of Prodos which can access file.

$1E Access rights to the file. Bit assignments as follows:

Bit 7 File may be deleted.
Bit 6 File may be renamed.
Bit 5 File has altered since backup.
Bit 1 Fle may be written to.
Bit 0 File may be read.
All other bits reserved.

In an unlocked file that you can read/write to this will be $C3

$1F-$20 Depending on the file type, these two bytes will represent various parameters.

TXT - Random access record length
BIN - Load address of the binary file
BAS - Load address of the program
SYS - Load address of the System program, usually $2000

$21-$24 Date and time of last modification.

$25-$26 The block number of the Directory Header block that describes this file.

As you will now have seen ProDOS really is an extremely powerful system. It holds much more information in its directory than any other disc system for the Apple II. It is interesting to note that Subdirectory entries look like actual file entries. In fact this flexible construction runs through the whole system. There is a considerable amount of echoed structure, subdirectories for instance are virtually the same as the main directory. The directory itself is seen as a file by Prodos and it is possible to open and read a directory from the MLI as though it was itself a file. This is the method you would use if you wished to display a Catalog from a program. Prodos itself does not actually provide this function.

The files themselves other than a single block seedling file, will always have one or more Index blocks. As of course Prodos does not know the length of file until it is closed, you will find that the first block reached on free disc space, will always be a data file. On any other file than a seedling file, Prodos will need to provide pointers to the other blocks, and so makes a sapling file by creating the first Index block. It then follows this block with further data blocks. If the Index block is filled up, then a tree file is needed and more Index blocks must be added. A Master Index block is then created to point to all the Index blocks, and the directory altered accordingly to show a tree file. The two byte pointer to the key block will now point to this master index block. An Index block itself is interesting in its construction. It must of course consist of pointer pairs to block numbers. However to make programming easier, the least significant byte is placed in the lower half of the block, and the most significant byte in the same position in the upper half.

All the data blocks of files are constructed in the same way, there are no bytes describing length or load address as in DOS 3.3. The hi-bit is not normally set on text files. There are however some peculiar file constructions amongst the special file types. Have a look at an AppleWorks AWP text file for example.

I was going to discuss the MLI in this article, however I think you have had plenty to digest so far, so will leave it till next time.

Happy zapping

COMTEC
COMPUTER REPAIRS

* FAST TURNAROUND - NORMALLY 2 DAYS
* 3 MONTH WARRANTY
* COMPETITIVE PRICES ON ALL APPLE REPAIRS AND UPGRADES

EXAMPLES

Apple][+ or //e Power Supply	£32
Apple][+ or //e Motherboard	£32
Apple Interface cards (most makes)	£25
Disk Drives - cleaned/aligned	£25

Please ring for other prices
or post equipment for free estimate.
Quantity discount available.
Prices include P+P and 15% VAT
Also

MACINTOSH UPGRADES
128k to 512k
128/512k to MACINTOSH PLUS
RING FOR MOST COMPETITIVE PRICES.

COMTEC, ST GEORGE'S MILL,
3 ST GEORGE'S STREET, MACCLESFIELD,
CHESHIRE, SK11 6TG
Tel (0625) 34691

Software Review

The Chameleon

A file transfer tool.

By Tony Game

In the current wave of euphoria about the imminent new machines from Apple, it is very easy to forget that progress in software matters is every bit as significant to the user, even if it is not so obviously exciting.

I remember once, years ago, needing badly to convert a Wordstar file to AppleWriter text. I sat down with Bag of Tricks booted up, and after studying the manual for a very long time eventually came up with a macro which I believe did the job, and which I suppose I still have somewhere. I can remember nothing about how successful the conversion was. Someday I expect I shall discover the macro lurking on its disk and chuckle to myself as I delete it.

Ewen Wannop, the author of Data Highway in case anyone does not know, has waved his magic assembler yet again, and produced a program aptly called The Chameleon, and a program of many changing colours it certainly is!

One of the great strengths of the Apple is the fact that it can run a number of different operating systems. As one progresses from basic to Pascal, and then CP/M, taking on ProDOS on the way, one tends to forget just how useful a facility this is, and how few other machines in fact have it. It does however bring problems with it. All these operating systems use their own file formats and structures, and transferring from one to the other tends to be difficult if not impossible. That is until now and the advent of The Chameleon.

With a single boot, because it is memory resident, though you will need 64k, this miracle, with a few key strokes, will allow you to convert any disk file in Apple format, from any Apple operating system to another. This means CP/M, Pascal, SOS, ProDOS and of course the evergreen DOS 3.3. The only other program I have seen which sets out to attempt this, requires one to shuffle disks in and out of the drives like a demented postman, and even then manages to turn wordstar files into DOS binary files! Even the ProDOS convert program is much slower and harder to use than this one. In short at the price it is now being offered to Apple2000 members no-one can possibly afford to be without it.

The Chameleon comes on a single disk with the program, which runs under ProDOS, on one side, and detailed instructions in a DOS text file on the reverse. The instructions can be printed out or read to the screen, and will be needed eventually, though in the early stages the program is so easy to use that the menus themselves will be enough. Ideally AppleWriter should be used to produce a print out of the ten page manual.

I shall not attempt an explanation of the actual working of the program since this will inevitably make a very simple process sound complex. Suffice it to say that all is menu driven, and that the menus are descriptive and easy to follow. They use the arrow keys and space bar to choose options, and the key board is seldom touched.

The program is basically intended for the transfer of text files which is what generally needs to be done, but in fact it is perfectly possible to swap binary files around if one wishes to do so for any reason. This needs a little knowledge of when high bits are set or not set, but have no fear, the instructions make all this eminently understandable. An example of when this facility is uniquely useful, is when one has downloaded a binary file from a bulletin board, and to one's horror finds it on one's disk as a text file. I know no other way in which one can easily correct this situation, on which I have spent hours before The Chameleon appeared on the scene.

The text file transfers are perfectly simple and work beautifully. Anyone using Dark Star's shuttle with CP/M in one memory chunk, and ProDOS in another, could now have the Chameleon in a third, and convert files in a matter of minutes with an almost unbelievable simplicity.

As with all good programs the simple options are backed up by those which are more complicated and require a greater study. One of the menus is called Special Options and although this will not allow you to turn a 5.25 inch disk into an 8 inch one, it will do practically anything else! Normally the program recognises the disk types quite automatically, and you are not involved in the process at all. However you can opt to take over if you wish and tell the program to do many exotic things, including the aforementioned changing of a text file into a binary file. Some study of the instructions is required here but is extremely worthwhile. For instance it is possible to change a DOS text file into a Wordstar file, changing all the single hard returns into soft returns. Anyone who has struggled to take the hard returns out of a Wordstar file in order to reformat it will presumably rush their cheque to Apple2000 for The Chameleon on just reading this. I know of no other facility for doing it.

Pascal and ProDOS files may be read from, or transferred to unusual devices such as ram disks and hard disks, but this does not extend to DOS or CP/M, where the file structures differ according to the storage media. However a transfer could of course be made to a standard 5.25 disk, and then copied onto the other medium.

ProDOS produces large numbers of unusual file types, as shown by their various suffixes. Appleworks in particular uses unusual formats for its files. These may be copied into other operating systems, although it may be useful to first print them as disk files, but the reverse does not apply. That is to say a DOS or CP/M text file cannot be turned into an Appleworks file. It seems that this is something that is next door to impossible to accomplish. In fact it seems to be about the only limitation I have realistically found to The Chameleon, which is useful since a reviewer likes to manage at least one!

This program would be a bargain at many times the asking price. I suggest you send off for your copy at once, even if you have no need for it just at the moment. The time will come when you will have, and when it does come it is likely to be urgent! I speak from bitter experience.

CONVERSION TO OMNIS3 ON THE MAC

A Users's experience of Omnis and the change from Apple // to Mac.

By Keith Chamberlain

As some of you may know, during October 1985 the club membership database was converted from D.B. Master to Omnis2, both running on an Apple II+ with three disc drives. Because of the different amounts of infor-mation required in the new database the information was transferred by typing it in from a printed listing, which involved both considerable time and the inevitable typo's.

It soon became apparent (running Omnis2 with only 3 disc drives and the amount of data held) that the system was becoming unmanageable and either a hard disc or a different machine would be required. In February 1986 I became the proud owner of a 512k Mac with an Imagewriter II, 800K external drive and Omnis3 (donated by Blyth), and therefore set about the task of setting up a new database on the Mac. The information required by the Mac was identical to that held on the][+, I decided to find an easier way of converting the data.

Armed with Omnis2, Chameleon, Data Highway II, Mac-terminal, Omnis3 and a cable connecting Apple][+ to the Mac I set about the conversion.

From the Utilities on Omnis2 I was able to create DIF files in Pascal format and decided to split the size of each file thus creating 15 small files AB, CD, etc. This was due to the length of time it takes to transmit files between machines and my fears of power cuts during transmission.

I needed to convert the resulting Pascal text files to DOS text files for transmission by Data Highway. I chose Chameleon for this task. I will not go into the details of the conversion (this is covered on page 16) but the end result was 15 DOS text files, produced in a very short time.

Using Data Highway, Mastercard and a serial cable the files were sent in turn through the Mac modem port into Mac-terminal. Eventually 15 Mac text files were produced. This was the longest part of the process taking about six hours, so you can see my worry over transmitting long files.

The final leg was now to use the option to insert records from a DIF file in the Omnis3 utilities menu and the new database was complete.

The complete process took about 20 hours, but unlike the manual method, I was able to let the machines do all the tedious work while amusing myself gardening (a boring but necessary task).

The end result has slowly transformed my life, the power and speed of Omnis3 is a bonus I could not have imagined. The upkeep of the database has decreased from about 40 hours per month to about 20 hours per month, I hope Jim does not read this or he will find work for me elsewhere.

Ed: I have noted that you are now available for more work !!!

PERIPHERAL CARDS

VISION

Colour Modulator + sound for //e	£25
PAL for use with colour TV for II	£42
RESOLUTION (80 col //e)	£28
RESOLUTION 64 (80 col & 64k RAM)	£55
SCREEN 80 for II	£39
NEW AUTO SCREEN 80 for II	£44
DMS C12 RGB for II or //e	£45

PRINTER CARDS

Paragraph cards are CP/M, Pascal., DOS and ProDos compatible with full graphic dump facilities

PARA-GRAPH	£44
Printer + 16k	£70
Printer + 64k	£90
Serial/Communication	£48
PACT Serial Printer	£22
RS232 Serial Cable (2m)	£14

MEMORY EXPANSION

16k RAM CARD For II	£33
128K RAM CARD For II	£95
80 COLUMN + 64k For //e	£55
MULTIRAM //e 256k	£179
MULTIRAM //e 512k	£219
MULTIRAM //e 768k	£259
MULTIRAM //c 256k	£229
MULTIRAM //c 512k	£269
MULTIRAM RGB 256k	£219
MULTIRAM RGB 512k	£259
MULTIRAM RGB 1MB	£399
65C816 for //e	£159
65C816 for //c	£149

INTERFACING & CONTROL

IEEE-488	£79
Clock Card (battery back-up)	£59
Z80 Circuit Emulator	£199
A to D (16 channel 8 bit)	£69
A to D/D to A (8 bit)	£85
I/O Card (4 ports/2 timers)	£59
IC Tester	£99
PAL Programmer Card	£299
Logic Analyser Card	£299

Others

Z80 CP/M (II or //e)	£35
Disk Controller	£28
EPROM writer up to 2764's	£47
EPROM writer up to 27128's	£75
EPROM writer up to 27256's	£99

PRINTERS

EPSON	
LX80	£199
FX85	£359
FX105	£479
DX100	£299
KAGA	
KP810 (80 Column NLQ)	£249
KP910 (132 Column NLQ)	£399

SOFTWARE

FORMAT 80 Enhanced	£99
Flashcalc	£69
dBASE II	£299
Ormbeta Datafile Software	POA
Systematics (per package)	£219
Decathlon	£9
Super Expander	£19
Super Expander 80	£29
Super Expander 80.2	£39
Screen Director for Apple III	£75
PKASO III for Apple III	£19

ACCESSORIES

Graphic Mouse + Software	£59
Numeric Keypad for //e	£24
Power Supply	£59
AC Cooling Fan	£24
Joystick (for][or //e)	£30
Disk Doubler	£4.95
Diskettes - Wabash SS/SD (10)	£13
Diskettes - Datalife SS/DD (10)	£19

DISK DRIVES

Apple II compatible drive (Japenese TEAC mechanism)	£99
Apple //c compatible disk drive	£109

MONITORS

KAGA	
12" HI-RES (green or amber)	£109
14" Colour from	£209

DATA SWITCHES

PARALLEL, all 36 lines switched. Two way communication	
1 to 2	£49
1 to 3	£59
1 to 4	£69
Cross Over	£69
Printer Buffer 64k	£149
SERIAL, two way comunication	
1 to 2	£39
1 to 3	£49
1 to 4	£59
Cross Over	£59

DEALER HOT LINE
(021) 356 3828

Rosco Ltd

289 Birchfield Road,
Birmingham B20 3DD.
Tel: (021) 356 7402.
Telex: 334303 TXAGWMG

Access VISA

`Apple` is the Trade Mark of Apple Computer Inc.

Letter Quality Printing with AppleWorks and the Epson FX80

By Paul Ross - Washington Apple Pi

I just switched from Homeword to Appleworks for word processing. Homeword was too much like a toy and I wanted a word processing program that would take full advantage of all the print enhancements available on my Epson FX-80 dot matrix printer.

Appleworks was very disappointing. The most obvious problem was that it would not print consistently with my Grappler+ interface card and the Epson FX-80 dot matrix printer. It seems that Apple did not program AppleWorks for non-Apple parallel interface cards. Fortunately, Walt Mossberg published a fix for these problems in the November 1984 Washington Apple Pi Journal.

After putting Walt's fixes into AppleWorks I was still disappointed. Although I could print in 6 widths from 5 to 17 characters per inch, none of the printing was "letter quality." The FX-80 printer provides three degrees of boldface but AppleWorks used none of them except for "emphasized" type which was available at 5 and 10 characters per inch. There were no italic typefaces at all and it was not possible to change type sizes within a paragraph. This last problem not only ruined the fun of using type size for emphasis, it also meant that superscripts and subscripts had to be the same width as the other characters on the line even though they were only half as tall. (In fairness to AppleWorks I must say that there is one "letter quality" type style available - proportional. However, proportional is not useful for technical work because the columns do not line up and there are no boldface, superscripts or subscripts. These are limitations of the Epson FX-80 dot matrix printer, not AppleWorks.) A (probably) harmless peculiarity was that I could intermix paragraphs printed with different type styles freely except that proportional could not follow 6 or 12 characters per inch.

A solution for most of the above problems would be for Appleworks to send user-defined strings to the printer, but AppleWorks does not provide this capability - at least not explicitly. AppleWorks does provide for user-defined custom printers. Appropriate use of that customization feature can allow your FX-80 printer to produce "letter quality" print, Italics, continuing boldface (in everything except proportional spacing), and intermix proportionally typed paragraphs with other paragraphs at random. It will even make superscripts with width in proportion to their height. About the only feature I have not been able to obtain is the intermixing of different type sizes within the same paragraph.

Here's how I did it: (If you have any trouble following these instructions, see Appendix B, pp 281-293, AppleWorks Reference Manual.)

Go to the "Add a Printer" menu. Add a custom printer. Give it a name. (I named mine "LETTER QUALITY.") Your new printer is accessed exactly the same way your old printer is; both from the same slot - probably slot 1. This new printer does not need a line feed after each return and does accept top-of-form commands. Proceed to the "Printer Codes Menu." This is where the real work is done.

A. Characters per inch.

5 characters per inch:

Enter "ESC ! (^". **("^" is the character which ends the entry process.)** These characters instruct the printer to print emphasized enlarged type when you specify 5 characters per inch in the text of the document. The AppleWorks built-in driver uses draft mode at 5 characters per inch, which is not dark enough on the page.

6 characters per inch:

Enter "ESC ! ! ^". This produces enlarged Elite type which is useful for material, such as speeches, to be read aloud.

8 characters per inch:

Enter "ESC ! $ ^". This produces enlarged condensed type.

9 characters per inch:

Enter "ESC ! CTRL-H ESC 4". This produces emphasized Italic type at 10 characters per inch. This is your new "global Italics" command. After you specify 9 characters per inch in a document everything will be printed in Italics for the rest of the document or until you specifically turn it off. To turn on global Italics, specify 9 characters per inch in the document and print at least one character. You can then switch to any other type size you want and it will appear in Italics. If you do not switch type sizes you will get emphasized Italics at 10 characters per inch with the margins just a little off. To get the margins just right, specify 9 characters per inch; print a single period; and then specify 10 characters per inch. You must actually print a character; just a space or return will not turn on the Italics. If you adopt this global Italic feature, you must also have "local" Italics (see below) because the only way to turn global Italics off is to turn local Italics on and off in immediate succession.

10 characters per inch:

Enter "ESC ! CTRL-H ^". This produces emphasized (letter quality) Pica type. It will be the AppleWorks default typeface. This is not true letter quality but it's as close as you can come on the FX-80.

11 characters per inch:

Enter "ESC ! CTRL-@ ESC p 1 ^". (Note the lower case "p".) This produces proportional typing at about 10.2 actual characters per inch.

12 characters per inch:
Enter "ESC ! CTRL-A ^". This produces standard Elite type which prints quickly and looks good but is a little small for my old eyes. This is the same as with the AppleWorks driver except that boldface works with this.

17 characters per inch:
Enter "ESC ! CTRL-F ^". Produces condensed type.

B. Lines per inch.

6 Lines per inch:
"ESC 2 ^" (Remember, "^" is the indication that you are through making entries.)

8 Lines per inch:
"ESC 0 ^".

C. Boldface - Superscript - Subscript.

Boldface:
Boldface begin: "ESC G ^". Boldface end: "ESC H ^". These codes will produce boldface with type sizes 5, 6, 8, 9, 10, 12, 17 characters per inch - everything except 11 characters per inch. (proportional). In contrast to the boldface supplied in the AppleWorks driver, this boldface will continue to the end of the paragraph or until specifically ended.

Superscript:
Superscript begin: "ESC SO ^". Superscript end: "ESC T ^". Superscripting terminates at the end of the line or when specifically ended. These superscripts are the same width as the rest of the characters on the line; that keeps the right justifications correct. If you rarely right justify, usually use 10 characters per inch, and you would like superscripts that are appropriately proportioned according to their height, try:
Superscript begin: "ESC ! CTRL-F ESC S O ^".
Superscript end: "ESC T ESC ! CTRL-H ^". This begin command installs narrow characters when superscripting is started. When superscripting ends the printer does not have any way to know what width you were using before and so it reverts to 10 characters per inch. This is rather useful for equations but only if you are using the 10 characters per inch typeface.

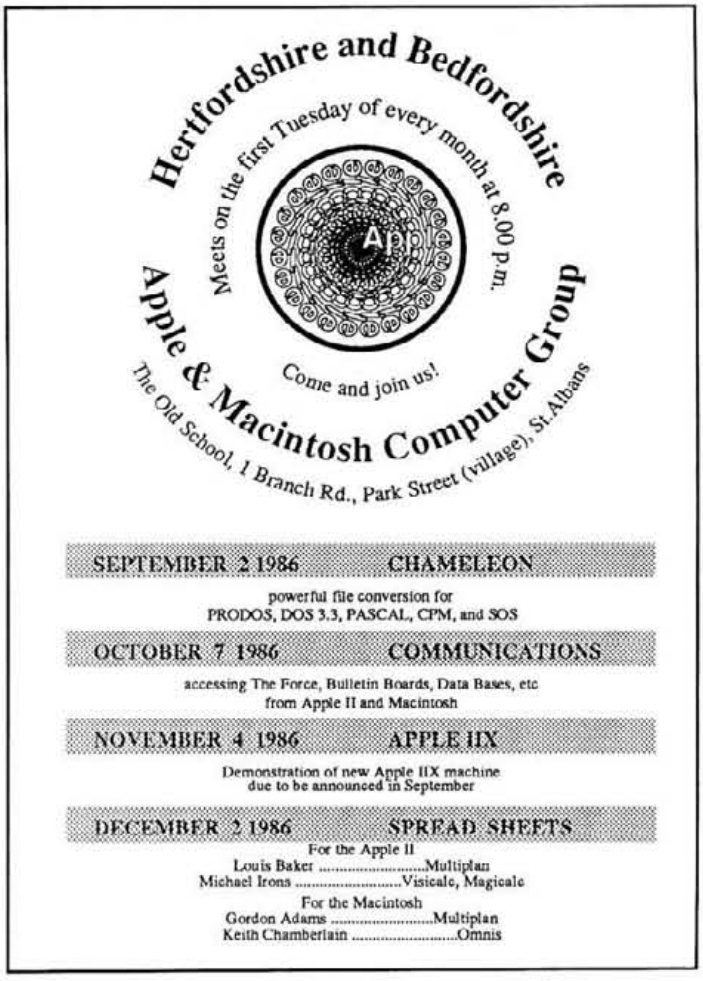
Subscript:
Subscript begin: "ESC 4 ^". Subscript end: "ESC 5 ^". This produces Italics, not subscripts; this is how I get 'local' Italics. These Italics appear in whatever typesize and boldface is in effect when you turn them on. Like super-scripting, this will not continue beyond the end of the line so it is not a useful way to get Italics for more than a few words. These characters are also required in order to turn off global Italics which are set by specifying 9 characters per inch, above; use 'subscript begin' followed immediately by 'subscript end'. (If you want real subscripts use "ESC S 1 ^" to begin ant "ESC T ^" to end. If you set this up for real subscripts there is no way to turn off the 'global' Italics set by specifying 9 characters per inch, above.)

D. Underlining

Choose option 2, "Printer has start/stop underline commands." For underline begin, Enter "ESC - CTRL-A ^". For underline end, Enter "ESC - CTRL-@ ^". Note the '-' following the ESCAPE. Underlining and boldface are the only actions that continue beyond the end of a line; if not specifically ended both will continue to the end of the paragraph.

That's all there is to it. After you have installed this driver into AppleWorks, it will ask where you want to print the document, Old Name or LETTER QUALITY? If you specify LETTER QUALITY you will get 5, 6, 8, 10, 12, or 17 characters per inch of nicely matched type including Italics - all of which is more or less letter quality and can be boldfaced , italicized, superscripted, and underlined. Boldface and underline will stay in effect until the end of the paragraph if not specifically ended. Remember, you get 'global' Italic type by specifying 9 characters per inch and printing at least one character before you switch type sizes. You turn off global Italics by turning 'local' Italics on then off. Local Italics have replaced subscripts. You also get letter quality proportional spacing by specifying 11 characters per inch but proportional cannot be boldfaced or superscripted.

This is the first in an occasional series of articles which we shall be publishing from our friends in Washington Apple Pi. We hope you like the new idea. Ed...



Utility Review

DMP UTILITIES

By Harry Gardiner.

CUSTOM CHARACTER SETS FOR THE FX-80

The Vilberg Brothers in the USA have produced a package to exploit a little used feature of Epson's FX-80 printer. Their DMP Utilities program allows you to download a variety of twenty ready made character sets into the printers memory or you can create your own sets.

Getting started with DMP is fairly simple. First make a working copy by COPYA. Next read the first sections of the manual to check how to configure the disk for your printer interface card. This is important as certain interfaces could ruin the program if you do not use their special configure routine.

Fonts come on side two of the program disk. Specialist character sets are - Phonetic, Greek, and NEC. The others are a variety of different styles of font. In addition to these, DMP Utilities includes 'foreign' character sets for each font. French, German, Danish, Spanish, Swedish and real English. To these, Vilberg Brothers have also added the characters to enable standard Epson print command codes to be used such as enlarged, condensed, emphasised, double-strike, super-script, sub-script and of course, underlining. Some codes are incompatible with each other, in true Epson style. For example proportional spacing cannot be used with 12 characters to the inch as in the "elite" font.

My first problem came with the Epson printer card and I found the program would not work with it. Apparently these cards are not sold in the States so the program was not configured for them. Frustrated, I borrowed a Tymac PPC 100 printer card, and things thereafter went very smoothly. Other printer cards are supported and they include the Fingerprint, Grappler+, Microvitek, MPC AP-80, PKASO, Prometheus, Seriall, Skyman and Wizzard. The manual gives advice if your card is not compatible, - but you will need to understand 'status bytes' and the like.

Program menus are good and operate by the items selected being highlighted by an inverse bar. A small sub-menu appears at the bottom of the screen. Several menus are offered. Firstly setting up for printing (which font etc.). Next, editing/creating a font and lastly converting into DMP form one of the many hi-res fonts available with the Applesoft Toolkit Editor, or the Higher Text II Editor.

The Set Up Printer menu is very comprehensive, allowing you to control the number of characters printed per inch, the left margin, the number of lines per inch, lines per page, print enhancement (bold, double-strike, etc.), national character set, fonts held in computer memory (two). You can change these settings, save them to the program disk, or load a setting from disk.

Working your way through the menus is fine but learning by exploring would improve if the escape key were to be programmed to take you back to the item you previously chose. Another problem is the long time taken to load the program overlays and the font sets. Most users will only load one character set, but it took me hours to load and print several, using DMP and then a word-processor. The manual recommends Diversi-Dos. However if you have a hard disk or memory card it would speed things up considerably.

CONCLUSIONS

At £39.95 + VAT you can have a lot of printing fun or tailor-make those one or two special characters you always wanted. As the copyright date is 1983 I wondered if the Vilberg Brothers have done anything since for the 24 pin NEC P6 printer or 27 pin Epson LQ1500. Some of the slightly rough edges of the characters I saw could be smoothed out by those smaller pins.

The character editing was well set out and carefully organised. However a demo printing out all variations of each set would help sell this interesting and attractive product. Overall I was impressed. It put some of the power of the Mac into an Apple II - Epson combination.

Program loaned for review by:

MGA Microsystems, 140 High St. Tenterden, Kent

Quick Tip

ProDOS patch

ProDOS will not normally run on non-Apple machines because of a routine in the startup sequence which checks to see what computer is present. This may be simply overcome by applying a patch to the disk, and then ProDOS and programs like AppleWorks (via PlusWorks) will run on the Basis, Franklin, and other compatibles. Using a sector editor (Disk Manager will do nicely), and working with a copy of the disk NOT the original, find the occurrence of the following bytes on Track 1 and replace with NOP's:-

	From	To
(a)	AE B3 FB	A2 EA EA
(b)	69 0B D0 03	69 0B EA EA

Depending on the version of ProDOS you are patching, these bytes will be in different sectors:-

Version	Track	Sector	Offset	change
1.0	01	C	57	(a)
	01	A	FC	(b)
1.0.1	01	C	B4	(a)
	01	9	59	(b)
1.1.1	01	B	06	(a)
	01	9	9C	(b)

Two for the Price of One?

DMS 20SHD

The DMS 20SHD 20 MByte SCSI Hard Disk has been designed to provide an economical mass storage device for the Apple Macintosh Plus computer and is a stand alone unit.

* Uses Latest SCSI Parallel Port and Protocols
* Economical low cost, designed and built by DMS in the UK
* Plugs into the Macintosh SCSI port
* No Pre Boot Disk - It boots straight in with HFS & Finder 5.3
* Can be used as a shared disk on the AppleTalk Network using MacServe
* Housed in a robust attractive case
* Uses its' own internal power supply operating off 240V or 110V

Why pay nearly £1500 for other hard disks when for a limited period, whilst initial stocks last, we are selling our DMS 20SHD at £750 + VAT. With MacServe software - £950 + VAT. With MultiUser Omnis 3 Plus (2-5 users) - £1600 + VAT.
Send full remittance to DMS who will despatch your unit carriage free in the UK. Please add £15 for overseas carriage.

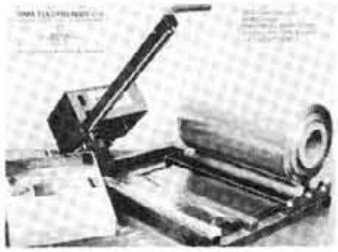
DMS SABRU

The DMS SABRU, Stand Alone Barcode Reading Unit reads practically all world wide barcodes automatically. It sends the characters out via either a serial or parallel port - enables it to be used with most computers. Designed and built by DMS in the UK. No other barcode reader combines all these features at the same price.

* Reads 8 & 13 digit EANA, 13 digit ISBN, 12 Digit UPCA, 6 digit UPC- E (with or without 2 and 5 digit price addons), 14 ITF, Variable length 3 of 9, 2 of 7, Monarch, Codabar, 2 of 5 Industrial, 2 of 5 Matrix, 2 of 5 Interleaved and Plessey
* Serial, DTR or Xon Xoff at 300, 1200, 2400, 4800 Baud Rates
* Diagnostic Barcode Read Facility * Self contained with its' own CPU
* Metal Bodied, Sapphire Tipped, High Definition Industrial Barwand
* Scans forwards or backwards * Parallel Centronics Port * 240V or 110V operation

The cost of the DMS SABRU including Wand is £460 + VAT carriage free in the UK. Please add £10 for overseas carriage.

DMS SEALER



The DMS SEALER is ideal for all businesses. Use it to shrink wrap and professionally seal your products. The cost of the DMS Sealer including 1 Roll of 14" Wide film is £200 + delivery of £15 in the UK + VAT. Please add £30 for delivery overseas.

QUIK CIRCUIT

This is professional PCB drafting software for the Macintosh computer and outputs to a plotter. Create Libraries of Layouts and produce Multi Layer boards. The cost of Quik Circuit software is £695 + VAT, carriage free in the UK. Please add £10 for delivery overseas. Complete Hardware/Software System - £4,595 + VAT. Why pay £11,000+ for PC systems?

Coming Soon The DMS Point of Sale System - DMS POS

This is based around a MacPlus with our DMS 20SHD and DMS SABRU, Tally printer, Till and ImageWriter II printer to provide a FULLY INTEGRATED SYSTEM using Barcodes as data input for high speed Till use. The system includes the following features: Open Ended Invoicing (eg for Hotels and Professional Practises), Point of Sale Invoicing supporting up to 25 Macintoshes and Tills for Multiuser supermarket use. Facility to give detailed Till Messages + VAT Analysis (for cash and carry) or abbreviated till receipts (for general stores), Message Lines on the receipts for advertising, Sales Invoicing & Ledger, Telephone Sales, Statements, Stock Control & Movements, Alternative Stock Group, Back Ordering System, Reports of Stock Movements through each till (for high volume restocking procedures), Purchase Ledger, Nominal Accounts, Aged Debtors & Creditors, Job Costing, Agents Commission, Vat Returns, Balance Sheet and Management Accounts, Handles 25 Bank Accounts and 10 different Credit Cards. Cut and Paste Results to other software e.g. Excel, 2 Years Accounting on Line to ease year end procedures, supports up to 32,000 stock items and 32,000 accounts (depending on disk storage). Total ease of use.

Complete system cost - £6,300 + VAT (2nd User System - £2,600 + VAT). Versions being prepared in French, German, Danish, Swedish, Spanish and Italian. This is todate the most powerful software system on the most powerful micro.

The above items, plus the rest of the DMS product range, including our RGB Colour Cards for Apple //c + Apple //e, Data Capture Devices, Presfax® KeyPad, IO Cards etc. are available direct from us. We have been established since 1973 and are the largest Apple only dealer in the North - 5 minutes off Junction 31 on the M1. We stock the full range of Apple equipment and have full showroom, training, workshops and warehousing facilities with inhouse programmers and engineers. We would be pleased for you to visit us - telephone for directions. Send a SAE for further details. We reserve the right to alter specifications without notice.

DMS Electronics Ltd, Bretton Court, Manor Road, Wales Village, Sheffield, England, S31 8PD. Tel: Worksop (0909) 773399

Apple // Hardware Review

CIRTECH //e CP/M PLUS

By Chester Kemp

The product title does not lightly trip off the tongue, but the product itself is pretty nimble! It consists of a fast Z80 card using a Z80H running at 8mHz, which implements CP/M Plus version 3.0 and runs on an Apple //e with at least 128k and a single disk drive.

The package consists of the Z80 board and 56 page User's Manual which describes installation, the new CP/M commands, Cirtech 'Toolkey' features, System Master and System utilities disks.

The card is not placed in a slot, rather it is fitted on the motherboard; the 6502 chip is removed and replaced with the board, the 6502 is then plugged onto the card, finally a small clip is attached on to the PAL/HAL chip. The procedure is relatively simple and clearly explained in the manual. The temporary removal of the 80-col extended memory card from slot 3 will make it easier.

Apple users have always been content with an inferior performance than on most other CP/M micros because of 6502 timing problems halving the Z80A/4mHz speed, the new Z80H is about twice as fast and further enhanced by special screen-handling (rather than using the 6502 ROM based routines).

I did a series of benchmarks using Wordstar, MBASIC and dBase][against the typical Z80 Softcard: the slowest at 1.4x faster was a simple loop in MBASIC; the fastest at slightly over 2x was a screen-intensive test using Wordstar; the average was a respectable 1.7x though. Cirtech provide a patch for MBASIC to get round Microsoft's Apple-specific modifications for their Softcard but otherwise all commercial packages run without any modification whatsoever.

Benchmarks can be something of a sterile game, but subjectively I felt that the improvement of performance for spreadsheets and database manipulation were very satisfying. The most dramatic improvement was in using Wordstar: on the old Softcard cursor movement was relatively sluggish, and screen refreshes tedious with even a poor typist typing faster than the processor could respond; on the Cirtech it was immediate in action and highly responsive.

Cirtech have added an extra feature called 'Toolkey" which by pressing the "Closed-Apple" and a letter allows you to interrupt whatever program you are running and optionally: toggle the cursor; duplicate disks; format disks; print a snapshot of the screen. You can then carry on as if there had been no interruption. This facility can be quite useful, for example many have got disk overflow at an inopportune moment with no formatted disk available - the Toolkey gets rid of that problem. The card allows you to run CP/M 2.2 if you wish, but with the superior CP/M Plus being available why bother? CP/M-3 does not support the RAM drive so this could be an important reason to remain on the lower version. On a 128k system I did not find the RAMdrive too useful, however with a larger memory then activities such as complex database access or lengthy compilations could make a significant difference. Cirtech have utilised the extra memory and provide a 12k printer buffer and a 4k auxiliary output buffer enabling printing whilst the program continues. The length of user area under CP/M is the Transient Program Area (TPA) and CP/M Plus provides 54k, which is more than the so-called 56k system under 2.20 which actually gives about 50k.

Digital Research have an on-screen HELP system and this is available on the Utilities disk which gives the purpose and syntax of all commands and their various options. This system is said to be fully expandable in that it automatically recognises "Flipper", the Apple extended memory card, and supports all ProDOS storage devices such as Unidisk 3.5 and hard disk drives. [I did try the system with some Eicon 8" drives, but the Eicon disk ROM used memory locations also used by the CP/M Plus system and so no solution was directly available.] Whilst writing this, I came across Max Parrott's review of this card in Apple User (Sept.86) wherein he records that he had problems with Turbo Pascal accessing the printer - I have tested this and get no problems.

CP/M Plus has a number of differences with 2.2, the most immediate and welcome is the removal of pressing control-C whenever you change disks which was always so irritating! STAT has been withdrawn and most of its duties done by SHOW, although some of them are harnessed by an enhanced DIRectory command. DEVICE replaces CONFIG for baud rates. The maximum size for a file increased from 8mb to 32mb (big deal for most Apple users!). Most commands are more useful and friendly, eg the TYPE command stops when a screen is full rather than dashing on (although this can be deselected). CP/M Plus has a potentially useful addition for small businesses which allows you to add passwords to files.The User Manual is surprisingly informative despite its apparent brevity.

The information on the commands including syntax, options and examples appear to be drawn directly from Digital Research and these are reflected in a very useful on-line HELP system on the Utility disk. Commercial packages need to be "installed" before use and you are advised to choose the Soroc 120/140 option, but this is not enough for some packages, and it would thus have been useful if the screen-handling codes had been given. For those interested in more technical access to the system you can get the CP/M Plus Programmer's Pack consisting of: a disk of utilities, a 36 page manual and a Cirtech ring binder containing three Digital Research manuals (Programmer's Guide, Programmer's Utilities Guide and Symbolic Instruction Debugger Reference Manual).

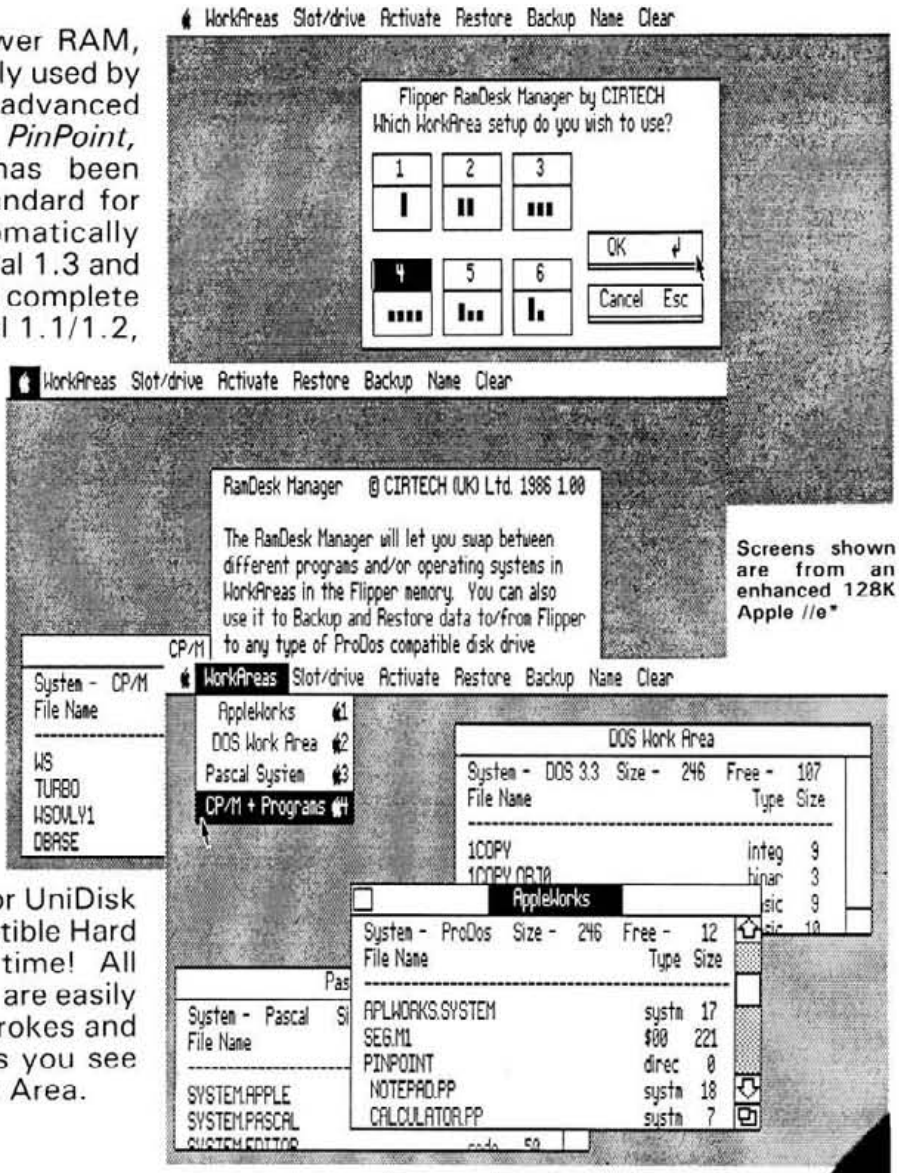
The utility disk includes a normal and a relocating macro assembler and linker, an 8080 and a Z80 debugger. There are differences between 2.2 and 3.0: DDT is replaced by the more versatile SID (and ZSID for Z80 codes). DUMP has been enhanced to add ASCII translations to the hex codes. The Cirtech manual includes the CP/M Plus memory map, terminal emulation codes, various BIOS calls, some useful Apple addresses and assembler examples, etc.

To summarise, it is an excellent card and package; it easily displaces my Softcard and I would recommend this to anyone interested in using CP/M packages.

Open the Window on Today's Revolution!

To use today's and tomorrow's high-power software you need more than just a simple Ramcard. The *Flipper* System boosts the performance of today's programs and is equipped to take on tomorrow's. The combination of unrivalled compatibility and the versatility of the **RamDesk** Manager makes this system the most powerful productivity tool available for your Apple.

With one MegaByte of low-power RAM, the *Flipper* system is automatically used by a growing range of today's advanced programs such as *AppleWorks, PinPoint, Mouse/PFS series, etc.* It has been designed to the new Apple standard for memory cards, and is automatically recognised by ALL ProDOS, Pascal 1.3 and CP/M + based programs, comes complete with RamDisk support for Pascal 1.1/1.2, SoftCard CP/M 2.23/2.20b and has inbuilt support for DOS 3.3.



Screens shown are from an enhanced 128K Apple //e*

Unleash the Potential of your Apple II

The revolutionary **RamDesk** manager with its Macintosh-like window environment, lets you instantly switch between different programs or operating systems WITHOUT re-booting from disk! **RamDesk** can load and save data from user-defined Program Areas to 5.25 or UniDisk 3.5 disks or ANY ProDOS compatible Hard Disk in a fraction of the normal time! All of **RamDesk**'s powerful features are easily controlled using Mouse or keystrokes and the unique DeskTop display lets you see the full status of each Program Area.

The AppleWorks Advantage

The *Flipper* system automatically expands the DeskTop to a massive 1012K. It will even let you use AppleWorks on a 64K Apple II+. The number of database records can be expanded to an incredible 4,200! All these features are available with ANY version of AppleWorks.

The revolutionary new *Flipper* system is available from your nearest Apple dealer or direct from CIRTECH for only £350.00 + VAT.

Fully compatible with the //e, II+ and GS

CIRTECH

CIRTECH (UK) LTD., Currie Road Industrial Estate, Galashiels, Selkirkshire, Scotland, TD1 2BP
Tel: 0896 57790 Telex: 265871 (MONREF G) ATTN 84:CPD001 Source Mailbox AAH555

*A text version of **RamDesk** with the same features is supplied for use on other Apple models.

Pinpoint is a registered trademark of Pinpoint Publishing and Virtual Combinatics Inc. Apple / e, II + , GS, Appleworks, ProDOS, UniDisk, and DOS 3.3 are all registered trademarks of Apple Computer Inc. CP/M and CP/M Plus are registered trademarks of Digital Research Inc. PFS is a registered trademark of Software Publishing Inc. Mouse Series is a registered trademark of Vision Software.

P.S. – If you have an earlier Flipper you can get **Ramdesk** by returning your ORIGINAL Program Manager disk (with £5 to cover handling) direct to CIRTECH.

Rescue Raiders

By Tom Wright

Sir-Tech Software Inc., have supplied us with a review copy of RESCUE RAIDERS which was briefly reviewed some time ago in Apple User and A+ magazines.

If the Apple User review left you thinking that RESCUE RAIDERS is just another " shoot-em-up " game I suggest that you think again. I strongly recommend this excellent game and just hope that I can pass on some of its flavour in this review.

RESCUE RAIDERS can be played on any Apple // series machine with a minimum of 64k RAM, one disk drive and a two-button joystick. A colour monitor or T.V., will produce the best display but a monochrome display will suffice. A useful training guide is provided with the game which is contained on a single disk.

RESCUE RAIDERS is a strategic war simulation game set in 1944. The general scenario is that the player controls air and ground forces with which you must win eight successive battles to complete the game. Your opponents, are led by a group of time terrorists who have taken modern weapons back to 1944 with the intention of changing the course of history. You as the player have also taken similar weaponry back to 1944 in order to prevent the terrorists from achieving their objective. You will find that resource management is a major feature of this game.

Both sides are evenly matched in types of weapons which include Helicopters, Tanks, Mobile Launchers, Demolition Trucks, Infantry, and Combat Engineers. During the first battles the player's helicopter is armed with guided missiles, machine guns and bombs, while the terrorists helicopter has only bombs and a machine gun. This happy situation is short lived however and by battle number two the terrorists also have guided missiles on their helicopter. In later battles both sides replace the machine guns with unguided missiles.

At the start of the first battle each side has a number of pillboxes. barrage balloons, and anti-aircraft guns, all of these can be destroyed by your helicopter as can the terrorists ground forces and helicopter. Sounds easy but life can be hectic if you find yourself tackling terrorist missiles, helicopter and A.A guns all at the same time ! Like their helicopter born missiles the terrorists mobile missile launchers do not appear during the first battle but when they do you will find that they are very fast and, until their fuel runs out, very persistent.

Anti-aircraft guns can be knocked out by Helicopter or infantry attack, trying to neutralise them with tanks is a good way of getting rid of your tanks. If you manage to destroy either of these types of guns you can build your own on the site by marching three combat engineers onto it, they will build you a gun and then march on as infantry.

RESCUE RAIDER is thoroughly recommended.

Helicopter control is good but you cannot fly backwards and there are times when this characteristic of helicopters would be very useful to the player. Perhaps Sir-Tech will consider it for any up-dated version of the program ? Since both joystick buttons are used for weaponry control they could use one key depression to induce reverse flight control. The player can only refill and rearm a helicopter on a helicopter pad which is controlled by the player.

During each battle you are presented with a two-part screen display, across the top of the screen is a radar display which shows you the position of everything on and over the battlefield. Of course you may find that the terrorists are working on a stealth version of their helicopter, or even radar jamming, and radar like missiles is not always reliable. The main part of the display covers the section of the battlefield where your helicopter is located. The display scrolls horizontally as your helicopter moves back and forth.

To win each battle you have to get a demolition truck from your base to the terrorists time machine. The terrorists will be continually attempting to treat the players time machine in the same manner. A fairly obvious tactic would be to position the player's helicopter by the terrorists time machine to destroy their helicopters as they emerge from the helicopter pad, but these terrorists are an awkward lot and they have equipped their time machine with a missile launcher.

Throughout each battle you accumulate money, the amount depends on how much time you spend in the combat zone, and since you have to buy all forces and equipment as you use them (apart from an initial supply of helicopters) you have to keep an eye on your bank balance.

Scoring relates to the number of terrorist units that you destroy as well as to the amount of money that you spend and it is very easy to saddle yourself with a sizable negative score. You can win battles, and even the game, with a very low score but there is a score saving facility for the five highest scores so if you want to record a high score as well as winning (or instead of) you have to be careful.

Prior to each battle you are given a warning that the terrorists have been sighted at Paris, Verdun, Brussels, or whichever city the perishers have arrived in, and shown the location of the city on a map of Western Europe. Successful completion of a battle produces a summary of the relevant city's history which is interesting the first few times through and can subsequently be by-passed by pressing the ESCape key. If you win all eight battles you will be shown a display which may remind you of a film in which John Wayne got shot.

The player loses either when he/she loses the last helicopter or when a terrorist demolition truck reaches the player's time machine. There is a very necessary game saving facility so that you can avoid losing simply through tiredness. All in all a very entertaining game which can take several hours to win, or lose.

Appleworks - Use

Using AppleWorks Enhancements

Harvey L. Nyman

I think I must have been among the first to order the first two AppleWorks Library Discs; I have since ordered the next four!

I am a very happy Apple //C user, running a number of business application programs, including the favourite AppleWorks. Being a professional user of another make of computer, whose exact name escapes me. (I think it is some initial letters beginning with 'I'.) I have experience of a number of wordprocessors (including Wordstar), spreadsheets (including Multiplan), databases (including Datamaster) and integrated packages (including Framework II) and I would not swop any of them for my Apple and AppleWorks!

I am writing in response to your request for experience with the package, and I am enclosing a disc which contains one or two of my own applications.

First on the software front I think it may be of interest to other AppleWorks users to hear of my experiences with two American software packages from a very young company I think, called The Software Touch, of 9842 Hibert Street, Suite 192, San Diego, California. I purchased from them some time ago "FontWorks" at $39.95, which is a print-out enhancement program, producing results in a variety of fonts, type styles and sizes, as well as printing spreadsheet, etc sideways.

When I first got the program in Version 1, it required AppleWorks files to be printed to disc as text files, before the program would print them.

However in response to press announcements I have now had a free update to version 2 which is a vast improvement. It now reads AppleWorks files directly, which saves much time and trouble. Up to four fonts can be used for printing (two if printing sideways). There is also a font editor included which can be used to design your own or foreign character sets (it can be used to change the US hash sign to '#').

All in all FontWorks is now a very usable utility, and so much based on AppleWorks menu systems that a manual is hardly needed. There are some drawbacks, of course! Since printing is in graphic mode it is slow, moreover there is no "WYSIWYG". The controls of print size and spacing are not easy to envisage and the results are not seen until they are printed. (Unlike 'Multiscribe' which I also have, but that's another non-AppleWorks story).

The second program from the same stable is however very good indeed. This as they say "will change your life!". Called AutoWorks it gives from within AppleWorks a mail merge, macros, mouse control, and a disc filing/cataloging system. The program modifies the AppleWorks start up disc, as a one time operation and thats it. AppleWorks with the modified start up has all the features available by pressing open-apple-X, from anywhere in the program.

The features are really first class. Mail merge will print truncated or fixed length fields, and it works really well; and in full view on the screen! The Macros are also a marvellous addition.

The program will read ProDos disk directories directly into an a database, for subsequent library possibilities. I really think this is a first class add-on for a fine program (it costs $39.95).

There is one bug lurking. The manual says you can update the macros on booting up, with a turnkey file. I can't! All I do is end up in the monitor. I have written to San Diego for help.

As a keyboard die hard I also find being able to whizz through a file by mouse control very useful. Finally I have included three of my own application templates.

1. A spreadsheet which I use for keeping track of photographic material stocks, but could obviously be adapted for any stock control situation. A minimum level of stock is included with the last column indicating quantities required to restore stock levels.

2. A database which I use to keep track of magazine articles, listings, etc.

3. A spreadsheet for share investments, but of a much simpler format than those included on the library discs. I hope that all this may be of some interest to other AppleWorks users!

SPECIAL OFFERS TO BASUG MEMBERS

PROGRAM GENERATORS from the Specialists !

WRITE YOUR PROGRAMS IN PLAIN ENGLISH or any other European language.

CORP *(4 disk system for Europlus][& //e)*
A Bargin now at £49.00

CODEWRITER *(3 part system for //e only)*
Was £125 and now only £49.00

ADVENTUREWRITER WITH GRAPHICS
Latest version, unbeatable at ...£29.00

DIALOG Authoring System
WITH GRAPHICS,tests and scores etc
...Only £29.00

FILEWRITER, REPORTWRITER & MENUWRITER (Codewriter sections)
... £19.00 each

Send us your cheque for return mail-free delivery now of, any of, the above; otherwise £5 will get you our (refund offer) demo-disks and sample programs:

ETCETERA Ltd., 2 Valdemosa, L'Islet X-Roads, Guernsey - GB (tel 0481 44955)

Software Review

THE GRAPHICS DEPARTMENT

By Tom Wright

The Graphics Department is a versatile package aimed at the small to medium business user for presenting data in chart form. The package can also be used by anyone who needs to produce title screens etc on the Apple II series

Many packages claim to be "user friendly" and are anything but that, so THE GRAPHICS DEPARTMENT was a pleasant surprise in this respect as it really is "USER FRIENDLY". All modules of the package operate via comprehensible menus and the accompanying manual is fairly easy to follow.

All well and good but what does THE GRAPHICS DEPARTMENT do ? It is in fact a set of routines for the production of business related illustrations. Area, Bar, Line, Pie, Scatter & X-Y charts are easily and quickly produced as are organization charts etc. Original data can be entered at the keyboard or transferred from DIF files.

An additional facility is the SLIDE PROJECTOR which enables the automatic display of up to 32 screens in succession at intervals ranging between 1.5 and 9999 seconds. The display can also be manually controlled.

Graphs generated with the CHARTING KIT can display up to 99 data points and the combination of charts for comparison purposes is EASY.

A large range of fonts is backed up by the availability of 6 primary and 100 secondary colours. Apart from the straightforward charting functions, commands are also available for drawing, construction of rectangles and ellipses, and the use of shape images from shape tables. Picture shrinking, figure painting, colour filters, and several cut-and-paste options are also available for modifying and merging graphics.

THE GRAPHICS DEPARTMENT produces normal hi-res pictures and can be used to add lettering to pictures created by other methods. Screens (pictures) are easily dumped to printer by in-built facilities.

Any Apple II series, Franklin or Apple III hardware can be used. A minimum of 48k RAM, Applesoft Basic and one 5.25" drive must be available. Support is offered for 25 different Dot Matrix and 15 Letter Quality printers and 23 Printer Interface cards. An AppleMouse is also optional.

The FILE UTILITIES module enables you to initialise disks from within the program. As none of the program disks are copy protected the purchaser is advised to work with copies - this is good advice. The 169-page manual is well laid out with a clear table of contents which makes finding your way around very straightforward.

Layout of the table of contents includes :

(1) Introduction
(2) Getting started
(3) Functions common to all modules
(4) The Charting Kit
(5) The Lettering Kit
(6) The Graphics Tools
(7) The Slide Projector
(8) The Printer Interface
(9) The File Utilities Module
(10) Advanced Techniques
An Appendices is also supplied.

All four modules and the support systems occupy 3 disks which is a nuisance but understandable considering the number of goodies included.
Disk No.1 includes The Charting Kit & Printer Interface and Large Fonts for The Lettering Kit.
Disk No.2 includes The Graphics Tools & part of The Lettering Kit .
Disk No.3 includes The Slide Projector, File Utilities, Small Fonts and the Sample Slide Show.

THE GRAPHICS DEPARTMENT is entered by simply booting the label side of any disk. When using a module you leave the disk in the drive until told to remove it as many of the modules periodically load sections of code.

LETTERING KIT

A large number of fonts are provided including some very clear ones,but some are dreadful. Most are good however, so do not let me put you off. Most of the fonts produce ragged letters, with Roman Italic Bold best. Gothic fonts produce text which ranges from difficult to read to illegible.

The Lettering kit provides excellent control over placement and size of lettering on the screen. The angle of each letter or line can be controlled through 360 degrees, and kerning (the space between letters) controlled to close limits.

Colour of letters can be selected from Green, Violet, Orange, Blue, Black (2), and White (2). The scale of letters can be varied on X and Y axes to improve some (such as English Gothic).

At larger scales individual letters can be printed onto the screen and used as patterns which can then be filled-in by use of the Edit function. The Lettering kit is useful for titling screens and complete lines or individual letters can be entered. Proportional spacing is also available.

GRAPHICS TOOLS

This module gives you the ability to edit existing pictures (ie Binary files) or create designs from scratch. There are seven main facilities within the module: Draw, Edit, Combine, Painting, Shape Tables, Colour Filter, Offset Picture. This combination is a powerful and useful package which I found to be the most interesting module.

Pictures can be saved or loaded to or from either Hi-res page giving access to a full range of colours.

DRAW allows you to draw points, lines, rectangles, circles, and ellipses of various sizes and colours.

TRANSFORM allows you to view page 2, page 1 being the page which is normally displayed.

XCHANGE swaps pictures between pages 1 & 2.

COMBINE provides a "cut-and-paste" facility for portions of a picture, merging of two pictures, and reduction of pictures. Merging is achieved by loading separate pictures onto the two Hi-res pages then using the MERGE option.

TRANSFER copies a portion of a picture on page 1 onto either the same picture or page 2.

REDUCE produces a one quarter size image.

PAINT provides the ability to colour areas of the screen with one of 111 colours and patterns.

You can CAPTURE sections of a picture using the TABLE sub-module,and captured sections can subsequently be recalled and added to other pictures at new sizes, colours and rotations.

Before drawing Rectangles etc you must define the required dimensions of the window on the screen.

Very precise editing of an image is possible using the EDIT and XPAND routines which enable you to work on one pixel at a time. During use of XPAND you are shown two representations of the area on which you are working. The left hand side of the screen shows enlarged,while the right hand side displays the same area at normal size. The area covered by XPAND is 40 x 28 pixels.

CHARTING KIT

This should come as a pleasant surprise to anyone needing to produce graphs via the Apple II. During the last few years, graph-producing software has been either very limited in capability or too expensive.

The user can enter data for the CHARTING KIT from three sources :

1. Direct from the keyboard.
2. From a previously saved CHARTING KIT file.
3. From a DIF file.

This offers not only a large number of fonts, but also the LETTERING KIT AND GRAPHICS TOOLS which can produce some very attractively finished displays. *Appearance often has nearly as much to do with selling projects as the content!*

Fonts can be changed within the CHARTING KIT and chart scaling can be done automatically or by the user. Direct entry of data is very straightforward via a simple two-column display. You can then select a chart type from : Area, Bar, Line, Pie, Scatter, and x-y.

Selection from the list of options is a one-key operation, the resultant CHARTS being very legible. Data points on the charts can be highlighted using a range of four marker signs. With the exception of Pie charts, it is possible to easily add the mean value, standard deviation and a best fit trend line to a graph. However care is needed to avoid this optional data overwriting part of the plotted data.

Dot or line grids can be added to the charts, either horizontally, vertically or both. Completion from depression of the selection key was achieved in the following times :

1.	Bar Chart	0.19 minutes
2.	Scatter Chart	0.17 minutes
3.	Line Chart	0.17 minutes
4.	Medium size Pie	0.43 minutes
5.	Large Pie Chart	0.62 minutes

Not exactly greased lightning but still a lot faster than hand drawn graphs. Colour can also be added to the charts which enhances the appearance of Pie charts considerably.

Pie charts can be drawn in "exploded" or three-dimensional form and may be repositioned on the screen. The position of the legend in relation to the chart can be varied over a wide range. Dumping some of the charts to my printer (Epson MX-100 III) demonstrated the user-friendliness of the CHARTING KIT. While reconfiguring the hardware set-up (a very easy menu based sequence), I found my ROSCO PARAGRAPH printer card was not included in the list of printer cards, so I selected ORANGE MICRO PARALLEL GRAPPLER. The PARA-GRAPH card worked perfectly!

The printing module offers a good range of options including cropping, image magnification and choice of inverse, horizontal or vertical.

SLIDE PROJECTOR

This module is capable of displaying graphic screens at a rate of one every 1.5 seconds. This fixed frame display facility is not capable of animation although very reasonable lap dissolves can be achieved. It seems potentially very useful for business and education presentations.

A single presentation can include 99 different frames and each can be subtitled with a line of text at the bottom. Subtitles obscure the bottom one sixth of a picture, which must be born in mind when preparing the pictures for display.

Pictures are stored 16 to a disk on special high- speed disks and can be shown in any order. Control of the display can be automatic at predetermined intervals, or manually via the keyboard or paddles. Presentation outlines can be dumped to printer if required. " Slide " disks are easily prepared by transferring pictures from DOS 3.3 disks to the high-speed SLIDE PROJECTOR disks. The module for doing this includes appropriate catalog and review facilities so that you can check what you've done at any time.

FILE UTILITIES

This is a set of basic file handling utilities which enable the user to :

1. Initialise a disk
2. Catalog a disk
3. Load a file
4. Delete a file.
5. Lock a file
6. Unlock a file.
7. Rename a file
8. Review all pictures on the disk.

ADVANCED TECHNIQUES near the end of the manual provides some very useful tips on how to use various modules on the same picture, and include some good thought starters for enhancing your pictures. This is a useful section, particularly if you're new to presentation of graphics.

Well that's about it folks; a very useful package which is recommended. Thanks to M.G.A MicroSystems for providing the review copy. THE GRAPHICS DEPARTMENT is priced at £99.99 + V.A.T.

Members Small Ads

FOR SALE

Visicalc ver 218 for //e	£25
PFS Graph for //e or c	£25
DB Master 4+ for //+ or e	£25
VersaCalc 16 Tutorial/Utilities	£15
AppleWriter 1 for //+	£5
Ramex 128k for //+ or e	£25
Synergiser kit for //+	£50

Telephone Geoff Wood on:
[illegible]

FOR SALE

Paralle dot matrix printer	£170
2 Mountain H/ware clock cards	£80e
Keyboard for][+	£40
T.V. modulator card for //e	£20

Will split
Write to J.R.C.Stevens
[illegible]

FOR SALE

MAC + New	£1800
Speech Synthesizer //e	£50
Copy][+ v.5	£35
Quickfile II	£25
Appleworks	£50
Grand Prix & Bryant Games	£30

Write to: Nal Hawk
[illegible]

Members small ads are free - although we reserve the right to edit the copy as space permits

SCROLLING THE HIGH RESOLUTION GRAPHICS DISPLAY

By Graham Keeler

The programs listed are on BABBS and The FORCE and on Software Library Disk D111

A requirement I met recently was the need to 'scroll' a graphics display to the left in order to show a graph of the variation of a physical effect with time, where the effect could continue beyond the limits of a single screen picture. While tackling this problem, it seemed sensible to cover the other possibilities, i.e. scrolling to the right or vertically up or down. The machine code listings show three routines to do this.

If you have an assembler entry of the routines will be quite simple, following the assembly programs listed. If not, the easiest way is to enter the program from the hexadecimal dumps, also listed. To do this, first enter the Monitor by the command **CALL -151** when the Applesoft] prompt symbol will be replaced by a star. Start with SCROLL and enter the lines as 300: A2 00 2C A2 01 A9 20 85

308: 27 A9 D0 85 26 18 8A D0

When you have finished entry, list the program by

300.38A

and check that it is exactly the same as the listing shown. If not, correct any erroneous line by re-entering it. Return to BASIC by typing **3D0G**, and save the program to disc by

BSAVE SCROLL.OBJ0,A$300,L$8B

Do the same with SCROLLUP and SCROLLDOWN, but change the block of memory to be listed to 300.35C, and the L parameter to BSAVE to L$5D.

The first routine, SCROLL, tackles the more difficult problem, scrolling left or right. To understand how it works, we must first consider the way the Apple stores graphics information. Each 8-bit byte governs a row of 7 pixels, (0 for off, 1 for on) with the last (most significant) bit determining which group of colours is to be displayed for that byte. In principle then, scrolling one pixel left or right can be achieved by shifting the set of bits within the byte and transferring one across to the next byte, a task very conveniently performed by the instruction ROL or ROR. In practice the task is considerably complicated by the necessity to hop over the colour bit.

The core of the program SCROLL is the subroutines LEFT and RIGHT, which shuffle a complete row of pixels one place to left or right. The process is fairly time consuming, since altogether nearly 8000 bytes must be handled. A short cut is therefore used when both the whole byte, and the bit to be switched in, are blank, on the assumption that most of the screen will be black.

The first part of the subroutine, which works its way through every line of the display, is the same whichever way the picture is to be shifted. The entry point is at $300 for a shift left, and $303 for a shift right. I have used the Applesoft trick of masking out the second entry point with a dummy BIT instruction.

A word of warning is needed regarding the colour bit. This has to be left where it is, and governs the colour set for all the pixels in the byte. If the bit is set to 0, the pixels have HCOLOR in the range 0 to 3, if set to 1, they run from 4 to 7. As a pixel is transferred to the next byte, it will adopt the colour set of that byte (0 to 3 if the byte was originally blank). You will thus find that a single, non-horizontal line plotted with HCOLOR 4 to 7 will gradually change colour as it is repeatedly scrolled. There is no way of avoiding this problem, since one colour bit governs 7 pixels. (It is in fact a more general limitation of the system - try the sequence of commands HCOLOR=2:HPLOT 0,0 TO 150,150:HCOLOR=6:HPLOT 3,0 TO 153,150). Unless it is imperative to use HCOLOR 4 to 7 the simple solution is to avoid them completely if you want to scroll the screen. Even in other applications it is best to avoid mixing colours from the two blocks (0 to 3 and 4 to 7) where possible.

```
0300- A2 00 2C A2 01 A9 20 85
0308- 27 A9 D0 85 26 18 8A D0
0310- 06 20 36 03 4C 1A 03 20
0318- 67 03 A5 26 F0 0F 38 E9
0320- 28 C9 58 D0 03 38 E9 08
0328- 85 26 38 B0 E0 E6 27 A5
0330- 27 C9 40 D0 D4 60 A0 27
0338- B1 26 F0 20 B0 0E 0A B0
0340- 05 4A 4A 4C 61 03 4A 38
0348- 6A 4C 61 03 0A B0 06 38
0350- 6A 4A 4C 61 03 38 6A 38
0358- 6A 4C 61 03 90 03 69 3F
0360- 18 91 26 88 10 D2 60 A0
0368- 00 08 28 B1 26 F0 0D 2A
0370- B0 06 10 0D 69 80 10 09
0378- 30 07 69 7F 90 03 69 00
0380- 18 91 26 C8 08 C0 28 D0
0388- E1 28 60
```

High-Res Scroll Binary Listing

Two separate routines, SCROLLUP and SCROLLDOWN, are used for vertical scrolling. They are in principle much simpler, and avoid the colour problem since a whole byte at a time is transferred to the row above or below. Again the practical problem is complicated somewhat by the tortuous way in which the screen lines are mapped on to the memory, which also explains the rippling effect the routine SCROLL exhibits.

The routines are very similar, and involve three nested loops to handle all the lines. The inner loop deals with a block of 8 lines, whose addresses are in increments of $400. The second loop runs through 8 successive blocks of 8 lines, with addresses changing by $80 each time. The outer loop runs through the three blocks of 64 lines which make up the total screen of 192 lines, with the addresses incrementing by $28.

I have included a very short program to plot a simple cross and border, and scroll it in every direction, to illustrate how the routines are called. Note that as written they scroll high resolution graphics page 1. The assembly program is commented on how to change to page 2, if you wish to scroll that page. The full assembly program is available from the FORCE, BABBS or the Software Library.

```
10  HGR
15  POKE  - 16302,0: REM  SWITCH TO FULL SCREEN
DISPLAY
20  HCOLOR= 3
25  PRINT  CHR$ (4);"BLOAD SCROLL.OBJ0"
30  HPLOT 0,0 TO 279,191 TO 279,0 TO
0,191 TO 0,0 TO 279,0 TO 279,191 TO 0,191
40  FOR J = 1 TO 280: CALL 768: NEXT
50  HGR
55  POKE  - 16302,0
60  HPLOT 0,0 TO 279,191 TO 279,0 TO 0,191
TO 0,0 TO 279,0 TO 279,191 TO 0,191
70  FOR J = 1 TO 280: CALL 771: NEXT
80  PRINT  CHR$ (4);"BLOAD SCROLLUP.OBJ0"
90  HPLOT 0,0 TO 279,191 TO 279,0 TO 0,191
TO 0,0 TO 279,0 TO 279,191 TO 0,191
100  FOR J = 1 TO 192: CALL 768: NEXT
110  PRINT  CHR$ (4);"BLOAD SCROLLDOWN.OBJ0"
120  HPLOT 0,0 TO 279,191 TO 279,0 TO 0,191
TO 0,0 TO 279,0 TO 279,191 TO 0,191
130  FOR J = 1 TO 192: CALL 768: NEXT
140  TEXT
```

Hi-Res BASIC Listing

```
0300- A9 D0 85 26 85 FE A9 3F
0308- 85 FF A9 3B 85 27 A2 08
0310- A0 27 B1 26 91 FE 88 10
0318- F9 A5 26 85 FE A5 27 85
0320- FF A5 27 38 E9 04 85 27
0328- C9 20 10 E4 18 69 20 85
0330- 27 A5 26 38 E9 80 85 26
0338- A5 27 E9 00 85 27 CA D0
0340- CF 18 69 04 85 27 A5 26
0348- 38 E9 28 85 26 29 7F C9
0350- 58 D0 BB A0 27 A9 00 91
0358- FE 88 10 F9 60
```

Scroll - DOWN Binary Listing

```
0300- A9 00 85 26 85 FE A9 20
0308- 85 FF A9 24 85 27 A2 08
0310- A0 27 B1 26 91 FE 88 10
0318- F9 A5 26 85 FE A5 27 85
0320- FF A5 27 18 69 04 85 27
0328- C9 40 30 E4 38 E9 20 85
0330- 27 A5 26 18 69 80 85 26
0338- A5 27 69 00 85 27 CA D0
0340- CF 38 E9 04 85 27 A5 26
0348- 18 69 28 85 26 29 78 C9
0350- 78 D0 BB A0 27 A9 00 91
0358- FE 88 10 F9 60
```

Scroll - UP Binary Listing

Graham Keeler lectures at the Department of Pure and Applied Physics, University of Salford.

Health Warning !

APPLE ELBOW

By Tom Wright

"this is not meant as a criticism of Appleworks"

I am tapping this out with my left hand due to the fact that I am currently the none too proud possessor of an Apple elbow. What's he babbling about I hear you asking, well friends the sad truth of the matter is that long hours of addiction have resulted in my developing a painful touch of Tennis Elbow which my doctor has decided is due to my Apple installation at home.

When I set my Apple up at home I was very careful to ensure that the relative chair to desk, desk height, and various other features conformed with ergonomic standards that are in common use within industry. Although I had seen various angled plates for positioning at the front of an Apple II keyboard I had never given them serious thought and had experienced no discomfort during many hours of keyboard bashing, I now wish that I had given some serious thought to wrist/hand support.

By a process of elimination we worked out that the damage had been caused during sustained use of Appleworks, particularly during use of its primitive copy function when copying formulaes, this is not meant as a criticism of Appleworks itself any similar activity can apparently cause the condition. Without support for the wrists/hands it is easy to adopt a wrist/hand attitude which includes the wrist being bent upwards with continuous strain associated with key depressions and this is said to be what caused my current trouble.

The doctor recommended that I fit myself out with a support which enables the hands to be presented horizontally to the keyboard so that there is no wrist bending involved and the fingers either stretch straight out or slightly downwards, I have done this and it is certainly more comfortable.

I recommend anybody engaging in long periods of keyboard bashing to do the same, as the alternative is PAINFUL. Two weeks wearing of a splint did not help much and I have now had an injection in the elbow (of Cortizone, not sure about the spelling of that but it's not nice).

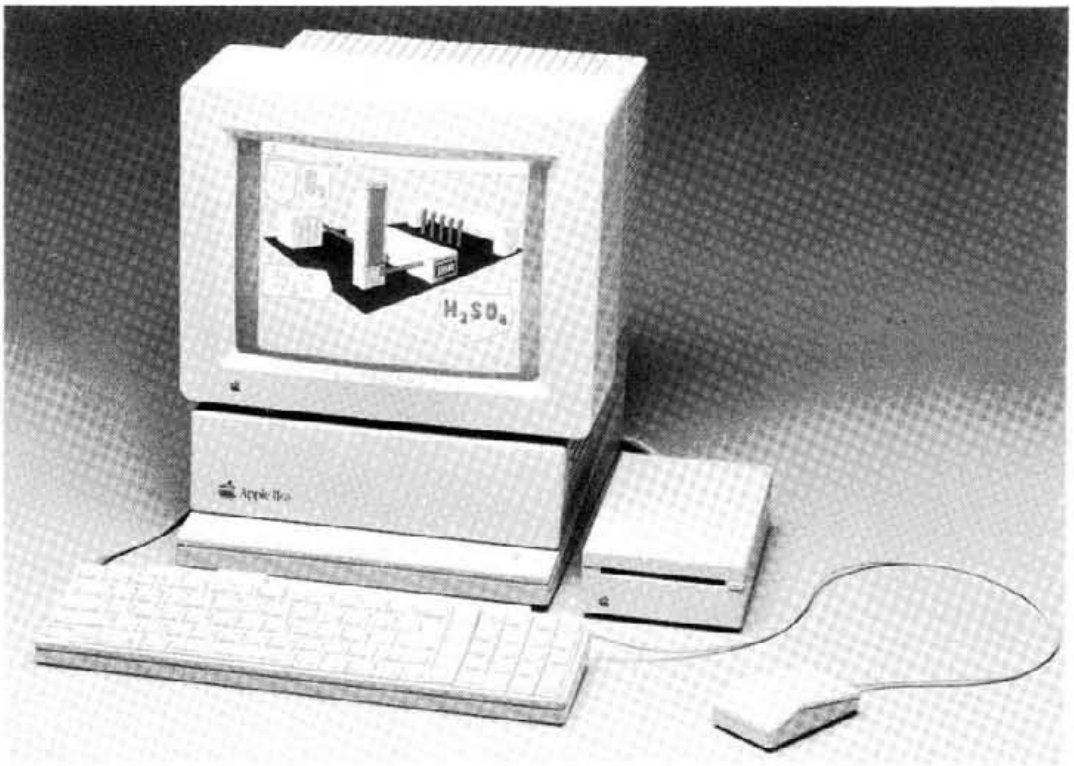
Ed:
I wonder what the doctor would order for PageMaker Blues or Hard Disk Crash-Out ?
A nice holiday in the sun on full pay hopefully !

DANGER: Government Health WARNING:

COMPUTERS CAN SERIOUSLY DAMAGE YOUR HEALTH, MARRIAGE AND SANITY!

Apple Announces NEW PRODUCTS

Apple II GS



Compatibility **Graphics** **Sound** **Power**

The much awaited succesor to the Apple //e & c has arrived, designated Apple IIGS it is a total break away from the old styling. It incorporates the three box system (Main Unit, Monitor and keyboard).

Over the last six months Apple have been saying that new products will be market driven and not technology driven. That is to say they will listen to the User - it would appear that this new machine is exactly what Users have wanted - it incorporates new styling, compatibility and the WIMPS environment.

The IIGS contains a wealth of new technology which will take it into the next century, however those boffins at Apple Inc have not forgotten the 600,000][Users, they have cleverly built a machine that will accept both][Software and Hardware and also allow a speed-up of much old software into the bargain. This ability to use old software at a much higher speed will ensure that there is no software shortage when the machine becomes available in December.

The technical details of the machine leave no doubt as to the hard work put in to development, but some of the new developments are designed with machines of the future in mind, Apple have brought in the Apple Desk Top Bus which I understand will be the standard for some years to come and will probably be seen on the top end machines expected next year.

The Apple IIGS has a more powerful micro-processor, the 65C816 is a 16-bit processor with a 24-bit address and compatibility with the old 6502 (a'la Apple][). The 65C816 runs at either 1MHz or 2.8 MHz which allows timing specific][software and hardware to be run. The speed is user controlled although certain device use will automatically slow it down when required.

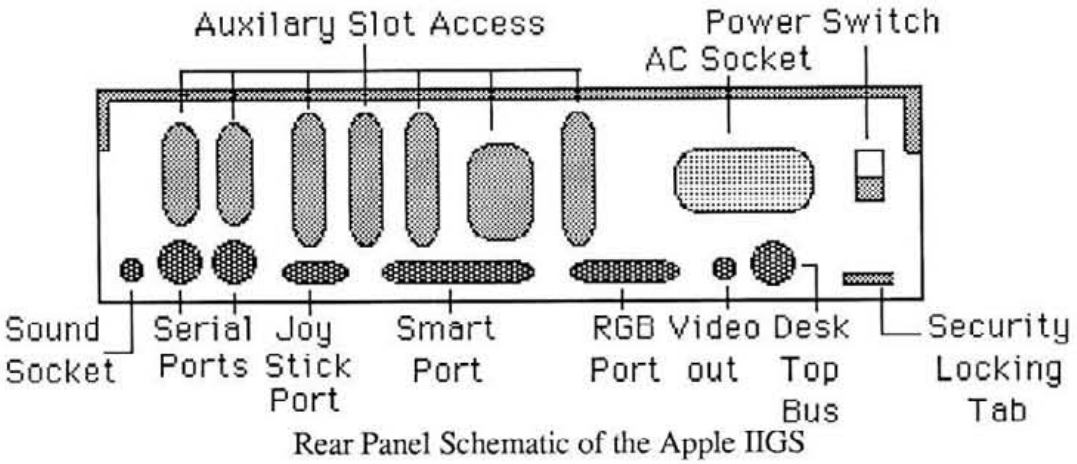
The machine comes with a standard 256k of memory which can be expanded by add on cards to 8 megabytes. The 256k is used in different ways depending on what mode you are in. If you want to run Apple][software you are given the normal 128k mapped as main and auxiliary memory, just like the //e. The other 128k is used by the system firmware. If you use the

native (IIGS) mode you can address more than 128k and will have about 176k of the 256k onboard RAM at your disposal, the rest is used by the system and displays. By adding memory expansion cards you increase the contiguous memory available to your application. Unlike the //e, expansion RAM is not paged and program code can run in any part of the RAM.

The new 128k ROM has many features including good old Applesoft and a host of new features including built in drivers for the I/O ports, resident desk accessories, the monitor, monitor I/O routines and a resident toolbox . The Applesoft has been kept the same as on the //e to allow for those applications that have had the bugs written around !

The keyboard is a new design with 78 keys, it has a numeric keypad and cursor keys incorporated and conforms to European standards in the shape and position of the Return and Shift keys.

The new Apple Desk Top Bus (ADB) controller supports the keyboard and provides basic scanning and encoding along with other features such as type-ahead buffer and support for up to eight keyboard layouts.



Rear Panel Schematic of the Apple IIGS

The new mouse connects to either end of the keyboard and also uses the ADB. The mouse is unlike previous designs and uses a microcontroller to report movements to the ADB, therefore relieving the main processor of additional work. It is smaller and has a different shape than previous Apple mice !

The ADB will be the standard interface for other input devices including joysticks and graphic input devices.

The GS allows both analog RGB and NTSC video outputs although RGB has to be used to obtain the best results. Apple will be supplying suitable monitors, both in mono and colour. The colour one shown at the press launch appeared to be of very high quality.

The graphic output from the GS includes both Lo-Res, Hi-Res and Double Hi-Res in the Apple][emulation mode and Super Hi-Res in the GS mode. The Super Hi-Res comes in two modes depending on what resolution you require and the number of colours you need to display at any one time. The new Super Hi-Res modes allow coloured dots to be exactly the same size as the black and white unlike the //e where coloured dots are slightly larger than black and white ones. The resolution sixes and colours allowed are: 640H * 200V or 320H *200V. 16 colours per scan line, 256 max colours on screen from a palatte of 4,096. In text mode you can choose from sixteen colours for background, foreground and text.

The sound capabilities are improved by the provision of a Ensoniq digital sound IC with 32 oscillators. This will allow 15 seperate voices. The sound system is made up of the Ensoniq, 64k RAM, a Sound General Logic Unit and an audio amplifier. Outside equipment can be connected via a sound connector. Sound from old Apple][applications will work normally although you can now adjust the volume.

The Desktop User Interface allows the User to interface with the machine just like the MacIntosh, you will see new programs with pull-down menus, scrolling windows and all the other advanced environment associated with WIMPS. The new Control Panel is available from the menu bar and allows you to set the mode of operation, display type, operating speed, time, date, serial port protocals and the disk drive types.

Incorporated into the machine is a clock with battery back-up which uses ProDOS and is compatible with the old system.

The machine comes with two serial ports which will support modems, printers and AppleTalk. A memory slot for extra memory. A disk interface slot for the new 3.5 inch drives. Seven slots similar in protocol to the //e are included, these have some extra features which will make any new cards more intelligent.

The Game I/O has been kept in two forms, the internal DIL plug and an external 9 pin jack.

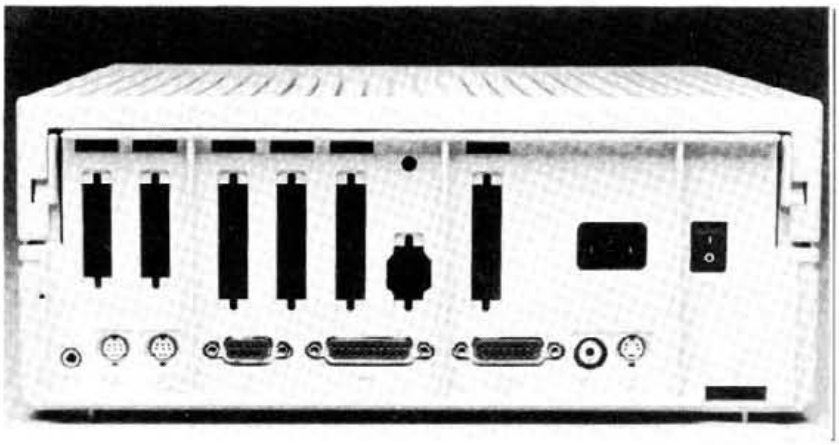
External storage devices are catered for in several ways, the first is the internal disk interface which uses the IWM and allows the connection of the new 800k double sided drive (the same as the Mac internal/external drive). Secondly you can put your // disk interface into a slot and run on 5.25 drives (the processor will automatically slow down to 1MHz for disk accesses if you are using the fast option). Then you have the third option which will appeal to many POWER USERS - you can use a SCSI card and run a hard drive. So you have all the options - use old or new : 3.5, 5.25 or Hard disks. This is the start of a whole range of generic devices which will work with all Apple Computers whatever the model !

'The IIGS contains a wealth of new technology....'

Right that gets the hardware side out of the way and it is really time to talk about the software options.

The new chip will allow programmers much better speed whilst still working within an environment that they understand. The new toolbox is similar to the MacIntosh but not as strict. Apple expects programmers to use the guidelines laid down (this will ensure no hiccups if the hardware changes). Remember the problems with the MacPlus where programmes worked if the guidelines were followed ! The monitor has been improved and has many new features and routines.

Appleworks is being upgraded to use the new features and the

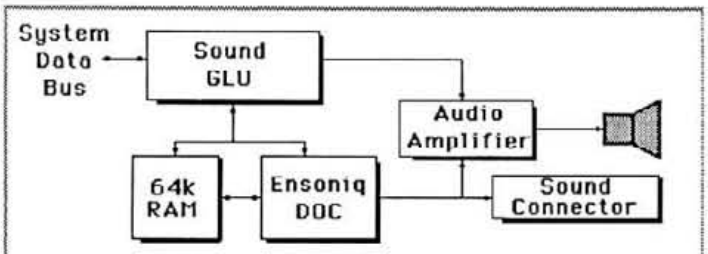


Looking at the business end of the IIGS

possibility of others following is good. There are two ways to do this - firstly you can rewrite the whole application to use all the 16 bit instructions or you can rewrite parts to use the toolbox and consequently run faster. Whatever happens you can bet some really hot versions of old software will be around in the near future.

The IIGS in native mode uses ProDOS 16, this is an upgraded version of ProDOS with enhancements to allow for the extra memory and the 16 bit processor. The languages favoured for use on the new machine are C and Machine Code. Apple are releasing a Programmers Workshop which will include the required tools for designing and developing software.

Apple will be releasing a whole series of Technical Reference Books for the new machine - these are similar to those released for the Macintosh.



Apple IIGS Sound System

Some early BTest versions of the software which will be available have left me wondering 'what next?'. I saw a word processor which resembled Microsoft Word on the Mac but with advanced features. To be able to highlight text in any colour, even have adjoining letters in different colours was amazing and to top it all the screen resolution made viewing easy. The other application was like MacPaint/Draw rolled into one and given a large dose of colour. Everything that you do on the Mac was there, windows, pull down menus, scrolling within windows and to top it all a little coloured Apple sitting on the Menu bar. Lets hope the Mac will get some colour soon.

This machine will change the way that many thousands of Users do their work - it will be the Working Class Macintosh allowing millions of people to get to grips with computers without all the hassel of the dreaded BDOS error @3$3323454 type of system.

The slogan should be **"The computer for everyone".**

Prices for Apple IIGS

Basic CPU inc 256k RAM	£795
3.5 inch 800k Disk Drive	£295
12"Monochrome Monitor	£110
12" Colour RGB Monitor	£410
SCSI 20Meg Hard Drive	£995

Bundle Prices.

Apple IIGS 256k RAM Monochrome Monitor 3.5 inch 800k Disk Drive	£995
Apple IIGS 256k RAM Colour Monitor 3.5 inch 800k Disk Drive	£1395
Apple IIGS 512k RAM Monochrome Monitor SCSI Interface SCSI 20 MEG Hard Drive 3.5 inch 800k Disk Drive	£2195

Availability: Stocks should be plentiful in January

This article was prepared prior to the release of the GS and with only limited access to a machine. It is a truthful preview of the new machine and not a review. The next issue of Apple2000 will feature the first review of the machine. We will be adding information as quickly as possible and hope to have enough information in our members hands prior to its general release in December/January. We are working with Apple (UK) to produce a compatibility chart.

Apple IIGS User Group

On Monday 15th September 1986 we launched our new Special Interest group (SIG) under the name Apple IIGS User Group. Graham Attwood will be the co-ordinator for the next few months. We need to know if you have particular interest.Please register it by writing to the P.O.Box with your Name, Address, Telephone number and membership number. We will then be able to get details to you as and when they arrive. Please mark your envelope **Apple IIGS User Group** and enclose a SAE.

Next Issue

Living with the GS

The inside story on what the machine will do and what it is like to use it for more than a few hours. Get the story - get your December Issue.

Inside the GS

The first in a technical series by our resident boffin.
The technical side of the GS.
How do they do it ?
How easy is it to program ?

Apple III News
Apple III News
Apple III News

Disk Drive News

The Apple // 800K Unidisk can now be used on the Apple /// with a //e interface card and driver software developed by On Three, a Californian company specialising in the Apple ///. The driver and documentation is $50.
They are also offering 'Selector ///' at $99, a menu driven program switcher for the Unidrive or hard disk, and a plug in real-time clock for $49.95.

D A Datasystems of Hamburg NY have an alternative floppy system called PcDisk in 400K and 800K versions which can be configured for standard SOS use, and also PC/MS-DOS, allowing file transfer between the Apple /// and 'Big Blue'.

The III Magazine

THE /// MAGAZINE is a monthly review of Apple /// tips, articles, rumours and news, and costs $60 for 12 issues (inc postage) from The /// Magazine, 3201 Murchison Way, Carmichael, CA 95608.

Special Offer

As a "SPECIAL OFFER" to /// users I will send a photocopied bundle of Apple /// information, adverts and articles, together with Software Disk T001, for £6.00 including VAT & postage. Ask for 'Apple 3 Bundle' from the P.O.Box.

A letter from B.W. Mantell

I am delighted to see the appearance of the /// News and would support a SIG if their was sufficient interest. A room on BABBS has been suggested but I doubt if there are enough /// owners into comms. (If so, register interest with Tony Game).
Two questions:
1. Would it be possible to borrow a sample copy of On-Three Magazine and/or /// Magazine to see if they are worth subscribing to? Postage paid both ways, of course, and returned within the week.
2. How about obtaining public domain /// software for the library? The group might even make a profit!
My set up is a 256K ///, Monitor ///, 2nd disk drive and Sendata 700 acoustic coupler with Access /// comms. programme.
I would like to hear from anyone via BABBS.

Reply.... Its a good idea to get together, the /// is the most under-rated machine ever introduced. We are trying hard to get articles and tips, our latest effort has lead to the Washington Apple PI where the III SIG is very active - we will keep you informed. See the 'special offer' above - its the best we can do at present.

Hardware

A review of the C.I.Cayman Keypad for the Apple //e

Colin Holgate

Numeric keypads for the //e have been available for some time now, but at a price that makes you think twice about whether you have an application for one. C.I. Cayman of Solihull have recently added such a device to their Apple // range of goodies, for a more modest outlay.

This keypad consists of a 16 key pad mounted in a smart, pleasantly coloured box. A 1 metre lead extends from the box and terminates in a socket that is plugged into the keypad connector in your //e.

The keys are arranged in a similar manner to the Mac numeric keys, except that the * and / are swapped over. Not that this matters, all the keys work fine.

I have no need for spreadsheet applications myself, but I did find uses for the pad in entering coordinates, etc. in graphics programs. Using Diversi-DOS I could redefine the keys for other characters, and thus use the 16 keys as a hex input means, for all that intense machine coding I do.

C.I. Cayman are offering this at a Special Price of £15 to Apple 2000 members. This is a saving of £4 on the RRP. Remember to quote your Membership number.

C.I.CAYMAN

NUMERIC KEYPAD FOR //e..... latest design, plugs directly into port on //e mother board, 16 keys + - * / = . ENTER	£19
16k RAM CARD][,][+	£29
128k RAMCARD][,][+, //e	£69
Apple compatible half height disc drive (pancake motor mechanism).	£89
13/16 sector controller for above.	£25
64k/80 COLUMN CARD //e	£25
80 COLUMN Videx compatible with built in 40/80 softswitch for][+	£35
ACCELERATORS, process approximately 3.5 times faster with CMOS 6502 and 64k of fast memory to match: For][+.	£99
Different timing for //e.	£150
Z80 CP/M board.	£29
RS232 serial:	£29
Serial plus card (software selection of protocol, suitable for use with a modem).	£49
Printer Interfaces: Parallel (Centronics -Epson)	£29
Parallel Grappler compatible.	£39
Parallel Grappler with 64k printer buffer.	£79
7.5A HD POWER SUPPLY for][+ and //e	£49
Replacement Keyboard for][+	£49
Fan][+, //e	£29
Reconditioned Apple //e systems, all have been brought to 'as new' condition, offered with our standard 12 month warranty (including 64k/80 column text card).	£225 (+VAT)

All prices exc VAT, postal carriage £3 under £100, £5 over £100.
Apple Repairs - phone for quote.
021 - 705 7097
C I Cayman Ltd. P.O.Box 77, Solihull, West Mids. B91 3LX

ZBASIC Basic Compiler Version 3.0 - A review

By Terry Cymbalisty

ZBASIC is the latest chapter in my search to find the perfect programming language to use on my //e. I quickly became dissatisfied with Applesoft due to its slowness and lack of features common in more modern implementations, such as commands which encourage structured programming and more powerful statements like CIRCLE, FILL and more sensible file handling.

I did not consider Pascal because it did not offer an increase in speed as would a true compiler, and anyway I did not want to learn another operating system. The next language I considered was C (see my article in the October 1985 issue of Hardcore for a review of Aztec C). Although I found that the speed and features of the language were second to none, it suffered from excessive disk swapping and really needed a hard disk.

When I saw an advert for ZBASIC in "Byte" magazine, my initial thoughts were that it could not be as good as the advert was claiming, and besides, if it was so good why had no one else heard of it. However, I promptly obtained a copy and I soon found that their claims were not exaggerated. Zedcor describe ZBASIC as an Interpiler, which includes a mini-compiler, and allows immediate mode, i.e. Basic commands may be directly entered and run, as well as offering a deferred mode where commands are entered as a program and run later.

An interesting feature of ZBASIC is its transportability between different machines. It is available on the Apple //e, Apple //c, Macintosh, IBM PC and compatibles, TRS 80's, CP/M machines, Kaypros, and UNIX machines. On all these versions, the language (hardware permitting) is the same, even down to having the same editor. Thus moving from one machine to another is easy; even file commands are the same. This means that a program written on the Apple may be transferred to another type (via RS232 for instance), compiled and run.

Powerful graphics commands are supported. CIRCLE, CIRCLE FILL, circle segments : ARC, PIE, BOX, BOX FILL. These commands use the device independent coordinate system of 1024 x 768, (hence double Hi-Res and more may be used if the appropriate mode is set). ZBASIC allows the integration of text and graphics on the same screen just like other computers.

Apple // specific hardware is supported - a mouse (or joystick) may be read for both position and button closure - the Apple Super Serial Card is supported by use of the OPEN command. Hence serial transfers are treated somewhat like disk files. Although a 128k machine is required for program generation, once programs have been compiled they will run on 64k machines. This includes a][+ with a 16k card fitted.

An online help facility is provided to aid the memory, and a quick reference card is also provided. A great advantage of ZBASIC is its ease of compilation. No linking loaders, subroutine or runtime packages are required. To execute a program, the following is typed: RUN Executes immediately in memory. CTRL-C is typed to return to the editor. RUN* Compiles and saves program in memory to disk as a BRUN-able file. RUN+ Compile and create a CHAIN file. Sharing variables is supported. If filename is used directly after any of the RUN commands, ZBASIC will compile a program from disk instead from memory.

Compilation speed is reasonably fast; on average it takes one second to compile one kilobyte of code. ZBASIC can be used to compile Applesoft programs which have been saved as text files. Obviously such things as graphics and file handling commands will need to be altered for ZBASIC to run correctly. The code generated is a Binary file which may be BRUN. On booting the disk, four options are offered:

Edit Configure Save Patch.

The normal procedure is to select "EDIT" and enter the compiler system. The "CONFIGURE" option allows the user to alter the system default settings. The options are:

1. Double precision accuracy - from 6 to 54 figures.
2. Single precision accuracy - from 2 to 52 figures.
3. Scientific precision accuracy - from 6 to 54 figures.
4. Set the maximum number of files openable - from 0 to 99.
5. Define 0 or 1 as array start.
6. Array rounding.
7. Default variable type (single, double or integer) .
8. Checks for array values exceeding DIMensioned bounds.
9. Whether or not ZBASIC converts lowercase input to uppercase

These settings may be saved to the system disk using the SAVE option. The PATCH option allows patches to ZBASIC i.e. such things as manufacturer's updates. Note that ZBASIC uses BCD maths, and also the maximum selectable accuracy is 54 figures! There is of course a speed penalty (slight) to pay when high accuracies are used, but they are user selectable for those occasions when they are necessary.

ZBASIC supports structured programming, for instance, listings are available without line numbers. ZBASIC automatically indents loops and structured segments two lines per level. Labels may be used instead of line-numbers for jumps, calls etc. Such commands as : WHILE WEND, DO UNTIL are allowed. The first fifteen letters of a variable name are significant, hence variables may be given more meaningful names. Note that line numbers are optional.

MERGE and APPEND may be used to insert or overlay programs and subroutines. In fact subroutines may be saved without line-numbers to ease insertion into programs. Machine language code is directly supported.

The MACHLNG command may be used to insert bytes directly into the compiled program. It may also be used to insert machine language directly into memory without having to use POKE. ZBASIC does not need to perform string

garbage collection.

The supplied disk is not copy protected. This is a very good lead which I wish other manufacturers would follow, and I have now refused to purchase copy protected non-games software. I believe such software is "fragile", but that is another story.

I have a few minor criticisms of ZBASIC. Nothing to detract from the product really. Firstly the supplied editor is only a LINE editor. A proper screen editor would have been so much nicer. Zedcor could have provided more example programs on the disk. (They supply a sort subroutine and a simple graphics demo.) It is a shame that ZBASIC does not check input during 'edit' mode for syntax at each 'line-feed', but simply signals errors only at compile time. And finally, it is only DOS3.3, and not PRODOS, although a PRODOS version will become available sometime during the summer. I feel that I can recommend this product to others. It certainly meets my requirements. For those who have not seen the ZBASIC advert in Byte magazine, here are the results from it of a benchmark Sieve test run on different machines:

	Macintosh	IBM	Apple //e	TRS-80
ZBasic	7.4 sec	13.7 sec	486 sec	30 sec
BASIC	684 sec	2190 sec	5401 sec	2520 se

Machines: 128k Apple //e and //c
Publisher: Zedcor Inc., 4500 E.Speedway, #93, Tucson, Arizona
Price: $90
Review Machine: 128k Apple //e

Members Small Ads

For Sale

Koala Pad
Microsoft Softcard][(8hz & 64k)
Pair 8" Drives with Power Supply
Other Apple][Bits,

Offers to Chris Bakolas on [illegible]

For Sale

Expeditor II (A/Soft Compiler)
ASM/65 (Editor/Assembler)
Format 80 (WP)
AppleWriter (WP)

Offers to Keith Ashton on [illegible]

WANTED

Software for Apple ///
Word Juggler, Visicalc and PFS File (or similar).

Ring Bernard on [illegible]

HOLDENS
COMPUTER SERVICES

191 - 195 Marsh Lane,
Preston,
Lancs. TEL. (0772) 561321

Complete Apple Support

UniDisk 3.5 Special Deals

This month we are offering two bundles to Apple // users, so now there is no excuse for not going the 'UniDisk way'.

Bundle 1 for Apple //e/+ comprising :

Apple UniDisk 800K Drive.

Accessory Kit (Includes interface card)

MouseDesk master - menu desktop environment

Unimate software for use with DOS 3.3, CPM, and Pascal 1.1/1.2

All for just £365.00

Bundle 2 for Apple //c comprising:

Apple UniDisk 800K Disk Drive.

New version 2.1 of System Utilities

UniMate software for use with DOS 3.3, CPM, and Pascal 1.1/1.2

Fitting of new ROM and modification of //c including shipping both ways

All for just £335.00

Please add VAT to all our prices

Thinking of buying the new Apple // ? Ring for generous part exchange allowances

CARDS

Apple 80 Column	£79.00
Apple 80 Column 64K Ext	180.00
Apple Parallel Interface	99.00
Apple Super Serial	90.00
Cirtech 80 Column	27.00
Cirtech 80 Column 64K Ext	49.00
Cirtech Z80 IIe	35.00
Cirtech Champion	42.00
Cirtech CP/M+ IIc	165.00
Cirtech CP/M Prog Pack IIc	89.00
Cirtech CP/M+ Syst IIc	195.00
Cirtech Flipper	285.00
Orange Printer Card	69.00
Orange Grappler+ S or P	99.00
Orange Buffer Board S or P	89.00
Ramfactor 256K	219.00
Ramfactor 512K	259.00
Ramfactor 1 meg	329.00
Ramworks 256K	189.00
Ramworks 512K	229.00
Ramworks 1 meg	329.00
Ramworks RGB Option	119.00
Resolution 64	49.00
System Clock II/II+/IIc/IIe	79.00
Transwarp Accelerator	249.00
Z-Ram 256K	299.00
Z-Ram 512K	359.00

APPLE II SOFTWARE

Appleworks	£130.00
Apple Logo II 128K	69.00
Apple Access II	49.00
Applewriter II ProDos	89.00
Apple Pascal 1.2	180.00
Apple Pascal 1.3	180.00
Apple Instant Pascal	90.00
Apple Fortran	99.00
Apple Quickfile	25.00
Apple MouseDesk	29.00
Big U	35.00
G.P.L.E.	45.00
Graphworks	79.00
Macputer Accounts	180.00
Macputer Profile	350.00
Macroworks	35.00
Mousewrite	89.00
Pinpoint	69.00
Pinpoint Speller	69.00
Printographer	35.00
Print Shop	38.00
Print Shop Companion	30.00
Print Shop Graphics	18.00
Systematics Ledgers	195.00
Systematics Payroll	195.00

Desktop Publishing Bundle
Our Desktop Publishing Bundle comprises, Macintosh Plus, External drive, LaserWriter Plus, MacDraw, MacWrite, Fullpaint and Pagemaker and all connecting cables. An ideal opportunity to get established early, in what is rapidly becoming a new major industry.
£7250

Database - News

Omnis Special Interest Group News

Odette

Firstly, I would like to congratulate the Apple2000 team on the design of the new magazine. I am certain that existing and prospective members of the club will appreciate the new, fresh image. Please keep sending your Omnis queries and suggestions to Keith Chamberlain at the Apple2000 PO Box.

Blyth News

Blyth Software now have distributors in Belgium, France, Denmark, Holland, Iceland, Norway, South Africa, Spain, Italy, Sweden and West Germany as well as a subsidiary company in California.

Next Issue

In the next issue I will be giving details of a new book called "Mastering Omnis".

New Product News

SalesPro: Price £995 for Macintosh 512K and Macintosh Plus.

SalesPro is a single/multi-user sales management package designed for dealers who need to keep track of the progress of sales prospects. Prospective customers can be coded according to the amount of interest they show in the products. These customers can then be selectively retrieved for telesales compaigns or direct mailings and the response can be monitored for possible follow up calls. You can also track the entire progress of seminars from invitations and attendance to eventual sales.

Accounts Suite: Price £245 (Sales Ledger) for Macintosh 512K and Macintosh Plus.

Blyth Software have long recognised the need for providing an Omnis based accounts system. Consequently we have just launched the Omnis Sales Ledger which is the first module in an integrated ledger system running with Omnis 3 Plus. These programs will be available only from designated dealers who can customise the package to suit your particular needs.

Technical Enquiries

We receive a large number of calls from users who encounter great problems when libraries or datafiles are lost due to damaged disks or corruption. It is absolutely imperative to have backups of both. If the datafiles themselves are damaged, it is possible to use the DIF option in Omnis Utilities to transport the data to a new file or even DIF out around the bad patch. If this is not successful, it may be necessary to retype all the data.

Whilst it may seem a nuisance, it is less time consuming to back up at the end of each session/day than to re-input all your information.

Occassionally any problems may not materialise until a few days later, in which case the backups would have the corruption as well. It is advisable, therefore, to keep perhaps a weekly and a fortnightly backup in order to ensure that if problems occur, only one or two weeks information would have to be input. This is in addition to the session/daily backup.

Mr John Hughes
Hayes

I have used Omnbis 3 on the Apple /// for the past 18 months. My company have decided to convert the offices to Apple //e's and I was wondering how easy it would be to transfer my existing library and datafiles to the //e?

Answer: It would be necessary for you to upgrade your Omnis 3 boot and program disks to work with the Apple //e. It would then be a matter of simply transferring the library and datafiles.

Mrs Ann Collins
Gloucester

I am a user of Omnis 3 on the Apple //e and have worked quite happily with the program for the past year. However, I have now come up against a problem which seems rather odd. The whole database functions perfectly except on reporting. My transaction listing stops at 'K' and I seem unable to get round this.

Answer: You actually have an indexing problem whereby for some reason the index pointers have become corrupt. If you re-index the file you will find that the report will be printed out fully.

Mrs Peter Burton
North Wembley

I am at present the owner of Omnis 3 on the Macintosh 512K. I am shortly to upgrade my whole system to a multi-user environment using the HD20 and MacServe. Will my existing single-user applications function on the new system, or will I need to instigate any changes?

Answer: Omnis has locking at record level. However, if two users access different records which are both drawing information from a constants file, it would appear that file locking has taken place, when in fact record locking has occurred because of this field from the constants file.

When Omnis 3 opens an entry layout, it reserves enough of the Macintosh's memory to hold one record from each file used by that entry layout. This area of memory is called the current record buffer. When several Macintoshes are running multi-user Omnis 3 on the same library on a network, Omnis will reserve a current record buffer in each Macintosh. Record locking will occur if there is a conflict between the current record buffers of two users attempting to edit at the same time. A flashing cursor will appear to indicate that the requested record is locked.

Therefore, the main consideration when transferring to amulti-user system is that when a constants file is present, it would be necessary to keep clearing all unnecessary records from the buffer with a sequence command.

84:BSG041

FIRST CLASS

17p

The Editor
Apple2000
P.O.Box 177
St Albans
Herts
AL2 2EG

Dear Editor,

I wonder whether one of your members could give me help in the following matter ?

Artificial Personality may be closer than Artificial Intelligence

I think I may have uncovered the mechanisms and principles whereby an individual personality comes into being. (ie How genotypes become phenotypes.)

It seems to me that the entire taxonomy can be replicated by computer.

If anyone is interested in attempting to produce the first model to show how every infant becomes a unique adult - warts and all - please get in touch.

NB Excepting the basic principle, I know nothing about computers. My contribution would be limited to supplying a diagram for the model showing the 'neural' networks, stop-go features, feedback loops etc. and perhaps seeing how to circumnavigate whatever hitches arise.

P Preston Brooks (Author: The Anatomy of Intelligence. 1984) 17 The Mount Square London NW3 6SX Tel: 01 435 0663

Ed: A real chance here for you all to put your computers to work. There must be someone out there, perhaps a member of the AUC, who would like to be involved in this challenging project.

WHAT A DIFFERENCE A NAME MAKES...

If you're taking a straw poll on the reaction to BASUG's metamorphosis into Apple2000 then count this as an enthusiastic vote in favour of the change.

Though the new millenium is barely 13 years away, the appendage of '2000' to the Apple name immediately opens up broad vistas of exciting things to come. More importantly it gives us all a fresh start - and fresh hope. In this case it has even managed to stop one member from 'jumping ship' at the next opportunity.

As a Macintosh owner I joined BASUG over a year ago in search of more information about my machine and like-minded people with whom to share problems and discoveries. Imagine my feelings, then, when attending my first AGM to find Macintosh owners being harangued from the floor (by, admittedly, one member) as hardly worthy of breathing the same air as the "dedicated" Apple II membership.

Though fully accepting the majority of Apple II members in BASUG, I have, since that day, felt something of a 'second class citizen' within the group. Each issue of Hardcore did little to ease this feeling, with piecemeal Mac coverage and large tracts of Apple II material that rendered the publication of little interest to me.

Under Apple2000 we have a fresh start. The Mac membership may still occupy the 'junior' position in the partnership for some time to come, but now there is the room and the inclination to expand and work with the Apple II members to produce a user group worthy of such a far-reaching title as Apple2000.

RICHARD BURTON

Ed: Its nice to receive complementary messages over the FORCE, especially when its very late at night and the Royal Snail is in bed!

Your views are exactly those of the Committee, we see the chance to GO FORWARD with a new vigour and help all members whatever Apple they own or use.

I would like to add that we intend to support all machines, old and new without favour. If you see more on one particular machine in one issue that is purely the fault of the membership, we still rely on input!

Farmplan Computer Systems Limited
Netherton,
Ross-on-Wye

Dear Mr Panks
While reading your excellent new publication, I was horrified to learn that Celtip Computers (Dealer Profile - page 28) claimed to be the only Apple dealer in Hereford and Worcestershire.
To put the record straight, we are also a long established Apple dealer in the same county, having started in 1978 selling ITT's (and then Apple's in 1979) into the Agricultural vertical market. In 1982 we even invented a revolutionary language- operating system for the Apple which enabled us to produce application software which ran 4 times faster than programs operating under AppleDOS. (I believe it now comes under the heading "4th Generation Language").

We are now the largest agricultural systems house in the world and, in 1985, we were informed by Apple that we were the second largest dealer in the UK, in terms of Apple // Sales.

So, in the words of the aforementioned article, "if you are in the Ross-on-Wye area at any time pop into Farmplan for a chat and coffee, we'll we pleased to see you"!

Yours sincerelely
Jeremy Turbervill

Ed: Thanks for setting the record straight, it's nice to know that our journal is read all over the country.

RAF Bentwaters User Group
from John B Thomas

I am the Chairman of an Apple User Group at RAF Bentwaters at Woodbridge. Our group is relatively new being 6 months old and having 20 members on our roster. Can you provide me with some information? We are interested in having guest speakers address our group. The group is interested in demonstrations of hardware, software, programming, maintenance of the Apple and future developments with the Apple family of computers. Do you have any suggestions as to where we can obtain such a guest?

I have written to several computer dealers in the Suffolk area requesting their assistance. I have not received any responses. I spoke with Tom Wright and he referred me to Harry Gardiner of the Midlands Apple Group. Both had some good ideas. I have not written to Apple UK. I have not been able to locate their address. I will be looking forward to your reply.

Ed: Thanks for the letter, it's nice to see new groups thriving. You should have received by now some more information from Tom Wright, our Local Groups Co-ordinator.

I look forward to meeting you at AppleWorld where we can discuss getting you a speaker.

Mr Stuart Ramsden
Shoreham
W. Sussex

Dear Sir,

I am a registered disabled person, suffering from M.S. and have just been given:- Apple ///, 2nd Disc Drive, Printer, Plotter and Profile.

I have two problems that I would be grateful for your help:-

a. The Plotter's Pen head is missing, the plotter is an Apple 410. Could you please tell me where I can obtain one.

b. The Profile's Ready Light comes on three times then goes out never to come on. Could you please tell me where I can get it repaired at not too great an expense also I have no packing for it therefore postage is out.

Ed: Sorry to hear of your problems, however we can see what this letter will bring in, I am sure that Apple will at least give us the information we require. I would ask that anyone out there that is capable or knows how to fix the problems mentioned contact me.

Wokingham

Dear Jim,
I've followed with interest the metamorphosis of Hardcore from the A5, somewhat amateurish mag into the very professional looking A4 version. Congratulations on such an achievement.
Now you've gone and spoiled it all by adopting such a damned stupid, infantile title as "Apple2000". Your explaination of the reasons for the change on Page 3 just don't hold water. "Apple2000" sounds like the over hyped name an optimistic software house might adopt to try to give themselves a bit of unearned credibility. Our committee must have taken leave of their senses.
On whose authority did the committee decide on such a radical change ? Was the ordinary subscription paying membership consulted ? If so, when and how ? If not, why not ? I don't normally attack any club, or society committee for occasionally doing things I don't agree with, since I'm only too aware of the unacknowledged efforts made by committee members and the sheer hard work they put in to keep the club or society going. However, every now and then, they overstep the mark and need reminding that the ordinary member must be consulted occasionally. This is one of those occasions. I trust our committee. This trust has been abused.
APPLE2000 IS A BLOODY SILLY NAME
I trust you to publish this letter,
Jim.
Yours, very angrily,
Bob Mould.

[Reply]....
Thanks for the compliments about the new magazine, I am puzzled as to why a name should upset you so much, its the quality and value for money that you get from your membership that should be of prime concern. And as you can see we are improving in many ways, this costs money and we feel that the way to cover these extra costs is to attract more members and advertisers and at the same time attract respect. The few members that attended the AGM supported the changes that the committee were making and to this effect we have managed to increase the membership substantially since then. Since the change I have received massive support from the membership and the trade in general. Look at the advertising we now attract - that must be due to something we are doing right !
I am sorry that you do not like the name but as the saying goes "We try to please most of the members, most of the time".
I hope that you still find the group as helpful as it always has been under the new name ?
Ed.

More letters appear in the MacChat pages

PINPOINT

ACCESSORIES, COMMUNICATIONS AND MUCH MORE.....

Stand-alone or integral with AppleWorks.

PinPoint provides desk-top accessories and communications which become an integral part of AppleWorks. A single key press gives you access to:
Communications
Calculator
Appointment diary/calendar
Notepad
Typewriter
QuickLabel
Graphics/Text Merging

PLUS: SPELLING CHECKER

PINPOINT provides communications with electronic mail/telex services such as One-to-One, Telecom Gold and EasyLink from within AppleWorks and is as easy to use as AppleWorks itself. It will directly transmit an AppleWorks Word Processor file. There is no text-file creation necessary, simply use the arrow keys to point to the file to transmit. Messages received are automatically saved as AppleWorks WP files. And all without quitting AppleWorks.

PINPOINT POP-UP SPELLING CHECKER

You can now Spell check within AppleWorks without leaving your document. There is no need to save, print or ceate a text file. One keypress selects the Spelling checker. You can check an entire document, just a paragraph or just a word, with a single keypress. You can even check the spelling of a word in a Spreadsheet cell or a DataBase field.

When spelling is faulty the pop-up speller will suggest up to 10 alternatives for automatic correction or you can easily add the word to the dictionary. Or you can edit the word yourself.

The Spelling checker is an optional add-on to PinPoint and is dedicated for AppleWorks.

Both PinPoint and the Spelling checker are particularly suited for use with extended memory peripherals such as RamWorks, Z-RAM and RamFactor.....

MEMORY MANAGEMENT
with PinPoint RAM Enhancement Kit:

This is a utility program which gives much more flexibility and ease of use when using Ramdisks.

The RamFactor card can be automatically partitioned via its own on-board firmware. RamWorks and Z-RAM are usually used as a total memory area for expanded AppleWorks (or other single program such as Supercalc 3a) or as a single RamDisk.

Using the PinPoint RAM Enhancement Kit enables RamWorks and Z-RAM to be easily partitioned into two areas: typically one area for expanded AppleWorks and the second area as a Ram-Disk containing often-used files. The RAM Enhancement Kit enables a startup disk to be created which will automatically load the required files into RAM on boot-up. A typical configuration would be for a 1 Meg RamWorks to have 700K available to Expanded AppleWorks and 320K designated as a Ram Disk. The Ram Disk has been set to auto-load the PinPoint accessories (including the spelling checker and its 50,000 word dictionary) plus two standard letter formats, and two spreadsheet templates. On boot-up, all these are automatically loaded into RAM, saving later disk access and giving fast loading into the AppleWorks desktop directly from the Ram disk. (AppleWorks recognises the Ramdisk directly).
PINPOINT requires a IIc or Enhanced IIe with at least 128K of RAM.

Prices: (excluding VAT)

PinPoint	**£69.00**
PinPoint Pop-up Spelling Checker	**£69.00**
PinPoint Ram Enhancement Kit	**£29.00**
(included free with PinPoint to Z-RAM RamWorks owners)	
IIc Enhancement Kit (4 chips)	**£59.00**

MULTISCRIBE

MultiScribe gives you MacWrite on the Apple IIe or IIc.

MultiScribe uses the double hi-res screen to provide multiple fonts, and sizes, proportional spacing and shadow outline printing - just like MacWrite!.

Plain Text
Bold
Italics
Underline
Shadow
Outline
Sub$_{script}$

With MultiScribe you don't have to use a mouse. All functions and pull-down menus are easily accessed via the keyboard. Plus, as well as 10 fonts provided, there's even a font editor so you can create your own. All this on a full feature word processor.

Multi-Scribe works with a IIc or 128K IIe and most dot matrix printers and interface cards. You can even use Multi-Scribe to customise files created on other word processors such as AppleWorks or AppleWriter - in fact any word processor that can save text as a text file. Give your old files new life with the attractive, attention-getting fonts and print-styling available only with MultiScribe.
(MultiScribe can also save text as text files for transfer to other programs).

For all its sophisticated features, MultiScribe is remarkably easy to learn and use. There are no complicated control codes to learn. Macintosh-style pull-down menus provide you with all the word processor commands you'll ever need - without leaving your document. And MultiScribe feature advanced visually-oriented text editing commands, like cut & paste and ruler-based text formatting.

IF YOU'RE AFRAID OF MICE, DON'T WORRY

With MultiScribe you have the option of using a standard keyboard or a mouse. You can use your mouse to pick and click commands from the pull-down menus, or use the keyboard to simulate mouse action. And for advanced users, MultiScribe offers keyboard equivalents for most commands, allowing you to by-pass the pull-down menus.

With MultiScribe you can change type styles easily, on the screen and on your printouts. With a few simple keystrokes or mouse clicks, you can change that humdrum print into fancy fonts - like Old English, business quality print, foreign language characters or maths and engineering symbols. Ten fonts are included but if you don't like any of them, then you can create your own (or edit an existing font), with MultiScribe's FontEditor. For education the FontEditor can be used to create maths, physics, chemistry and biology fonts while for business use, the FontEditor can be used to create logos and letter heads.

MultiScribe can even be "Ram-Driven" with RamWorks, Z-RAM or RamFactor, and accelerated with TransWarp.

And all this for just £59.00.

No wonder Nibble nagazine gave MultiScribe 5 apples - its highest rating.

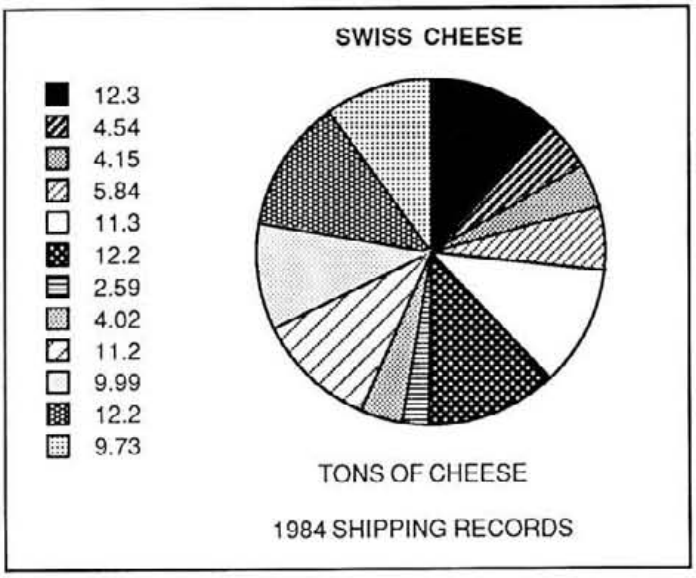
Price: (excluding VAT)

MultiScribe	**£59.00**

BIDMUTHIN TECHNOLOGIES

GRAPHWORKS

GraphWorks is the graphing program for AppleWorks.



GraphWorks has been developed to offer business graphics capabilities for AppleWorks Users.
GraphWorks is a stand-alone program which directly accesses AppleWorks spreadsheet files and plots them as four graph types; bar, stacked-bar, line and pie charts.

Price: (excluding VAT)

GraphWorks	**£79.00**

ProFILER 2.1

ProDos DataBase for Apple II computers

ProFiler 2.1 is a data manager/report generator which is intermediate in terms of power and ease of use between simple file systems such as Quickfile/AppleWorks and complex, truly powerful databases such as dBaseII and Omnis.

The structure of ProFiler is a flat-file system with the ability to merge two files. It also provides a mail-merge facility with AppleWriter II, and will accept database files from AppleWorks.

ProFiler 2.1 has been designed for ease of use, is menu driven with help screens available at key points. It is programmed on a single floppy disk with hard disk transfer capabilities for increased storage and speed.

Key features are:

Maximum records per file:	64,000 (Subject to available space on your disk) (floppy or hard disk)).
Maximum pages per record:	8 (16 in 40 column mode).
Maximum fields per record:	250
Index fields per record:	3
Search:	Maximum of 10 search criteria per record. (Browse and/or report)
Report:	Free-Form or columar "Calculated fields on columar report plus averages, counts and totals.
Mail-Merge:	With AppleWriter II Version 2.0 (ProDos). (Use the Convert utility for Dos 3.3 version)
Import Data:	Accepts AppleWorks' DataBase files directly. Will also accept text file input. (And can output as text file)

Price: (excluding VAT)

ProFiler 2.1	**£99.00**

RAMFACTOR FOR THE II+ / IIe

RAMFACTOR FOR APPLEWORKS ON THE II+

While RamWorks is the clear winner for the auxiliary slot of a IIe, RamFactor sets the standard for IIe main slots and the II+.

Like RamWorks and Z-RAM, RamFactor follows the Apple software standard. RamFactor also follows the Apple II Memory Expansion standard for Ram cards.
This permits the organisation of the memory into multiple work areas containing different programs and operating systems. It also permits limited expansion of AppleWorks 1.3 or later.

With RamFactor, you'll be able to instantly add another 256K, 512K or 1 Meg onto the main board of your IIe or II+.
And as it's socketed you can upgrade your RamFactor at any time.

Virtually all modern software is already automatically compatible with RamFactor: software such as AppleWorks, PinPoint, SuperCalc 3a, ProFiler, Catalyst 3.0 and more.

PROGRAM FLIPPING

RamFactor can be organised into a maximum of nine partitions. Each partition functions as a separate RamDisk which may be configured for either ProDos, Dos 3.3 or Pascal 1.3. This enables you to switch between programs and operating systems as electronic speeds.

APPLEWORKS POWER

RamFactor now includes software which enables AppleWorks to run on the II+.

So, with RamFactor you don't need any further software to run AppleWorks on your II+. And RamFactor expands AppleWorks as well:

RamFactor gives AppleWorks a larger desktop, increases AppleWorks' internal memory limits so that the Word Processor can have 5,300 lines, and the database 5,300 records. Plus it also automatically loads AppleWorks into RAM and so accelerates AppleWorks by eliminating program disk access. It will also auto-segment large files across 2 or more floppy disks. It even provides the time and date on the screen with virtually any ProDos compatible clock.

Unlike RamWorks, however, the AppleWorks must be version 1.3 or greater. And you still require an 80 column card (for II+ we recommend ViewMaster). You also require a 16K language card in Slot 0 (or the Transwarp accelerator in slot 0).

Prices: (excluding VAT)

256K RamFactor	**£239.00**
512K RamFactor	**£289.00**
1 Meg RamFactor	**£369.00**

BIDMUTHIN TECHNOLOGIES

P.O.BOX 264, HARROW, MIDDX HA3 9AY

ALL PRODUCTS CARRY A TEN-DAY NO-QUIBBLE 'MONEY BACK IF NOT DELIGHTED' OFFER PLUS ONE YEAR GUARANTEE.

ORDERING INFORMATION

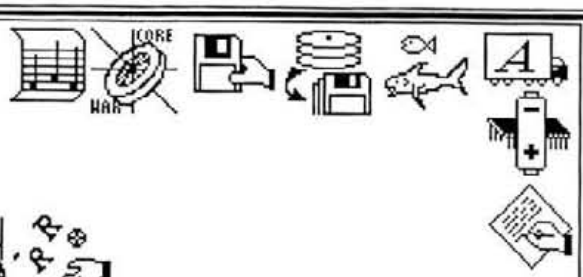
Add £1.00 P&P per order. Add VAT at 15%

Also available from your Local Dealer

Tel: 01-907 8516
Telex: 8950511 ONEONE G (Ref: 22554001)

The Macintosh Pages

MacCHAT



Edited by Norah Arnold

On Sunday August 3rd I was Mac-ing happily away when disaster struck. I placed my Macintosh Plus™ System Disk in the internal 800K drive and transfered the system to a newly initialised disk in the external drive. Having finished with the System Disk I ejected it. The Macintosh gave a funny litle hiccup as if something had stuck in its throat - and out came the System Disk with the 800K internal drive upper read head wedged neatly in the partly open door of the disk!

Naturally I was plummeted into those depths of depression only felt by deprived Macintosh owners when their favourite machine gasps and dies. To have the poor thing decapitated in front of my eyes was just too much.

The next morning I was up bright and early to contact the dealer who had upgraded my machine. Fortunately Action Data had a replacement drive so off I went to High Wycombe where it took less than ten minutes to remove one, and replace it with another. My System Disk with the head still trapped in the door aroused some interest.

Dave Martin of Action Data expressed doubts about the use of the yellow shipping disk provided with 800K drives with the idea of keeping the two drive heads apart when travelling with the machine. "Customers who use the yellow disk constantly have had problems which we think may be caused by the yellow disk catching on withdrawal. When we have advised them not to use the yellow disk, we have not heard from them again so presumably the problems have gone away. We have suggested to Apple U.K. that the yellow disk may be causing problems, but at the moment it is only a suggestion."

Dave demonstrated with our decapitated drive, now removed from the machine, that a quite severe shake or jerk is necessary before the heads could meet together. If one takes reasonable precautions before travelling with the Mac, e.g. putting it in its original box or using a padded travelling bag, Dave suggested that it might be better to leave out the yellow disk if one was to be travelling by car with the machine in a position where it would be upright and reasonably secure.

Having returned home I immediately tried out the new drive. It was extraordinarily noisy and remained so for several days until my inquisitiveness got the better of me and I shone a torch into the mouth of the drive. The drive has functioned well and remained very quiet since I removed a small piece of polystyrene foam with surgical tweezers. I have a very high opinion of Action Data, whose staff always respond with good humour and efficiency, so I suggest that Apple U.K. might consider whether their packing materials are suitable for this type of equipment.

System Trouble

System 3.2 and Finder 5.3 were finally released by Apple U.K. during August. Unfortunately for some people this was not before they had got fed up with waiting and had obtained a copy of the U.S.A. version by downloading it from one of the networks. That the downloaded copy was corrupt dawned slowly after crash followed crash with undue haste.

We have been told over and over again that System 3.2 and Finder 5.3 are intended to be the final, stable versions and there would not be another upgrade to the system for some time. Indeed, the version released by Apple U.K. seems relatively stable in normal operation. I would advise anyone who has come by these system files by an abnormal route to go to their dealer and ask to copy their system disks.

Using the new system files on two Mac Pluses during the last few weeks, I have discovered some interesting (and irritating) little quirks in some of the files. The Imagewriter driver version 2.3 was obviously intended for millionaire Mac owners who never run short of paper as it persists in pushing out one clean sheet of paper before every print run when used from PageMaker. Not much, you think, but it soon mounts up. Perhaps this is the fault of PageMaker, but the problem did not surface until I started to use Imagewriter 2.3.

The other irritation concerns the keyboard. Every so often when mounting a disk using the new system files, one finds that the keyboard has become un-localized, so that the bottom two rows of the MacPlus keyboard give the wrong characters. This can be solved by disconnecting the keyboard and then reconnecting again, whereupon everything is found to be normal. Funnily enough, this has never happened on the upgraded machine, but has happened several times on the other, a genuine Mac Plus.

Now it appears that Apple Computer Inc. have released System 3.3, Finder 5.4, Font/DA Mover 3.3, etc, etc, to developers in the U.S.A.

A Holographic Screen?

A little scrap of unconfirmed information that has come our way may be of interest to all those Macintosh owners who would admit to having grumbled about the small size of the screen. How do you feel about the possibility that the screen might not only be larger, but three dimensional as well? A third party developer in the U.S.A. is said to be working on a display that employs holographic projection which results in not only an expanded screen area but three dimensional colour as well!

Cache Conflict

If the Mac Plus RAM cache is active then any program which uses the alternate screen buffer will crash when the user attempts to exit to the Finder. The cache uses the alternate screen buffer whether or not it is in use by another program. Using the Control Panel to turn off the

cache seems to prevent this particular type of crash.

One popular program which appears to suffer this way is 'Vanlandingham', better known to most of us as Mac's answer to 'Boing!'. This very effective demo works perfectly on the Plus with the cache off, but crashes on exit to the Finder when the cache is on. Boing! will run on the 512K if all the memory is available and not tied up with RAM disks, etc. Memory intensive graphics programs like Boing!, which stores a large number of images of the rotating ball in high memory, are the most likely to be troubled by this problem.

Progress on the M.P.W.

For those who have been waiting eagerly the final release of the Macintosh Programmers Workshop, the news that beta-testing is well on the way means that the moment they have been looking forward to has come a little nearer. On paper the Programmers Workshop looks like the ultimate developmental language environment, providing an interactive setting with Pascal, C and Assembler all linkable together.

The good news for Pascal programmers is that the Pascal compiler is the same one used on the Lisa, which means that existing programs will need only minor modifications in order to be compatible with the new Workshop. Another good point is that the system is both MFS and HFS compatible.

Although the Programmers Workshop will run on a 512K machine, there is almost no room left for object code development and it certainly works best with the new ROMs and at least a megabyte of memory. However, it looks as if a hard disk will be a necessity for any kind of serious program development as the MPW basic environment set up for use of the ASM module takes up 2000K.

KanjiTalk In Use

Apple Computer Japan's new KanjiTalk™ operating system has been getting good reports from first users. It seems that KanjiTalk is easy to use and has a dictionary of sufficient size for most purposes. The speed of conversion into Kanji from the text entered in alphabet is faster than in EgWord, the powerful Japanese word processing package introduced in September, 1985, by Ergosoft.

Although KanjiTalk is compatible with most software there are a few problems with Microsoft programs and the Japanese subsidiary of MicroSoft have modified Excel in an attempt to overcome the problem.

The rather large 18-point font used for KanjiTalk is one of its greatest shortcomings, but some of the very intricate Kanji characters need this degree of size in order to be displayed clearly on the Macintosh screen.

Chinese Too!

In the U.S.A. Wu Corporation have brought out FeiMa, a Chinese word processor for 512K Macintosh or larger. The whole user interface is in Chinese, or by icons, right down to the file handling. Entry of characters is by use of the mouse on the Chinese Typewriter shown on screen although there are several other ways in which this can be achieved. The characters are printed and displayed at 24 x 24 pixel resolution. FeiMa also translates from traditional Chinese characters to the simplified version. English text can also be included if one so wishes. More information can be obtained from Wu Corporation, 46 W. Avon Road, Avon, CT, 06001 USA.

MacTeX

MacTex® is a new professional typesetting program for the Macintosh Plus from FTL®. MacTex is designed to give desktop publishing users a new power and freedom by the use of TeX, a typesetting language intended for sizeable or intricately designed documents.

TeX was designed in 1982 by Professor Donald E. Knuth of Stanford University in order to provide a high level of control over typeset output. TeX has an extensive set of around 300 commands including many standard typesetting features. Plain TeX and LaTeX are two extended versions of the language giving access to over 600 additional commands. LaTeX, by Leslie Lamport, is intended to make TeX accessible to non-technical users. Output from MacTeX is converted into PostScript code giving full support for the LaserWriter and LaserWriter Plus as well as the Linotronic 100 and 300 phototypesetting systems. MacTeX appears to combine all the power of TeX, Plain TeX and LaTeX, giving access to over a thousand commands. This is then combined with the two hundred or so compatible PostScript commands to give a very powerful system indeed. No prices have been announced at the time of writing.

MazeWars+

Those who were upset to find that their MazeWars would not work on the Plus will be pleased to learn that MacroMind, who are the makers of MusicWorks, VideoWorks, and the new ComicWorks for the Mac, are completing MazeWars+, a great improvement on the original version you may have seen. It is reported to have multiple levels, Tardis style transporter booths, 3D first person projectiles, and optional dragging of your character through the maze with the mouse. It can be played over AppleTalk or a modem.

Verbum

A new quarterly journal of Personal Computer Aesthetics has been announced. The premier issue of Verbum features artwork by J.H. Davis, Malcolm Thain, Jean Sole and other innovators in personal computer art. This is a limited edition premier and formal publication of Verbum begins with the January 1987 issue.

The journal is intended to be an ongoing showcase of original art showing leading examples of creative works using personal computers and including music and video. Artwork inspired by the Macintosh and stimulating graphic design using the latest desktop publishing tools will play a central part in Verbum.

More information can be obtained from VERBUM, P.O. 15439, San Diego, CA 92115.

New Fontographer

Fontographer owners should be receiving the 2.0 release from Altsys. This should be a very powerful tool for users wishing to customise resident LaserWriter fonts.

The resident fonts can be used as a base for customised fonts, by the construction of composite characters. Even quite complex logos can be built up by creating a composite character made up of several smaller characters. When building up the composite character you can choose to reference other characters in the same font or reference characters defined in another font.

Altsys have recently moved. More information is available from:

Altsys Corp. 720 Avenue F,
Suite 108 Plano, TX 75074.
(214) 424-4888.

LETTERS

Dear Norah,

I thought I would drop you a few lines, whilst out in Spain, where I do spend a fair amount of my time. The purpose of this letter is to let you know of my experience with Apple (Espana) S.A., which could be of interest to readers of the magazine, because I was unfortunate enough to suffer a breakdown with my new MacPlus purchased in the U.K. at the end of February.

Late in March, my internal drive would not read, although of course I was still able to operate using the external drive, however I was within the warranty period, but there was of course no way I could get my machine back to the U.K. for replacement or repairs, therefore I advised my supplier, and also asked Apple U.K. if they could recommend a competent mechanic to repair. Apple recommended me to Apple Espana S.A. in Barcelona, who did not start off on the right foot, because they will not deal directly with the public, and it seemed as if I was committing a crime even to try.

However, as a result of a further request to Apple U.K. they decreed that because Spain was now in the Common Market, my guarantee was applicable in Spain, and therefore valid, and so my machine was to be delivered to the local agents in Alicante near where I live, although quite correctly I must bear the cost of sending it to Barcelona. Eventually the machine was sent to Barcelona, at their risk, and returned in approximately one month, with its drive replaced at no charge. I could write you a whole chapter of what actually happened which you would find difficult to believe, but I can assure you in Spain, truth is stranger than fiction.

The important thing, therefore, is to advise readers that their warranty is valid in Spain as part of the Common Market, but take my advice and only allow the machine to be sent back to Barcelona for repairs. Apple do not have many, if any, exclusive agents. Local agents, usually with nil or almost nil knowledge, sell everybodies computers without any specific loyalties, and believe me they are lethal. Machine are allowed to run in the shops with everybody trying them and then these are sold. You would be unable to obtain an unopened, new machine. Even software gets interfered with, and rarely works correctly, but of course the market is very small, because prices and charges are very high. I know several Spanish enthusiastic buyers, who took the trouble to go to the U.K. in order to buy, and of course saved much more than the costs of their trip. Obviously they did not trust their own dealers.

Yours sincerely,
J. C. Goldsmith.
U.K. address:
Boughton under Blean
Kent
(Thanks for letting us know. N.A.)

Dear Norah Arnold,

It would be useful if your organisation had the resources to determine which MacSig library disks are MacPlus compatible and to release these on 800K disks. If there's any interest in this for others then I should be glad to help.

It's a shame that many authors of programs don't follow the interface/toolbox rules (but use quick and dirty fixes), otherwise more would be compatible. Never mind, there was a lot of interesting material on the disks, anyway.

The file organisation data on MFS contained in the Fedit documentation was greatly enlightening and I look forward with anticipation to someone doing the same for the HFS data, and publishing it.

Yours sincerely,
Kevin Thompson
(I try all the PD programs on my MacPlus before putting them in the library. It all seems to depend on your particular configuration, hard disk or not, etc. N.A.)

Dear Norah,

More comments on using the MacPlus as a continuation of my remarks published in Apple 2000 1/1 pp. 40-41.

First an apology to the creators of Slide Show Magician. It is now clear to me that the reason why my master disk refuses to run and accuses me of piracy is the fact that I removed the original System File and substituted the new System 3.0 file. Plainly there was a piece of code in their original System file which marked the disk as a bona fide Master disk. This however raises a new problem for MacPlus users. Apple's documentation officially discourages you from using Systems earlier than 3.0 on the MacPlus; so in principle one should use the Installer program to update protected program disks. But the only available Installer program is for System 3.0, which as we all know by now has nasty bugs in it. Apple has not yet released in the UK an Installer for System version 3.1.1 or 3.2 so far as I know. So what does Apple expect us to do?

I now have the new MacPlus keyboard, and the accents ` and ~ are restored to life. The new keyboard is in effect the old American keyboard layout with additions. As a result many of the characters which I lovingly designed for myself on the Option level or Option-Shift level of the keyboard are now in the wrong place and I shall have to rearrange my custom fonts. More peculiarly I have found that when you pull down the Calculator from the Apple menu using the new mathematical keypad produces the oddest mathematical results. 2+3 no longer = 5 but = 3E, etc. Using the mathematical commands (+-*/) on the typewriter part of the keyboard still produces the familiar results. I do not have any spreadsheet programs to test the new keyboard on; it may only be a bug in the Calculator program.

The latest version of Fontastic (version 2.7) works well on the MacPlus and allows much larger fonts (previously 32K was the limit). The creators of the program, Altsys Corporation, now have a new address on their envelopes: P.O. Box 865410, 3116 Kingsbridge Dr., Plano, Texas 75086, USA; and another new address in their documentation: 720 Avenue F, Suite 108, Plano, Texas 75074, tel. 214-424-4888. I hope they at least know where they really are!

Now for the nasty one! A brief comment from MacSerious Software on one of the final pages of the July issue of MacUser (UK edition) draws attention to the "spectacular" failure rate of the new MacPlus internal 800K drives. The day after I read that, I started having serious problems with my internal drive. At first it would not initialize new disks. Then it started rejecting existing disks as unreadable. In effect it was destroying the first one or two tracks on every disk it handled. By the time I worked out what was going on it had rendered 6 disks quite unusable - some of which, of course, I had failed to back up! So if anyone out there sees any sign of a problem with his or her 800K drive, be warned! Proceed with extreme caution! Happily the Apple Centre at Knightsbridge were able to get me a replacement internal drive within 10 days which is now working satisfactorily. It seems that even good 800K disk-drives have some mechanical problems with some old 400K disks, in my case especially Maxell disks; I have had to use a less sensitive old 400K drive to copy some Maxell disks onto Sony disks before the new drives can read their data. I have also had problems with a 3M disk.

That of course left me with my unusable disks to be rescued. I now have MacZap version 4.1 which is claimed to be compatible with MacPlus. That is true insofar as it has not yet crashed on me. But when I use it to get information about an 800K disk I am told that it cannot give me disk information on Hard Disks! Their Recovery program appeared to me as a complete novice to be adequately explained in the manual - but it has yet to succeed in recovering a single file from my damaged disks! For the moment I put that down to my inexperience and patiently persist. One of the problems is that if a disk is sufficiently damaged the files have No Name, and one needs eventually to provide not only the name of the file you are trying to rescue but also its Type and Creator - all this when you don't even remember what you had on the disk in the first place!

That brings me to my latest "find" - Mac Disk Catalog or MDC for short. I have had the program for a week and it is a dream! What every Mac program should be! For once I was satisfied within five minutes that I had got my money's worth. Just insert the disk, double-click on MDC, type a name, click on New, and then insert all your disks one after the other. In a few minutes you have a complete catalogue of all the programs on all your disks, which you can them manipulate and search as you like. It gives a list of all your applications, documents, etc., and the disk and folder in which to find them, the dates of their creation and modification, their size in K, and of course their Type and Creator. Surprisingly the latter are not as predictable as I had supposed. I have masses of Word documents; but some of them are Type WDBN, Creator WORD, while others are Type WORD, Creator MACA. At least with this information I should have a better chance of rescuing a damaged file next time.

Now that I have System 3.1.1 I no longer have strange crashes in Microsoft Word or Basic, although using the new Key Caps has the effect of disabling the Character, Paragraph and Document menus in Word (version 1.0). But there are still some things to watch out for. System 3.1.1 needs Finder 5.2, and Imagewriter 2.2. It seems it is not enough to copy each of these files individually onto a new disk - doing that results in Word telling me, when I want to print, that I do not have a printing resource (although both the Finder and I can see the Imagewriter 2.2 file there on the disk in the System file).

Finally a suggestion for Shop 2000. What about anti-static mats? I don't know how static has affected other members' Macs, but shortly after I got my Mac, eighteen months ago, I had an endless stream of problems and unexplained crashes, which not only gave me endless frustration but also wasted hours of my friendly dealer's time, until we worked out that all my disks were being corrupted by static because of my office environment. I remember that the catalogue from Action Data's Apple Centre at Swiss Cottage offered some dinky little anti-static mats that would be a suitable size for sending through the post, and may save the Hotline or correspondence columns from explaining away many a poor member's problems!

Chris Walker
London 7 August 1986

Report by Irene Flaxman

For our annual holiday this year, I visited the MacWorld Expo in Boston along with my husband. We were amazed at the scale of the show - around 200 exhibitors showing hardware, software and books all devoted to the Macintosh (O.K., so I saw a few Apple II's, and an odd IBM PC linked up to a Mac, but we won't mention them!).

We spoke to the organiser of the event, Mitch Hall, at the end of the show. He was obviously very busy, but still made the time to talk to us - as a first estimate, he reckoned that there had been 17000-18000 visitors during the three days. We bought our tickets on day 1, deciding on the higher price which allowed access to the various conferences. The one ticket was valid for all three days, so we reckoned it represented good value for money.

The show was open for seven hours a day - 11.00 am to 6.00pm, Thursday to Saturday. The list of exhibitors included some familiar names (Blyth, Aldus, Microsoft, etc.), and many which were unknown to us - the number of products available in the States, but which never come to us in the UK, is astounding.

Apple Computers' presence was fairly low-key, with several small stands around the exhibition hall to offer advice and general information. Finding technical advice was not easy, nor was it a simple task to acquire a copy of up-to-date system, finder, etc. - we were disappointed by this, as we had assumed that this sort of service would have been readily available at such a large event. Apple also provided a large area for use by educational establishments wishing to demonstrate their developments - both on Apple II and on Macintosh. Their third type of representation was a 'hands-on' area, for attendees to try out various software - some new, and some old favourites.

The conferences were scheduled on the hour from 12.00 noon to 5.00pm, allowing 50mins. for each - so, if you're keen on that type of meeting, you needn't see the rest of the show! They covered a variety of topics at all levels of experience, with an impressive list of speakers. We intended to take in a number of these, but found that time was a limiting factor (YES - even though we were there for all three days!).

We did leave early on the Friday afternoon (about 2.00pm), to attend a meeting between Apple Computers Inc. and the USA user groups. We were pleased to go along as representatives of the UK users, to what was essentially a private meeting. There are 773 Apple user groups in the USA, and all were invited to send a representative to this meeting. In the event, only 60 people were present - this surprised us, as our own reaction to such an invitation would be to ensure that we were there, but the distances involved in travelling around the USA, and the consequent costs of travel may well preclude the smaller groups from attending.

We found the meeting really interesting, and were able to introduce ourselves to many new contacts which we hope will enrich our knowledge. We were disappointed that Apple did not give us any real news at the Expo, other than to say that any new porducts will be launched simultaneously in all countries, in future - so we should no longer have to suffer the frustrations of hearing about new products available only in the States.

The Expo itself was really well organised, with tight security which was unobtrusive but effective (I'm really glad I remembered where I'd put one particular receipt!). Registration was fairly painless, with a free draw for a Macintosh each day (it was a micro-computer, too!). Unfortunately, we didn't win one, though - could have caused problems at Customs, I suppose?

The Expo guide was a 44-page tabloid effort, which gives some indication of the amount of information we were given (there weren't that many adverts.). This was to 'help' us decide which conferences we wanted to attend (each was listed, with a description of the topics to be covered); and which exhibitors we wanted to visit again, all were listed with details of their wares. We spent hours (literally!) planning our visits, but still found ourselves running around during the final hour trying to see remaining items of interest. We found unexpected 'goodies' hidden away at this stage, which was really frustrating as we could only have a brief glimpse and chat before picking up literature and moving on. Eighteen hours at such a show is just not enough!

At the end of the day, we retired to our hired car to survey the wealth of information that filled the boot. After all the excitement of the past three days, we were left rather exhausted and wondering 'What next?' Although the Expo was the main reason for our visit to the States, we had extended this into a two-week holiday, and still had three days to go. So, we headed off to the Adirondack Forest Preserve for some calm reflection before the return to the realities of everyday life.

Apple2000

While at the MacWorld Expo., I took the opportunity to show our new-look magazine to as many people as possible. They were all impressed, even dazzled!

Apple Computers Inc., the dealers, the user groups, and end-users - all wanted to get their hands on a copy. In fact, I had to hold tight onto my last copy! My one big mistake was that I didn't take any membership application forms with me Anyway, I hope a few new members will come out of it. We certainly made plenty of promising contacts. No user group over there can boast a magazine like ours they don't even come close. When I pointed out that it is all done in spare time by volunteers, everyone was amazed. The overwhelming reaction in the States is 'Well done, and keep up the good work'.

Review

STELLA Dynamic System Dynamics

by Nick Hunter

What serious software has ever offered you the heavens, bathtubs, globes, pipes and valves to play with?

Stella is an experimental laboratory animated for structured thinking to improve one's ideas about any subject. By applying discipline to thought it teaches how to formulate better models. This totally new and different kind of program could well become a Visicalc or Pagemaker in Education. It has its roots in System Dynamics, much of the methods of which were developed at MIT.

Stella's models can be used to assess the dynamics of situations such as the Arms Race, Soil Erosion, Medical Conditions (like Cancer or Diabetes), Business Situations (like Loss of Market Share or Disappearing Profit Margins) or other concepts - like the Collapse of Civilisations.

Build Your Own Worlds

The key components of Stella are Stock, Flow and Converter icons which are easily named and assembled on-screen.

The STOCK icon is a rectangle which includes a changing level so it responds to inflows and outflows. It is like a bathtub - which fills or drains according to what goes in or out. Stock can be identified as any item, and can be set with an initial value to start a model running.

When the stock rectangle is opened (double click) it displays a calculator and a list of allowable inputs. These derive from the names of related icons, which can input into Stella's algebraic expressions. The input terms must be linked with calculator commands and/or other built-in functions which include: Time, Step, Pulse, Ramp, Min, Max, Cos, Sin, Tan, Exp, Logn, Random, Normal, If, Then, Else, And, Or and Not.

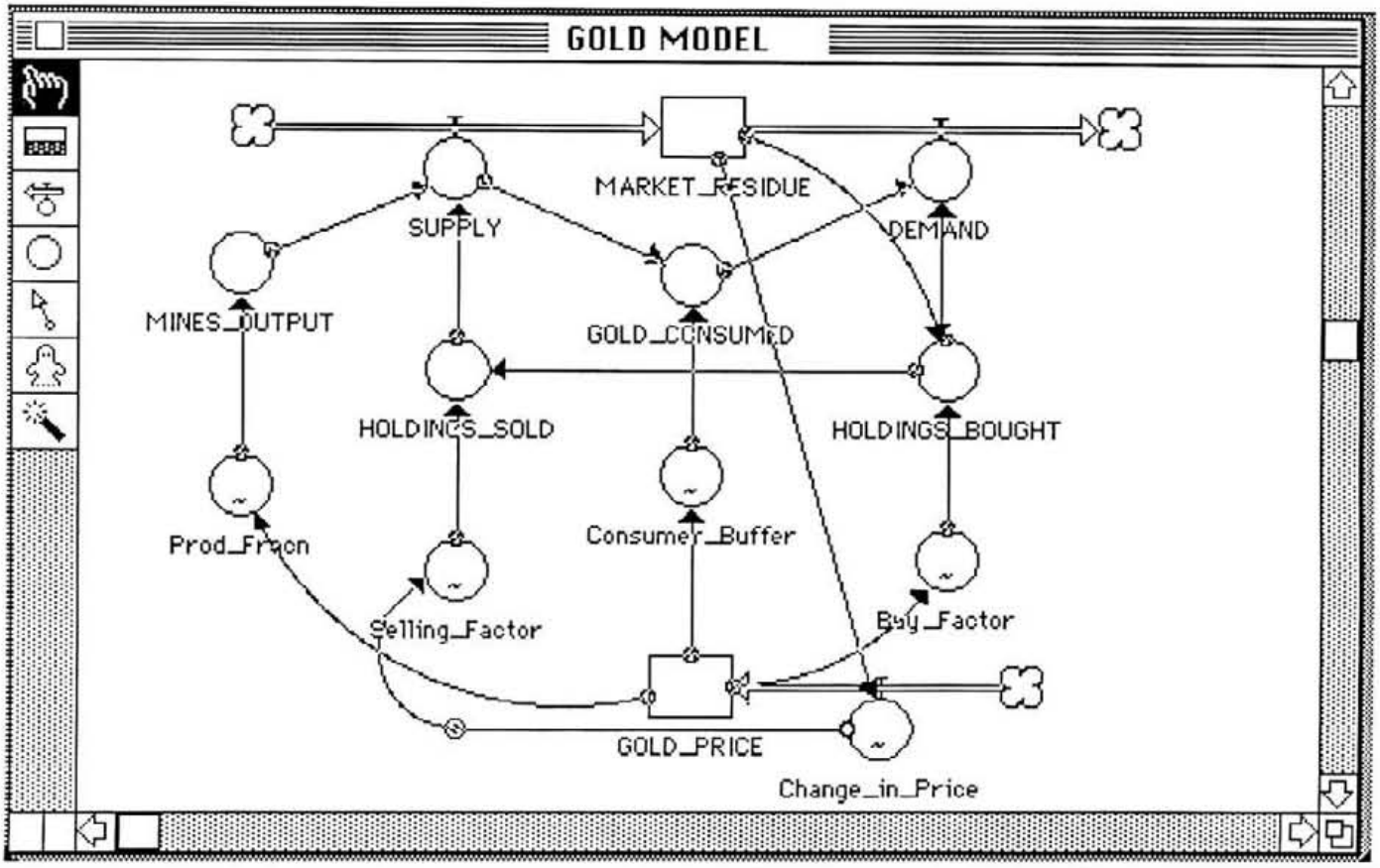
The FLOW icon consists of:

- a Cloud (Sources and Sinks)
- a Pipeline (where Actions flow)
- a Valve (Regulator) with its globe

The Clouds are infinite reservoirs or repositories out of which influences can appear or disappear - beyond the limits of the model.The Pipelines provide the avenues for flows, which are time-dependent movements to or from stock. Flows are regulated by Valve settings.

The final key icons are CONVERTER globes which convert inputs into outputs. Globes known as Logic Receptacles are also attached to the valves on the Flow icons and these generate the special output of valve settings.

These three key structural elements can be linked by a fourth element - the INPUT LINK. These are thin arrows which can be drawn straight or to a variety of curvatures, and through



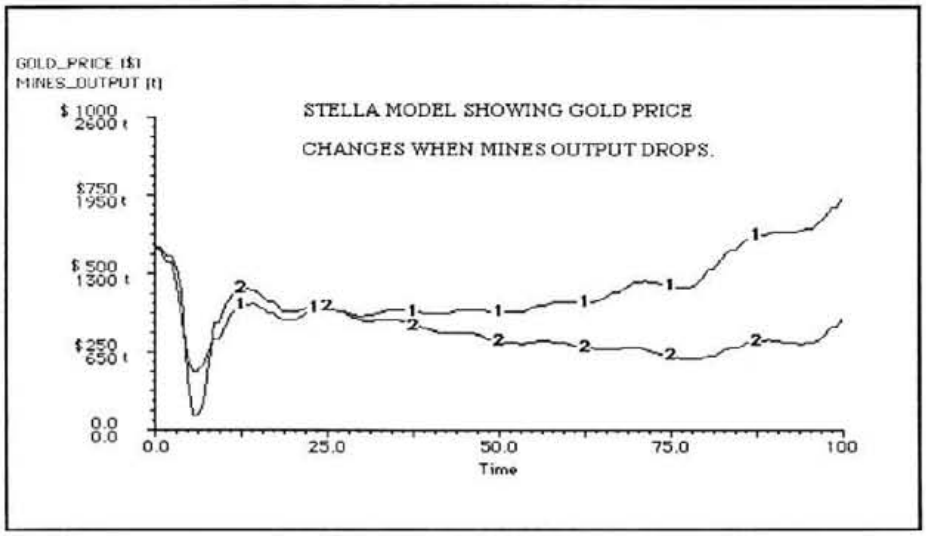
intermediary points. They form the signalling network which directs the structural icons to act on each other.

Feedback Loops

The two basic System assumptions underlying Systems Dynamics models are: 1)All living things manifest goal-seeking as an essential activity, and: 2) Goal-seeking involves the circular process of feedback loops.

Stella's models assume feed-back loops. In the classical model of such a loop, the original Stock (say people) will generate a signal for Action (say pressure on land). This action works to regulate the Flows to the stock (land wars). The flows change and determine new Values for the stocks (reduced population) which in turn then puts out new signals to the flow-regulating systems (stop war). Thus Conditions lead to Actions which in return influence Conditions. Feedback loops are well known in medicine, engineering and many other areas.

Stella has four display modes - the Diagram, Graph Pad, Table and Equations windows. Most of the model design takes place in the Diagram window by moving and joining key icons, and the system works through dependent equations being linked by structural connections in this window. A model will not work unless all parameters and dependencies have been properly defined. This forces a discipline, so if any have been missed out they must be found and quantified.



There is a one-to-one correspondence between the main structural diagram and its supporting equations - which allow the models to run conceptually. It is still however theoretically possible to model an irresistable force meeting an immovable object, because Stella cannot prevent the operator from building dimensional imbalances into its equations.

Stella's built-in clock starts ticking as soon as a model is run and becomes animated. Time makes the program most interesting, and the model can be speeded up or slowed down using the time step, dt.

The Manual Needs Improving.....

The manual is set up in a "now-do-this-now-do-that" style which is more of a tutorial than something which can be consulted from scratch. It is necessary to work through an hour or more to find out essential commands which could have been better explained in a few short tables.

Instructions are given in long paragraphs of bold text which are not formatted to the separate steps involved. This approach makes it hard to pick out the more important commands - as there is not enough emphasis given to these. Also the magic Mac instructions: 'Select' (Icon) and 'Choose' (from Menu) are not used.

A most absorbing section termed 'Bare Essentials' encapsulates years of model-building experience in ten pages of condensed guidelines. These valuable tips were a blessing to find - more please! Six models are also illustrated and include Population Dynamics, Laws of the Marketplace, Diet and Exercise and Macro-Economic Money Flows.

Absorbing and Demanding

During my first attempts at modelling, I found the program to be both addictive and demanding as I became absorbed in gold price predictions. Using Consolidated Goldfields latest graph of gold production costs, I was able to make the Mines_Output in my model responsive to a market-sensitive gold price.

After some fiddling to get the model to run, the Market_Residue and Gold_Price bathtub levels agreed to rise and fall sympathetically. This then allowed me to build in a declining ramp into Mines_Output which resulted in the cost curve shown. Although many improvements could be made to my crude attempts, it was exciting to get the results that came out. The program is most powerful and probing, because it allows you to graph up to four factors during a run, which then give traces back to source of the causes of unexpected model behaviour.

Stella is unique, and is valuable more for what it does to people's minds rather than for any printable results it might produce. It obliges you to get to the conceptual roots of things and won't work otherwise. Its greatest value is in disciplining ideas so they adhere to coherent structures. It is therefore firstly a Learning Tool and then a Productivity Tool.

Stella will appeal to Academics and has many obvious applications in Marketing, Management,Economics, Physics, Biology and Psychology. It could well become a cult program in Universities, but may not be so popular in the consumer market because it demands too much mentally from the user - most people are lazy and don't like to learn. But for those keen to let their imagination soar there are numerous ideas in: Systems Thinking (Vols One & Two) by FE Emery (Editor) published by Penguin,1981.

The output of Stella's diagrams and graphs is constrained to conform to limited formats which at first are not as aesthetically beautiful as Mac users have come to expect. However these can be modified by pasting data into MacPaint for enhancement. Perhaps Stella's elegance lies in reducing complex organic interdependencies into pure equations and graphs, but these may seem rather cold and dry to the average person

I am convinced that this new direction of software evolution is an important one and will command increasing respect. If Systems modelling in any form is important to you then Stella will be a must. It is available at £249.00 from Logotron Limited, Dales Brewery, Gwydir Street, Cambridge CB1 2LJ.

And who knows..... if given long enough with Stella you might recreate the Universe!

Assembler

CYCLAN Development System

Shareware

MAC.68K is a macro assembler that runs under control of the CYCLAN Development System. It produces clickable applications but does not support full resource file capabilities. MAC.68K does support many additional features not found on other Macintosh assemblers. These include:

Sorted, cross referenced symbol table.

Macros with symbolic parameter substituion.

Nested conditionals.

Column error flags.

String and substring manipulation.

MAC.68K also has many of the features available on other assemblers:

Included text files.

Compressed symbol libraries.

Hierarchical expression evaluation.

MAC.68K uses the Motorola syntax, and no line numbers. An instruction line

Supports features not found on other Macintosh assemblers

is terminated by a carriage return, and uses this field format:

Location Operation Code Operand(s) Comment

The location field symbol must begin in column 1 and may optionally end with a : . The operation field begins with the first non-blank character after the location field. It may begin no sooner than column 2, but must appear by column 32. The operation field contains either a 68000 op code, a pseudo op codes, or a macro name. The operand field begins with the first non-blank character following the operation code. The comment field begins with the first non-blank character following the operand field. It may optionally begin with a ;. A comment line contains an asterix or a semicolon in column 1 or blanks in columns 1 thru 32.

A symbol is a string of 1 to 8 characters. It may not start with a number or a $. It may contain A-Z, a-z, 0-9, or any of the following: . $ _ = ~ period dollar underscore equal tilda. Symbols may be longer than 8 characters but only the first 8 are significant.

Expressions are evaluated using normal algebraic notation. Parenthesized expressions are evaluated from the innermost outward. Arithmetic operators are evaluated from left to right, with multiplication and division taking

Macros with symbolic parameter substitution

precedence over addition and subtraction. All values are signed 32-bit integers.

File names supported by the CYCLAN Development System are limited to 8 characters in length with an optional extension of 3 characters. E.g. TESTLONG.ASM is the longest file name that may be used.

A good place to start with the assembler is the example program MICROF.S. This is a very simple application based on the micro finder program found in the June 85 issue of MacTutor (an outstanding magazine for anyone programming on the Mac in any language). You click on SHELL, type EDIT MICROF.S, and examine the program then transfer to the SHELL and assemble the program by typing:

MAC MICROF.S no Listing.

MAC MICROF.S -P on the screen.

MAC MICROF.S >LST: to the printer.

Any of these options will produce a clickable application file named MICROF.68K. To run the program transfer to LAUNCHer and select the file. You may return to SHELL by clicking on SHELL when the micro finder runs.

Having completed these steps you have run through the simplest development cycle: edit a program, assemble the program, and execute the program. Since the sample program will run you have missed out on the important step of debugging an assembly language program. SHELL does not currently support a full debugging environment as it is missing the instruction trace tools. Until these are available you will need to use the MACSBUG debugger from Apple Computer Inc.

MAC.68K supports compressed symbol and macro files. File MACTEXT.S contains the source definitions for the toolbox trap calls, for some standard record structures, and for a few memory locations. An assembled version of this file takes only 12K of disk space, and approximately the same internal table space when used in an assembly with an INCLUDES pseudo op code. Trap names are defined with an EQU instruction and may be used as an op code simply by prefixing with an underscore (E.g. _NewPtr).

Cyclan is NOT public domain software, but 'Userware' and if you decide to use it you should send in the requested fee of $10.00. Cyclan Software restricts distribution of MAC.68K and its related files to whole disk copies only. None of the copyrighted programs, text, or manuals may be placed on a bulletin board or similar electronic distribution system. Fortunately non profit user groups may distribute whole copies of this disk and Cyclan will send a complimentary copy of the next level release disk to any user group or person generating 5 or more license responses, so please let us know if you register your use of Cyclan with Cyclan Software.

Also teachers may like to know that any public or private school teacher may

Teachers may distribute copies of this disk for a one term class or course

distribute copies of this disk for use in a one term class/course. The students need not make their decision to continue use of the product (and send in their fee) until the end of the term/course. Teachers are requested to send in their fee only if they use the product outside the scope of the course. The teacher or school may photocopy the applicable manual(s) for nonprofit distribution to students enrolled in the class/course. All other copyright and distribution restrictions apply in the usual manner.

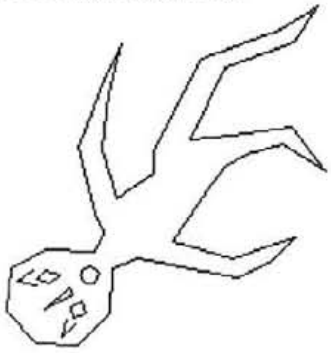
We have placed the Cyclan Development System in the Apple2000 Macintosh Library; check your order form for details.

DYNAMO™

Available on Mac Disk 36

from Event One

Dynamo is one of the most interesting of the public domain/shareware programs. It is a program for editing and running line drawing animations. It has a different approach from some other animation programs which require the user to enter a large number of paintings or drawings. Dynamo expects the minimum imformation from the user and then computes the pictures needed for animation. This approach has the advantage of quicker entry of data, smaller files and greater smoothness in animation, for instance you can run an animation in slow motion without the movements appearing 'jerky'.

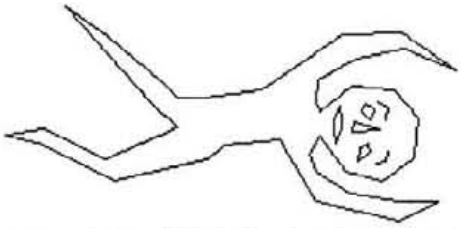


Dynamo has received a lot of attention for its "tweening" function. This automatically draws all the frames in between two drawn by the user. This is accomplished by mathematical interpolation, so the drawings must necessarily be geometrical, in this case limited to straight lines. This encourages the user of Dynamo to think about drawing structurally and in particular, to study the relationship between structure and motion. First, you click at the point that will be the centre of the object's motion. Then click at the object's centre of gravity, then at the points that define the rest of the object's structure, then connect those structural points with visible lines, the "skin" of the object.

Structural points can be selected and given a variety of motion attributes. All connected or "descendent" points move with the "parent" point, and the "skin" lines are interpolated to give the picture smooth, continuous motion. The user can also choose "On-Line help" in Dynamo's Apple menu for a more detailed

explanations.

As far as Dynamo is concerned, an object is defined by a single node, called the 'Top node'. The Top node and all its

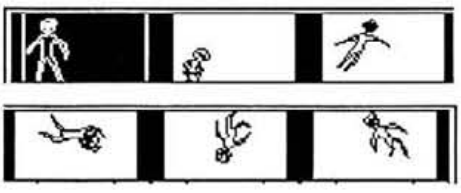


descendants, define the structure of an object. To set about creating a new object to animate, you start from the topmost node and work downwards defining the family tree of nodes that will control the movement of the object in question. Next, you must decide each node's type, by setting it to be Linear or Rotational.

After the basic structure of nodes has been defined, the form is developed using Lines. For each object in the Edit View, the user must draw the necessary lines to create a visible form. Then, once the structure and lines are complete, you can begin inserting frames in the Frame List.

Editing any sequence of frames can be accomplished easily by finding the relevant frame in the View Clip and extracting a frame for editing by double-clicking the Mini View button. When the changes are completed the frame can be put back by using the Overwrite button.

One of the most interesting features of Dynamo is the ability to transform objects, that is, have one object change smoothly into an entirely different object. Transformation of the form of an object may be achieved by turning lines off, other lines on, and by changing the line attributes. Transformation of the structure is accomplished by manipulating the nodes in a similar manner.



There is no doubt that a certain amount of conceptual gymnastics are required to draw this way, but for those looking for a way to simulate complex structures in motion, Dynamo is dynamite. Even the public domain/ shareware version is a powerful motion-generator which will give hours of pleasure to those who are not in the business of serious animation.

Michael Everest, the creator of Dynamo has also mentioned an interesting procedure that can be used. Create your

animation in Dynamo. Then run it at the slowest speed, stopping it every so often (by clicking on the speed control) and screen-dumping the lines-only image. Then, take the screen dumps, enhance in MacPaint and animate with VideoWorks for the final version. Dynamo is a great motion generator. It can produce much more complex effects than the simple motion generator accessory that comes with VideoWorks. Another possibility that comes to mind: create images in MacPaint or video digitize; create a moving structure for those images in Dynamo. Then run it slowly, stopping often and screen-dumping structure-only images. Clipboard the screen dumps to VideoWorks. The nodes of the structures act as reference points. Add the MacPaint images, rotating and resizing as necessary to keep them keyed in with the reference points. If you are the type of person who 'sees' motion frame by frame, then the possibilities laid before you by Dynamo stretch as far as the horizon, and beyond.

The MacSerious Programmers' Tool Shop

TML Pascal at £90.00 is too cheap. We could be selling it for 2 or 3 times the price. This amazing system will compile BOTH Lisa & Macintosh Pascal, permitting the creation of stand-alone, double-clickable applications, and DA's. Complete access to the Toolbox is provided, including QuickDraw, MacInTalk speech, printing, serial drivers, AppleTalk LAN, and the SANE floating point types are supported. MDS and C routines can be linked. This is a complete development system incorporating multi-window editing, Linker/Librarian, Resource Compiler , and executive batch processing as well as the Pascal Compiler with 11 application & D.A. examples. Works with Mac XL, 512K Mac, MacPlus, HFS, HD20, and extended memory systems. *Can you afford NOT to own this program?*

And to go with it there's TML Systems' Development Tools....

TML Source Code Library for only £70.00: A collection of 18 example Pascal applications representing over 1 megabyte of source code demonstrating how to program such things as:

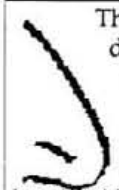
- Printing
- Serial Drivers
- MacinTalk Speech
- Standard File Dialogue
- Split-scrollable Windows
- Pop-up Menus

as well as example Function Key and Desk Accessories.

MacLanguage Database Toolkit for £85.00 - a complete library of Pascal procedures that allow you to quickly sort, search, and manage your data so you can build powerful applications.

MacExpress for Pascal from ASoft for £175.00 is a complete library of Pascal procedures.

From Jasik Designs



The interactive disassembler.

When you've got MacNosy, there are no more secrets.

£80.00

The Debugger beyond Discipline... the ultimate one

£100.00

LightSpeed Pascal

£115.00

An interactive compiler and development environment for the Mac. You'll find all the convenient debugging features of Macintosh Pascal (also from Think Tech) but the interactive program is seamlessly integrated with a high-performance compiler, ultra-fast linker, and automatic project management.

Lightspeed Pascal offers both the beginner and professional developer speed and ease of use in creating stand-alone double-clickable applications. Features include a High-Level Symbolic Debugger, Toolbox-level Debugger, numerous utilities, excellent documentation

LightSpeed C

£160.00

A complete high-performance C programming environment providing in a single integrated Macintosh-style application, a multi-file text editor, high performance native code compiler, ultra-fast linker, and automatic make facility, as well as full ToolBox and Unix-compatability library support. **Complete implementation of the C language** as defined by Kernighan & Ritchie's *The C Programming Language* plus more recent features.

Lightspeed C compiles more than 10 times faster than any other Mac C compiler. Generated code is between 70% & 90% of the size produced by other compilers, and execution time varies between 65% and 95%. **Call for full details.**

Prolog II is a Macintosh implementation of the artificial intelligence language that is ideal for creating expert systems and natural langauage processing. It can be linked to the ToolBox using Lisa or TML Pascal £345.00

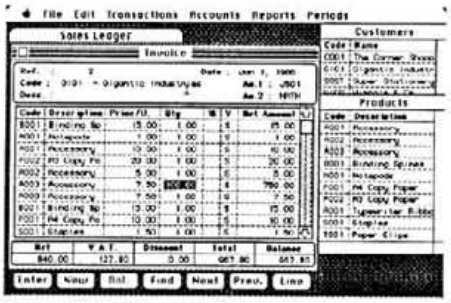
TOPLINE accounting

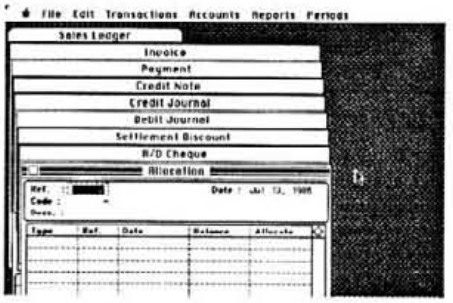
The accounting system that leaves you in control

S-Ledger **£395.00**
P-Ledger **£395.00**
S-ledger & P-Ledger **£645.00**

TOPLINE - a new series of modular accounting packages that make full use of the Macintosh user interface. Neither power nor ease of use are sacrificed here.
TOPLINE takes the Macintosh interface and improves it with it's unique Drag'nPaste system, greatly speeding up data entry and reducing the danger of errors.
TOPLINE has been designed with all the analysis tools you needed to monitor performance. What's more, it couldn't be easier to transfer information to and from other applications for additional processing.
TOPLINE does not rigidly constrain your way of working. Flexibility is the key. For instance, if when preparing an invoice you forgot to enter a product code, simply open the product window, 'create' the new product, and return to the invoice.
TOPLINE leaves you in control.

- **Full-power accounting system**
- **Integrated Invoicing**
- **Full Macintosh interface - and more**
- **Easy integration with other programs**
- **Full Laserwriter support**





Available now from all good Apple dealers

Ask for the TOPLINE information pack - it includes a working demonstration disk. The costs is £5, which can be set against purchase of TOPLINE

Published by MacSerious Software Publications and exclusively distributed by MacSerious Software (of course) Topline,S-Ledger, &P-Ledger ©Louisiana Ltd

The MacSerious Promise

We're dedicated to helping the serious - or not too serious - Mac user get hold of the software he or she needs ... and which no-one else supplies this side of the Atlantic. If you can't find it elsewhere, try MacSerious. If we don't have it in stock, we'll get it for you if it exists.

FileMakerPlus

£275.00

Database & form mangement for business:

- powerful, flexable database
- up to 16Mb per file
- open 8 files at once
- automated command macros
- transfer data to/from text,basic, SYLK files
- mail-merge with MS-Word
- every word is indexed, so searches are lightning fast
- 10 form templates included
- accepts graphics from MacPaint, MacDraw, etc.
- full LaserWriter and ImageWriter compatability

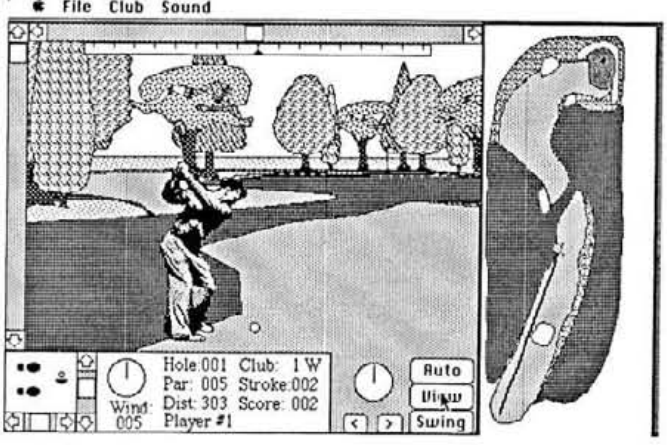
What you *want* from a database

If you see ✓ beside an item, it means we have a demo available. Cost is £5.00 each inc. P+P, refundable on

MacGolf is not a *Game*

...it's a *simulation*. (If we can have flight simulators, why not one for golf?) You will love it! Even for 'dedicated' business users, MacGolf has proven appeal. Don't let yourself leave without it! Version 2.0 is here, at a new *reduced* price of £49.95 ✓

If you think it's tough reading this stuff just be glad you aren't to one who have to put it together - The Workers



INBOX

A Macintosh desktop communications system for the AppleTalk network. INBOX makes it possible for you to send phone messages and memos, and has advanced file sharing capabilities. Call for more information about this groundbreaking new product. The starter kit, which includes an Administrator Unit and three Personal Connects, retails for £245.00. Additional Personal Connections are £65.00 each.

new... new... new...

Dark Castle

Can you defeat the Black Knight, evil ruler of the Dark Castle? Action is hot and heavy as you battle your way through stunning graphics and smooth animation that will take your breath away ... an arcade/action game so big it fills two disks... hectic, frantic... but most of all FUN!!

Silicon Press £74.95

The colour print solution for the Mac. A utility for printing labels, cards, or full-page layouts - whatever size you want - in colour on the ImageWriter II. Text & Graphics can be mixed freely, & information can be merged from most database programs. Full LaserWriter support. *"Silicon Press takes desktop publishing one step further. It is pure genius"*

SUPERPAINT

The ultimate paint/draw/publishing program. Only SuperPaint let's you mix bitmap and object graphics artistry and design on screen at the same time, and print them correctly on the LaserWriter. Only SuperPaint gives you LaserBits™. 300 dpi bitmap editing. Only SuperPaint gives you the power to pattern your text -including laser fonts. SuperPaint also fully supports colour printing on the ImageWriter II. There's too many unique features to list them all here.

only £90.00!

The end of the MacPaint/FullPaint Era!

WORLD BUILDER

An Authoring system for creating stand-alone interactive graphic scenes accompanied by text and digitized sounds. World Builder was used to create the highly acclaimed Enchanted Scepters adventure game. Now you can create your own games, or use it to create interactive training, story boards, etc. There's a World of possibilities awaiting you!

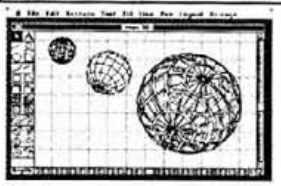
£74.95

Quality Programs from SILICON BEACH SOFTWARE™

THE WAVE OF THE FUTURE

Authorised UK distributor

MacSerious Software



Mac 3D v2:£199.00

is the 2 & 3D object-oriented graphics package with auto-dimesioning, a 22-shape tool palette, hidden-line removal and lath-like shaping tools. Version 2 expands the range of powerful features to include automatic shading and a massive speed increase. Call for full details.

A little plastic notice

We take orders paid with Access, American Express, EuroCard, MasterCard and Visa cards

Shipping & Handling:
In the UK: £2.00/order (1st class mail)
W. Europe:£3.50/order (normal mail)
Call for costs by other ways or to other places.

The MacSerious Top 10

October 1986

1	SuperPaint
2	Mac Zap
3	TML Pascal
4	Tempo
5	Acta
6	Mac Golf
7	Silicon Press
8	FONTastic
9	Lightspeed Pascal
10	PictureBase

Cricket GRAPH £174.00

SCIENCE AND BUSINESS GRAPHICS FOR THE MACINTOSH

Easily create presentation quality graphs with powerful features such as 16-bar patterns &plot symbols, selection of fonts, sizes & styles, text lines & arrows added anywhere, 2000+ point data sets, regression curve-fit & error-bars, 3D pizzaz, graphic macros, colour plotting, and much more.

BUSINESS

FilevisioN

Now here - the Mac's most versatile file manager! Up to 32,000 records, files up to 4Mbyte. 4,000 characters per record, 99 information fields & 16 data types with 2,000 characters per field - & graphics, of course, but now you can cut'n paste from MacPaint, & full LaserWriter support is provided. £345.00

OK you guys. Here we are with our flashy (well, bigger) adverts. They cost money, so see you buy lots so we can pay for them. All right? - The Boss

Write now

The ultimate word processor from T/Maker

Multiple columns on screen, Graphics embedable within text, and lots, lots, more, all for £165. Not copy protected.

(This is the one Steve Jobs bought!)

Can you manage without a disk catalogger/labeller much longer? Fully Mac+ & hard disk compatible

£39.95

The Games Department

(MacSilly Software??)

Airborne	£19.95
A View to a Kill	£37.50
Balance of Power	£44.95
Dark Castle	£44.95
Deja Vu	£44.95
Enchanted Scepters	£34.95
MacGolf	£49.95
MacInooga Choo Choo	£34.95
Racter	£39.95
Steven King's The Mist	£37.50

Acta

outline processor desk accessory

The better solution to outlining. Because Acta is a desk accessory, every application can now have it's own outline processor. Use Acta with MacWrite, MS-Word, MacAuthor, Write Now. It's all the same to Acta! Also includes Search and Sort capability; paste pictures into outlines; ThinkTank™ file conversion utility.... and it's only £54.95

Mac Zap

Mac Zap Copy
Mac Zap Recover
Mac Zap Patcher
Mac Zap Tools
Mac Disk Copier
Fat Disk Maker

- the one essential disk utility,now 800K disk compatable. £49.95

Tempo..

Have you got your copy yet?

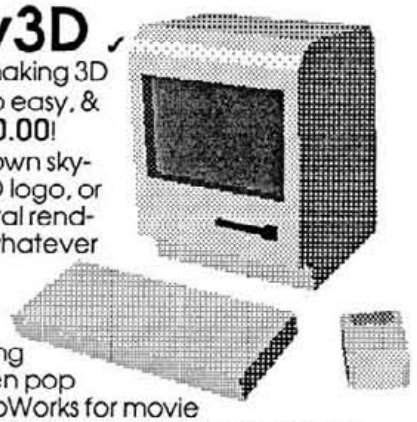
Tempo macros work hard to make your work easier... Add Intellegence to your Mac software.If a keyboard sequence needs to be performed 27 times or every 15 minutes, Tempo will do it. If it depends on a number starting with a "£" or a name greater than "Jones" it'll know what to do - and do it. Tempo can even decide if it needs to branch to another program. Tempo will close the program you're in, open the other, and continue replaying your commands. *Automatically.*

£90.00 Tempo works with almost every Mac Program. Requires min.512K

All offers subject to availability. We reserve the right to adjust prices without notice. UK residents add 15% VAT to all prices

Easy3D ✓

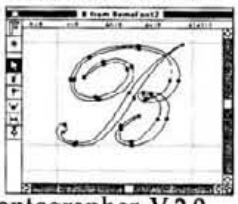
... makes making 3D graphics so easy, & it's only £90.00! Build your own sky-scraper, 3D logo, or architectural rendering. Or whatever you fancy. And it all happens with lightning speed. Then pop it into VideoWorks for movie magic. Also compatable with MacPaint, PageMaker, LaserWriter, etc., etc.



instant art

UK Atlas

Instant Symbols, Hands, Food & Drink. Display & Border Fonts, Display Alphabets, Business Forms - and **Laser** Business Forms



Fontographer V 2.0

- the only professional laser font editor available for the Mac today. When your design is ready, it can be printed on the LaserWriter, or any PostScript™ compatable device. *Now supports composite characters and can replace or add new characters to the built-in fonts.* Maximise your LaserWriter power. Bitmap are made automatically, and can be fine-tuned with an enclosed copy of FONTastic, the famous bitmap font editor (also available on it's own)

Fontographer:£375.00

FONTastic: £44.95 ✓

Paragenesis

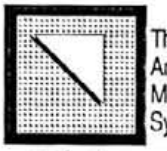
- an electronic design software system with **Schematic Entry (£325.00)** and **Digital MacroScope (£350.00)**. *Note these fantastic price reductions!* This is a top-end professional system, with linker to Bishop Graphics' Quick Circuit program **(£650.00)**, making it the most powerful system of it's kind on any micro.

EZ-Draft £1750.00✓

- the first fully professional CAD system for the Mac, EZ-Draft is significantly more powerful than any other CAD systems available on micros, and ideal for all types engineeringing & architectural drawings and technical illustrations. Optional EZ-CAM completes the system. Please call for full details. Special fiducational price.

Dealers - call about special arrangements for distribution of Paragenesis & EZ-Draft

There are over 500 programs listed and described in our current catalogue. Why don't you write or phone for one? (It includes the MacSerious MiniMagazine, and a list of 78 disks full of public-domain & shareware software. These programs are available free, but a duplication fee of £6.00 per disk plus £1.50 postage per order will be charged.)



The Art Management System

Picture Base

... a tool that lets you create, manage, and use your own personal art library. Turn your Mac into an easy-to-use graphics storage-&-retrieval system that works with your favourite page layout program such as Write Now, MacAuthor, PageMaker or ReadySetGo. £59.95

Dealers! Distributors! Send for our InfoPak.

MacSerious - *the* Mac software source for the UK & Europe. Let us help you get the products your customers want.

File.... Edit.... Goodies! TM

titled

MacSerious Software

17 Park Circus Place
Glasgow G3 6AH
Phone 041-332-5622

Germany: Triererstraße 8, 5517 Wincheringen Phone 06583-1371
Netherlands: Graafseweg 99, 651285 Nijmegen Phone 080-239520
Irish Republic: Apollo Buildings, Dundrum Road, Dublin 4 Phone 01-987-001
Switzerland: Wehntalerstraße 414, 8046 Zürich Phone 01-59-11-77
Belgium: Begoniastraat 5 9731 Eke Phone 091-85-55-11

Meet us at AppleWorld in London from 29th October to 1st November

Review

FRACTAL PROGRAMS

by John Arnold

In 1951 Benoit Mandelbrot began publishing his papers leading to the idea of a "fractional dimension". In 1975 he called shapes which have a fractional dimension FRACTALS and published a book Fractals: Form Chance and Dimension in 1977, with its major revision into The Fractal Geometry of Nature in 1982.

As might be expected with an idea which had such a long gestation period the underlying mathematics is not for everybody, however that should not deter those with an eye for the beauty of mathematical objects, from experimenting and examining for themselves the patterns that can be obtained by using those fractal programs in the public domain.

The best book to date showing a range of computer generated graphics of fractals both in colour and black and white is The Beauty of Fractals by H.-O. Peitgen and P.H. Richter published by Springer-Verlag 1986.

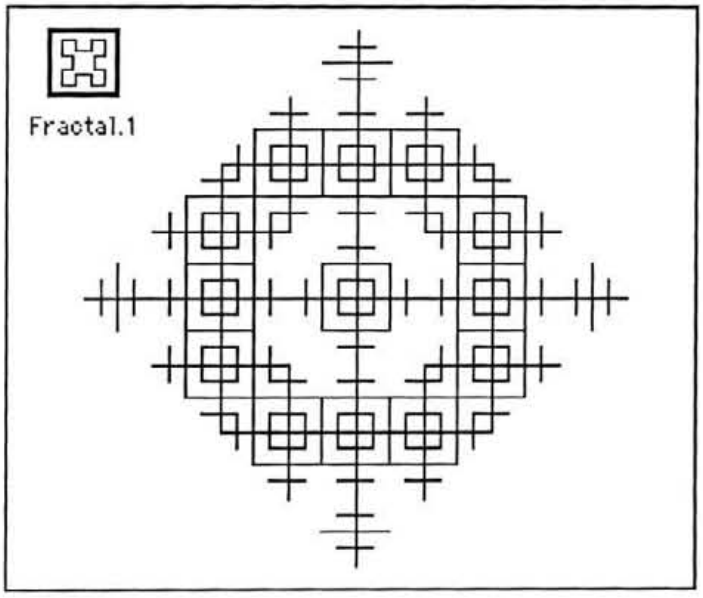
Some Available Fractal Programs

The programs include some details about fractals and the method being used to generate them in that particular program.

Fractal.1 by Richard Koch on MacSig 24

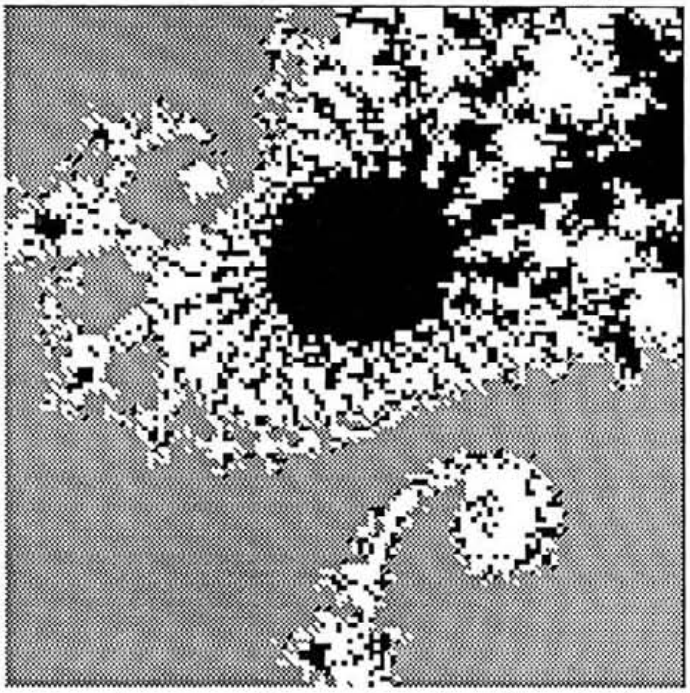
This program uses as its basis a square, each side of the square being replaced recursively to a specified level by a generator which can be edited , if the recursion could be applied ad infinitum the curve generated would be a fractal, however as the maximum level obtainable is 6, the curve obtained is only an approximation to the fractal for the generator used.

The program is easy to use, the generators can be edited, with the possibility of using up to 10 segments (this is the number of horizontal units between the beginning and the end of the line). As the level number increases, the time taken to generate the curve also increases and I have found that because of the Macintosh screen resolution, levels 5 and 6 may be unsuitable for the more complicated generators.



Mandelzoom by Robert P. Munafo on MacSig 39

Mandelzoom appears to have been written as a result of the fractal article in the August 1985 Computer Recreation column in Scientific American, that article probably having spawned many such programs for a variety of machines, but in its present form this program requires a certain amount of patience to find out what the buttons do!

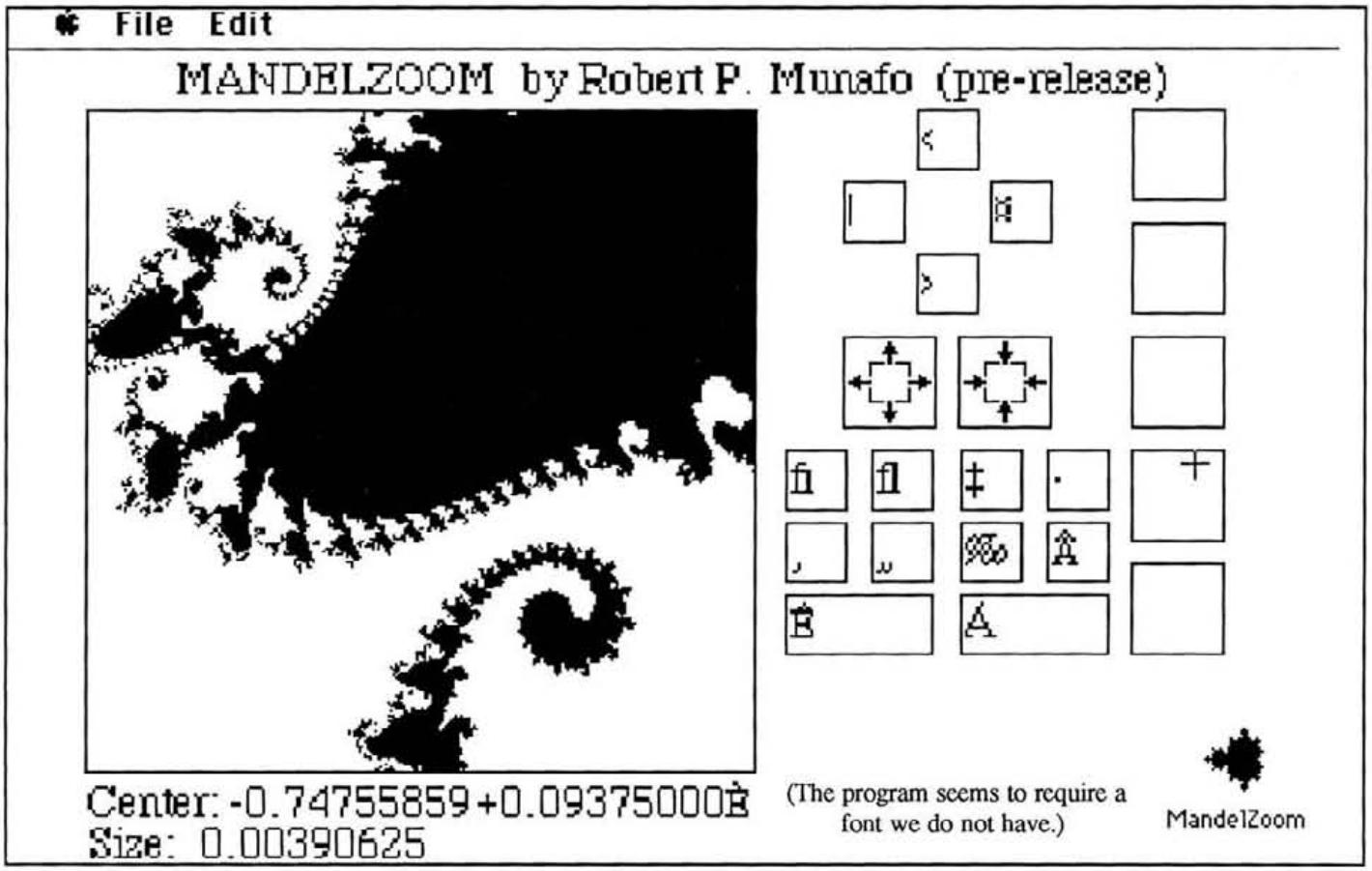


The program provides an initial method of examining the so called Mandelbrot Set, one of the most visually rewarding mathematical objects to have been discovered recently, and the subject of many hours of computer examination!

The article mentioned above gives the details necessary for writing a program to produce the Mandelbrot Set. Mandelzoom enables you to move the centre, zoom in or out, change the precision of calculation, and change the 'colouring' of the various levels. The coordinates of the centre and the magnification are displayed. I have found this program to be useful in quickly finding areas of interest but it then becomes necessary to go to one of the other programs displaying the Mandelbrot Set and transfering the coordinates because the display window is small.

Mandelzoom enables you to use various levels of resolution but be warned, the number of calculations being done is enormous and at the high resolution it will take a considerable time to fill the window.

I hope to see the finished version eventually, the present



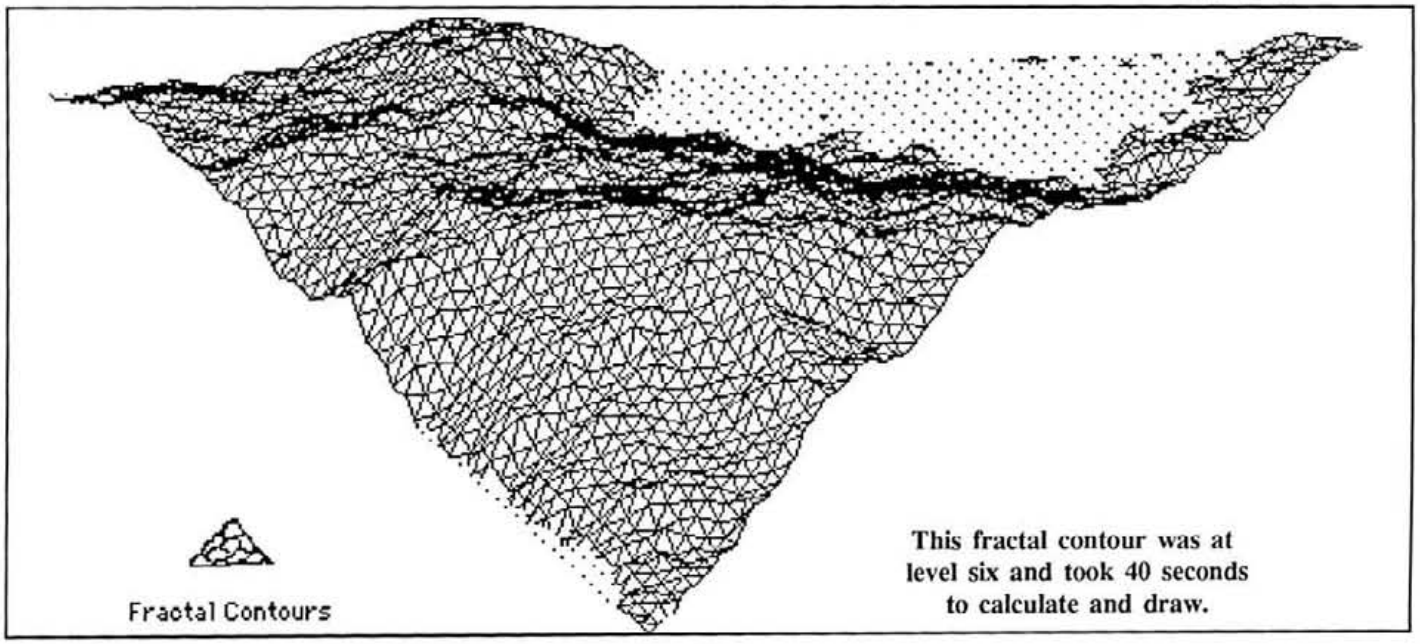
version is workable (with effort), but as can be seen from the screen dump it needs some improving.

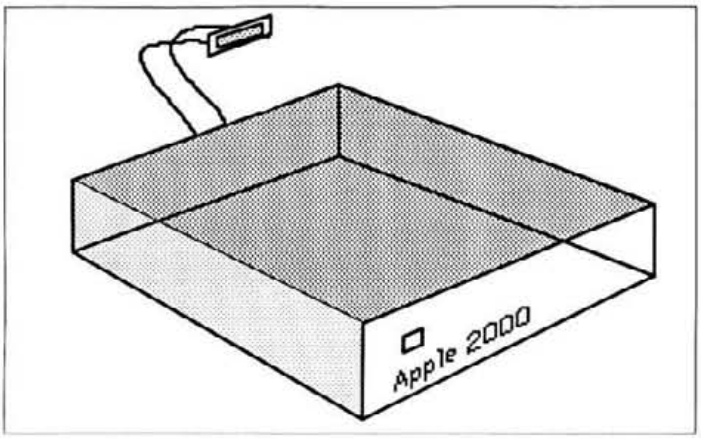
Fractal Contours v 1.0 by Jim Cathey

There are around a number of programs giving versions of fractal landscapes or contours written in Basic which now seem incredibly slow compared to this one which is written in C. The landscape is built up by starting with a triangle and applying a random displacement to the mid-points of each side, these are then taken as the vertices of a new set of triangles, the process is then repeated for all the triangles until the set level is reached.

Fractal Contours is very fast. Because the displacements are random, each landscape generated is different from the previous ones. Should a hard copy be required the screen has to be dumped to disc with the 'command shift 3', as I found the 'SAVE as paint file' option has not been implemented.

The first two programs described above are meant to provide visual results and as such they have few, if any practical uses. It should be sufficient however to experiment and see what can be produced. The third program should give some feeling for the landscape programs which have been used in the Motion Picture industry. For those who get bitten by the fractal bug I can guarantee you won't notice the hours slipping by!





Review

Apple 2000 20 MEG SHD

Before I start this review I would like to mention that I have been using a variety of hard discs for the Mac over the last year and I have reached the stage when I now find it difficult, with my workload, to use a Mac without one. My bias is personal and it is no reflection on the Mac. At the time of this review I was using a Symbiotic 20 Meg SCSI drive.

Construction

The Apple 2000 Hard Disc arrived by Datapost in a neatly packed and well protected cardboard box. I was surprised by its small size and it made the Symbiotic look large and awkward in comparison. Housed in a very sturdy case, it is strong enough to support a Mac filled with lead ! The outer case is coloured cream and it fits neatly underneath the Mac. It is very compact, 24cm x 25cm and only 6.5cm (2.5 inches) in height. A red LED is situated on the front panel and indicates power on and data access. The rear panel houses the main power switch, power cable socket and fan. The SCSI ribbon cable comes directly from within the machine and there is no SCSI plug on the back panel. I questioned the lack of a SCSI plug on the case but I then recalled an incident with the Symbiotic HD that crashed a few weeks ago. It refused to respond after the crash and we tried everything to recover it. After it refused to reformat, we opened it up and reconnected all the SCSI plugs. It then booted up and we were able to continue with the data intact. So extra plugs can provide extra problems.

Operation

Following the instructions I connected it to the mains and plugged the SCSI cable into the Mac Plus SCSI port. After powering up the hard disc, I waited for the drive to come up to speed (approx 20secs for safety) and immediately noticed a change from what I was used to. The Symbiotic I was using sounded like a hovercraft, the A2000 drive was much quieter, but still there is the inescapable backgroud whir. Oh for a silent drive ! After the Mac completed its internal check, the hard disc came to life and in an instant the desktop was up, which contained the system and utility folders for the A2000 SHD.

System Utilities

There are 4 utility options for reformating or mounting the hard disc and for backup and restoring of your data. During the review I tried a *reformat* and *initialise* and it is the simplest of tasks. Another utility called *Mount (see Fig 1)* allows you to mount the A2000 SHD even though you may have started from another network or other hard disc system. This is necessary if you wish to transfer programs or files from another hard disc. I did mount the A2000 SHD off the Symbiotic 20Meg SCSI and data transfer was fast and clean. Before the A2000 SHD can be mounted off another SCSI device, the device number needs to be set. This requires the removal of the housing and the changing of a DIP switch to the device number required. If you wish to permanently use this drive as a second drive then the switch will be set by the factory to the required device number. The A2000 can be daisychained together with 7 other SCSI devices by using a special adaptor plug and socket but being short of extra devices I was not able to try this facility.

Software Compatibility

No software problems were encountered, except for the hassle of the copy protected programs that ask for a Master Disc. You will have problems with software that is not compatible with HFS but by now most of these programs should have been updated. However I would advise against running unknown Public Domain software from this or any other hard disc. Once you have experienced the ease of opening and closing applications from the desktop, cutting and pasting between applications and using a multitude of system fonts and D.A.'s, it is difficult to go back to standard disc drives.

Backup Facilities

Archiver, a backup program is included on the Hard Drive but it is very time consuming if used regularly. I have been using HFS BACKUP, written by Dave Winzler of PCPC, and this is an affordable, quick and easy answer to data backup. HFS BACKUP is an incremental system that only backs up new data or data that has been changed from the previous backup. Using this system I do not spend more than four or five minutes a day with data backup. It is worth every penny and for home or small bussiness users it must be the cheapest option on the market.

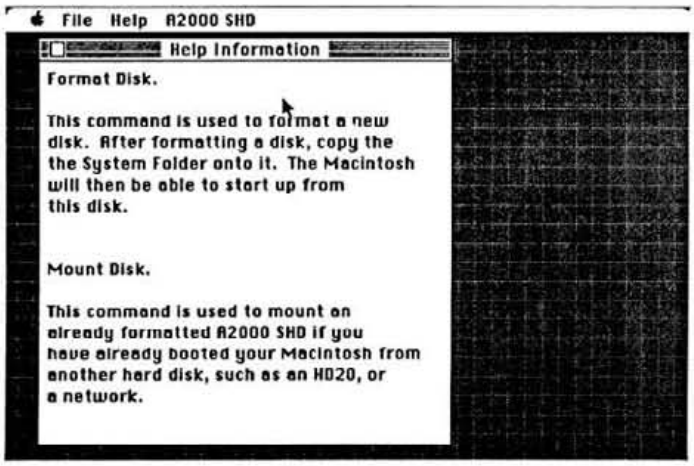


Fig 1. Help Screen for *Mount* and *Format*

A2000 SHD as a Disc Server

Using the A2000 20SHD with MacServe opens the doors to multi user applications like Omnis 3+. Macserve is not a file server, but if you use more than one Mac then it can allow you to share the storage of the hard disc. It is a brilliant piece of software with some nice features, especially the print spooler which only works with the imagewriter as yet.

Speed

The Apple 2000 SHD is as fast as you would expect a SCSI Hard Drive to be. I have compared it with the Symbiotic and Ice SCSI 20 Meg drives and there is little to choose between them. As hard discs fill up the available space so they slow down in operation, especially in rebuilding the desktop. I always find that it is better to only use about 15 Meg of the disc and trade the rest off for speed. Fragmentation caused by constant HFS writes and re-writes to the Hard Disc can also reduce the speed of disc access. A remedy for this problem is to periodically backup and restore the entire contents of the drive.

Summary

The Apple 2000 SHD is an extremely cheap, sturdy and reliable Hard Disc. Built in England, it offers all the features of the other SCSI drives at half the price. It carries the normal 12 month guarantee and comes from a well known third party Apple product manufacturer. Like all SCSI drives it is fast and easy to use and no software or hardware problems were encountered. Noisy fans have to be lived with and this one is better than the competition drives. I have been informed that later drives will be even quieter. The only design complaint I have, would be the position of the red LED on the front panel. I did find that when I used my Mac close up to me, as I normally do, the LED was not visible. Awkward when you wish to see if the hard disc is busy with an access. No problem for those of you who use the Mac at least 2ft away, from the the eye to screen.

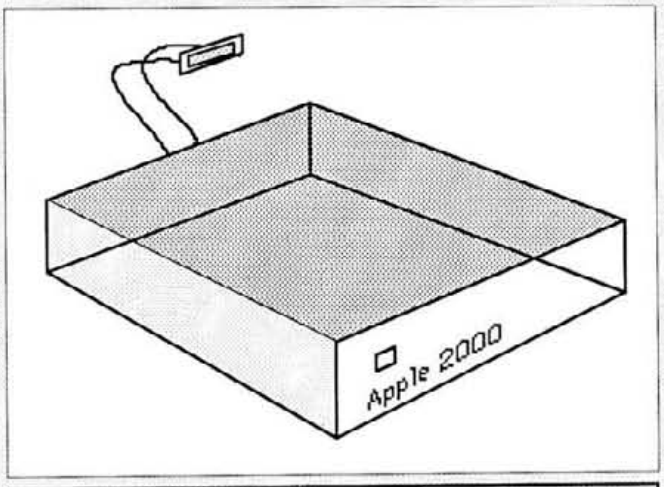
Conclusion

I have been using the Apple 2000 SHD for 8 weeks now and it has not let me down during or after the review. On numerous occasions I have dumped it into the car and taken it to Local Group meetings, and it has not complained once. We even suffered a power crash at our last editorial meeting with two of the Hard Discs in use at the time. We booted them up again with no problems. I have bombed the disc with all the suspect applications in my P.D. library and the only victim was a corrupted system, which was easily replaced. I was so impressed with the operation and value for money of this Hard Disc that I purchased the review machine for myself and now its sits proudly underneath my Mac, endorsed with the APPLE 2000 badge.

I.Knezovich

The APPLE 2000 SHD is available now on limited offer for **£699.00 + VAT** from:
Apple 2000, P.O.Box 177, St Albans, Herts, AL2 2EG.

A2000 20 Meg SCSI Hard Disc



- Made for Apple 2000 in England
- Plugs into Macintosh SCSI Port
- Software boots from disc
- No Pre-Boot Discs required
- HFS File Structure
- Compact size, sits under the Mac
- Uses own internal Power supply
- Can be supplied for either 240V or 110V
- Internal fan for efficient operation
- Can be daisychained with 6 other devices
- 12 month Guarantee

Special Offer !! ONLY !!

£699.00 + Vat

Technical Enquiries tel: (0299) 403418

Place Access Order tel: (0727) 73990

Send cheque for **£803.85** (inclusive of Vat) to **Apple 2000, P.O.Box 177, St Albans Herts, AL2 2EG.**

From Delphi

From: JIMH (306)
Subject: RE: **INITs** (Re: Msg 292)
Here is some brief documentation on the INIT resources.
System 3.2 Inits

0 - Keyboard translator (vector to this placed in KeyTrans); Converts from keycode to ascii; appears to do something else haven't had a chance yet to check it out.

1 - Keypad translator (vector to this placed in Key2Trans; Converts keypad codes to ascii

2 - Error handler

3 - patch OpenResFile ROM routine; Checks for minifinder and uses it if four conditions are satisfied:- 1. this one I can't figure out what SDENABLE is. 2. is the option key pressed (run finder if so). 3. Is findername = current application name. 4. is there a file called minifinder on disk? If all of these pass the name of the minifinder replaces finder in the current application name, and the old openResFile routine is called.

13 - patch OpenRF, and something else.OpenRF - I haven't looked at the code yet; other - I don't know its trap number appears to be blockmove but it is checking FMStyleTab + 5 which has something to do with the font manager

31 - reads other INIT resource from files

35 - has something to do with the disk cache appears to load the cache software in from resource file among other things.

From: MACMAG (313)
Subject: RE: **INITs** (Re: Msg 308)
Does any know what Managers can or can't be called in an INIT ? A lot of people want to write an INIT0 for those disks that shouldn't be booted from (like club disks, or filled datadisks) Any info would be greatly appreciated. Rich

From: PEABO (316)
Subject: RE: **INITs** (Re: Msg 313)
I wouldn't jump to the conclusion that *any* manager can be called from an INIT. INIT's do not contain programs, they are subroutines of the initialization process. Peter

From: MACMAG (326)
Subject: RE: **INITs** (Re: Msg 316)
Well basically when you see that you have about 10K left on a disk and you say to yourself: Instead of having this thing be spewed out (??) when I try to boot from it, why not have a program that will tell the user that the disk must be booted with a proper system (talk about making it user friendly). Anyways, the only thing that comes to mind is to write an INIT ID=0, and get rid of all the rest. So I did that.. except that it bombs when I call InitWindows, so, is there another routine /pointer that must be setup prior to InitWindows? Before that I'm calling InitGraf & Co. described in IM. What about InitResources? Any ideas? Rich.

From: JIMH (329)
Subject: RE: **INITs** (Re: Msg 326)
Rich, I helped our club librarian write an init program for our disk, we didn't use or need init windows, just wrote zeros to the screen to clear it and moved a bit image save using the bitnapper DA from MacTutor to the screen. If you are interested I will see if he will upload it. Jim

From: RJWM (312)
Subject: **ResEdit**
Is there an easy way around the following problem: Whenever I modify a program with ResEdit then save it, all large code segments (probably > 32K) are lost. Is there a 32K limit to resource size in the latest version of ResEdit? -Richard

From: PEABO (315)
Subject: RE: **ResEdit** (Re: Msg 312)
There is generally speaking a real problem with CODE resources larger than 32K, and I'm surprised that you would run across any. (There is some discussion in the Tech Notes about this problem). However, I had the idea that ResEdit has trouble with any resource larger than about 16K. Peter

From: DDUNHAM (319)
Subject: RE: **ResEdit** (Re: Msg 312)
That was a problem with 64K ROMs, I thought...

From Info-Mac

From: Paul Christensen
Subject: **Patch for MacDraw 1.9 Font Menu**
Several days ago, I posted a message explaining some of the bugs in MacDraw 1.9. At the time, I mentioned a patch I'd been using successfully for about 3 months that allows MacDraw's Font menu to scroll. This patch will modify MacDraw VERSION 1.9 ONLY, disabling its limitation of 11 fonts in the font menu. This will allow you to use many more fonts, provided you have a scrolling menu installed on your system. How can you tell if you have a scrolling menu? If you have a MacPlus, don't worry ... scrolling menus are part of the 128K ROM. If you're using a Mac with the old 64K ROM, Apple has included the MacPlus' scrolling menus in the newest system software. If you use system 3.2 then your menus will scroll. Otherwise, use ResEdit to copy the MDEF from system 3.2 to the system file you are using. I have installed the system 3.2 MDEF into system version 2.0 with no problem. I do NOT recommend using system software prior to Finder 4.1 and System 2.0 (released with Finder 4.1). Be sure to perform this modification on a COPY of your MacDraw 1.9. NEVER USE AN ORIGINAL COPY FOR THIS TYPE OF WORK!!! You will have to use a file-editing program such as John Mitchell's excellent shareware program FEdit, or commercial programs such as MacZap or MacTools. Simply open up the FILE MacDraw (don't open the whole disk) and search for the original data. Be careful to change only this data to the modifcations listed, double-checking your typing. Then write the sector back out to disk. You will have to repeat this process for every line (a total of 22 times). For this

reason, I like automating the process with MacZap Patcher, included as part of MicroAnalyst's MacZap package. MacZap Patcher allows you to write your own files that will search for data and change it many different times. This also helps prevent human error. Whatever method you use, good luck in your hacking. NOTE: I make no guarantees as to the stability of this patch. However, I can assure you that I've been using it for more than 3 months now with no ill effects. The following patch originated from Jonathan Hardis at Washington Apple Pi. If MacDraw does not work properly after you make ALL of these changes, then try the patch again on a fresh copy of MacDraw. Be sure you are using MacDraw VERSION 1.9 and double-check your modifications before writing to disk. I have proofread these patches and can assure you there are no typographical errors on my part.

CHANGE MacDraw 1.9:

Search for... Change to ...
41ED FAD6 ..... 41ED F360; 9 times
0000 0C60 ....0000 0CA0; once
0014 6F02 7C14 .....001F 6F02 7C1F; once
000B FACE ..... 0016 FACE ; twice
70E1 ....709B; 3 times
0001 00E1 ....0001 009B; 3 times
10E1 ....109B ; once
0C47 0015 ..... .0C47 0020; once
4E56 FFBE ..... 4E56 FF9E; once

Paul Christensen

From Usenet

From: ephraim@wang.UUCP

Subject: Re: **Animation Query**

> I've just started writing an arcade-style game in Lightspeed C and there are a few problems which I'd like to clear up before moving on. 1) How do you make sure the memory for the alternate screen buffer isn't used for something other than a display? BufPtr points to the top of available memory. You have to re-launch yourself to get the alternate screen setup. So: at first launch, check that BufPtr points *above* the alternate screen. At re-launch, check that it points *below* the alternate screen. This should guarantee that the screen was available and is now yours.

> 3) How do you make the video display hardware display the alternate screen buffer? How can you make it do this during a vertical blank? Twiddle some hardware bits to switch screens; see the Hardware chapter of the Addison-Wesley Inside Mac. To hit the vertical blanking interval, just wait for the Ticks counter to change.

> 4) Is there a global variable I can access that holds the address of the alternate screen buffer so that the program will run on the Mac128, 512, and Mac Plus? I'm not positive, but I think that the screen pointer global will point to the alternate screen if you launch yourself with the alternate screen configuration. For the existing Macs, it's sufficient to use fixed screen addresses assuming 4Meg of memory. Wrap-around takes care of smaller memory sizes. This technique will drop dead as soon as Apple comes out with a Mac with a different-sized screen.

> I realize that screen flipping is not a 100% Apple-approved animation technique (and it won't run on the Lisa), but it does provide the highest quality animation possible. Apple suggests: draw into an off-screen bitmap, wait for the clock to tick, then _BlockMove the changes onto the screen. If your changes are organized from top to bottom, you don't have to finish during the vertical retrace, you just have to keep ahead of the current scan line.

From: mlr0@bunny.UUCP

Subject: Re: **Animation Query**

From a friend of a friend: David --

I spent some time recently working on an animation program which dealt with a lot of the issues you asked about. (It's "Vanlandingham", the Mac parody of Amiga's "boing" -- available on some nets and through the Boston Computer Society). A lot of the answers to your questions are covered in an article in the June '86 MacTutor on "Screen-switching animation". Some more details, not quite in order of your questions:

(1) In theory, the Launch trap allows your invoker (eg, the Finder) to ask for you to get the second screen. So, you can wake up, see if you have the screen allocated, and re-Launch yourself if you don't. Unfortunately, things like RAM disks, debuggers, and the damned Mac Plus RAM cache seem to reside in this area, but don't prevent the Launch code from promising you the second screen. Apparently the global variable BufPtr can give you a clue about whether this area is actually in use. I'm not sure how to do this, so Vanlandingham crashes in some cases. Sorry. (4) In all existing Macs, the alternate buffer is 32K bytes below the main screen. Of course, if a Mac with a larger screen comes out, they'll have to be farther apart. (2) It's possible to switch screens by using two grafPorts, but I use just one and switch the bitmaps with SetPortBits. The standard screen is described by the bitmap screenBits, so you can say something like (pardon my Pascal):

```
var altBits: bitmap;
altBits := screenBits;  /* alternate screen's bitmap is almost same... */
altBits.baseaddr := screenbits.baseaddr - 32768; /* ...but lower */
SetPortBits (altBits);  /* do all drawing in the alternate screen */
SetPortBits (screenBits); /* do all drawing on the main screen */
```

I suspect SetPortBits is faster than SetPort, but I don't know.

(3) You control the screen hardware through the VIA; the article covers this.

Yes, Quickdraw is very slow. Vanlandingham has 16 or 32 (I can never remember) preshifted shapes. Even if you keep using Quickdraw, keeping the stuff aligned will save some time. Remember that when you clean up a screen (copy from a pure background to erase an old image), you can round the copy out to the next word (or longword) boundary on either side, and your erase code can run much faster -- although it's copying a little more data, it doesn't have to worry about left and right boundaries.

Yes, assembly language is worth it. Vanlandingham does a good imitation of the Amiga's bouncing ball, including drawing the ball to scale on the screen. Using Quickdraw, the ball would have been about the size of a quarter, or else the animation would have had to be much slower than 60Hz. I found it easy to prototype with Quickdraw, but needed assembler in the end. Have fun!

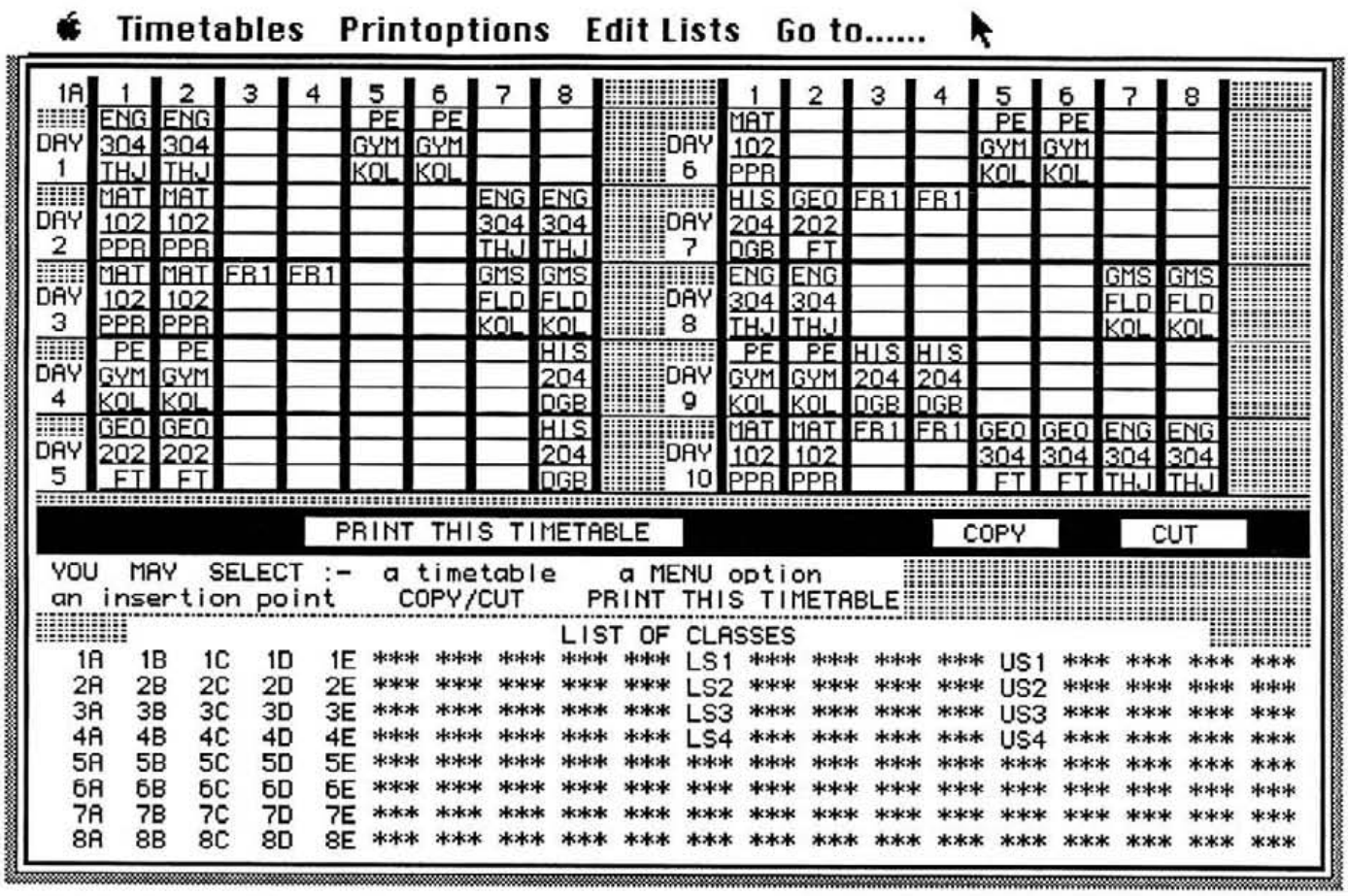
-- Mike Morton

Credits

Info-Mac digests consist of submissions by individuals on the academic computer networks. Submission and distribution of these digests is by network, moderated by volunteers at Stanford University.

Usenet is a loosely-coupled network of co-operating academic and commercial computer systems. It is a non-profit network whose primary aim is the sharing of technical information and the spreading of research results.

Delphi is a commercial time-sharing and bulletin board system. The Delphi Digests are made available thanks to Jeffrey Shulman of Rutgers University.



This is a dump of the new improved screen from the Timetabler program available from Computer City.

HELP US HELP YOU

Earn £3 in our RECRUITMENT DRIVE

Apple 2000 has ambitious ideas for the future. To implement all the benefits we have planned we need to increase our membership. For example, more magazines, cheaper software and extra services would be possible. Our new image is proving a huge asset in our membership drive but to reach more users, **WE NEED YOUR HELP !!**

Apple 2000 announces its *"RECRUITMENT DRIVE".* As incentive to our members we are offering a **£3.00** voucher for each new member recruited by **YOU** ! This voucher can be used as part payment for future membership or items from Shop 2000. As there is no limit on the number of new members you recruit, please telephone or write to A2000 for extra membership voucher forms. A box of 10 Discs will be awarded to the member who recruits the most new members by Jan 1st 1987.

New Mac Library Disks

More new disks to keep you all busy !

Disk 57: The Force Manual
Given free to members who join the Force.

Disk 58: VideoWorks 1.
Space Junk, The User Group Meeting, Willy the Bug, MacMelt, July 4th, Mexican Food, The Big Twist, The Chase, Marbles, Spinning Sphere.
NB. You do not need the VideoWorks program to enjoy this disk or Disk 59 as they contain the VideoWorks Player.

Disk 59: Videoworks 2.
Chopsticks, The MacGrid System, Cloud #9, Jet Air Show, Dumbo Goes to Mars. Also ScreenEdit.

Disk 60: Artists Fonts etc.
Venice 36, London 36, Black Shadow, Leavenworth 36, White Shadow, Infocom 36, Deep Box, New York 72, Tiny 12, Basel 48, Rome 18,36, Sttel Brush, Blockbuster, Font Display 4.0 and even more fonts.

Disk 61: Cyclan Disassembler.
A public domain 68000 assembler with editor and manual (see article).

Disk 62: Multiplan/Excel Real Estate
This disk is packed full of templates concerning Real Estate.

Disk 63: Multiplan/Engineering etc.
This disk is full of Multiplan templates for Engineering, Stock Control etc.

Disk 64: PacMac #1, More Excel Templates.
More Excel templates and the PacMac #1 folder with full documentation.

Disk 65: Excel Financial templates.
Excel templates, Inventory, Revenue, Payroll, Depreciation, Office Manager and many more.

Disk 66: MSBasic Compiler.
BCompile, BRun, Help/Editor, Examples, Runs, Headers, Basic Programs etc.

Disk 67: Small Games.
Juggler!, Ashes, Go, Klondike, Adventure, HexPuzzle, BlackBox, Wall, etc.

Disk 68: MacDraw Files, Parametric Stats & Regression.
Fifteen MacDraw files such as Isometric Drawing, Architectural Design, Back to the Future, Enterprise, Shuttle Stuff, etc. Also The Parametric Stats program and Regression Folder.

Disk 69: MacNifty/MacRecorder Sounds
Some entertaining MacNifty Sounds which can be played back without MacNifty. MacRecorder II files with good sound quality.

Disk 70: Calc Demo & DA's.
The Calculator Construction Set Demo with example files. DA's:- Fade to Black, File Transfer, Disk Info 1.42, CrashFix, Window DA, TimeOut, Maxwell2.1, Chime, Melt, Slow Death, CopyFile, QDial1.0, FrCalcDAFile etc.

MACTEL

THE MACINTOSH BULLETIN BOARD

[illegible]

(V21) 300/300, (V22) 1200/1200, (V23) 1200/75
8 BITS - NO PARITY - 1 STOP.

Europe's leading Macintosh Bulletin Board

[illegible]

Macintosh Spreadsheet

SPECIAL RELEASE

by Chris Burridge

1. **StockMarket Investment Portfolio**
Massive template to monitor, record and value an investment portfolio of Stockmarket Shares or unit trusts. Built in analysis, prediction and chart facilities.Tax credit, Annual yield,World Sector Analysis and tons of other features.

2. **Electricity, Gas & Phone Budgets**

3. **Petrol Economy Calculator**

4. **Company Balance Sheet**

Provided with a MacWrite Instruction File on the disc. Also included a telephone Hotline direct to Chris to help sort out any problems.

! ONLY £8.50 !
SPECIFY EXCEL OR MULTIPLAN WITH ORDER.

A Tutorial

MacNosy Version 2

by Steve Jasik

Over the past year MacNosy has helped many programmers learn about the Macintosh Operating System, and the workings of other Mac programs. Meeting some of my users at trade shows has been fun for me. Many of their suggestions have been incorporated in Version 2 of MacNosy.

The reasons for V2 of Nosy are the introduction of the 128K ROM's, and the addition of many features such as the context sensitive symbol substitution discussed below. This was what I started with. By the time I was finished coding, the mini editor has been substantially extended to include displays of procedures by double clicking on a procedure name, and the ability to interactively create separate, mergable comment files had been added.

The introduction of the Mac user interface makes Nosy much easier to use. The Display menu allows one to bring up windows containing the listing of a procedure, the references to any symbol, the complete reference list of system symbols referenced, the complete reference list of trapnames referenced, the listing of all the strings in the program, the list of code blocks in the program, etc.

Nosy now lists the formal parameter list with the listing of a trap call, and for I/O calls, it knows that the register A0 holds the address of the parameter block, so in between the definition of A0 and the trap call it substitutes names of the structure variables. For a procedure that creates a stack frame with a "LINK A6" instruction, references of the form -d(A6) are to local variables, and are named "vxx_n", and those of the form d(A6) are the parameters "param1", "param2",... , and if it is a function, the function result is called "funRslt".

Other additions to the Window mode of Nosy are displays of information in its internal tables. They include a list of the structure names known to Nosy, lists of trapnames and their parameter lists, the names and values of the system global symbols, and a file listing most of constant definitions for field values (event mask values and such).

I have had a set of the new ROM's for some time, and in addition to getting Nosy to disassemble them, I have made a few observations about the code in it. About 30K is devoted to resources, and to find out what they are use the "Rsrc map" list in window mode (Chicago font, WDEF0, etc). Other facts of interest are the methods used to speedup BlockMove and the QuickDraw routines. The code in Blockmove is 'unrolled', that is the loop body has been replicated a number of times to cut down on the number of increment and test instructions. The reason for this is that the 68000 used in the Mac is "bus limited", and anything one can do to cut down the number of instructions executed in a loop will speed it up.

Consider the loop:

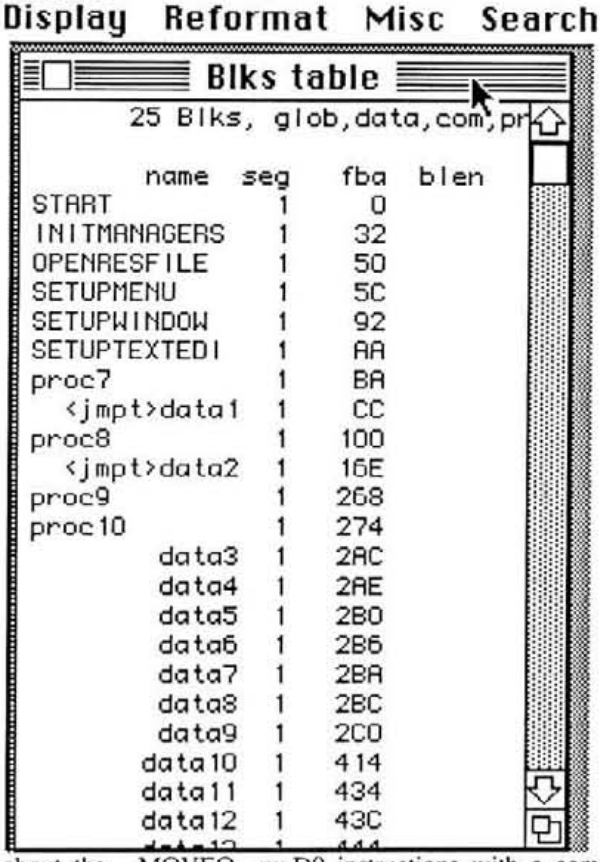
```
for i := 1 to 20 do a[i] := b[i];
```

by rewriting it as:

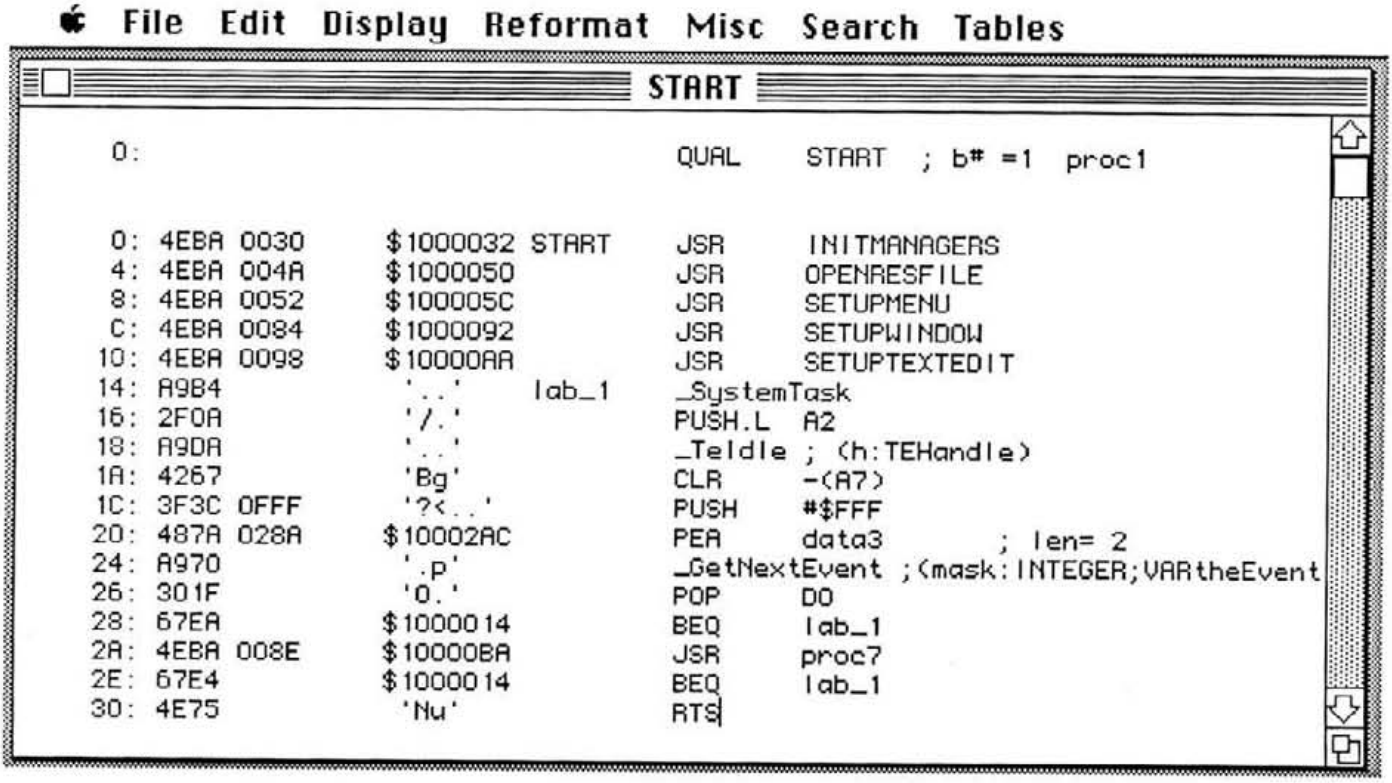
```
for i := 1 to 20 by 2 do begin
  a[i] := b[i];    a[i+1] := b[i+1]
end;
```

We eliminate the execution time associated with 10 increment and test instructions at the cost of extra space by duplicating the assignment statement.

Another interesting tidbit about the new ROM's are that they contain some 68020 instructions. Yes, Nosy knows about the 68020 instructions, and the FPU (68881) co processor instructions. The new ROM's have been setup to run on a variety of machines as evidenced by some of the new EQU's.



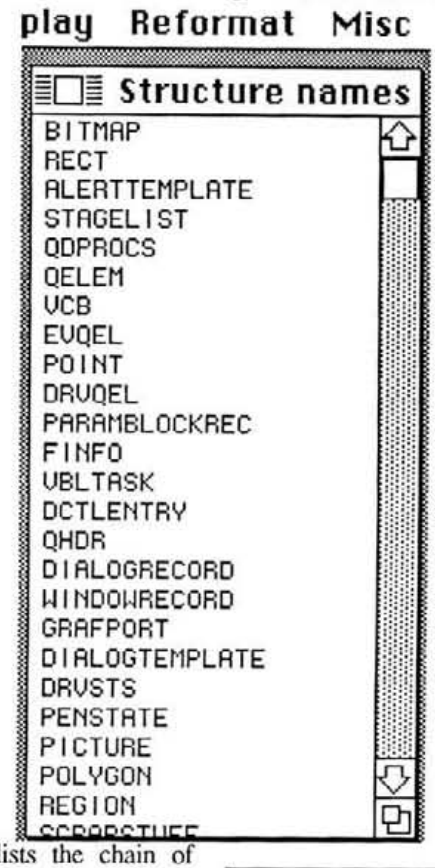
Last November I made a "ROM comments" version of Nosy available along with a comments file that Nosy read in and merged with the disassembly listings it produces. In V2 I have extended this capability so any file can be commented, and provided a way that one can interactively create the comment files in window mode. Another little goodie that was added in conjunction with the comment mode was to "annotate" MOVEQ xx,D0 instructions with a comment of the form "; err = name" if Nosy's symbol dictionary contained an error



number for the value.

Another use of Nosy is the location of copy protection code. To prefix this discussion, note that during manufacture (disk duplication), the duplicator writes the disk in a non-standard way by including non-standard data or address markers, or some other devious device so as to make the disk difficult to copy. During the execution of the program it checks the disk for the existence of this "mark", and if it finds it, proceeds normally. This checking code is usually refered to as copy protection code.

Fortunately for us the program itself cannot be "marked", for if it were, the segment loader could not read it, so Nosy can read the file in, and if the copy protection code can be found, and eliminated, the program is still usable. A number of the facilities in Nosy are useful in the location of copy protection code. The reference maps, lists of the resources ("please insert master disk"), the "Strings" display, the Search Mark command, and the convert address command. The Search Mark command searches for references of the form "$D5 ....." which are used to setup the Sony drivers for non-standard reads. If the procedure that references that data area contains references to any of the disk driver variables, then Nosy displays the message "ahoy matey, x marks the spot (base of the copy protection code)", and lists the chain of procedures that call it. One can then inspect the chain of procedures to find a suitable place to patch the code.



Trying to keep up with the changing copy protection methods is a never ending game, as evidenced by the frequent updates to Copy II Mac. I have sharpened some of the checks in Nosy so that it doesn't blow up or follow incorrect paths during the treewalk. This was done after I checked out some games, and found that they were putting garbage in the "CODE 0" segment.

Other additions to V2 are the support of Desk Accessories in Window mode, and the support of Switcher in all modes.

Nosy is a continually evolving program to which I have been and will be adding bug fixes and new features. The current version of Nosy may be downloaded from my SIG on Delphi by those who have purchased it. At this time I am not sure what future directions Nosy will take, but some of the things under consideration are:

- to add features to the window mode so as to make it easier to use
- to make it into a debugger
- to add a symbolic simulation of the register contents along with some more flow analysis so it handles languages with register based calling sequences better, and produces a more informative reference map ie.knows the difference between Loads and Stores.

(This was written for Earthbeat™ (Volume 4) Box 278, Islesboro, ME 04848 USA.)

MacNosy version 2 is available from
MacSerious Software
Price £80.00

BIT 32

THE DESKTOP COMPUTING CENTRE

THE BIT 32 HEADSTART WORKSTATION

The most useful workstation we've yet designed, our BIT 32 HeadStart Workstation makes it possible for even the most severely physically handicapped people to access the full power of Apple's remarkable Macintosh computer. Developed at the National Spinal Injuries Unit, Stoke Mandeville Hospital, our HeadStart Workstation was designed for two main purposes; to help rehabililitate severely disabled people and provide them many more opportunities for employment than were previously possible, and to give some creative outlet for disabled people who are too weak to seriously consider work, but who nontheless need something to release them from enforced passivity.

Headstart Workstations are already in use in ordinary schools to help disabled students study for exams, at specialist disabled colleges, in hospital occupational therapy departments and by a growing number of disabled individuals for whom the Macintosh is the only outlet for expressive and creative abilities. Users include people with tetraplegic and paraplegic spinal injuries, (for the spinal injury literate, one user suffered a 'C2 Complete' lesion), palsy, locked muscle syndrome and various other severe disabilities. Because every disabled person has unique problems, each Workstation is individually tailored to the user's needs.

HeadStart Workstations are the only complete, purpose designed computer systems for the disabled, and individual training and support, plus one source supply, ensures complete confidence for the user.

Head-Start Purchasing Schemes

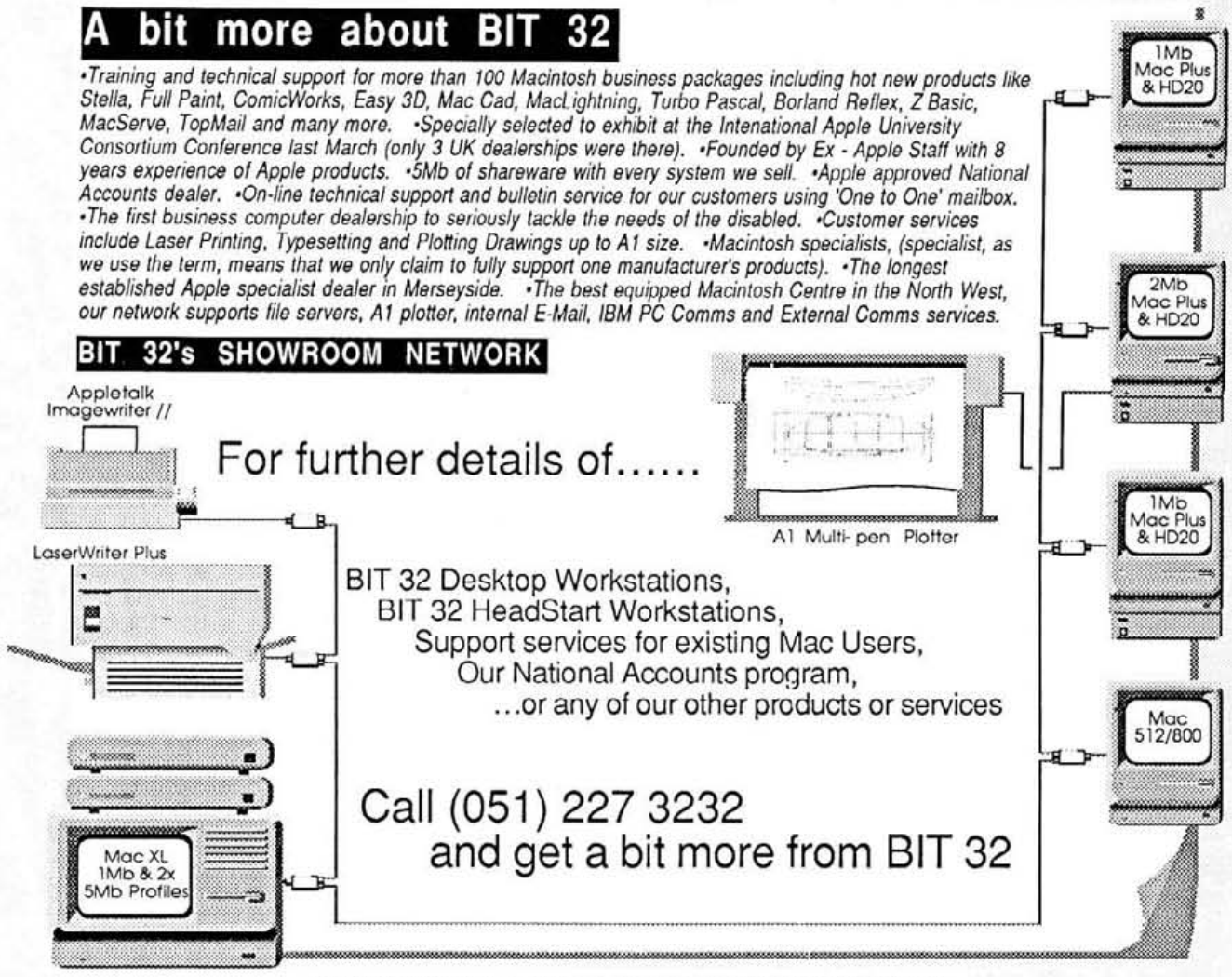
By special arrangement with Apple Computer (UK) Ltd, we are able to offer discounts of 25% off all Apple manufactured components, where the system is for exclusive use by one disabled individual, and any VAT exemptions also apply. Where a HeadStart Workstation can be used to give a disabled person employment, including homeworkers and the self employed, funding may be available for the entire workstation through the Manpower Services Commission, and we can put prospective employees and employers in touch with the necessary departments to help speed the process up.

The cost of BIT 32 HeadStart Workstations varies from around £2500 to £5500 (excl. VAT) depending on the individual's particular needs, so we will be happy to provide further detailed information and cost estimates on a personal basis.

A bit more about BIT 32

•Training and technical support for more than 100 Macintosh business packages including hot new products like Stella, Full Paint, ComicWorks, Easy 3D, Mac Cad, MacLightning, Turbo Pascal, Borland Reflex, Z Basic, MacServe, TopMail and many more. •Specially selected to exhibit at the Intenational Apple University Consortium Conference last March (only 3 UK dealerships were there). •Founded by Ex - Apple Staff with 8 years experience of Apple products. •5Mb of shareware with every system we sell. •Apple approved National Accounts dealer. •On-line technical support and bulletin service for our customers using 'One to One' mailbox. •The first business computer dealership to seriously tackle the needs of the disabled. •Customer services include Laser Printing, Typesetting and Plotting Drawings up to A1 size. •Macintosh specialists, (specialist, as we use the term, means that we only claim to fully support one manufacturer's products). •The longest established Apple specialist dealer in Merseyside. •The best equipped Macintosh Centre in the North West, our network supports file servers, A1 plotter, internal E-Mail, IBM PC Comms and External Comms services.

BIT 32's SHOWROOM NETWORK



For further details of.....

BIT 32 Desktop Workstations,
BIT 32 HeadStart Workstations,
Support services for existing Mac Users,
Our National Accounts program,
...or any of our other products or services

Call (051) 227 3232
and get a bit more from BIT 32

BIT 32 LTD, 32 North John Street, Liverpool, L2 9QJ Tel: 051 227 32 32

BIT 32

THE DESKTOP COMPUTING CENTRE

BIT 32 DESKTOP WORKSTATIONS

Macintosh Plus

Carefully designed systems that provide solutions to specific needs in the office and allow easy expansion for other tasks. All components are selected and tested for reliability, ease of use and total integration enabling us to ensure the quality of service and support that you expect from one of Apple's carefully selected national account dealers.

The BIT 32 Desktop Publishing Workstation

All you need to produce high quality documents, from design to finished copy, at your own desk. DTP is the fastest growing application area that the personal computing industry has seen because of its high value benefits. Give a polished, professional look to all your business documents, including correspondence, marketing materials, (such as this ad.), technical documentation, proposals and many other tasks where presentation matters so much.....and all with dramatic savings in time and money. Additional workstations can share access to the LaserWriter and Hard Disk.

•Macintosh Plus •LaserWriter Plus •20Mb Hard Disk •Appletalk Connectors •MS-Word •MacDraw •Aldus Pagemaker •Full Paint •Cricket Graph •Various Graphics Utility Programs

Mfr. Suggested Price - 1Mb		£10751
BIT 32 Price	2Mb	£8751
Additional Workstations	2Mb	£3986 each

The BIT 32 Desktop Design Workstation

For professionals in all areas of technical design, including architects, engineers and technical draftsmen. The BIT 32 Desktop Design Workstation is a complete drawing system that can totally replace the drawing board and dramatically improve the quality and throughput of your work. A highly interactive drawing environment helps you to create 2D & 3D designs in a fraction of the usual time while alterations to existing drawings or new drawings based on previous designs can be produced in minutes. Additional workstations can share access to the Plotter and Hard Disk.

•Macintosh Plus •A1 Multi Pen Plotter •20MB Hard Disk •Imagewriter 15" •MacDraft •Mac3D •Full Paint •MacPlot Professional •Various Graphics/Calc. Utility Programs

Mfr. Suggested Price - 1Mb		£10420
BIT 32	2Mb	£8941
Additional Workstations	2Mb	£4228 each

The BIT 32 PA Workstation

Much more than just a word processor, our Personal Assistant Workstation provides many facilities that are invaluable to secretaries, area co-ordinators and P.A.s alike. Word Processing, electronic mail, telex, address book, mail lists and other indexed files, diary management, form design, expense accounting, reports & proposals which include diagrams and charts..... and many other tasks, all at the touch of a button. And fast, silent laser printing helps to reduce the tensions of the working day. Additional workstations can share access to the LaserWriter and Hard Disk.

•Macintosh Plus •LaserWriter •20Mb Hard Disk •Appletalk Connectors •Apple Modem •MS-Word •MS-File •Vicom •MacDraw •Desktop Diary •1 to 1 •Various Useful Utility Programs

Suggested Price - 1Mb		£10157
BIT 32	2Mb	£9157
Additional Workstations	2Mb	£4042 each

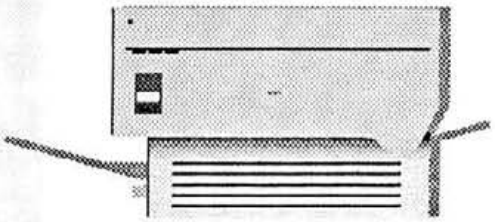
The BIT 32 Desktop Accounts Workstation

A totaly integrated accounts suite in a totally integrated environment. Apple Accounting offers everything you expect from an integrated accounts package plus many valuable features not available on any other system. And because it is true Macintosh software, you can naturally transfer any accounts data into spreadsheets (Excel), databases (File), Word Processors (Word) or to any other place where it might be needed, without having to learn any complex routines or command sequences.

We claim, with complete confidence, that the BIT 32 Desktop Accounts Workstation is the most flexible, the most expandable and the easiest to use accounts system you can buy for your business, and for such an important role, only the best will do.

•Macintosh Plus •20Mb Hard Disk •Imagewriter II & Cable •Cut Sheet Feed •Apple Accounting (S/L, P/L, N/L, INV) •DBS Payroll & NL Link •MS-Excel •MS-Word •MS-File •HP12c Fin. Calc. Emulator •Clickon Worksheet •Various useful Utility Programs

Suggested Price - 1Mb		£7168
BIT 32	2Mb	£6168
Additional Workstations	2Mb	£3803 each


LaserWriter

An Apple LaserWriter printer was used to produce the artwork for this ad. using a BIT 32 DTP Workstation. Laserwriters can be shared by up to 31 Macintosh computers.

Installation, Training & Support

All hardware/software is pre-installed and configured for you, and the price of every workstation includes 1 full day's basic training on delivery and 10 hours free telephone support (total value £700).

Money Back Guarantee

A 30 Day Money Back Contract accompanies every workstation to ensure your complete satisfaction.

All prices are exclusive of V.A.T. and delivery charges.

BIT 32 LTD, 32 North John Street, Liverpool, L2 9QJ Tel: 051 227 32 32

POSTSCRIPT AND THE LASERWRITER

by Irene Flaxman

PostScript Language Tutorial and Cookbook

Author: Adobe Systems Incorporated
Publ. by Addison-Wesley, 1985. $16.95, 238pp.

If you want to understand the inner workings of the LaserWriter, who could give better advice than the authors of the PostScript language on which its processing is based? This book, along with the companion volume reviewed below, are being quoted by Apple Computers as THE technical reference manuals for the LaserWriter. All aspects of the programming language are covered in depth, to provide you with all the information you will need to dig deep into the workings of the printer.

This volume consists of two parts, as the title implies. The Tutorial introduces you to programming in PostScript, including explanations of the stack, notation and data types. As the authors claim, it is a flexible language and easy to read or write (once you know how!). Explanations of basic programming concepts are not laboured, but are clear enough to give the necessary background knowledge.

The text leads you step-by-step through the stages of programming in PostScript by means of small programs designed to illustrate each point, with explanations of the instructions as you go along. The 'operator summaries' at the end of each chapter are particularly useful in providing a summary of any new operators which have been introduced with a description of their uses. This is particularly useful as an 'aide memoir' and also as a prompt - if you don't recall the functions of the operator, now is the time to review!

I found the Tutorial to be a good introduction to the PostScript language - easy to follow, and comprehensive, with frequent references to the companion volume 'PostScript Language Reference Manual'. The Cookbook section comprises a collection of complete sample programmes which cover all aspects of programming in the PostScript language. It assumes that you have read the Tutorial and have the access to the companion Reference Manual.

Twenty-one programs are included, with varying degrees of difficulty. The programs are primarily organised into four types - Basic Graphics, Printing Text, Applications, Modifying and Creating Fonts. Each section starts with a brief description of the operators to be introduced, before the programs are presented in detail. For each program, the output is displayed on the left-hand page, whilst the right-hand page is split into two columns - the left column contains the program listing, whilst the right column contains an explanation of the code. This makes it easy to understand the functions of the operators and is ideal as a method of teaching. The idea is that you run the programs, then make your own amendments to determine their effects - thus learning as you develop your own style.

In all the sample programs, the first priority is clarity - even if this has been at the expense of efficiency. The reasoning is sound - when you have mastered the language, you will develop your own style and will naturally introduce efficiencies in your coding. A brief Bibliography and an Operator Summary provide the final (and very useful) components of this volume. My overall view was that it would be useful to (and understood by) anyone interested in the topic, even if they have no previous programming experience, although the authors do state that they have assumed some programming knowledge. Be patient, though - you will use both books a lot, and must have plenty of practice, before you will become proficient enough to get the best out of your LaserWriter!

PostScript Language Reference Manual

Authors: Adobe Systems Incorporated
Publ. by Addison-Wesley, 1985. $22.95, 310 pp.

This book is essential reading for anyone who wishes to delve deeply into the inner workings of the LaserWriter - or any other PostScript driven device. The Reference Manual is well-structured to give you all the necessary information to create your own PostScript programs, but is not as easy to read as the Tutorial and Cookbook reviewed above. Surely this is to be expected, though? Reference manuals are designed to provide information in a structured format for reference purposes - not to be read from start to finish in order to learn the basic principles. Almost half of the book is devoted to detailed information about all the standard operators of the PostScript language. The chapter covering this topic is presented in two sections. The first provides a summary of all the operators organised into groups of related functions, and is intended to assist in the choice of the most appropriate operator to perform a particular task. The second section is organised alphabetically and provides a detailed description of each operator - complete with examples, errors and cross-references. This section forms the final chapter of the manual. It is preceded by basic information about the language and its uses, a very comprehensive description of the language, and chapters devoted to the topics of Graphics and Fonts.

The manual covers a lot of theory, some of which may be unfamiliar to programmers from a more conventional background. PostScript does not handle text in the conventional (ASCII) way!

The manual includes four very useful appendices, including one which describes the standard fonts and another devoted to the operation of the Apple LaserWriter. The authors state that if you wish to

interface existing applications programs to generate PostScript files, or if you wish to create applications in the PostScript language itself, then this is an essential book. I cannot argue - it is certainly comprehensive, and I would suggest that the companion Tutorial and Cookbook is also essential reading for the majority of us to ease the necessary learning process.

LaserWrite It!

Author: James Cavuoto
Publ. by Addison-Wesley, 1986.
$16.95, 193pp.

This book is subtitled 'A Desktop Publishing Guide To: Reports Resumes Newsletters Directories Business Forms And More', and this admirably describes the contents of the volume. The interest in Desktop Publishing has gained momentum as we have realised the potential savings in terms of time and money, and the increase in quality and control which can be achieved by the use of this technique. The term has, to date, been associated purely with the Apple LaserWriter printer and the Macintosh, with would-be rivals running to catch up.

This book gives a nice, down-to-earth introduction to the LaserWriter and what it can do for you, without being too technical. It is very easy to read, with plenty of useful ideas and practical tips for the novice user - but the more experienced will probably also find some new ideas for improving the ouput from the System. The book starts with an introduction to the LaserWriter and the PostScript language, and then continues into descriptions of particular aspects of Desktop Publishing - including Typesetting, Graphics, Forms Design, Page Layout, and others.

Each topic has a chapter devoted to it, including discussions of available software and guidelines for its use. The final element of each chapter is a simple case study - in some cases, they seem too simplistic but they do get the points across to the reader (which is their purpose, after all).

The final chapter addresses the topics of Networking and Communication, which we see becoming more important as we all become conscious of the economies they make available to us, and (dare we say it?) the opportunities they provide to link OTHER manufacturers' computers to our LaserWriter.

LaserWrite It! is rounded off with a comprehensive set of appendices including details of PostScript and LaserWriter specifications as well as a Glossary and sample fonts. Overall, I am impressed. The topics are well-covered, the text is easily understood, and the content is very comprehensive.

Comment

I have reviewed, above, three books published by Addison-Wesley which all address the topic of the Apple LaserWriter and the PostScript language. All had their strong points, and all were very good. How, then, does one choose which to buy? I would recommend that the last reviewed 'LaserWrite It!' must be the choice of the general user of a Desktop Publishing System who is looking for advice and guidelines on general usage but who is not intending to write application programs in the PostScript language. For the more adventurous, who have the time and the inclination to learn the programming language, and who wish to delve into the mysteries of PostScript and the LaserWriter, the two companion 'PostScript Language' volumes would seem to be essential reading. I must admit that I enjoyed all three. Wish I had the time to experiment with PostScript, though - could be fun!.

LASER OUTPUT IN COLOUR !!!

Colour your LaserWriter output in a range of 35 different colours, including gold and silver. This can be done cheaply and easily and give outstanding results that bring life to your Macintosh created printing - **You will be amazed at the quality obtained.**

The colours actually blend with the toner from the LaserWriter so the finished product can be used as would an ordinary Laser copy.

As a added bonus photopies of the actual output from the LaserWriter can be coloured rather than the actual ouput enabling you to keep your original and photocopy it whenever you need a colour copy - the coloured photocopy retains the quality of the original.

Several colours can be combined within one copy and the finished page is up to the standard demanded by professional design studios for finished visual and print simulation work.

Among the multitude of uses are:-

Letterheads and logos : Advertising Mockups
Business cards : Presentations
Eye-catching labels : Advertising

All of the above can include brilliant **gold** and **silver** giving quality usually only previously available at great cost

This equipment is available now !!
free leaflet and samples available upon request

Full installational and support is guaranteed

MacSoft ©

The Source for Quality Mac products

Desktop Publishing
We can supply any programs needed for Desktop Publishing including:
Pagemaker : Ready Set Go : Silicon Press (accurate print setup) : Fontographer : Specialised Laser Fonts etc. We can also supply cameras and other equipment for digitizing graphics. We are now supplying Hardware including Macs, LaserWriters etc - call for details.

A3 paper size Laser Printer

Available now!

A high volume laser printer completely compatible with the Macintosh - contact us and we will send you a sample of the output.

Details on these and over 700 other Mac Products available **free** from:

MacSoft
Bridge House : Wellington
Somerset : TA21 0AA

Or contact us on
(082 347) 3625

Modems

Full range of modems available as under:

WS 2000	Basic modem but offering more features than comparable modems	125.00
WS 3000	Upgradeable Modems	
V21/23	- 1200 baud half duplex	339.25
V22	- 1200 baud full duplex	569.25
V22 BIS	- 2400 baud full duplex	747.50

All of the WS 3000 series are upgradeable:

V21/23 to V22	230.00
V22 to V22 BIS	178.25

Modems are manufactured in the UK and are very highly recommended

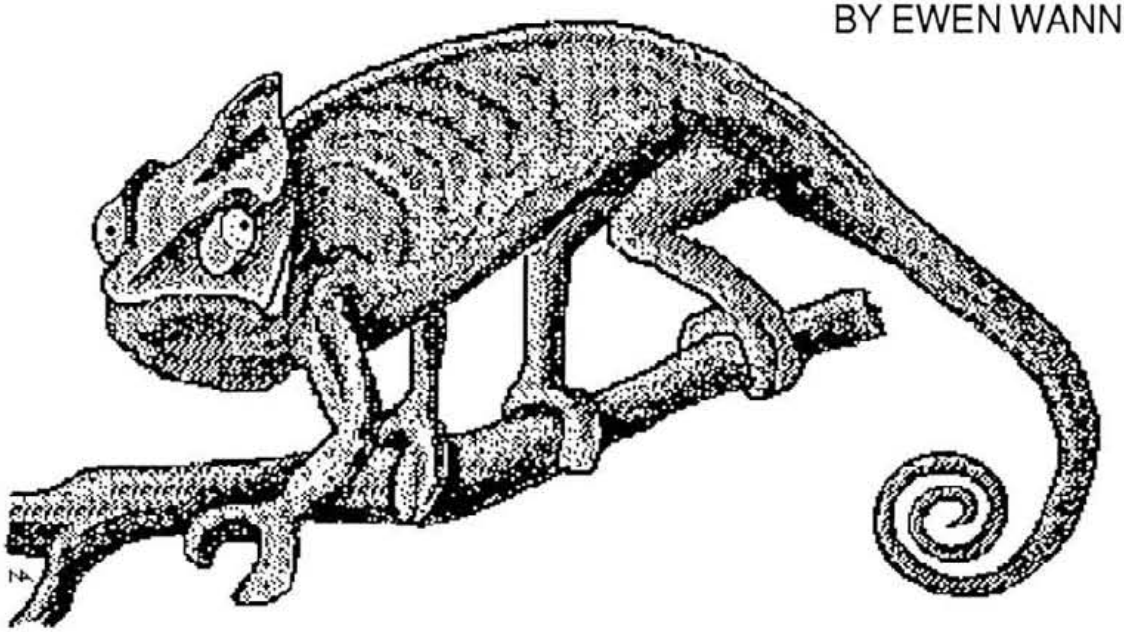
HumanForms™ **£49.50**

Now anyone can construct drawings of human figures in an almost infinite variety of positions - even if you cannot draw you will find it very easy to use. **demo disk available**

THE AMAZING

CHAMELEON

BY EWEN WANNOP



POWERFUL FILE CONVERSION FOR PRODOS, DOS3.3, PASCAL, CPM & SOS.

Special Release Price £16 includes VAT and P&P. Disc Size: 5.25 inch.
Requirements: Apple II, II+, //e, //c with 64K. Minimum two disc drives.
Instructions: Text file on back of disc. Operating System ProDos.

The CHAMELEON is an extremely powerful File Conversion program. It allows the free transfer of all filetypes between the various system discs. The program is designed to be extremely 'user friendly' and only needs a few keystrokes to operate. The option is given to change the filename if required.

CHAMELEON determines disc types without prompting, and with the Catalog option, allows unknown disc types to be quickly indentified. Though primarily intended for transferring Text files, CHAMELEON will allow the transfer of Binary and Data files. A Special Options Menu allows the setting of various parameters. These include the changing of CPM type text files to normal text files and vice-versa, changing of Appleworks text files to normal text files and the forcing of the hi-bit of the byte either on or off. The integrity of text files on CPM transfer is preserved to allow the use of Wordstar.
A unique option allows CHAMELEON to force the handling of the source or destination file as either Binary, Text or Basic. This allows for instance the changing of Text files into Binary Code files, allowing the running of files which have been downloaded by Xmodem.
Any number of disc drives may be attached, and all devices recognised by Prodos may be utilised. On a //c or extended //e, the /RAM drive is activated for use.

The CHAMELEON is available at £16 from P. O. Box 177, St. Albans, Herts. AL2 2GE.

Local Group News

Tom Wright

It's been pleasant talking and corresponding with Apple users again to find out what is going on in the groups, time and space have again prevented me talking with some contacts in time for this column but happily there are a number of new friends this time.

The **Kent Group** now has a new Contact person but unfortunately I do not yet have that person's identity, as soon as I get it I'll put it on The Force.

The **Bentwaters Apple User Group, Cambridge Apple-2000 Club, Midland Mac Group, Gateway Computer Club,** and **Macintosh User Group** are all included for the first time.

I apologise to anyone who tried to contact the Bentwaters group recently, I gave an inaccurate telephone number .

The **BENTWATERS APPLE USER GROUP** - had its initial meeting last October and currently has twenty members. Meetings are held at 7pm on the first Tuesday of each month in a school at R.A.F Woodbridge. Contact is John Thomas (0394-270240). A useful monthly newsletter is produced. John tells me that although the groups members are associated with the U.S.A.F., it is not a closed one and I'm sure that there will be a warm welcome for any Apple user who wants to contact them.

CAMBRIDGE APPLE 2000 CLUB - 20th August saw the inaugural meeting of this new club. I managed to get there and spent a very pleasant evening with a bunch of great people whose Apple interests range through business, music and games. Ian Archibald told us that he had received messages from other's about the meeting. At the meeting Ian was elected club coordinator until the club has elected officers. Since the meeting Nigel Strudwick has arranged the use of a venue at Christ's College). Everybody at the meeting was an Apple II user and there appeared to be general interest in Apple-Works which was the topic for the second meeting. It was agreed that initially the club will meet at fortnightly intervals.

The **MIDLAND MAC GROUP** - meets at 7pm on the first Tuesday of every month at Spring Grove House in the West Midland Safari Park, Bewdley, Worcestershire. Group contact is Ivan Knezovich ([redacted]). The venue includes a private bar which is open from 7pm to help the Mac reach parts that other Micros cannot reach. The group has a Laserwriter and Macintosh network running with MacServe and offers a Laser printing service for users. All the latest P.D software is reviewed by the membership whose interests include a very wide range of business and professional activities. The local dealer CELTIP also attends every meeting to help with any members needs. This group welcomes all Mac users - so give Ivan a ring.

LONDON APPLE II GROUP - held a meeting at St Bride's Institute on the 7th August and has held several informal sessions in a Pub. St Bride's is a temporary venue but Abe Savant and Chris Williams tell me that a more permanent venue is in mind and may be available from October. Contact identity for the group has now changed from Abe to Chris Williams, Chris can be contacted on 01-882-0333 and he will be happy to provide more details of this group which welcomes all Apple II users. Good news about the improved venue situation.

THE NORTH WEST APPLE USERS GROUP - includes members with Apple interests and some with I.B.M lookalikes. The mixed interest base provides additional interest, learning and fun opportunities for members and its adop-tion appears to have stimulated some growth in membership. Although the club normally meets at 8pm on the last Thursday of each month the December meeting is usually the las Thursday before Christmas. First attendance is free, members pay £2.00 per attendance, there is no annual membership fee. This group appeared in the last column under the simple heading "Manchester".

MIDAPPLE - the July meeting saw Apple U.K at the club in the form of Andy Seymour and Mary Ainsworth. Andy gave a very interesting presentation on the 3.5" UniDisk and Mary spoke bout the Apple U.K User Group Council. This event somewhat restored my expectations of APPLE U.K which had been dented after the Liverpool groups inaugural meeting. The August meeting saw Ivan Knezovich demonstrating a Mac in conjunction with colour from an Imagewriter II and talking about Apple-2000. General topic for the evening was printers with advice being available anyone with printer problems. The September meeting concentrated on Spreadsheets.

GATEWAY COMPUTER CLUB - this club has been established for some time, while it is a multi-interest club it has about 50 Apple users amongst its membership of 100 plus. The majority of the Apple users are Apple II fans, with a few Macintosh users for good measure. Most of the members are U.S service people with some Brit's as well, sounds like a good crowd I'll try to give more information on them next time.

MACINTOSH USER GROUP - another new group who have held two meetings so far. They already have eighteen active members and are currently organising themselves. I hope to be able to provide more information about them next issue.

HERTS & BEDS - main topic of the August meeting was games, the meeting was well attended and several new members appeared. Those members who didn't admit to being interested in games enjoyed a session swapping P.D software and technical tips. Keith Chamberlain (Apple2000 membership secretary) demonstrated Chameleon from the Apple2000 Special Release Software Library at the September meetings main topic; Chameleon was followed by a showing of some of the newer Videoworks files on the Macintosh. Being public domain, the quality and length of the Videoworks graphics tended to vary from the sublime to the ridiculous, but all were reasonably entertaining.

LONDON MAC GROUP - at the August meeting of the London Mac Group those present were treated to a demonstration of Pagemaker by Jim Panks (Apple2000 chairman). Jim could only demonstrate a small percentage of the skills necessary to the production of

this magazine in the time available, but those present were able to judge whether Pagemaker is a program that will meet their needs. Some members of the group have followed up this demo by getting to know Pagemaker better.

WEST MIDLANDS AMATEUR COMPUTER CLUB - a general interest club which welcomes micro enthusiasts of all persuasions. The club currently has about thirty members of whom two are Apple users. Meetings are held on the second and fourth Thursdays of every month with the fourth Thursday being a non-games evening at which the club has a guest speaker / presentation. Venue is Hill Crest School, Simms Lane Netherton, Nr Dudley, timing is 7pm to 10pm. Contact is John Tracey (0384-70097).

BRIGHTON, HOVE & DISTRICT COMPUTER CLUB - there are currently no Apple user members in this general interest club, but if you're in that area and don't have an Apple user club to go to this club welcomes users of all machines. You could at least enjoy the companionship and help of other micro users.

APPLE U.K USER GROUP COUNCIL - Apple U.K have been supplied with a list of our user group contacts (names and Telephone numbers only) to help them ensure that they are able to offer participation in the council to as many groups as possible. If you haven't heard from them yet let me have the postal address that you want used by them and I'll pass it on. Mary Ainsworth has proposed that anyone looking for local group contacts is referred to Apple2000 so hopefully we'll see dealers passing information about local groups to us. For the benefit of anybody who hasn't yet heard of the User Group Council, it is an Apple U.K initiative which is aimed at fostering the links between Apple and user groups in order to ensure greater exchange of information and a broader basis of mutual cooperation. Apple user groups are being asked to supply some information to Apple U.K who in return are offering cooperation with user groups. A very encouraging development which will please members Apple2000 and local groups. Good move Apple !

If any group wants to advertise more details about themselves via this column please get in touch with me and give me the details either by phone or in writing. We would like to include a forward programme for each group and I still have incomplete information regarding which groups publish newsletters.

I wish to offer personal thanks to all those people who have supplied us all with information and additional contacts since this column last appeared, and look forward to the chance of meeting some of them at the Appleworld show as well as more friends from our group.

Don't miss Appleworld folks, it's gonna blow your socks off ! ! !

BENTWATERS APPLE USER GROUP
CONTACT - John Thomas Tel : [illegible]
VENUE - R.A.F. Woodbridge
MEETS - 7.00pm first Tuesday of each month
NEWSLETTER - Published monthly

BRISTOL GROUP (B.A.U.D)
CONTACT - MIKE FARMER Tel : [illegible]
VENUE - Bristol Maternity Hospital
MEETS - 7th day of each month, or the Friday nearest to it if the 7th falls on a Saturday or Sunday

CAMBRIDGE APPLE2000 CLUB
CONTACT - Ian Archibald Tel : [illegible]
VENUE - Isons Cycle Shop, 72, Chesterton Road, Cambridge
MEETS - Inaugural meeting 7.30pm 20th August, 1986

CROYDON APPLE USERS GROUP
CONTACT - Graham Attwood Tel : [illegible]
VENUE - The Waddon, Stafford Road, Waddon, Near Croydon
MEETS - 7.30pm on the third Thursday of every month
NEWSLETTER - Published monthly

ESSEX GROUP
CONTACT - Pat Bermingham Tel : [illegible]
VENUE - The Y.M.C.A., Victoria Road, Chelmsford
MEETS - Third Friday of every month

FURNESS AREA
CONTACT - Alan Curtiss Tel : [illegible]
There are currently no regular meetings in this area, when held they have been at the premises of a local dealer.

GLASGOW GROUP
CONTACT - Donald Davidson Tel : [illegible]
VENUE - University of Strathclyde, Livingstone Tower, (Laboratory 5.01)
MEETS - Three or four times per year, check with Donald

HERTS & BEDS GROUP
CONTACT - Norah Arnold Tel : [illegible]
BSG009
VENUE - The Old School, 1, Branch Road, Park Street, St Albans
MEETS - 8.00pm on the first Tuesday of each month

HANTS & BERKS GROUP
CONTACT - Mike Hollyfield Tel : [illegible]
VENUE - Bracknell I.T.E.C., Fitzwilliam House (3rd floor) Skimped Hill Lane, Bracknell
MEETS - 7.00pm on the second Monday of every month

HARROGATE AREA
CONTACT - Peter Sutton Tel : [illegible]
No active organised group in this area but there are a number keen Apple users in contact with each other.

LEICESTER GROUP
CONTACT - Bob Bown Tel : [illegible]
Long standing group which has had some venue problems recently check directly with Bob for current details.

LIVERPOOL GROUP
CONTACT - Irene Flaxman Tel : [illegible]
VENUE - 78, Victoria Road, Widness, Cheshire, WA8 7AR
MEETS - Check with Irene

LONDON APPLE II GROUP
CONTACT - Chris Williams Tel : [illegible]
VENUE - St Brides Institute
MEETS - Check

LONDON MACINTOSH GROUP
CONTACT - Maureen de Saxe Tel : [illegible]
VENUE - Room 685, London University Institute of Education, Bedford Way, London, WC1
MEETS - 6.00pm on the second Tuesday of every month.

MIDAPPLE
CONTACT - Tom Wright Tel : [illegible]
BSG019
VENUE - I.T.E.C., Tildasley Street, West Bromwich, West Midlands
MEETS - 7.00pm on the second Friday of every month
NEWSLETTER - Published monthly.

THE MIDLAND MAC GROUP
CONTACT - Ivan Knezovich Tel : [illegible]
VENUE - Spring Grove House, West Midland Safari Park, Bewdley.
MEETS - 7.00pm on the first Tuesday of every month

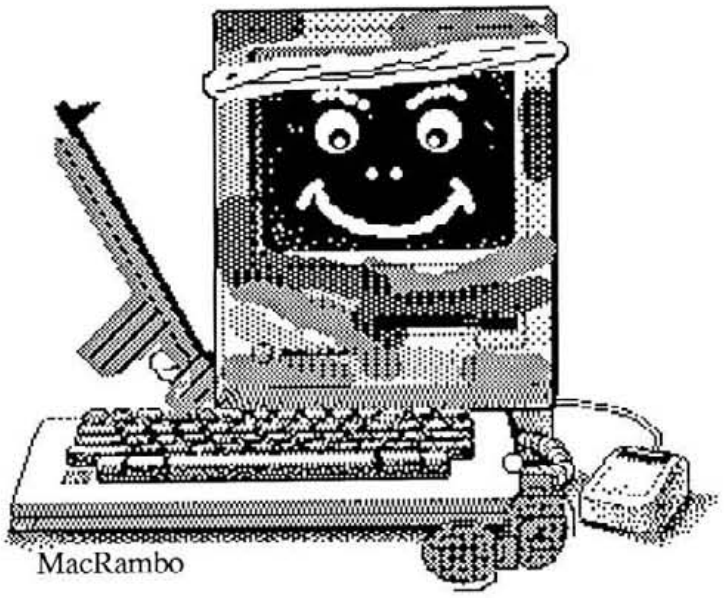
THE NORTH WEST APPLE COMPUTER CLUB
CONTACT - Jim Rosco Tel : [illegible]
VENUE - Horse & Jockey Pub., Winwick Road, Warrington
MEETS - First Monday of every month

THE NORTH WEST APPLE USERS GROUP
CONTACT - Max Parrot Tel : [illegible]
Extn 2055 daytime : [illegible] evenings
VENUE - Staff House (2nd floor), University of Manchester Institute of Science & Technology, Sackville Street, Manchester.
MEETS - 8.00pm on the last Thursday of each month.

"The only serious challenger to the IBM world, Apple,"

Computer Weekly 10th July 1986

Celtip Computers



Worcestershire's only resistance Centre

Campion House, Franchise Street,
Kidderminster, Worcs., DY11 6RE
Telephone (0562) 744377

Report on the first Apple User Group Council Meeting

On Saturday 20th September 1986 the first Apple User Group Council got under way at the Holiday Inn near Heathrow. The meeting was attended by 20 various User Groups both large and small, many of them will be found in the Club Spot.

Over the last six months Mary Ainsworth at Apple has been given the mammoth task of co-ordinating Apples response to the User Groups and also the way in which we will communicate with each other. Needless to say, Mary has done a fantastic job in what could be called a 'minefield', every one has their idea on how best Apple could help Users, however a guideline had to be set down which would help all concerned.

The meeting laid down some guidelines for the types of help that Apple could give immediately, the areas discussed were:

a) Access to the AppleText technical bulletin board.
b) Inclusion on the Apple press release list.
c) Availability of Apple technical information.
d) Availability of other general material (i.e. Wheels of the Mind).
e) Public Domain software/updates.
f) Loan equipment for reviews and meetings.
g) Exposure of User Group activities to Dealers and New Users.
h) Advertising in our magazines.
i) Making free advertising space available in other magazines.
j) The ability for representation at Apple functions.
k) The availability of speakers for meetings and the involvement of User Groups in Apple events.

As you can see the list is very comprehensive and gives us real help in those areas that we have found difficult in the past, namely getting information about the machines and also getting ourselves known by more users.

The meeting also included a chance for us all to see the new Apple IIGS, and for arrangements to be discussed for the AppleWorld Show. We are heavily involved in this venture and are now in a position to make our final plans. Apple really have some plans for the show and it should be a knockout.

Thanks to Mary and Tony Fraser for giving up the weekend and for giving us the ability to help Apple Users even more. We look forward to the Apple Experience in a few weeks time.

The Back Page

P.C.W. SHOW A Report

The P.C.W. Show was an exceptional experience for all of us this year, we returned after missing last years show and found that the ACC had again laid on excellent facilities. We used the show to try out our exhibition system and found lots of small hic-cups which we have now amended.

It was nice to see so many new and old members turning up, the high-light of the show for me was when a Disabled Gent took the trouble to find his way up to the stand, he explained how his Apple helped in ordinary tasks which we all take for granted. I was moved by the efforts of a person so severely handicapped and intend to take up the cause of the handicapped in the next issue.

The PCW Show gave us the opportunity to gain over forty new members and to go public with our new image.

We had a stand full of machines and also used the Laserwriter to produce press information and handouts for the Apple Stand.

We all enjoyed the experience and would like to thank all those that made it a success.

A Year On - That Long ?

A year has gone by and the experience of 'DOING' the journal has given me a few grey hairs, many sleepless nights and a great deal of knowledge on the use of 'Desktop Publishing'.

The journal has changed, the name has changed, the quality has changed but the people behind it all remain the same. My wish for the next year would be the involvement of more members in making this the best Apple Journal.

What will the next year hold - will we get Apple2000 out into the newsagents ? When will the print run go over the 2000 mark ?

Jim Panks

For Sale

Apple //e Computer - 2 Disk Drives (Waterbell).
RGB Card & Disk Controller.
Kaga Hi-Res Monitor.
Roland DXY-800 Plotter (A3)
25 Games incl Flight Simulator.
All in good condition with Manuals.
£495 o.n.o.

Contact David - Weekday Evenings only.
0l 278 5442

THE GOOD THING ABOUT

FORMAT-80

IS THAT IT GIVES YOU LESS

Written as an English word processor package, FORMAT-80 gives you MORE relevant facilities with LESS unnecessary complications.

Designed for Apples, FORMAT-80 gives you: –

LESS TO LEARN BY ROTE

Clear instructions and comprehensible commands make FORMAT-80 as easy to use the first time as the hundredth. For example, J is for justify, D for delete, C centre.

LESS CONTROL CODES

The FORMAT-80 screen is free of embedded codes and line markers because formatting instructions are retained without cluttering up the text.

LESS CONFUSION

What you type you see on the screen, what you see on the screen is what is printed – so documents can be quickly and accurately prepared.

LESS COST FOR MORE FACILITIES

At £129.00 plus VAT for the complete package – including mail merger, mailing list/data base, spread sheet/calculator, DOS 3.3 plus ProDOS versions, tutorial and reference manuals.

FORMAT-80 SCIENTIFIC

$$y = \int_{0}^{\infty} \frac{N_1^{(\alpha-\beta)} + N_2^{(\alpha+\beta)^2}}{\sqrt{2\pi + x}} \partial x \qquad \text{if} \quad \sum_{1944}^{1952} \eta \leq 180 \quad \text{then } \Omega \neq -1$$

This was printed on an NEC Spinwriter ELF printer using Format-80 Scientific. Other supported printers include Apple's Imagewriter and Epson FX, RX and MX series and compatibles.

At only £179.00 + VAT, or £60.00 + VAT for registered FORMAT-80 users, it's well worth contacting the Elite Software Company for more details.

Please note our new address:—

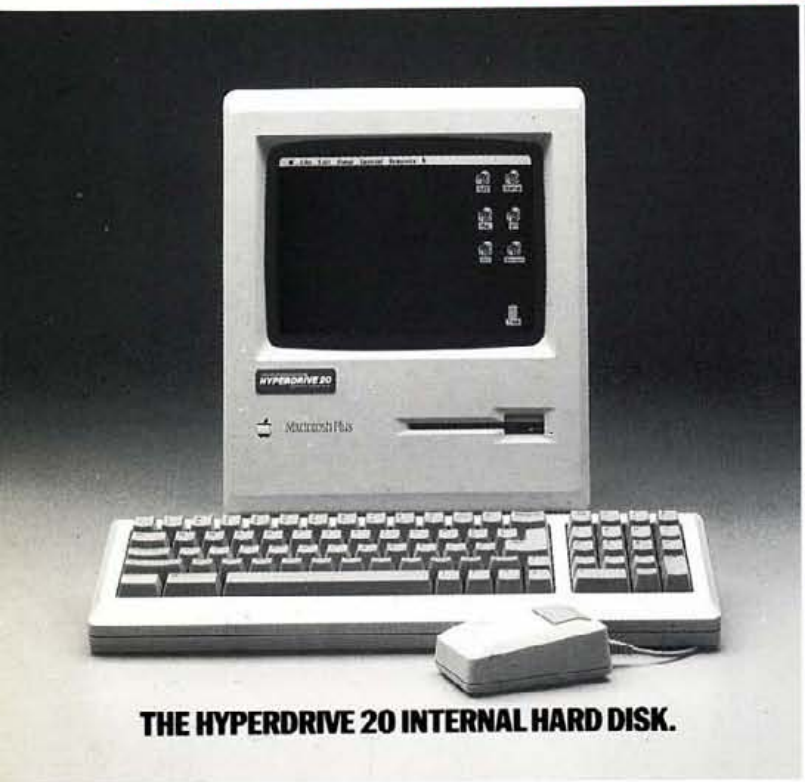
ELITE SOFTWARE COMPANY

4 Hawthylands Drive, Hailsham, East Sussex BN27 1HE.
Telephone: Hailsham (0323) 845 898.

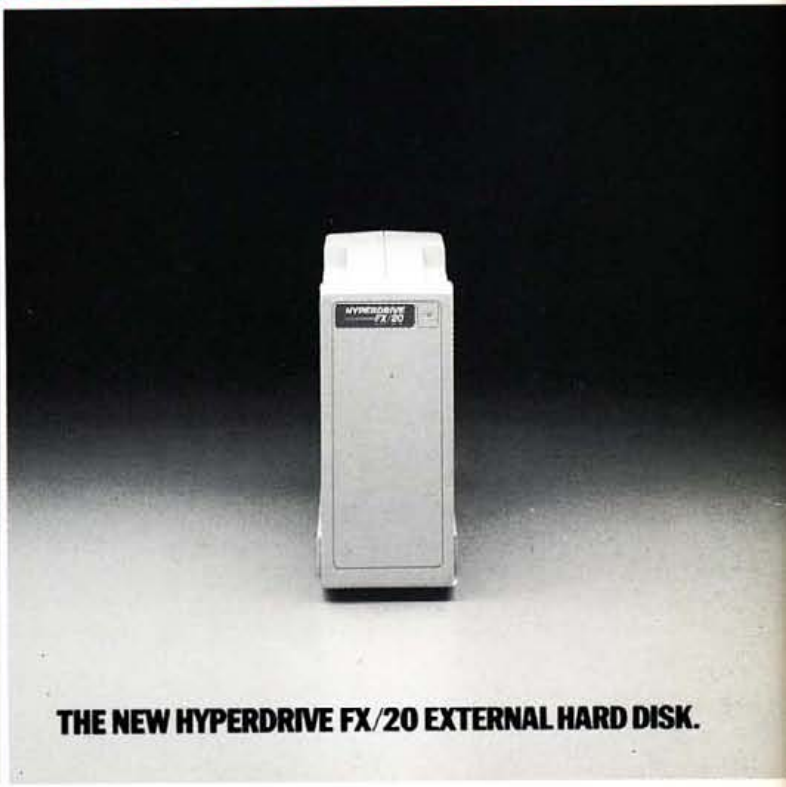
FORMAT-80 – *"Word processing so advanced anyone can use it!"*

Arabic and French versions available.

THE FIRST EXTERNAL HARD DISK WITH THE INNER STRENGTH OF HYPERDRIVE



THE HYPERDRIVE 20 INTERNAL HARD DISK.



THE NEW HYPERDRIVE FX/20 EXTERNAL HARD DISK.

INTRODUCING HYPERDRIVE FX/20.

When General Computer introduced HyperDrive, it set performance standards that remain unmatched by all but succeeding HyperDrives.

That's because HyperDrive was installed inside the Macintosh, where it connected directly to the microprocessor and was accompanied by software that made the most of this unique arrangement.

Now General Computer engineers have set their sights outward. And designed the first external hard disk with the inner strengths of HyperDrive.

THE FASTEST FULL-FEATURED EXTERNAL HARD DISK.

HyperDrive FX/20 not only runs all software programs developed to Macintosh or Macintosh Plus standards; it runs them faster than any other external hard disk.

Plug it into the Mac Plus' SCSI port, and it will reduce power-up time by 66%. It will load Aldus' PageMaker over one and a half times as fast as a Mac Plus. And Microsoft's Excel two and a half times as fast.

But unlike other external disks, HyperDrive FX/20 brings both speed *and* sophistication to the management of information.

A program called Backup, for example, lets you quickly make back-up copies of files onto diskettes—and checks to make sure each copy matches its original.

A print spooler program lets you use your Mac for other documents even while your LaserWriter is still busy printing the one you just finished. And it reduces by up to 90% the time you might otherwise have to wait.

A security program protects your files from unauthorized entry. It scrambles data so that it's indecipherable to everyone who doesn't know the password you assign it.

The FX/20 also *stores* information intelligently. Its 20-megabyte capacity accommodates the data that would otherwise occupy up to 50 diskettes. Files are structured hierarchically. So your data is dynamically stored and retrieved, and you don't have to partition the hard disk.

In short, with the FX/20, as with the Macintosh itself, elegance is more than cosmetic; it is designed into the system, and measured by functionality rather than just appearance.

NEW WITHOUT THE PENALTIES OF NEWNESS.

HyperDrive FX/20 arrives with the paradoxical advantage of being both new and proven at the same time.

Its software has been proven on previous HyperDrives. And its overall reliability is perhaps best summed up in the fact that HyperDrive is the largest-selling Macintosh peripheral in the world.

So if you prefer an external hard disk, you no longer have to settle for performance beneath the standards of HyperDrive. And if you prefer an internal hard disk, that issue was resolved in favor of HyperDrive some time ago.

The issue then becomes which form of HyperDrive you prefer: visible or invisible.

For further details contact your local P & P authorised dealer.

P P
MICRO DISTRIBUTORS LTD

GENERAL COMPUTER

FX/20 ONLY £995 + VAT

Todd Hall Road, Carrs Industrial Estate, Haslingden, Rossendale, Lancs. BB4 5HU. Tel: 0706 217744 Telex: 635740 PETPAM G.
1 Gleneagle Road, London SW16 6AY. Tel: 01 677 7631 Telex: 919220 PPMICR G.
Dale Street, Bilston, West Midlands WV14 7JY. Tel: 0902 43913.