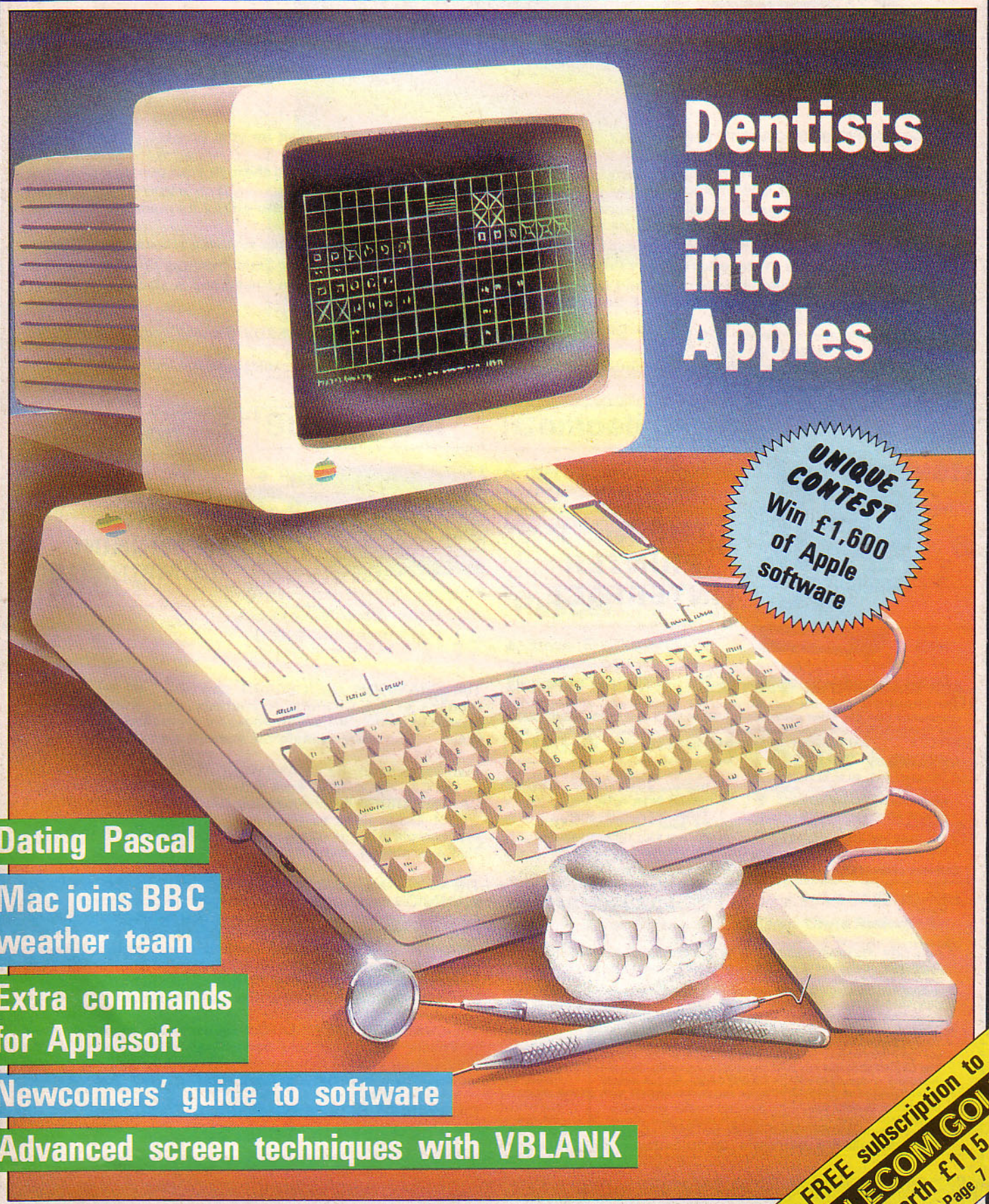




A Database Publication

# apple user

Vol. 5 No. 4 April 1985 £1



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## Design pack wins awards

APPLE'S design team for the Macintosh packaging has scooped five major awards in major US competitions.

Inspired by a poster by artist John Casado, the design for the Mac logo was created using primary colours and a line form in the style of Matisse.

Apple co-founder Steve Jobs is reported to have helped "fine tune" the final design.

## French open the door

APPLE France has been given a sop by the French government in the wake of its firm "Non" to allowing the company to gain a major foothold in the country's booming educational marketplace.

It is to be allowed the opportunity to tender for the "non-French" part of a contract to supply 120,000 computers to the nation's schools.

IBM and Apricot will also be offered the same chance, but Sinclair - despite the fact it claims to have 25 per cent of the French market - has not been asked.

But what does the "non French" share amount to after Thomson/Bull, the French computer giant, has taken its slice?

According to one Apple executive resident in Paris it will be "nothing more than peanuts". He told *Apple User*: "I'm afraid there will be little more than 10 per cent of the total up for grabs".

# Mac in drive on schools market

## -30% discount is offered

**APPLE (UK) is to offer the Macintosh to schools at a 30 per cent discount in a determined bid to dominate the British micro educational scene.**

It will form part of the "Our Kids Can't Wait" package recently launched by Apple with which the company hopes to capture 25 per cent of the British schools market by July.

And it will be in addition to the 50 per cent discounts on the Apple II range for educational purposes already announced.

The Macintosh offer is being viewed as the trump card in the package with which Apple intends to put the bite on Acorn, the current market leaders with 74 per cent.

Such is Apple's confidence that it is already predicting that it will be number one in sales to British schools by early next year. And David Hancock, Apple

UK's managing director, told *Apple User*: "The Macintosh offer is going to have a real impact.

"It means that for the very first time schoolchildren will be able to have the very latest technology used in business and higher education.

"Up until now the educational establishment simply hasn't been able to buy machines of any real power. Now, with the Government-funded schemes finished, we intend to change all that.

"This is the time for schools to catch up with what's really been happening in personal computers".

Apart from offering substantial discounts on its machines, the company is backing its educational drive with 2,000 software packages, with more arriving almost daily.

"We have been inundated

with people who want to write educational software for Apple here in the UK", says Hancock.

The "Our Kids Can't Wait" scheme will also see teachers attending special summer schools run by Apple.

However Hancock insists that the company itself intends to go to great lengths to learn.

"We are going to respond to the needs of education - and not the other way about", he insists. "That's the way Apple has always worked - and that's why we have more than a million computers looking after educational needs worldwide".

Does the discounting of machines for educational purposes herald Apple entering into the current price cutting war here in the UK?

"Certainly not", said Hancock. "We do not intend to reduce prices of our machines. In fact, they may go up".

## A IIe SAVES THE DAY

AN Apple IIe and expert programmers from a Surrey software house have saved a major advertising campaign from disaster.

Staff at EDA Software were preparing to leave for the weekend when an urgent telephone call came in from special effects experts Pennicott Payne & Lillie.

What was needed was some means of controlling 250 lights being used in a commercial for ScotRail, the Scottish equivalent of British Rail.

The lights had to switch on

and off in precisely timed sequences on an enlarged map of Scotland to show the railway lines linking the country's main stations.

Twenty four hours later EDA had the solution and on Sunday directors Mike Adamson and Ted Johnston arrived at Heston Studios in Middlesex armed with an Apple IIe containing three of their Quad cards.

The Quad card has 16 inputs, 16 outputs, clock/calendar and battery backed-up RAM.

The outputs from the cards were connected to 44 relays,

each of which operated a bank of lights.

The relays were switched by the cards using an external power supply - a unique feature of the card.

Control software was written in Apple Pascal to turn the lights on and off in a pre-determined sequence.

Says Adamson: "Apple really saved the day on this occasion. Until PPL contacted us on the Friday afternoon they were all set to cancel filming and lose the contract as no alternative was available".

# The American dream?

**DESPITE top level assurances from Apple that a secret new 16 bit computer project – codenamed Iix – was “dead” (see Steve Wozniak interview, *Apple User*, February 1985), American magazines are still maintaining it is alive and well.**

In fact one leading Apple watching publication Stateside has just revealed more details of the mysterious Iix.

Writing in the latest issue of *iCider*, Paul Quinn says: “Based on sleuth work we’ve done in and around Apple headquarters, here’s a rundown on the secret machine:

“The Iix will be a selectable

8/16-bit machine available in 1986.

“At its core will be the 65816MPU, a potent CMOS microprocessor from Western Design Centre in Mesa, Arizona.

“In its 16-bit native mode this little powerhouse will address up to 16 mbytes of memory and in its power-up 8-bit mode, it’ll address 64k.

“Presumably, compatibility with existing Apple II software will be built into the new computer, though it will be far more than a IIe with a new CPU. This machine will probably require a new motherboard and will most likely employ 256k memory chips.

“Its fast CPU clock speed, 5

mHz, will exceed that of Intel/IBM’s 8088. This, coupled with a CPU that addresses 16 times the memory of an IBM PC, will make it a strong contender for use in business.

“One highly-placed source describes the Iix as ‘A working man’s approach to a main-frame’.

“If the alleged new computer measures up to the conjecture it’s generating, we’ll see a product that will turn the industry on its ear”.

However *Apple User* readers may decide that even these “facts” may have to be taken with a pinch of salt as the article appears under the headline “California Dreamin’.”

# Back on form with Mac

AMERICAN baseball players who have hit a slump are being brought back into peak match form with a little coaching from a Macintosh.

Peter Favaro, who holds a doctorate in psychology, has written a program which is helping to improve player’s batting averages.

Working on the theory that poor performances result from the brain failing to make the most of visual information, Dr Favaro has come up with a video learning game to rectify this.

The player watches the image of a coin flipping at high speed, simultaneously clicking the mouse each time the image changes.

“Practising this helps train baseball players to judge the pitcher’s throw and when to hit the ball”, says the psychologist. “What it does is sharpen this one aspect of athletic decision making”.

Now if only this could be adapted for the England cricket team...

# Branching out

APPLE co-founder Steve Wozniak is to launch another company outside the computer field. However he will also continue to work “for the time being at least” with Apple.

To be known as MBF Inc (My Best Friend), the new venture will see Wozniak turn his electronic genius towards video-based products for the home entertainment industry.

“I just want to take some time off to develop another product outside the computer area”, he says.

While he gets MBF off the ground, Wozniak will have no daily responsibilities or assigned projects with Apple but will maintain close contact with Apple II projects.

# London Computing Festival

NEARLY two weeks of events are planned for the London Festival of Computing which runs from April 9 to 20.

Of special interest to Apple users will be Choosing and Using Computers – a two-day conference organised by the Greater London Council at County Hall on April 12 and 13 – and the London Logo Spectacular on the same dates.

The latter event, organised by Community Computers UK and Interactive Storybooks, takes place at London Docklands on April 12 and at London New Technology Network, Camden Town, on April 13.

There will be a variety of events aimed at encouraging the effective use of Logo and associated software and hardware, including seminars and workshops given by experts and practitioners in the field as well as exhibits by schools and agencies using Logo in informal and formal settings.

The Festival ends with the London Computer Fair organised by the Association of London Computer Clubs at Central Hall, Westminster, on April 18, 19 and 20.

# Electronic mail should mean a better service

**APPLE users can look forward to faster more efficient service in the future as the company and its dealers link up via electronic mail.**

“Within a year or two I expect most Apple dealers around the world will have electronic mail”, says Phil Peters, manager of Apple’s software business unit.

“When that happens it’s going to take a lot of the headache out of communications and make our marketing and distribution so much easier”.

Peters said Apple joined Easylink, the electronic mail service from Cable & Wireless, because it fitted so neatly into the firm’s marketing strategy.

“It is an effective and reliable communications service which our dealers can demonstrate to customers, and it is very likely to be seen as a major application for their personal computers, whatever else they use them for”, he said.

A feature of Easylink which particularly appeals to Peters is that it can broadcast a message



*Phil Peters... “effective and reliable service”.*

to multiple destinations simultaneously, wherever there is either a telex machine or another Easylink subscriber with a terminal.

“We do a lot of communicating with our people in the United States this way”, he says.

The Easylink communications software can be run on Apple Lisa (now Macintosh XL), Apple IIe and IIc. Access on the Macintosh is via the recently released MacTerminal.



## Looking ahead - thanks to Apple

A TWENTY-year battle to perfect a device that lets people row a boat while facing forward has ended in success, thanks to an Apple computer.

The Fore-Oar forward rowing system was invented in the early 1960s by a firm in Locris, Greece.

"The technical difficulties to make it simple and easily applicable to wide-range use were enormous", company spokesman Anthi Liva told

*Apple User*. "But we laboured on, mostly in vain, until we were able to use an Apple computer.

"Then solutions began to tumble into place. In the space of a year we were able to design the unit that reverses the oar stroke and attaches to a boat gunwale".

Even the most difficult application of all – a forward looking rowing device for the windsurfing board – was made possible with the computer's help.

## COMPUTER CAMP IN HUNGARY

BRITISH Apple users have been invited to join their Hungarian counterparts on holiday at a computer summer camp in one of the most beautiful regions of Europe during July.

Dietrich Diebel, a reader living in Budapest, has written to *Apple User* about his fellow enthusiasts in the Hungarian branch of Apple User Group Europe.

This 30 strong regional group and the John von Neumann Society for Computer Sciences are organisers of the third annual Apple Camp in Veszprem near Lake Balaton from July 15 to 28.

The first summer camp was held in 1983 in Miskolc, North Hungary and the second one last year at Szentendre near Budapest.

Dietrich says the camp is always held in a beautiful part of the Hungarian countryside and last year's attracted 34 Apple enthusiasts from Germany, Holland, Italy and Hungary.

This summer the camp will offer courses in Pascal for beginners, advanced Pascal, Pascal in English, CP/M and dBase II, Assembler, introduction to Apple II hardware and Basic for beginners.

A section will be formed with a minimum of four participants if an appropriate leader can be found. Dietrich says section leaders don't pay the cost of board and lodging, only their travel expenses.

This year there will be trips to Lake Balaton and the Heviz spa, to Pecs – a town in South Hungary with mosques from the time of the Turkish occupation – and to Pannonhalma with its monastery and famous library.

And, of course, there will be time for sightseeing in Budapest as well as swimming and surfing at Lake Balaton.

Dietrich asks *Apple User* readers interested in attending the summer camp to write to him for details at Rozsa Ferenc u. 26, Budapest, H-1039.

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Name .....

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A VISIT to a modern dental surgery can be technologically very interesting – unless you suffer from a preoccupation with what is going to happen to you.

Surprisingly, most of today's children seem quite happy about visiting the dentist, sitting in a silicon chip controlled chair which remembers pre-set positions, having their mouth illuminated by a tiny light via an optical fibre, and seeing the dentist peruse a bewildering array of powered instruments.

You might be aware that the dentist keeps a large amount of paperwork, but might wonder what much of it is for, and it would seem that a computer would be an obvious aid to a dental practice.

In essence the administration of a dental practice revolves around three main items of paper – the appointment book, the record card he keeps about each patient, and a claim form he submits to the government for payments under the NHS.

To many dentists this last item is the main administration bugbear. For all completed work under the NHS, the dentist must submit an FP17 claim form for each patient, which shows the treatment he has undertaken and the appropriate fees claimed.

This is sent to the Dental Estimates Board referred to simply as the DEB, for payment authorisation. It then sends a monthly payment list called a 'Schedule' which itemises each patient and amount to be paid.

Mr Patterson, a dentist in Harrogate, felt a computer could ease this workload of his office, and bought an Apple IIc from Claudius Ash & Sons, the largest UK dental suppliers, who now supply Apple computers along with all their other dental products. He uses the Feecalc Software package from Attar Computers to calculate the NHS charges for his claim forms and to check his schedule return against the list held by the computer.

The Attar package uses the Apple mouse, which Mr Patterson thinks is an excellent device and truly does help ease of use, although he thought the

# Dentists get their teeth into Apples

By BRYAN WOODS

cable a little too stiff – "a bit like the tail moving the mouse".

In fact putting the IIc mouse and the Macintosh mouse side by side it is noticeable that the IIc cable is somewhat thicker.

Using the mouse, items of treatment can be selected by clicking the button while the appropriate item is highlighted. A choice of main items is shown at the top of the screen. If one is selected, a more detailed choice will appear on the left of the screen and you can see the items already chosen on the right.

Once you have finished entering treatments you are prompted to click on any exemptions from patients charges, for example if the patient is receiving social security, or is under 16, etc. You can then instigate a fee calculation.

The calculation is not on a simple price per item basis, as many conditions are applied for various combinations of treatments and number of teeth involved. Also, depending upon the date your dentist accepts you for treatment, different fee scales might apply.

The Attar software keeps several fee scales at any one time, and an update service is provided for new fee scales as they appear from the DEB. It is a similar situation to payroll software, in that purchasers should ensure that they will be able to obtain fee updates readily on software of this type.

After the patient's fee and DEB fees are shown, the items to be completed on the FP17 claim form are displayed. However this is not printed, since the form is government provided

and takes longer to position in a printer than complete by hand. Completing the form consists mainly of entering crosses and numbers in the appropriate boxes.

The form will also have been signed by the patient, so that mistakes in lining up would be unacceptable. There is also a government funded pilot scheme of £1.9 million looking at alternative methods of sending claim forms, with new designed forms, sending floppy discs, and direct telephone links all being investigated. Adoption of any one would enhance the appeal of this type of product tremendously.

Another dentist with the same system, Mr Barton of Cardiff, also likes the mouse, and thought his staff adapted well to using the computer. He found using the machine more interesting and more accurate than his manual system, and is keen to expand the system to do other tasks, particularly recalls. But he is an advocate of mastering one application before adding others – sound advice for any first time computer user.

With saving time being a high priority, Mr Taylor, a Northamptonshire dentist, also sought out a suitable computer system. He visited the British Dental Trade Exhibition at the Wembley Arena last year, and saw the Attar Feecalc software demonstrated on the Claudius Ash stand.

He was impressed, but decided to look around at the other computer systems on show, then later went back and ordered the Apple IIc system on

the stand. As he found that as much as four days a month were spent on checking DEB schedules he thought that this was the main benefit of the Attar package, more so than the NHS fee calculation.

Unlike the previous two dentists, Mr Taylor thought using the cursor keys (a software configurable option) easier than the mouse, although he still enjoyed using the mouse on Mousepaint. He was interested to note the patients' reaction to his computer, in that so many had one or used computers already, a comment echoed by Mr Patterson who said many patients seemed to expect to see one.

A dentist who has gone a stage or two further down the computerisation road is Mr Johnson of Scunthorpe. He decided to computerise his appointment books as well as keeping patient records on the computer and uses a Symbiotics hard disc with Apple IIe computers linked via a network to his reception and surgeries.

The Apples are fixed onto swivelled wall mountings to conserve valuable surgery working space, with the main hard disc in the reception, and installed on the hard disc is an integrated suite of dental software from Attar Computers.

His staff can call up patients' records on to any Apple and see the previous details, together with the dental tooth chart, shown on the Apple's hi-res screen.

The chart is designed to be similar to the usual manual patient's record card, called an

FP25. This shows a two dimensional grid of 32 teeth, with representation of each tooth surface, onto which the dentist or his assistant indicates cavities, fillings and other information as to the state of your teeth.

As you leave the surgery the fees are calculated by the system and the amounts due can be seen at reception, where an appointment is made for any next visit and an appointment slip printed out. Free time in the appointment books can be searched for by specifying criteria such as a Wednesday after 3.30pm.

Mr Johnston's receptionist thought that the search facility should be faster, and an improved system of free time pointers was used in the appointments software, as well as a SpeeDemon card fitted into the Apple in reception to

improve performance in this respect.

Overall Mr Johnson is delighted with the system, which he has now been using for two years, and could not imagine ever returning to a manual system, feeling that he now spends very little time on routine administration and more time being a clinician.

He found that his adult patients were impressed by the way the practice was using modern technology, while the children seemed more interested as to whether they could play space invaders while being treated!

*(For professional reasons the actual users' names have been changed. Attar Computers can be contacted on 0942 608844 and Claudius Ash on 01-440 8100).*



## AppleTip

In the May 1984 issue of Apple User two apparently unrelated AppleTips reminded me of a program I wrote some time ago. It demonstrated a way of automatically swapping drives when a file wasn't found on the expected (current) drive.

Apart from a two drive system being essential, if the program is used within a larger one it will need modifying a little.

In particular, if an attempt is made to read a data file which isn't there, the Apple will open a file anyway, before finding this new file

empty and producing an error code #5. The empty file should be deleted of course.

If this program is used to run or load another program, it will obviously be overwritten itself in the process. It is for this reason that line 170 - which

reselects the original drive - is only necessary when using a READ instruction.

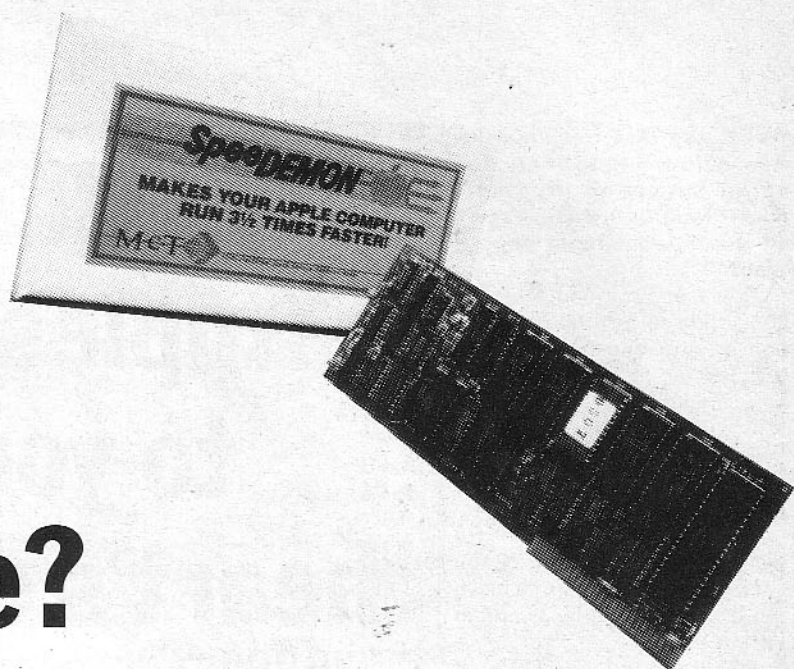
I have always found the ONERR function of the Apple to be one of its greatest strengths - perhaps because I tend to experience errors fairly frequently! **Duncan Langford**

```

100 REM Program to           or LOAD)
    demonstrate auto drive
    swapping
110 REM by Duncan Langford,
    Canterbury, Kent
120 REM LOAD/RUN/READ
    Program
130 DX = 0: REM Drive change
    flag
140 ONERR GOTO 510
150 PRINT CHR$(4)"RUN
    PROGRAM NAME"
160 REM Next line needed on
    READ instruction (not RUN
    or LOAD)
170 IF DX THEN DX = 0: POKE
    43634,1 + ( PEEK (43634) =
    1)
180 POKE 216,0: REM Cancel
    ONERR
190 REM Rest of program
    here....
200 :
210 END
220 :
500 REM DISK ERROR!
510 P = PEEK (222): REM Set
    P to error code value
520 REM P=6: File not
    found
530 REM P=5: No data
    file/end of data
540 :
550 IF P < 5 OR P > 6 THEN
    PRINT "DISK ERROR !";P;".
    SEE DOS MANUAL P.114": END
560 :
570 REM If DX=0 then change
    drives
580 IF DX = 0 THEN DX = 1:
    POKE 43624,1 + ( PEEK
    (43624) = 1): GOTO 150
590 :
600 REM Arrive here
    if we've
    changed drives once
610 :
620 PRINT "FILE
    NOT AVAILABLE
    ON EITHER DRIVE!"
630 :
640 REM Change back to
    original drive
650 POKE 43624,1 + ( PEEK
    (43624) = 1)
660 END

```

# Life in the fast lane?



IN August 1983 *Windfall* reviewed The Accelerator from Saturn/Titan Technologies. At that time the machine, which now costs £309, ran only on the Apple II+ although a IIe version, costing more at £379, soon appeared.

From Micro Computer Technology a competitor to the Accelerator has now come to the market. This costs £299 and runs on both the II+ and IIe.

Because the previous review did it so well, rather than describing the marvellous effects which an increase in speed allows I will concentrate on the differences between the two cards. But I would point out that I don't have an up to date Accelerator to hand.

The Speedemon, loaned to us by P&P for this review, has a 65C02 microprocessor from Rockwell. Like the Accelerator, it runs software about three and a half times faster. The Accelerator used to have a 6502 but, according to P&P's catalogue, now has a CMOS version.

There are so many possible configurations of hardware for Apple systems that it is impossible to check them all out so only a limited number of the more popular combinations have been tried here.

The card ran just the same in an Apple II+ and an Apple IIe. In both machines it worked with and without 80-column cards.

As an aside, I should say that it is a pleasure to see an

80-column card working at a fast speed and not to have the problem of losing text in Appewriter IIe because the rate of typing is too fast for the machine to keep up with.

However an expanded 80-column card does not run at breakneck speed and for fast typing of short documents it was necessary to take out the card.

Before putting the card into a slot a jumper has to be checked. This, when present, causes accesses to slots 4, 5 and 6 to slow down to normal Apple speeds – essentially for disc

accesses. When not present then only slot 6 has the slow access times.

After the card is put into a slot and the computer turned on there is a slightly disconcerting wait of about two seconds before the boot floppy springs to life. During this time the card performs some internal checking and waits to see if you want to use it.

Pressing a combination of keys while it's waiting, which is different on the two computers, halts it in case you don't want it to function.

The card may also be halted during use by issuing a simple command from the keyboard. Once switched off the card can only be re-instated by switching

the computer off and on again.

The Accelerator has a series of dip switches to choose a boot option. This doesn't apply on the Speedemon, although there is a small bank of jumper posts with unexplained functions.

I should say that there is no manual – merely a printed card explaining how to set the slot access times and how to cause the card to switch itself off. This is not an inconvenience because for most purposes one can put the card in the computer and just leave it there doing its job.

Unlike the Accelerator, there is no preboot disc necessary for

lot of disc accesses. Besides the fact that I just couldn't score anything worthwhile because of the speed of attack of the little monsters, everything worked perfectly.

I figured that the most likely software to have illegal opcodes was to be found in the games, but in fact I couldn't find a single game that would not work at breakneck speed.

So I returned to my investigation of disc accessing via the various disc copying utilities I could lay my hands on. The straightforward ones like COPYA and the p-system's Filer ran perfectly but I found an early version of Locksmith would not work.

Whether this was due to timing loops not functioning properly or to the improper use of opcodes I don't know. I suspect the former reason.

My ability to check hard disc systems is severely limited by their non-availability to me. But I did find one friend with an Icc system – which wouldn't work. I suspect that probably no hard disc systems can be speeded up. You will have to check it out yourself if you are interested.

By MAX PARROTT

some software. However I did find that some commercial, protected software would not boot from cold. But each of these would boot using PR #6 or Ctrl-Open Apple-Reset after a normal DOS disc had been booted.

I also tried ProDOS and p-system discs and had no problems. CP/M gave no speed-ups.

I expected most trouble either with programs that use a lot of disc accessing or those that use the various illegal 6502 opcodes which now have a new meaning under the 65C02 processor.

My first plan of attack therefore was to extensively play Sneakers, which makes a

**Product:** Speedemon.

**Price:** £299.

**Distributor:** P & P Micro Distributors, Todd Hall Road, Carrs Industrial Estate, Haslingden, Rossendale, Lancs, BB4 5HU. Tel: 0706 217744.



OVER the last few months this column has been devoted largely to programming graphics in Basic—after all that's what most people want.

However now and then it's interesting to turn one's attention to something more unusual. Besides, we all like to show off occasionally!

So this month's column is devoted to putting two new graphics commands into Applesoft itself.

Although some of the material is rather technical, the complete novice can achieve the end result just by typing in Listing I.

It all started a couple of weeks ago when I found—yet again—that I wanted the HPLLOT equivalent to XDRAW. Just to remind you, XDRAW puts a shape on the screen by inverting any points the shape passes over. Two successive XDRAWs thus return the screen to its original state. Unfortunately XDRAW isn't much use for general line drawing.

The uses of non-destructive HPLLOTs vary from drawing cursors and highlighting portions of the screen to simple animation and drawing laser

# Moulding Applesoft to your heart's desire

**PETER GORRY shows how to introduce two new graphics commands, including a non-destructive version of HPLLOT**

beams. Unfortunately there is no XHPLLOT.

This is not the case in Pascal or GraForth, which both offer an equivalent command.

What rubs salt into the wound is that Applesoft contains routines I've never used or wanted—SHLOAD, STORE and other cassette-based com-

mands—all of which use up valuable space.

In fact it's surprising that Applesoft doesn't contain this command since the extra code required to turn HPLLOT into its non-destructive version isn't much more than 20 bytes overall.

This was pointed out in April

1984's Call-A.P.P.L.E. by Mark Harris, who provided a machine code routine to do the job. But you have to duplicate large amounts of Applesoft in order to perform the task, resulting in 179 bytes of machine code accessed by the CALL command.

This approach works well for one-off problems but it doesn't beat having the command there in Applesoft in the first place, so I decided to put in the missing command.

Now Applesoft is in ROM (Read Only Memory) so it can't be altered as it stands. However, providing one has a language card or an Apple IIe, one can make a copy of Applesoft in RAM (Random Access Memory) very simply.

The Apple will work from this copy of Applesoft just as well as the original. In reality all we have done is to place the language Applesoft on the language card. In fact we also have to copy the Apple monitor across as well.

Once we have a copy of Applesoft in RAM we can alter it to our heart's content. This isn't something to be attempted lightly since it requires a detailed knowledge of the internal workings of Applesoft.

The strategy I decided on was to replace the SHLOAD command by my required XHPLLOT command. In order to keep the code short I wanted to use the existing HPLLOT routines wherever possible. This is achieved by getting the XHPLLOT routine to alter the necessary bytes in HPLLOT, performing the line drawing, and then restoring HPLLOT to its original form.

A careful look at the HPLLOT routines reveals that putting in some of the bytes requires no more than a simple swap. However, in a couple of places there isn't enough space to squeeze in the modifications so a little bit of redirection is used as well.

Flushed with success I decided that I never liked the look of STORE either, and that a command to invert the whole hi-res screen would be much better. This duly became IPAGE.

The program in Listing I

```

100 REM INSTALL XHPLLOT AND IPAGE
105 HOME : VTAB 10: HTAB 5: PRINT
    "INSTALLING ALTERNATIVE APPL
    ESOF"
110 REM COPY APPLESOFT+MONITOR
120 DATA 169,0,141,129,192,141,
    129,192
130 DATA 133,60,133,66,169,208,
    133,61
140 DATA 133,67,169,255,133,62,
    133,63
150 DATA 160,0,216,32,44,254,16
    9,0
160 DATA 141,131,192,141,131,19
    2,96
170 A = 768: FOR I = 1 TO 39: READ
    J: S = S + J: POKE A, J: A = A +
    1: NEXT
180 IF S < > 4970 THEN PRINT "
    ERROR IN FIRST DATA SET": PRINT
    : GOTO 3110
190 CALL 768
2000 REM XHPLLOT CODE
2010 DATA 72,169,143,141,16,247
    ,169,247
2020 DATA 141,17,247,160,6,32,1
    64,247
2030 DATA 104,32,254,246,160,13
    ,32,164
2040 DATA 247,96,32,192,222,166
    ,224,164
2050 DATA 225,165,226,32,17,244
    ,177,38
2060 DATA 69,48,73,128,145,38,9
    6,162
2070 DATA 5,185,191,247,141,7,2
    47,136
2080 DATA 185,191,247,141,6,247
    ,136,202
2090 DATA 48,236,185,191,247,15
    7,144,245
2100 DATA 208,244,48,73,128,234
    ,234,152
2110 DATA 247,28,37,48,81,38,87
    ,244
2120 S = 0
2130 A = 63349: FOR I = 1 TO 88: READ
    J: S = S + J: POKE A, J: A = A +
    1: NEXT
2140 IF S < > 12547 THEN PRINT
    "ERROR IN SECOND DATA SET": GOTO
    3110
3000 REM IPAGE CODE
3010 DATA 160,0,132,60,165,230,
    133,61
3020 DATA 177,60,73,255,145,60,
    200,208
3030 DATA 247,230,61,165,61,41,
    31,208
3040 DATA 239,96
3050 S = 0
3060 A = 62367: FOR I = 1 TO 26: READ
    J: S = S + J: POKE A, J: A = A +
    1: NEXT
3070 IF S < > 3498 THEN PRINT
    "ERROR IN THIRD DATA SET": GOTO
    3110
3080 REM NOW INSTALL COMMANDS I
    N TOKEN TABLE
3090 A = 53559: POKE A, 88: POKE A
    + 1, 72: POKE A + 2, 80: POKE
    A + 3, 76: POKE A + 4, 79: POKE
    A + 5, 212
3100 A = 53637: POKE A, 73: POKE A
    + 1, 80: POKE A + 2, 65: POKE
    A + 3, 71: POKE A + 4, 197
3110 END

```

Listing I

0800	1	PAG		00E1	53	XOH	EPZ \$E1	
0800	2	;MOVE APPLESOFT		00E2	54	YO	EPZ \$E2	
0300	3	ORB \$300		0026	55	GBASL	EPZ \$26	
0300	4	OBJ \$800		0030	56	HMASK	EPZ \$30	
003C	5	A1L	EPZ \$3C	DECO	57	SYNCHR	EQU \$DECO	
003D	6	A1H	EPZ \$3D	F6FE	58	HPL0T	EQU \$F6FE	
003E	7	A2L	EPZ \$3E	F411	59	HPOSN	EQU \$F411	
003F	8	A2H	EPZ \$3F	F457	60	HPL0T0	EQU \$F457	
0042	9	A4L	EPZ \$42	F590	61	FIX	EQU \$F590	
0043	10	A4H	EPZ \$43	F775	62	;		
FE2C	11	MOVE	EQU \$FE2C	F775 48	63		PHA	;SAVE TOKEN
0300 A9 00	12	LDA #\$0		F776 A9 8F	64		LDA #XPL0T2	;LINK TO HPL0T
0302 8D 81 C0	13	STA \$C0B1	;RAM WRITE, ROM READ	F778 8D 10 F7	65		STA \$F710	
0305 8D 81 C0	14	STA \$C0B1		F77B A9 F7	66		LDA /XPL0T2	
0308 85 3C	15	STA A1L		F77D 8D 11 F7	67		STA \$F711	
030A 85 42	16	STA A4L		F780 A0 06	68		LDY #\$6	;SWAP CODE
030C A9 D0	17	LDA #\$D0		F782 20 A4 F7	69		JSR SWAP	
030E 85 3D	18	STA A1H		F785 68	70		PLA	;RESTORE TOKEN
0310 85 43	19	STA A4H		F786 20 FE F6	71		JSR HPL0T	
0312 A9 FF	20	LDA #\$FF		F789 A0 0D	72		LDY #\$0D	;RESTORE CODE
0314 85 3E	21	STA A2L		F78B 20 A4 F7	73		JSR SWAP	
0316 85 3F	22	STA A2H		F78E 60	74		RTS	
0318 A0 00	23	LDY #\$0		F78F 20 C0 DE	75	XPL0T2	JSR SYNCHR	;CHECK TDKEN
031A DB	24	CLD		F792 A6 E0	76		LDX X0L	;OLD POINT
031B 20 2C FE	25	JSR MOVE		F794 A4 E1	77		LDY X0H	
031E A9 00	26	LDA #\$0		F796 A5 E2	78		LDA YO	
0320 8D 83 C0	27	STA \$C0B3	;RAM CARD READ	F798 20 11 F4	79	XPL0T0	JSR HPOSN	
0323 8D 83 C0	28	STA \$C0B3	;AND WRITE ENABLE	F79B B1 26	80		LDA (GBASL),Y	
0326 60	29	RTS	;DONE	F79D 45 30	81		EOR HMASK	
0327	30	;		F79F 49 80	82		EOR #\$80	
F39F	31	ORB \$F39F	;OVERWRITE STORE	F7A1 91 26	83		STA (GBASL),Y	
F39F	32	; INVERSE PAGE CODE		F7A3 60	84	DONE	RTS	
00E6	33	HPAG	EPZ \$E6	F7A4 A2 05	85	SWAP	LDX #\$05	;COUNTER
F39F	34	;		F7A6 B9 BF F7	86		LDA TABLE,Y	;Y=6 INSTAL XPL0T
F39F A0 00	35	INVP6	LDY #\$0	F7A9 8D 07 F7	87		STA \$F707	;Y=0D RESTORE HPL0T
F3A1 84 3C	36	STY A1L	;LOOP COUNTER	F7AC 8B	88		DEY	
F3A3 A5 E6	37	LDA HPAG		F7AD B9 BF F7	89		LDA TABLE,Y	
F3A5 85 3D	38	STA A1H		F7B0 8D 06 F7	90		STA \$F706	
F3A7 B1 3C	39	LOOP	LDA (A1L),Y	F7B3 8B	91	LOOP2	DEY	
F3A9 49 FF	40		EOR #\$FF	F7B4 CA	92		DEX	
F3AB 91 3C	41		STA (A1L),Y	F7B5 30 EC	93		BMI DONE	
F3AD CB	42		INY	F7B7 B9 BF F7	94		LDA TABLE,Y	
F3AE D0 F7	43		BNE LOOP	F7BA 9D 90 F5	95		STA FIX,X	
F3B0 E6 3D	44		INC A1H	F7BD D0 F4	96		BNE LOOP2	;ALWAYS TAKEN
F3B2 A5 3D	45		LDA A1H	F7BF 30 49 80	97	TABLE	HEX 304980EAEA	
F3B4 29 1F	46		AND #\$1F	F7C2 EA EA				
F3B6 D0 EF	47		BNE LOOP	F7C4 98 F7	98		ADR XPL0T0	
F3B8 60	48		RTS	F7C6 1C 25 30	99		HEX 1C25305126	
F3B9	49	;		F7C9 51 26				
F3B9	50	; XHPL0T CODE		F7CB 57 F4	100		ADR HPL0T0	
F775	51	ORB \$F775	;OVERWRITE SHLOAD	F7CD	101		END	
00E0	52	X0L	EPZ \$E0					

Listing 11

performs the installation of the modified Applesoft.

The first part of the program puts a small machine code routine at \$300 to perform the language card copy. The second and third parts then install XHPL0T and IPAGE in place of SHLOAD and STORE. The final

few pokes alter the Applesoft token table to recognise the new words.

Since it is very easy to make a mistake typing in DATA statements I've included a simple check at each stage.

The sum of the numbers in the DATA statements is

checked against the correct total - if the numbers do not tally the program tells you which section is involved and stops.

Once the program has run we have a customised version of Applesoft which treats the new commands just as if they had

always been there.

Figure 1 shows schematically the way the Apple is now configured. If this program is made the HELLO program on initialising a disc it will automatically install the modified Basic when booted.

For those with a burning

# GRAPHICS

desire to know how it works the assembler versions for each section are given in Listing II. What remains now is to give an example of using the new commands.

The XHPLOT command is used in exactly the same manner as HPLOT. All the same rules apply, apart from the fact that you don't need to define HCOLOR first since it draws by inverting colours already on the screen. IPAGE has no variables attached since it inverts the complete screen.

A point to note with XHPLOTing is that if you draw a closed shape such as a square or triangle the first point will be switched on by the first XHPLOT, and then off again by the last XHPLOT arriving back at the starting point.

To avoid this you must either ensure you stop one point away from the start or, more simply, XHPLOT the starting point a third time.

The program in Listing III demonstrates the new Basic in operation. It draws a border and coloured square on the screen, then covers it with 50 random rectangles using XHPLOTS.

The rectangles are then removed using more XHPLOTS leaving the original screen intact. This is also inverted a couple of times just to show the effect.

A point to note is that pressing Reset (or Ctrl-Reset) will restore the Apple to normal Applesoft. You can verify this simply by listing the program — all the XPLoTs will be SHLOADs again.

If you try to run it in this state the program will hang while waiting for the cassette information. Pressing Reset again will get you out of this.

You won't lose a program doing all of this but you do need to reconnect the modified Applesoft. This is done very simply by doing PEEK(-16253) twice.

The simplest way of avoiding trouble with Resets is to put the two PEEKs at the beginning of the program. This will ensure the modified version is always activated every time you run.

If you want to revert to normal Applesoft a little less drastically a PEEK(-16254) is all you need.

In fact using the PEEKs given

above you can switch between the two Applesofts while running the program. In this way you don't even have to give up the commands that have been overwritten. All you do is switch to normal Applesoft before using SHLOAD say, and then back to the modified version immediately afterwards.

The problem with altering Applesoft is that once you've done it you can't stop. Think of all the other commands that would be really useful, especially since you don't have to sacrifice the others!

I must say RESTORE is looking distinctly shaky, and I never did like NOTRACE...

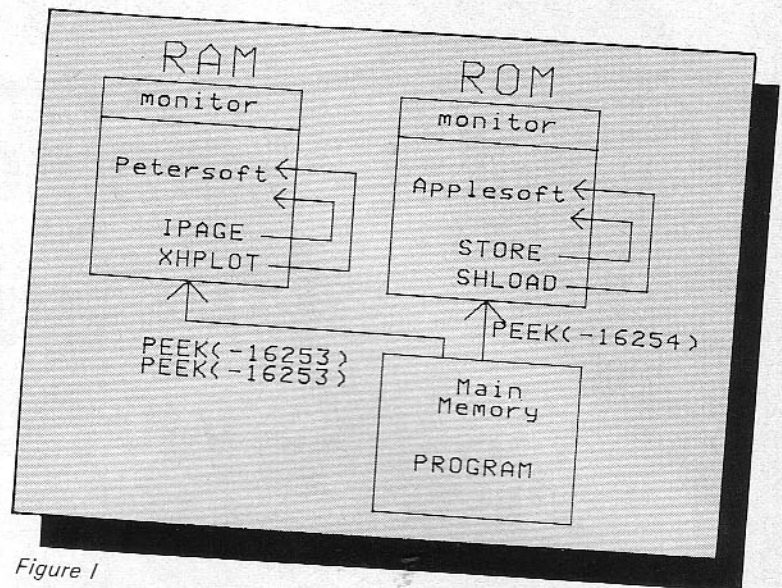


Figure I

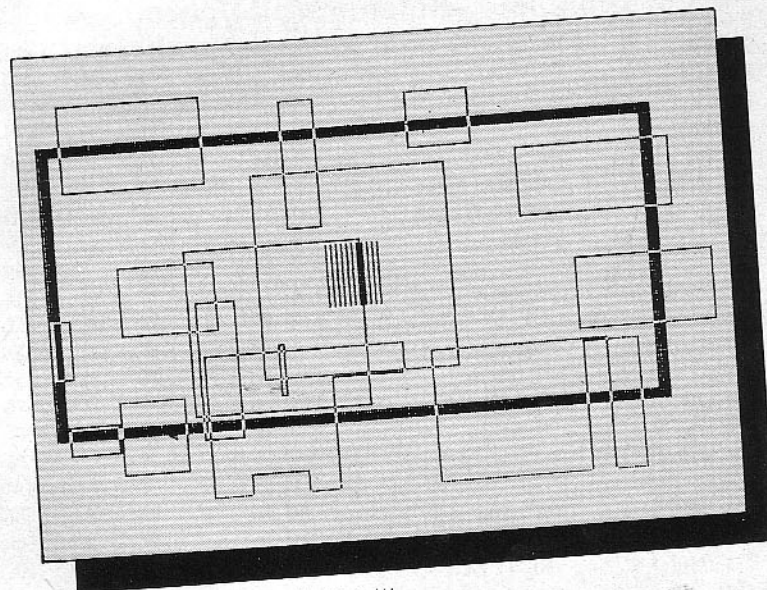


Figure II: Output from Listing III

```

100 DIM X(50),Y(50),D1(50),D2(50)
110 A = PEEK (- 16253):A = PEEK (- 16253): REM ALTERNATIVE APPLESOFT
120 GOTO 1000
130 REM BOX ROUTINE
140 XHPLOT X,Y TO X + D1,Y TO X + D1,Y + D2 TO X,Y + D2 TO X,Y + 1: RETURN
1000 HGR : POKE - 16302,0: REM FULL PAGE
1010 FOR I = 1 TO 5:X = 20 + I:Y = 20 + I:D1 = 240 - I + 2:D2 = 140 - I + 2:GOSUB 130: NEXT I
1020 HCOLOR= 2
1030 FOR I = 1 TO 30: HPLOT 130, 75 + I TO 150,75 + I: NEXT I
1040 REM NOW RANDOM BOXES
1050 FOR I = 1 TO 50
1060 X = RND (1) * 250:Y = RND (1) * 190
1070 D1 = RND (1) * 100:D2 = RND (1) * 100
1080 IF X + D1 > 279 THEN D1 = 279 - X
1090 IF Y + D2 > 191 THEN D2 = 191 - Y
1100 GOSUB 130
1110 X(I) = X:D1(I) = D1:D2(I) = D2:Y(I) = Y
1120 NEXT I
1130 IPAGE : REM INVERT THE SCREEN
1140 FOR I = 50 TO 1 STEP - 1
1150 X = X(I):Y = Y(I):D1 = D1(I) :D2 = D2(I)
1160 GOSUB 130: NEXT I
1170 IPAGE : REM INVERT AGAIN
1180 END
    
```

Listing III

# VBLANK

*It can make  
a real video  
producer  
out of you*

NOT all of the new features of the Apple IIe are as obviously useful as the extra memory and double high resolution graphics. One feature which has been much neglected until now is the ability to read the video frame blanking signal. With the application of a little bit of software this signal can be made to work for us to achieve some very useful video effects.

And this time all the Apple II+ owners need not feel left out as a very simple modification allows the II+ to use this new feature too.

With careful use of this signal many new visual effects are possible and this article merely brushes the surface and serves to demonstrate what can be done.

You can now split the screen display up into text, lo-res, hi-res, page 1 or 2. You can wipe smoothly from text to graphics displays and back again.

Simple uses of the VBLANK signal such as synchronising the screen updates for flicker-free animation should be immediately apparent to the experienced user (the only person likely to want to use such effects).

Let's dive right in at the deep end with something for every-

one. First of all, Here's something short and sweet just to get the hang of things and give you all confidence to try the big one in part two.

A straight video split is simplicity itself. Try this short machine code routine which exits when a key is pressed.

The demo program of Listing 1 shows how to use the SPLIT routine. Type in the program as listed, taking particular care with line 500 - I suggest that you save the program to disc before you RUN it. A mistake in line 500 could cause you to lose

control of your Apple.

You can use the data line (500) in your own programs to install split and then call it as in the demo program, that is **POKE S1, topmode : POKE S2, bottom : POKE 0, posn : CALL 779** where topmode is a number from table 1 to select mode at top of screen and bottom is a similar number to select lower video mode, posn is a number from 1 to 191 which determines the position of the partition.

Assembler source listings are provided for anybody who is

interested (listings 5 and 6). Note particularly the routine SYNC which waits for the start of a live scan by looking for a rising edge of VBLANK.

The routine SYNC is not exact. The synchronisation may be up to seven cycles late since the instructions testing VBLANK take some time to execute. An exact sync is possible, but would require several frames to complete and thus is not suitable for this application.

However with careful timing we can make sure that the mode switching occurs during line flyback (25 cycles) and so no glitches or jitter are seen on the screen.

Note that only the text and graphics switches are flipped in the demonstration but these could just as easily be any two switches you choose. Just select your values from Table 1 to POKE into S1 and S2 as in lines 80 and 90. Remaining switches should be set before calling SPLIT (watch out particularly for the MIX switch causing confusing results - see line 35).

To finish this section, here is a smooth, glitch-free screen wipe routine to give your programs that professional look.

Enter the program as in Listing II then save it to disc before you attempt to run it.

To use the wipe in your own programs simply use a line like line 500 in the demo to install the routine then set the switches using POKE as in lines 100 and 110. Then CALL 827 to do

```

10 REM *****
11 REM * SCREEN SPLIT DEMO *
12 REM * BY Andy Beveridge *
13 REM *****
14 REM

15 D$ = CHR$(4)
20 SPLIT = 779:S1 = 785:S2 = 798:NOMIX = - 16302
25 IF PEEK(SPLIT) < > 166 THEN GOSUB 500: REM install split routine
29 REM
soft switch lsb's for graphics,text,page1,2,lo-res & hi-res

30 G = 80:T = 81:P1 = 84:P2 = 85:LO = 86:HI = 87
35 HGR : POKE NOMIX,0
40 HCOLOR= 3: HPLLOT 135,75
50 FOR N = 0 TO 99: HPLLOT TO RND(1) * 280, RND(1) * 192: NEXT
60 TEXT : HOME
70 LIST : VTAB 1: PRINT SPC(240): VTAB 1: PRINT "THIS TOP BIT IS TEXT..."
72 PRINT : PRINT "Press a key to change it around"
79 REM top = text , bottom = graphics
80 POKE S1,T: POKE S2,G: POKE 0,48: CALL SPLIT
99 REM now the other way up...
100 POKE S1,G: POKE S2,T: CALL SPLIT
110 VTAB 1: PRINT SPC(120): VTAB 1: HTAB 1: PRINT "KEEP PRESSING KEYS..."
115 POKE S1,T: POKE S2,G
120 FOR N = 20 TO 180: POKE 0,N: CALL SPLIT: NEXT
130 TEXT : HOME
499 END
500 DATA 44,25,192,48,251,44,25,192,16,251,96,166,0,32,0,3,141,81,192,160,11,
136,208,253,234,234,202,208,246,141,80,192,173,0,192,16,230,44,16,192,96:
FOR AD = 768 TO 808: READ BYTE: POKE AD,BYTE: NEXT
510 RETURN

```

Listing 1

the wipe. Again, if in doubt see the demo.

Assembler source listings are provided for the curious. If interested you should be able to figure out how this one works for yourself. However you don't need to know how it works to use this impressive effect in your own programs.

So far all examples have been for use on the Apple IIe. As promised, here is how to use VBLANK on the good old Apple II.

There is indeed a frame blanking signal in the middle of your II or II+. However the only suitable signal I've been able to find is upside down. Not to worry though, we'll just have to turn the software upside down.

This signal is available on pin

4 of the integrated circuit (chip) at C14 on the Apple motherboard. In order to read this signal in software we must connect it to a spare input port.

Since you have an Apple II you probably have a shift key mod fitted to get lower case

from the keyboard, in which case you probably don't have a spare input.

The solution to this is to use the cassette input port rather than sacrifice your shift key mod. If you have disc then you probably no longer use the cassette input, so let's give it a new use.

If you do want to use the cassette input you will have to use another input or else put a switch in this modification.

The hardware mod consists of a piece of wire connecting VBLANK to the input port. This requires linking pin 4 of IC C14 (a 74LS32) to pin 4 on IC H14 (a 74LS151).

- Cut a piece of thin insulated wire (wire-wrap wire is ideal) about 7 inches long and strip about 2mm of insulation from each end.

Note that Set Hi-res will only cause the hi-res page to be displayed if graphics mode has previously been set.

Similarly, selecting GGraphics will display either HI-res or LO-res depending on how you have previously set the switches. (If you have just used HGR then hi-res will be set).

*These values should be POKE'd into S1 and S2 as in the demo programs:*

	Decimal
GGraphics mode use	80
Text mode	81
Display Page 1	84
Display Page 2	85
Set LO-res	86
Set HI-res	87

Table I: Switch values to select video modes

```
500 DATA 44, 96, 192, 16, 251, 44, 96, 192, 48, 251, 96,
166, 0, 32, 0, 3, 141, 80, 192, 160, 11, 136, 208, 253, 234,
234, 202, 208, 246, 141, 81, 192, 173, 0, 192, 16, 230, 44,
16, 192, 96 : FOR AD = 768 TO 808 :READ BYTE: POKE
AD ,BYTE: NEXT
```

Listing III (SPLIT)...

```
500 DATA 44, 96, 192, 16, 251, 44, 96, 192, 48, 251, 96,
162, 192, 32, 48, 3, 141, 81, 192, 138, 160, 11, 136, 208,
253, 234, 234, 202, 208, 246, 141, 80, 192, 170, 202, 208,
232, 96: FOR AD = 816 TO 853 :READ BYTE: POKE AD
,BYTE: NEXT
```

Listing IV (WIPE)

```
10 REM *****
12 REM * VIDEO WIPE DEMO *
13 REM * BY Andy Beveridge *
14 REM *****
20 TEXT : HOME
30 WIPE = 827:S1 = 833:S2 = 847
35 T = 81:G = 80: REM text,gr switches
40 IF PEEK (WIPE) < > 162 THEN GOSUB 500: REM install up-wipe routine
41 SPEED= 100
42 PRINT "A short demo of the use of VBLANK"
43 PRINT "=====
44 PRINT : PRINT "First we set up some graphics..."
45 FOR D = 0 TO 1000: NEXT
50 HGR : POKE - 16302,0: REM set full screen
55 HCOLOR= 1: HPLLOT 0,0: CALL 62454
60 HCOLOR= 3: HPLLOT 0,0 TO 279,0 TO 279,191 TO 0,191 TO 0,0
62 FOR D = 0 TO 1000: NEXT
64 TEXT : VTAB 6: PRINT " ...Then we set up some text..."
70 PRINT "Here's the program...": PRINT
80 LIST 100,120
90 PRINT : PRINT "Now press a key to see it in action ";: GET A$: PRINT

95 PRINT
100 POKE S1,T: POKE S2,G: REM text to graphics
105 CALL WIPE
110 POKE S1,G: POKE S2,T: REM graphics to text
120 CALL WIPE
140 PRINT : PRINT " Try entering CALL WIPE yourself."
150 SPEED= 255
499 END
500 DATA 44,25,192,48,251,44,25,192,16,251,96,162,192,32,48,3,141,81,192,1
38,160,11,136,208,253,234,234,202,208,246,141,80,192,170,202,208,232,96:
FOR AD = 816 TO 853: READ BYTE: POKE AD,BYTE: NEXT
510 RETURN
```

Listing II

- Remove the lid from your Apple. Solder one end of this wire to pin 4 of the 74LS32 at C14.
- Solder the other end of the wire to pin 4 of the 74LS151 at H14.
- Press the ICs firmly into their sockets and press the wire against the circuit board so it won't get in the way. The modification is now complete. Put the top back on your Apple II.

If you don't want to solder to your Apple you may prefer to make a lead from a 7 inch piece of wire with a test clip at each end. These clips can be connected to the ICs as indicated above. The clip can then be easily removed should you wish to use the cassette part or if your Apple needs to go in for a service.

Now all that remains is to turn the software upside down – in fact the only modification necessary is to the routine SYNC which waits for the start of a live scan which will now look like this:

```
VBLANK EQU $C060
SYNC BIT VBLANK
          BPL SYNC
SYNC2 BIT VBLANK
          BMI SYNC2
          RTS
```

so that the routine will now detect a falling edge of VBLANK rather than a rising edge.

This change is easily made – just change the first 10 numbers in the data lines of the example programs (line 500) to **500 DATA 44,96,192,16,251,44,96,192,48,251...** rest as in normal line 500, that is 96,32,0 etc.

With these modifications made the two versions of line 500 (for SPLIT and WIPE) should look like Listings III and IV respectively.

# PROGRAMMING

```

1 *****
2 *           SPLIT           *
3 *       for Apple //e       *
4 *       by Andy Beveridge   *
5 *****
6
7 KEYBD EQU $C000
8 STROBE EQU $C010
9 GR EQU $C050
10 TEXT EQU $C051
11 VBLANK EQU $C019 ;THE BLANKING SIGNAL (in bit 7)
12
13 WAIT EQU $FCAB ;monitor wait routine
14
15 ORG $300
16
0300: 2C 19 C0 17 SYNC BIT VBLANK
0303: 30 FB 18 BMI SYNC
0305: 2C 19 C0 19 SYNC2 BIT VBLANK ;wait for falling edge
0308: 10 FB 20 BPL SYNC2 ;to find field start
030A: 60 21 RTS
22
23 *
24 * THE SPLIT SCREEN PROGRAM ITSELF...
25 *
030B: A6 00 26 SPLIT LDX $0 ;get delay value
030D: 20 00 03 27 JSR SYNC ;wait for start of field
0310: 8D 51 C0 28 STA TEXT ;this mode at top of screen
29 *
30 * DELAY FOR n LINES OF 65 CYCLES
31 *
0313: A0 0B 32 WLINE LDY #11 ;each pass = 5 cycles => 55 total
0315: 8B 33 LUP DEY
0316: D0 FD 34 BNE LUP
0318: EA 35 NOP
0319: EA 36 NOP ;to give 59 cycles (55+2+2)
031A: CA 37 DEX ;each pass = 1 hi-res line of video
031B: D0 F6 38 BNE WLINE ;keep going until switching time
031D: BD 50 C0 39 STA GR ;this mode for rest of scan
0320: AD 00 C0 40 LDA KEYBD ;check for key-press
0323: 10 E6 41 BPL SPLIT ;if not then repeat
0325: 2C 10 C0 42 BIT STROBE ;clear the keypress
032B: 60 43 RTS ;and return to caller

--End assembly, 41 bytes, Errors: 0

```

Listing V

```

1 *****
2 * SOFT VIDEO WIPE FOR VBLANK *
3 *       for Apple //e       *
4 *       by Andy Beveridge   *
5 *****
6
7 NLINE EQU 192 ;No. of lines in live scan
8
9 * VIDEO SOFT SWITCH LOCATIONS
10
11 GR EQU $C050
12 TEXT EQU $C051
13 VBLANK EQU $C019 ;VBLANK input , low during blanking
14
15 ORG $330
16
0330: 2C 19 C0 17 SYNC BIT VBLANK
0333: 30 FB 18 BMI SYNC
0335: 2C 19 C0 19 SYNC2 BIT VBLANK
033B: 10 FB 20 BPL SYNC2
033A: 60 21 RTS
22
23 *
24 * WIPE UP SCREEN
25 *
033B: A2 C0 26 UWIFE LDX #NLINE ;initialise to end of screen
033D: 20 30 03 27 LOOP JSR SYNC ;LOCK TO VBLANK
0340: 8D 51 C0 28 STA TEXT ;top of screen in this mode
0343: BA 29 TXA
30 *
31 * WAIT FOR N LINES (65 cycles per line)
32 *
0344: A0 0B 33 WLINE LDY #11 ;each pass = 5 cycles => 55 total
0346: BB 34 LUP DEY
0347: D0 FD 35 BNE LUP
0349: EA 36 NOP ;to pad delay out
034A: EA 37 NOP ;to give 59 cycles (55+2+2)
034B: CA 38 DEX
034C: D0 F6 39 BNE WLINE ;TOTAL LOOP TIME = 65 cycles
034E: BD 50 C0 40 STA GR ;this mode until end of screen
0351: AA 41 TAX ;restore original vert. posn.
0352: CA 42 DEX ;& move up one line
0353: D0 E8 43 BNE LOOP ;repeat until at top of screen
0355: 60 44 RTS

--End assembly, 38 bytes, Errors: 0

```

Listing VI

# How to find your way along the software route

HOW do you get to grips with a new software package? Assume that you have bought the software because it fits your functional needs – a database management system, a word processor or a new programming language environment, for example.

Now you are ready to try it on your system. No matter what the software will do, there are a series of steps that you can follow to get acquainted with it.

This road map is intended to help you find your way through similar elements of any commercial software.

Where do you start? The process can be broken down into three parts – getting on, getting to use the package, and the possible interaction between the software and the outside world.

## GETTING ON

Does the disc boot the system or do you need to bring up the operating system – such as CP/M or DOS – from another disc? Most packages do boot themselves, so you need only to place the disc in the drive and turn on the machine.

If your package includes several discs, make sure that you know which is the starting one, the prime mover so to speak. Catalog the discs to see what files are on them. Print the HELP file if one exists.

Sophisticated software is designed to take advantage of special hardware you may have. Therefore many packages come with installation procedures which will alter parts of the software.

But before running the installation program make one or more copies of the original discs and only work with the copies. If the software is copy-protected the software should come with two copies

## DANIELLE BERNSTEIN guides you through the problems encountered with new software packages

or a way of getting a new copy if the original gets ruined.

I have always found the installation procedure cumbersome, like an exam to pass before being allowed to use the package. But the more user friendly the package promises to be, the more it needs proper customising to take advantage of your environment.

You must know about your printer interface, cursor control and function keys, if any. A good installation program will ask questions about your hardware and present several choices for the most popular peripherals.

If you have unusual features you may have to set the options manually outside the menu. When getting help take good notes since the information will prove useful for the next piece of software.

Incorrect installation may not show up immediately. You may discover a problem when you want to use the printer or move around the screen with cursor control keys. It is a good idea to make a copy of the installed software too.

## GETTING GOING

You are now ready to use the package for the purpose you had in mind. But it pays to think ahead. Format a blank disc on which you will save your data later on. To do that you may have to leave the package. But if you start to enter data now, you will have no place to save it later on.

Start on a small example. Do not try to tackle the

problem for which this software was intended, because the obstacles encountered will have nothing to do with the functional part of the system.

So if you bought a word processor, write a letter to a friend, not a novel; if a database management system, catalogue a personal telephone directory; if a new language, calculate the squares of the numbers from 1 to 10.

In effect, build yourself a personal experimental system

to familiarise yourself with your software. You will return to it often to try out advanced features as you need them without fear of ruining your real working system.

At this point you need to input data for your system to work on. Since there are no standards for editors (or for anything else, for that matter) the editing commands for one package may differ greatly from that of another.

Decide how much of the editor you want to learn. Often it does not pay to become an expert on every editor that you have. When I use Applesoft I just retype a whole line to correct it – that is the only editing feature I know. But I think that I have learned most of the editing tricks for my version of Logo.

## ROUTE TO FOLLOW FOR NEW SOFTWARE

- 1 Make a copy of the software, if possible.
- 2 Format a disc to be used for your data.
- 3 If the software boots, place the disc in the drive and turn the machine on. If not, boot the operating system and then replace the operating system disc with your disc and type the name of the program.
- 4 If the package needs to be installed, run the installation procedure.
- 5 Run the demonstration programs, if any. If any installation problems show up, go back to step 4.
- 6 Enter, edit and save the data. Reload it from disc and run your package with it.
- 7 If problems crop up with cursor control when editing, you may not have the hardware peripheral that the package expects. Most likely the installation procedure is the problem. Go back to step 4.
- 8 Retrieve the data, modify it and save it again. Go back to step 6 as often as you like.
- 9 Print your input data, commands and output results. If any problems show up, installation might be a problem. If so, go back to step 4.
- 10 Exit.

After entering and manipulating a small amount of data, save that data in one or more files. You may also be able to save commands. If you have forgotten to format a disc, this is the time to forego your data and format one.

Resist the temptation to place your data on the same disc as your software package. Some people keep formatted scratch discs around for this purpose, to be used just like scratch paper.

What exactly are you saving, data or commands? Are they going into the same file? With a word processor data is saved after it has already been processed. But with most programming languages the input data, program and output data usually go into separate files. Now try to retrieve those files, modify them and store them again.

If you want to delete a file use a command within the

package if possible instead of an operating system command such as DELETE.

At this stage you may not realise the possible interaction between files. A good piece of software will not let you delete a file that might be needed or connected with another file. For example, deleting an index file in a data management system without deleting the corresponding data file will cause you problems when you try to access the data file via the index.

So if your package does not let you delete a file investigate the reason before you use the blunt instrument of the operating system in frustration.

Printing is my second least favourite function after installing. Something is always bound to go wrong. So since I know that I will be printing the same file several times till I get it right I use the "think small" approach and tackle that on

my small demonstration system.

Often you need different print commands for the input data, commands and the output results. If the printing function does not work as smoothly as promised, go back and look at the installation procedure again.


You can often ignore any procedures for quitting the package. You can just switch your machine off – but not

always. Sometimes the clean-up procedure closes files properly or warns you if you have not saved your data.

I find it a good habit, engrained from my time-sharing days, to exit properly.

Having a set of steps to follow will help you in getting to know new software. Undoubtedly, you will find your own methods of getting to grips and evaluating packages.

## Apple tips

 Sometimes a disc access will return an I/O error, thus wiping out a precious file or program.

If this is caused by data corruption and not physical damage a rescue can usually be effected by altering \$B942 from \$38 to \$18 (POKE 47426,24).

This patch prevents an error code being generated by faulty data. A successful read should be followed by copying the data to a new disc immediately – it may not work the next time! –

Peter Bradley

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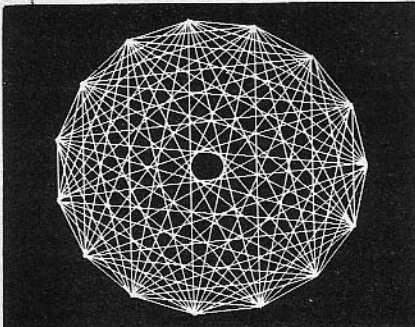
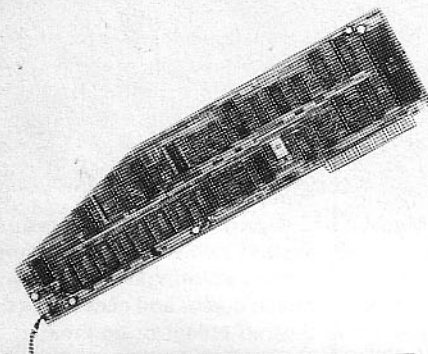
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**IT was raining clichés around Television Centre for a while – phrases like “weatherman needs a Mac”, “a change in the weather” and “the outlook’s graphic”.**

Cause of all the clever word-play was the BBC’s new look weather forecasts, produced with the aid of the world’s most sophisticated meteorological computer system.

And playing a key role in the TV studio presentation of the colourful new graphics are the Macintosh XL and mouse.

The revolutionary weather forecast presentation is the result of almost four year’s planning by the BBC and more than a year’s work by the computer graphics workshop at Television Centre.

The system uses the latest computer graphics linked to the Met Office computer in Bracknell in Berkshire.

It replaces the familiar hand-moved magnetic rubber weather symbols with electronic displays that tell viewers all they need to know about rainfall, temperature, pressure and humidity.

Or, as John Teather of TV Presentation says: “It has been designed to satisfy both the expert viewer and those who just want to know whether or not to take an umbrella to work.

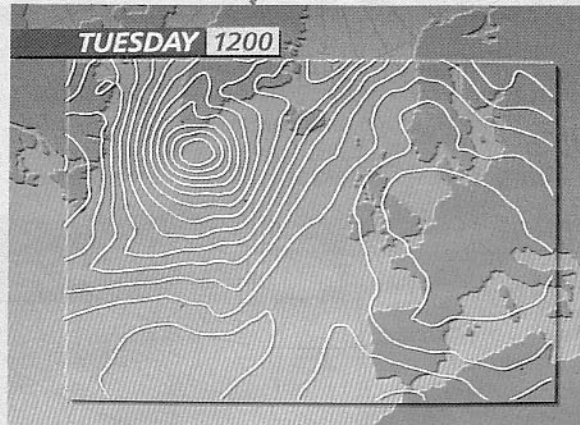
“In addition, those with a professional interest – farmers and fishermen for example – will be able to watch Weather View on BBC-2 every weekday after Newsnight for an in-depth look at the weather”.

The familiar faces of the weathermen, like Ian MacCaskill and Michael Fish, still appear on our screens. But now before they enter the studio they produce individual pictures on their Macintosh terminals to build up an electronic “slide show” of the weather.

Once the pictures are in order the weatherman tells his paint box to draw and colour them.

In the studio he controls when and how he shows the displays using a system that superimposes his image on the weather map while at the same time allowing him to see where he is pointing.

The system uses a Macintosh



# How the Mac XL made its way into the BBC’s weather map

XL configured as a weather workstation to control software running on a Digital Equipment VAX 11/750 mainframe.

The VAX in turn controls a Quantel 7001 graphic terminal which generates the animation sequences.

The bulk of the data – satellite images, forecast data products and weather statistics – are sent from the Met Office computer to the VAX over British Telecom Kilostream circuits.

This processing proceeds independently of other produc-

tion and view material.

When enough material has been assembled the video frames that constitute the final bulletin are stored on the integral 160mbyte Winchester disc that forms part of the Quantel display subsystem.

These frames are broadcast live from the Quantel, which is controlled by the weathermen in the studio using another Macintosh XL.

The greatest challenge to the software development team at the computer graphics workshop was design of the one

for the weather system represents a major step forward in man machine interfaces at the BBC.

“It allows the weathermen to see and edit a graphic representation of all the digital weather products, the satellite image sequences and an updated version of the familiar symbol chart”.

Operation of the mouse system involves various graphic menus, pointing with the mouse driven cursor and clicking on the desired object or command.

For example, when the symbol chart is being prepared the Macintosh displays a set of iconic representations of clouds, sunshine, snow, rain and hail symbols.

By selecting these symbols and placing them on the appropriate map background a complete layout is defined.

When the time comes to make up the full broadcast quality symbol chart the Macintosh sends a list of the chosen symbols and their position to the VAX which instructs the Quantel what to do.

This operation is very speedy and if need be the weathermen can make up a sequence of symbol charts which can themselves form a short animated

**By TONY LEAH**

tion work on the VAX system. The Quantel graphic facilities are augmented by a Jupiter 7 framestore which assists in the processing of satellite pictures.

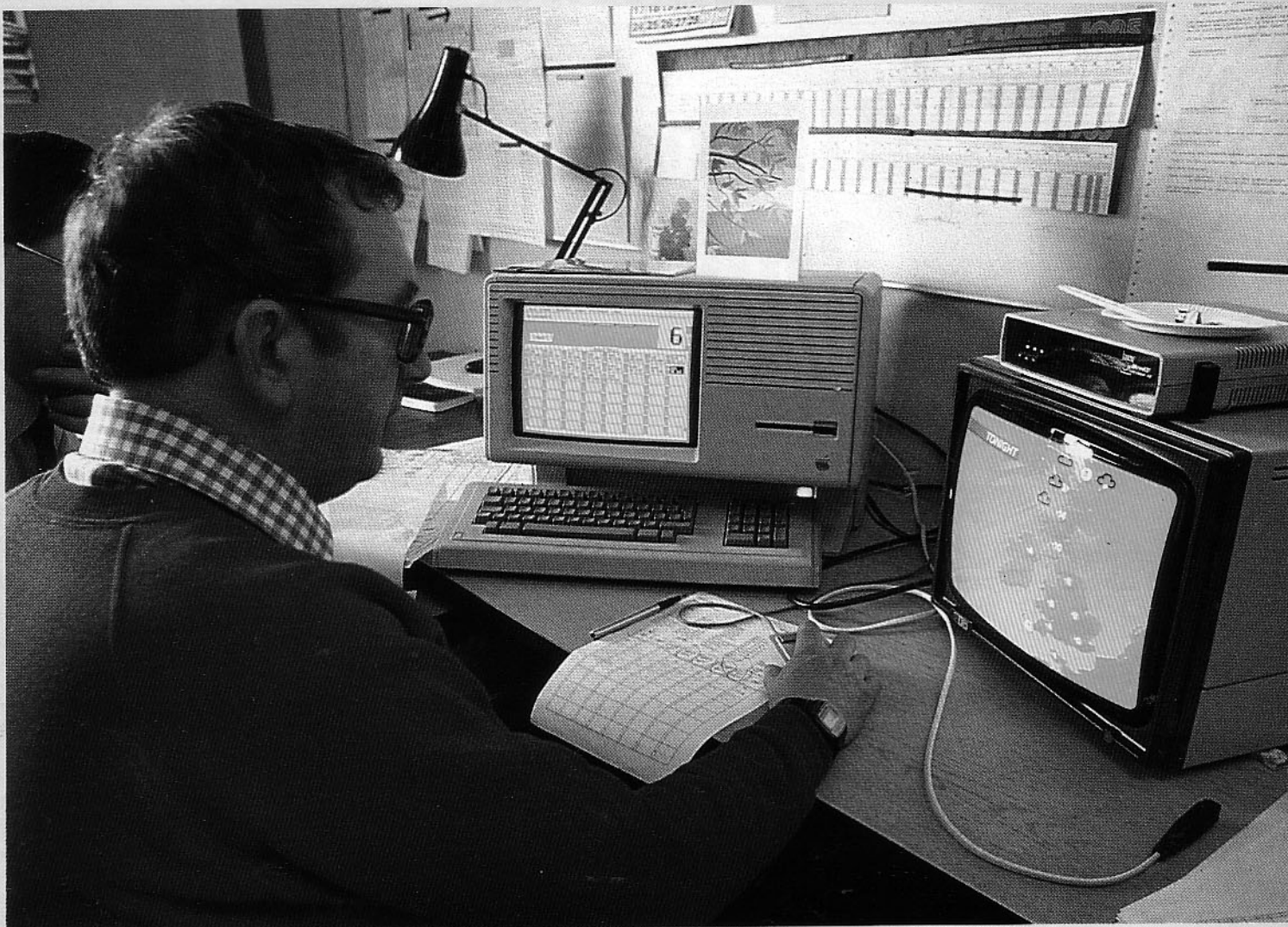
The computer system at Television Centre uses the 2 mbyte main memory VAX linked to two Apple Macintosh XL micros with 1mbyte memory each.

The software running in these computers allows weather data to be received automatically from Bracknell and also lets the weathermen

man operated weather workstation.

Various types of interface were evaluated and tested, including graphics tablets and joysticks, but the best method was found to be a mouse. At that stage the only easily available system with good interactive graphic facilities was the Apple Lisa, now re-named the Macintosh XL.

Says CGW manager Bill Gardner: “Implementation of this specialised user interface



*Weatherman Ian MacCaskill designing the day's presentation*

*Pictures copyright BBC TV*

sequence.

Similar techniques have also been implemented to help edit the positions of highs and lows on the isobaric charts and to allow the weathermen to draw warm, cold and occluded fronts.

Since another part of the workshop's design brief demanded that the format of each day's bulletin would be flexible, an interactive sequence editing facility has also been provided using a "filmstrip" representation of the complete bulletin.

All the images and graphics are assembled in the Quantel 7001 display subsystem which is composed of a Motorola 68000 micro in which the low level graphics software runs.

The micro also controls two broadcast quality framestores, a

local 160mbyte Winchester disc which stores pictures, as well as communicating to the VAX.

Almost all the graphic output techniques used within the weather project were originally developed by the workshop for use within real time projects such as the General Election and Olympic Games, which require high quality text and maps whose layout and design can be predicted well in advance.

The system heavily exploits the unique facilities for mixing between framestores to animate multiple satellite images and all of the forecast products.

"As far as we know the actual studio presentation by which

the weatherman is able to deliver his bulletin is completely new", says Bill Gardner.

"The technique is a hybrid one as it relies on both colour separation overlay - CSO - and video rear projection".

The computer graphics are projected onto a screen, the image tinted blue by spilling some blue light onto the rear of the screen.

This allows the weatherman to stand in front of the screen and see a degraded version of the full colour image. He can therefore point and gesture to the visuals in a way which used to be very difficult with CSO.

The locked-off camera viewing this scene sees the weatherman against basically a blue

wall, while the vision desk electronics perform the necessary magic to give the viewer at home both a full colour weatherman and background.

The weatherman controls the whole show through one push button and can interact with the graphics even though they may be animated.

The new system has worked without a hitch - but it has caused one slight problem for the presenters.

As senior weatherman Bill Giles, who presented the first of the new style forecasts, explained: "We can't wear blue clothes. Blue light is used to show the weatherman with the graphics on the screen and if we wear a shirt that matches we get covered in isobars!"





A PROGRAM of the database genre is normally an essential purchase for serious computer users. In the case of Macintosh there are several contenders on the market, ranging in complexity and facilities.

The much hyped but innovative Filevision caters for small visual databases and has a unique option of highlighting and linking records with other drawings. However, reporting and sorting modes are limited in scope and no mailing list or mathematical functions are included.

Of the full facility traditional Mac databases available Omnis 2 and PFS:File/Report are major competing products from either side of the Atlantic.

This month I'll concentrate on PFS:File. Next month I'll cover Omnis 2 in detail and offer my comparative conclusions. Both products are of the Card-box style and have already gained the respect of many Apple II series users.

Unfortunately a preliminary Mac version of Omnis 2 rushed out shortly after Mac's launch was disappointing. The latest version 2.10 reviewed here is a different animal and this time utilises all the Mac features such as pull down menus.

Current marketing effort on Omnis 2 and PFS:File/Report for the Mac is impressive both here and in the States. Full page ads extol them to be powerful, flexible, fast and easy to learn.

Neither program claims to be relational, in that searches cannot be undertaken through more than one database file name at a time. However both offer different methods of merging files - to effectively create a new database to sort/search on - providing they have exactly similar field names.

Because of this, care is needed when designing databases so that, for example, fields you are likely to want to link in AND searches are contained in the same file.

PFS:File and Report from Software Publishing Corporation of California are supplied as two stand-alone programs but can be bought together for around £160. Each comes in a

box containing ring manual, registration card and protected master disc with back-up copy. Attempts to copy display a message indicating that the program file "may not be duplicated or moved".

As the names suggest, File allows the creation, viewing and retrieval of records and does have useful but limited search and printing facilities. Report copes with fully comprehensive sorting, arrangement and formatted reporting functions, including the production of mailing labels.

Omnis 2 is sold only under non-transferable licence at £295 by Blyth Computers and comes in a box containing a single copyable disc, registration card and surprisingly slim manual ringed in a quality vivid green binder. On booting for the first time the new user is invited to enter the registered name which is then irrevocably recorded on disc.

Unlike its challenger, Omnis 2 is a fully integrated program containing everything including demo, sophisticated reporting, even mail-merge and password protection - all on the one disc. All data files are also upward compatible to Omnis 3, the family flagship which is a true relational/hierarchical database

program.

The PFS:File manual nicely complements the user-friendliness of Mac itself. It begins by outlining how File works and how to get started. Although there is no demo tutorial, consecutive chapters logically talk-through how to create, search, print and change design of files.

There are many graphic screen dumps showing examples and pull down menu commands, with a handy quick guide, excellent error-message explanations and index.

Certainly the targetted user new to Mac should have no difficulty as jargon is kept to a minimum and all sections are nicely headed up. The only part difficult to understand is the appendix on calculations of disc storage space.

Upon opening the File icon a title window appears and assuming the New file box is chosen a blank window opens on which to design your form showing the name you have given it at the top.

To enter field item names, which are automatically stored and cannot then be overwritten, simply move the pointer to wherever you want in the window and type them in, ending with a colon. There is no

need to specify field length, but you are warned to leave sufficient space for search parameters which might take up more space than the raw data.

For example, to search for "<200" needs four spaces - whereas the numbers take up only three. You are also urged to choose the first item carefully as searches are fastest on this field.

Unless PFS:Report is available, it is also important to consider field order because File only prints in the order appearing on the form.

Theoretically there is a limit of 100 items on a single page and forms limited only by disc space can have up to 32 pages accessed via the Mac scroll bars. An asterisk indicates the existence of more pages but unhelpfully tabbing will not take cursor to the next page, as in Omnis 2. This has to be scrolled.

The next step is to pull down the Functions menu and select Add Forms. A window appears showing your field names in bold. Next enter the appropriate data and tab to the next field. Any numbers entered that might require sorting later need leading zeros.

Simply click the Continue Adding box at the top to continue. There is no need to

# UK or USA? Choosing a base for your data

**CHRIS BURRIDGE begins a comparative review of two databases, English and American, for the Macintosh with an overview of PFS: File/Report.**

enter forms in any particular order. A possibility exists to add an attachment page after your last page and there is also a quick method to insert the current Mac time/date but only in the confusing USA format YY/MM/DD.

Pages can be printed "as is" and also erased, but a quirk of the program makes it difficult to remove the blank page left.

Having entered all data, Find Forms from the Functions menu then allows viewing – in reverse order – updating, counting and printing of whole page selections made from four basic search criteria (see Figure I).

These are Full (exact match), Partial, Numeric and Numeric Range. In addition any search can have its intent reversed by a slash (/) meaning 'Not'.

In order to compare the programs for this review, a fictional but typical personnel database comprising 20 staff was created and various test searches made and output to an Imagewriter.

In general, while File did all the manual claimed, deciding specific selection specifications using combinations of characters, '.', '?' (wildcard) and boolean, particularly for the partial searches, proved a bit head scratching and results were not always as expected.

An important point about name searches is that surnames need to be first as the program searches on the first few characters. This is fine for some applications but not for mailing labels. The manual suggests names are entered in both formats on your form design if necessary.

Another foible is that searches always display page 1, and it is a nuisance having to scroll to the correct page. Also, unlike Omnis 2, previous records cannot be recalled to view.

Apart from printing entire forms File can print simple non-columnar output based on your required search information. Saveable options include printing to disc or printer, lines per page, number of copies and printer codes.

Setting up formats for the specific items to be printed is fairly time-consuming. You have

STAFF RECORDS OF XYZ MANUFACTURING COMPANY LTD.

NAME : Joan Bergin Mrs DOB : 15/03/43  
 PERSONNEL NUMBER : 145880 JOINED COMPANY : 01/02/60  
 DEPARTMENT : typing GRADE: T5 JOINED DEPT : 01/03/79  
 POSITION : Senior Secy SALARY £: 6450 REVIEW DATE : 03/03/85  
 ADDRESS : 99 Bute Close  
 : White Horse View  
 : Highworth  
 : Town : Swindon Postcode : SN6 4TY  
 County : Wilts  
 TELEPHONE : (0793) 667341

Figure I: The 'Find next form' screen on PFS:File, showing typical staff record

STAFF RECORDS OF XYZ MANUFACTURING COMPANY LTD.

NAME : X S DOB :  
 PERSONNEL NUMBER : JOINED COMPANY :  
 DEPARTMENT : GRADE: JOINED DEPT :  
 POSITION : SALARY £: | REVIEW DATE :  
 ADDRESS : X  
 : X  
 : X  
 : Town : + Postcode :X  
 County : +  
 TELEPHONE :

Figure II: PFS:File 'print format' editing screen – codes provide limited options

BOHUS

NAME	SALARY £	BONUS 5%	TOTAL Pay
Adrian Douglas	2,650	132.50	2,782.50
Angela Smith Miss	3,440	172.00	3,612.00
Charles Voxall	3,300	165.00	3,465.00
Chris Jones	10,250	512.50	10,762.50
Christine Winters Mrs	6,890	344.50	7,234.50
Average:	5,306	265.30	5,571.30
Total:	26,530	1,326.50	27,856.50
Count:	5		

Figure III: A typical report – PFS:Report calculated the 5 per cent bonus to sales staff

to enter codes listed in a pulldown Help menu and the result can be stored for future use (see Figure II). In this way printing can be customised to print specific fields and either print more on the same line after a two spaces gap or move to the next line.

Further File chapters discuss changing form composition,

copying designs/forms, and removing forms. One of the most interesting facilities is the ability to divide or merge files – the latter only to exactly the same form design, including line boxes if present, otherwise data will be lost, and only after backups have been made!

Tabular reports require PFS:Report to be booted – the

manual, commands and search formats being similar to File.

Print A Report from the Functions menu requests search criteria to be entered on your original design layout and the program then shows how many it counted. This saves time compared with Omnis 2, which requires a second report design. A report title, then printing options are nominated via another window.

Once you are satisfied, the last step is choosing and entering short codes governing which items appear, their order and crucially in what column. Searches may be organised both alphabetically (A to Z) or numerically (high to low).

One gripe is that searches are only made on columns 1 and 2. If this does not suit, too bad! This can be prohibitive if you want, say, salaries sorted, but in the third column.

However a powerful feature is that calculations can quickly and easily be set up to automatically total, count, sub-total or average numbers in a column. A nice touch is the ability to produce columns calculated from other columns.

For example, Figure III shows a report derived from my test database of all the sales staff. I generously gave them a five per cent bonus – the program did the calculations and totalling.

Although the screen dump prints the £ sign, Report – like sister File – annoyingly only generates \$s to the printer. This should have been corrected for the UK market.

On the plus side Report automatically centres titles and aligns decimal points. A frustration when screen-printing is that clicking Next Page does just that – but it is impossible to get back again!

As you would expect there is scope to shorten/edit column headings and to save and modify column/calculation/print formats. Text can also be stored using keywords – useful for basic indexing of similar data. All is simply explained in the excellent manual.

● Next month Chris Burrige takes a detailed look at Omnis 2 and gives his conclusions.

HIDDEN at the back of the Applewriter II manual is a complete section on WPL – the word-processing language. Actually it's not hidden but it might as well be for all the use that most Applewriter users make of it.

Since the inception of Applewriter II I have only seen it properly referred to and used in Apple Orchard and, of course, *Apple User*. The reason is not too difficult to define – it appears pretty hard to use and pretty hard to read.

However it must be appealing in concept to many users because the *Apple User* article produced a great deal of feedback from readers. Most of this concerned difficulties with the presented program. But since many were more or less simple typographical errors, it is clear that WPL can be difficult to use.

A low-cost (£25) way of overcoming these problems has now appeared from Micro Applications (Central). Phil Kingsland, the author, has produced a floppy disc containing a whole series of WPL files aimed at easing WPL usage. On it are also the manual for these files and a supplementary manual for one other file, CALC – more about this later.

The manual is, of course, printed out via Applewriter. It has seven pages including the title page.

After a disclaimer of all warranties and liability there is a demonstration letter indicating the typical layout expected for a WPL compatible form letter.

To use this, the letter is created via Applewriter as normal and saved to disc, preferably in drive 2. The set of WPLAB utilities is inserted into drive 1 (it has to be drive 1) and the command 'DO WPLAB,D1' is issued.

The coordinating file is EXECed and a main menu is presented on screen. This and each of the following menus fits neatly on a 40-column screen so that all users can easily be accommodated.

All options are menu selectable to give a fully integrated set of word processing language utility programs, except for CALC. The complete set of files is copyable with COPYA or FID.

For full integration you must

# Why struggle on? Pay out £25 and Lick WP problems

By MAX PARROTT

have all files whose names begin with "WPLAB" located on the disc in drive 1. The menu tree structure is simply detailed on the next page of the manual (see Figure 1).

Apart from two minor criticisms the package works

extremely well. The first is that the note at the bottom of the menu is wrong – each menu has an exit option which has to be invoked to quit to the next higher level, or back to Applewriter.

The second is that the

catalog option is not very useful since it scrolls the whole catalog rapidly up the screen, giving no pauses on long directories, and also returns one to Applewriter rather than the main menu of WPLAB.

Now back to the parts that

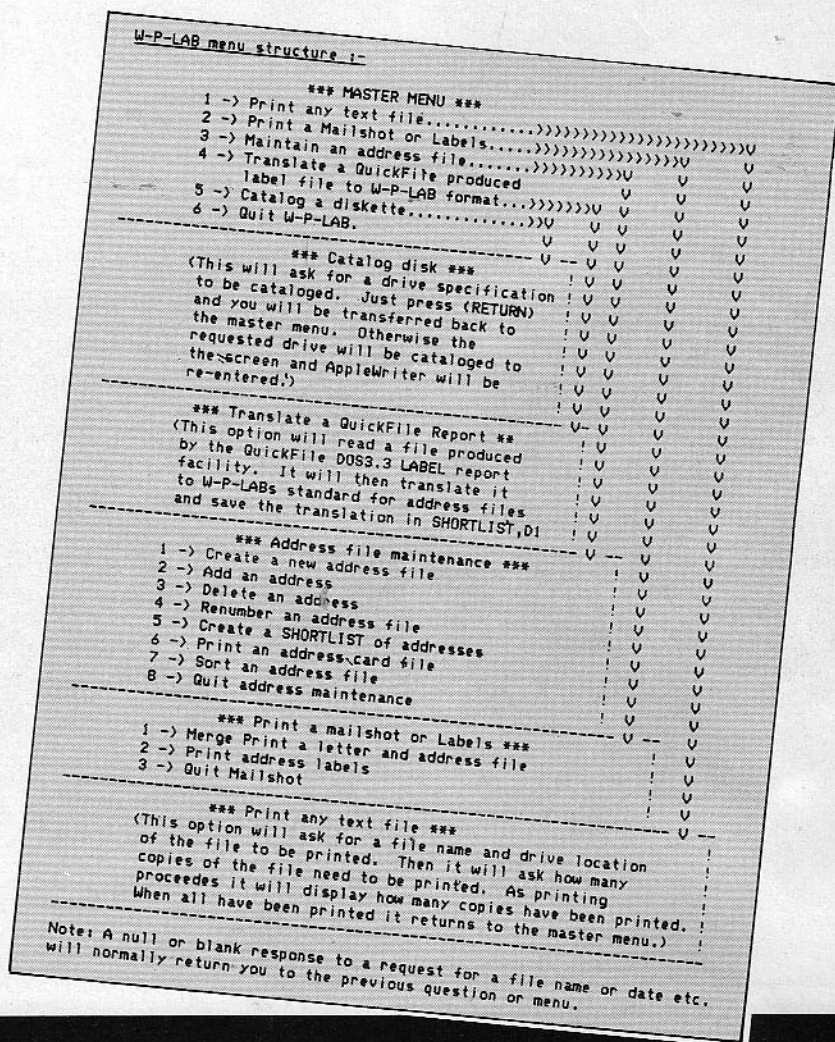


Figure 1

work well.

An address file is created to a standard format as described in the manual. It has four address fields, a name and company field, a salutation field and two general purpose fields.

As can be seen from the menu structure reproduced in Figure 1, the address file may be easily maintained as regards additions and deletions. Editing is facilitated by loading the file into Applewriter directly.

Item 5 of Address file maintenance refers to WPLAB's ability to select a shortlist from the address file. This is accomplished by including or excluding the numbers of the addresses you either require or don't require - depending on which gives the lesser amount of typing.

Attempting to type a record number not in the file elicits an error message but does not destroy anything.

When finished the shortlist file is saved to disc. If you want

to keep this permanently it should be renamed because the filename "SHORTLIST" is used by other WPLAB functions as a sort of temporary file.

The ability to sort the address file on the first letter of any of the nine fields of each record is useful but very time consuming since it is done entirely on disc. It may well be easier to sort by hand within Applewriter or perhaps use Quickfile to maintain a file and then use WPLAB's ability to convert Quickfile files to its own format. I haven't tested this.

Having created a skeleton letter and an address file it is very easy to merge the two and print your form letters. It is also easy to print labels from the address file - although this is set up to print on a roll of single labels, not a sheet of two or more columns of labels.

You may also print any normal Applewriter file any number of times. Here of course you really need either continu-

ous fanfold or roll paper or a cut-sheet feeder if you want to leave the computer to its own devices while you enjoy a well earned rest.

The other WPLAB utility is CALC. The Applewriter command DO CALC doesn't clear the screen and bring a menu but inserts the string "[WPL Calculator] Accumulator = 0 +" into your text and waits for a number to be typed. It is best to invoke CALC on a clear area of screen otherwise it's difficult to read.

Typing a number, which must be an integer, replaces the 0 by the number typed and waits for another number to add to this. Thus a sum is easily entered.

The typed number may be negative. If the final result is negative, wrap round will occur. That is, if the result should be -1 the number displayed will be 65535. A result of -2 will give 65534, etc.

When quitting CALC, by pressing Return, the above

string is replaced by "Insert xxx into your text Y/N/O?". Typing Y returns to Applewriter, leaving the result xxx where the cursor was. Typing N returns to Applewriter with no effect and typing O allows another sum to be carried out.

These responses have to be capitalised - unfortunate since the Caps-Lock is usually off when using Applewriter IIe, but one soon adjusts to this. The file could probably be easily adjusted to allow for both upper and lower case responses.

Is WPLAB worth the money? Well if you expressed any interest in the article in *Apple User* or you can picture yourself writing mail-shots or standard letters with Applewriter then £25 is well worth spending.

**Product:** W-P-LAB

**Price:** £25

**Distributor:** Micro Applications (Central), Greyfriars, Staffs. ST16 2SA. Tel: 0785-43414.

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# Make a date with Pascal

STEVE FRANKS shows how to improve on the Filer's date stamping routine

**THIS program demonstrates how to access the date set up by the Pascal Filer's D Command. Ever since I first bought the Pascal Language System I've thought it was a waste that Apple didn't provide a function to make this information available.**

It works by reading the second block on the System Disc (APPLE1:), which is part of the Directory. This block also contains the volume name and details of the start address, name, and length of each file on the disc.

These details are not required so I have called them Filler in the record description - a hangover from my days as a Cobol programmer.

The key to the whole program is the way in which this block is defined, especially the date. Once I had worked this out the values could be manipulated as required. You can even write the data to the disc, if you'd rather not use the Filer.

For example, if an inexperienced user is running your program, you can generate a turn-key system by calling your

program System.Startup, yet still have any files it creates identified with the correct date.

It is simply a matter of incorporating a UNITWRITE command which corresponds to the UNITREAD in Procedure Readisc.

This has the added advantage that the date can be properly validated because the Filer will accept invalid dates such as 31 Feb.

The remainder of the program simply reads the appropriate block from the disc, checks that the disc volume's name is APPLE1: and formats the date.

The same information is found in the equivalent block on every Pascal disc, except that the date is incorrect. All of my other Pascal discs contain a date of 14 August, 1980.

Table 1 shows the variables used by the program.

If you use the program to change the date and then use the Filer, it will appear not to have the new date. However when next booting the system, the date will be correct. When updating the directory the date will be correctly attached.

<b>VOLDIR</b>	Holds the directory when it is read from the disc.
<b>MONTH</b>	Abbreviations for each month of the year are held in this string and the appropriate one is then extracted for printing.
<b>GOOD</b>	Initially this is FALSE. It is only set to TRUE if the disc in volume 4 is APPLE1:.
<b>FLUSH</b>	This is read after waiting for a key to be pressed, simply to flush the keyboard buffer. If you don't do this the value of the key pressed could be interpreted as an operating system command when the program ends.
<b>SUFFIX</b>	Suffix to the day number within the current month. For example, 1=st, 2=nd, etc.
<b>A</b>	Only used in Procedure Getstuff. It holds the tens digit of the day number.
<b>B</b>	Holds the unit digit of the day number.

Table 1: Description of program variables

```
PROGRAM DATEUPDATE;
USES APPLESTUFF;

TYPE DATE = PACKED RECORD
  MM: 1..12;
  DD: 1..31;
  YY: 0..99;
END;

DIRECTORY = RECORD
  FILLER: PACKED ARRAY[0..5] OF CHAR;
  VOLNAME: STRING[7];
  FILLER1: PACKED ARRAY[0..5] OF CHAR;
  RUNDATE: DATE;
  FILLER3: PACKED ARRAY[0..400] OF CHAR;
END;

VAR VOLDIR: DIRECTORY;
    MONTH: STRING[36];
    GOOD: BOOLEAN;
    FLUSH, ANSWER: CHAR;
    SUFFIX: STRING[2];
    DD, MM, YY: INTEGER;

PROCEDURE READISK;
BEGIN
  UNITREAD(4, VOLDIR, 512, 2, 0); (*READ BLOCK 2 FROM THE DISC IN DRIVE
                                  INTO VOLDIR*)
END;

PROCEDURE GETSUFF; (*APPEND THE CORRECT SUFFIX TO THE DAY NUMBER*)
VAR TENS: INTEGER;
    UNITS: INTEGER;
BEGIN
  TENS:=VOLDIR.RUNDATE.DD MOD 10;
  UNITS:=VOLDIR.RUNDATE.DD DIV 10;
  IF UNITS=1 THEN SUFFIX:='TH'
  ELSE
  BEGIN
    CASE TENS OF
      0: SUFFIX:='TH';
      1: SUFFIX:='ST';
      2: SUFFIX:='ND';
      3: SUFFIX:='RD';
      4: SUFFIX:='TH';
      5: SUFFIX:='TH';
      6: SUFFIX:='TH';
      7: SUFFIX:='TH';
      8: SUFFIX:='TH';
      9: SUFFIX:='TH';
    END;
  END;
END;

PROCEDURE SHOWDATE;
BEGIN
  GOOD:=TRUE;
  GETSUFF;
  PAGE(OUTPUT);
  GOTOXY(10, 10);
  WRITELN('THE CURRENT DATE IS: -');
  GOTOXY(15, 12);
  WRITE(VOLDIR.RUNDATE.DD, SUFFIX);
  WRITE(' ', COPY(MONTH, (VOLDIR.RUNDATE.MM-1)*3+1, 3));
```

```

WRITELN(' 19',VOLDIR.RUNDATE,YY);
WRITELN;
GOTOXY(7,23);
WRITELN('PRESS ANY KEY TO CONTINUE');
REPEAT UNTIL KEYPRESS;
READ(FLUSH);
END;

FUNCTION LEAPYEAR:BOOLEAN; (*RETURNS 'TRUE' IF YEAR IS A LEAP YEAR
                           OTHERWISE 'FALSE'*)

```

```

BEGIN
  LEAPYEAR:=((YY MOD 400) = 0)
  OR ((YY MOD 100) > 0) AND ((YY MOD 4) = 0));
END;

```

```

PROCEDURE VALIDATE; FORWARD;

```

```

(*VALIDATE IS DEFINED HERE, SO THAT THE PROGRAM MAY EXIT*)
(*FROM IT, IF THERE IS AN ERROR IN THE DAY, OR MONTH*)

```

```

PROCEDURE CHECKFEB;

```

```

BEGIN
  IF DD>29 THEN EXIT(VALIDATE);
  IF (DD=29) AND (NOT LEAPYEAR) THEN EXIT(VALIDATE);
END;

```

```

PROCEDURE CHECKMM;

```

```

BEGIN
  IF DD>31 THEN EXIT(VALIDATE);
  IF (DD=31)
  AND ((MM=4) OR (MM=6) OR (MM=9) OR (MM=11))
  THEN EXIT(VALIDATE);
END;

```

```

PROCEDURE VALIDATE;

```

```

VAR MON:STRING;

```

```

BEGIN
  GOOD:=FALSE;
  WRITE('DAY : ');
  READLN(DD);
  WRITELN('PLEASE ENTER THE ABBREVIATION FOR THE');
  WRITE('MONTH : ');
  READLN(MON);
  WRITE('YEAR : ');
  READ(YY);
  IF (DD<1) OR (DD>31) THEN EXIT(VALIDATE);
  IF LENGTH(MON)>3 THEN MON:=COPY(MON,1,3);

```

```

  MM:=POS(MON,MONTH);
  IF MM = 0 THEN
    EXIT(VALIDATE)
  ELSE
    MM:=(MM DIV 3) + 1;
  IF YY>1900 THEN YY:=YY - 1900;
  IF MM = 2 THEN CHECKFEB ELSE CHECKMM;
  GOOD:=TRUE;
END;

```

```

PROCEDURE UPDATE;

```

```

BEGIN
  VOLDIR.RUNDATE.DD:=DD;
  VOLDIR.RUNDATE.MM:=MM;
  VOLDIR.RUNDATE.YY:=YY;
  UNITWRITE(4,VOLDIR,512,2,12); (*WRITE VOLDIR BACK TO BLOCK 2 ON THE
  DISC IN DRIVE 1. DON'T CONVERT DLE
  CODES, OR SEND AUTOMATIC LINE-FEEDS.
  *)

```

```

END;

```

```

BEGIN

```

```

  GOOD:=FALSE; (*ASSUME THAT THE DATE INPUT IS INCORRECT
  UNTIL IT HAS BEEN VALIDATED FULLY*)

```

```

  MONTH:='JANFEBMARAPRPMAYJUNJULAUUGSEPCTNOVDEC';
  REPEAT (*THE FOLLOWING INSTRUCTIONS WILL BE REPEATED UNTIL
  THE DATE FROM APPLE1 HAS BEEN DISPLAYED*)

```

```

  PAGE(OUTPUT); (*CLEAR THE SCREEN*)
  WRITELN('PLEASE ENSURE APPLE1 IS IN DRIVE 1');
  WRITELN('THEN PRESS ANY KEY TO CONTINUE');
  REPEAT UNTIL KEYPRESS; (*WAIT FOR ANY KEY TO BE PRESSED*)
  READ(FLUSH); (*CLEAR THE KEYBOARD BUFFER*)
  READISK;
  IF VOLDIR.VOLNAME = 'APPLE1' THEN SHOWDATE;
  UNTIL GOOD;
  WRITE('WOULD YOU LIKE TO CHANGE THIS DATE? ');
  READ(ANSWER);
  WRITELN;
  IF ANSWER IN ['Y','y'] THEN
    BEGIN
      REPEAT
        VALIDATE;
        IF NOT GOOD THEN WRITE(CHR(7));
      UNTIL GOOD;
      UPDATE;
    END;
  END;
END;

```

## appletip

**i** When DOS 3.3 saves a file on disc it also verifies it by jumping to the VERIFY command before returning.

With one POKE we can speed up the saving of programs by approximately 20 per cent.

POKE 46732,76 will disable the automatic verify.

POKE 46732,32 will enable the automatic verify. – **Jason W. Smith.**

**i** There is a slight inconvenience in DOS 3.3 in that it will not allow you to BSAVE files that are longer than 32k.

POKE 43364,255 will fix this

minor problem. The above location normally contains 127 (\$7F). – **Jason W. Smith.**

**i** To clear the HGR or HGR2 screen to a colour background instead of the usual black use this:  
1000 HGR (or HGR2)  
1010 POKE 28,X

1020 CALL 62454

X can be any number between 0 and 255. Except for the values below, you will get an interesting striped colour image.

Black 0 or 128; white 127 or 255; green 42; violet 85; orange 170; blue 213. – **Brian Hennessy.**



I DON'T care if it is only April, my award for the game title of the year goes to La Triviata from Quest Learning Systems.

Unless you're an opera fan without a sense of humour, you've probably realised just from the title that the game follows in the great trivia tradition. Mind you, I haven't been asked the famous Nancy Reagan question yet.

La Triviata allows from one to four players and offers a bit more than a simple "points for right answers" scheme. There's also a strategy element by which you can increase your points.

As you can see from the screen dump, each player's scoreboard is divided into 21 cells - seven question categories by three rows.

Each player's turn starts with the program randomly selecting a question category or giving you the choice. If it picks a category which you've filled already, play passes to the next player.

Within the chosen category, the program then either gives you a choice of three randomly selected sub-categories or selects a sub-category without option.

You must then decide what level of difficulty you would like the question to be, and in which of the category cells you will put the points. There are three levels of difficulty, with points being directly related to difficulty. A wrong answer causes a zero to be entered in the chosen cell.

Bonus points are awarded if the marginal totals exceed a particular value. In practice this means that for a bonus to be

# It's merely a triviality...

awarded you must average Level Two answers. While this may be easy to do within one topic, it's obviously a lot more difficult to achieve over all seven topic areas.

Since you must choose where your points will be put before the question is posed,

you may be forced to answer a question in a sub-category about which you know nothing - not difficult in my case. So much for strategy.

Once a player gets a question wrong, play passes to the next player. The first player to fill their card gets a chance to

the player can challenge the decision. The correct answer is then given and the other players must decide if the challenging player's answer is acceptable.

An incorrect challenge is penalised by the entry of negative points on the scorecard, while a correct challenge is counted as usual.

The penalty has the effect of making you think before you challenge. A few times we were hopping mad because we didn't challenge a decision, only to find that our guess ought to have been acceptable. In these cases a retrospective challenge option would have been nice.

For example, it's a bit annoying to give the answer 5 and have it marked wrong, only to discover that the "correct" answer was +5. Similarly, Thomas A Becket was acceptable to us but the program demanded Thomas Becket.

This latter example possibly betrays the major problem with the package - its American origins. The questions are distinctly biased towards the USA. Of course much of the American way of life finds its way over here, so you may still be able to answer many of the questions.

Another drawback is that the program seems to access the questions in a similar order each time. It will remember which questions have been presented over several games within the same session, but rebooting will produce a similar order.

Of course the random element means that different categories will probably be chosen, so no two games will be identical. Even after lots of games we were occasionally



Question 1: Name the tune they're dancing to

your confidence in producing the right answer becomes crucial.

My strategy, for example, was to leave Row A free for answers to categories in which I was confident of producing a correct answer.

The possible drawback is that each time a topic comes up, you

change one of the scores and then the winner is announced.

The game keeps a Hall of Fame, and high scores are saved to the disc along with the player's name.

One interesting feature of the game is the "challenge" option. When an answer is judged to be wrong, a rude noise is made and

	HIST	ARTS	MATH	GAME	PERS	PHIL	MISC	TOTAL	BONUS
A	0	0	6				3	9	0
B			6					6	0
C			9					9	0
Player 1 "bamber"								24	0
T	0	0	21				3	24	53
B	0	0	5				0	5	TOTAL
Sport/Game		Sport/Rec		-1-	-A-	NO			
What country has won golf's World Cup most often?									
↓ america									
Do you want to challenge? (Y/N) N									
United States									
Press RETURN.									

Some answers are more correct than others

	HIST	ARTS	MATH	GAME	PERS	PHIL	MISC	TOTAL	BONUS
A	9		9				9	27	0
B		6	9		0	6	6	27	0
C	0	6	9	3	3	0		21	0
Player 2 "magnus"								75	0
T	9	12	27	3	3	6	15	75	160
B	0	0	10	0	0	0	0	10	TOTAL
CATEGORY		SUBCLASS		LVL	SLOT	CHALLENGE			
Current Scores									
1. bamber								165	
2. magnus								160	
Player 2's turn.									
Press RETURN for your category.									

A close-fought contest of trivial knowledge

surprised by being presented with a sub-category we hadn't seen before, and new questions continue to crop up even now.

The game comes with two question discs and apparently more are planned. It would be nice to have a localised question disc, but even without it we've had great fun. After a few more games I might even be able to remember who won the Superbowl in 1983.

If you haven't encountered trivia games and still don't know what one is, ask yourself this question: How many folds are there in the standard paper aeroplane?

**Cliff McKnight**

*Title: La Triviata.  
Author: Not credited.  
Publisher: Quest Learning Systems.  
Requirements: Apple II+/IIe/IIc.*

## Have fun designing your own home

AVANT-Garde has recently released a trio of software packages covering architectural, interior and landscape design.

Written by Don Fudge, with a little help from Mary Carol Smith, each of the packages may be used quite independently. They come complete with program and data discs, manual/tutorial, workbook and quick reference and command cards.

The system requires a 48k Apple and paddles, or you can use a graphics pad, joystick or mouse. A colour monitor and a

printer with a hi-res dump facility are also desirable.

As computer manager in a medium sized architectural practice I have seen many design programs available for the Apple. The one we use currently is Scribe.

It soon became apparent that the Avant-Garde packages are aimed at the lay person and are not meant for professional use. However they are well thought out and considerably easier to use than many I've seen.

The manuals are quite easy to follow, though in places read like a cross between a Ladybird

book and a Shopperama advert. The initial tutorial is supplemented by files supplied on the data disc.

Your own home is introduced to the computer on plan (from above) or in elevation (from the side) by using the paddles and "etching a sketch".

Lines can be drawn in varying thicknesses and colours and there is a digital readout showing gradient, etc, in the text window.

Accurate dimensions can be entered direct from the keyboard and the architectural design program will calculate distances, diagonals and angles.

In the interior design program everything is automatically kept to the correct scale (to everything else). However in both cases - unless you have a very old printer - any graphics dump is slightly distorted owing to the oval hole in the print head.

Fortunately text can be printed on the graphics screen so that furniture elements can be labelled, because one box looks very much like another when viewed from above.

In fact the architectural program library includes squares which are quantified as small, medium, large and huge.

Once the design has been finished, elements of furniture or plants can be loaded from the disc library or defined by the user.

These can then be positioned, rotated to eight positions and fixed on the plan, which can then be saved to disc as a 33 sector picture.

The coloured examples supplied with the interior design package had been created by drawing an interior projection of a room and then adding library elements in elevation. The end result is a rather childish picture - a sort of 2D perspective.

Despite the limitations of the library there is nothing to stop the user choosing a viewpoint and designing his or her own library elements from it.

Alternatively the standard elevation of elements could be given depth by using the paddles. In short, there is a lot of scope to express any artistic tendencies.

The pictures can be painted and the end result is reminiscent

## READERS' SURVEY

*THE response to the Apple User survey was overwhelming - thanks to everyone for your comments, praise, brickbats, the lot.*

*We've been busy taking note of your likes and dislikes, and the encouraging thing is that we seem to be pointing roughly in the right direction. Mind you, that doesn't mean we won't be making some changes on the basis of your replies.*

*Nearly everyone wanted more applications and more Appletips, which is what we'll be aiming to give you in the future. We also hope to bring you more hardware projects and more coverage of the burgeoning field of communications.*

*On the language side, who said Basic was dead? Nearly everybody ticked the Basic box, although there was also considerable support for Pascal and machine/assembly language. It was also encouraging to note the support for*

*Forth and Logo, with Cobol, C and Modula-2 receiving a surprising number of votes. We'll aim to give some coverage of these in the future.*

*If you're one of the many people who requested an index, you'll be glad to know that we've started the job. An index to volumes 1 and 2 of Windfall appears on Page 68 and we'll continue with volumes 3 and 4 next month.*

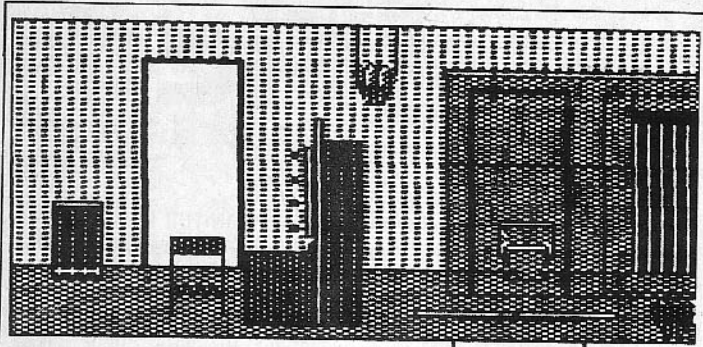
*We'd already started to widen the games section, and it's clear that many of you would prefer to see more coverage of general recreational software.*

*Apart from that, it's clear that most of our readers use one or more of the Apple II family. The machine seems to inspire amazing "brand loyalty" as testified by the many anti-Macintosh comments. It reinforces Apple's own comments that they're aiming the Mac at a completely different section of the market.*

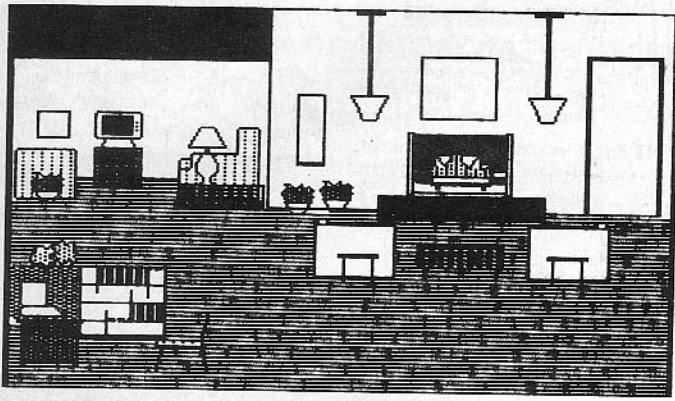
*We'll continue to cover the Mac to a small extent, but those of you who expressed fears about the Mac pushing the II family out of the magazine needn't worry.*

*Apple User has the same cover price today as it had when it began life as Windfall in July 1981. How many other magazines can make that boast? However, those of you who wanted to see less advertising ought to realise that it's precisely because of the adverts that we can keep the cover price the same.*

*And finally, the names of the lucky 10 who'll be getting a year's free subscription to Apple User. They are: David Wood (Aberdeen), C.D. Scott (Swindon), J.J. Matthews (Exeter), John Inglis (Fife), S. Yeung (Cardiff), R. Masters (Amersham), Stuart Langridge (Sutton Coldfield), S.I. Magnus (Dorset), Dr Brian Whalley (Belfast) and Marc Eskenazi (London). They'll be hearing from us in the near future.*



Interiors



Interiors

of a hi-res picture from an adventure game.

In fact this would be a very easy way for budding game writers to create hi-res pictures, although the story line and setting would be somewhat restricted - Upstairs, Downstairs or the Garden of Eden perhaps.

All the packages are menu driven with one-key entries and have similar commands, such as Space bar to go to the picture, Esc to go to the menu and Return for a data disc catalog. The various types of files are readily identified as the program adds a suffix when saved to disc.

Of the three, the landscape design program was by far my favourite despite my having no practical interest in gardening whatsoever.

You could set your landscape around one of several houses which are supplied on disc, or design your own garden space. Once your garden is designed the plants and trees can be aged to see the results in years to come.

The picture of a country home set against a mountain backdrop is quite magnificent on the screen but obviously loses a lot when printed out in black and white.



There is also the facility to print out a list of everything you have planted.

All in all I consider these packages fun (or educational) programs rather than for professional use although they would make an excellent introduction to computers.

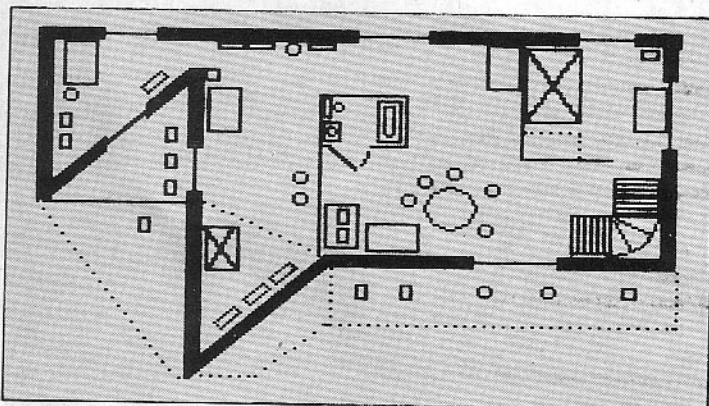
Don Fudge has written two other design programs - also available from Avant-Garde - one for schematics and one for flow charts. Presumably these are of a similar standard.

Avant-Garde programs are distributed in the UK by Softsel,

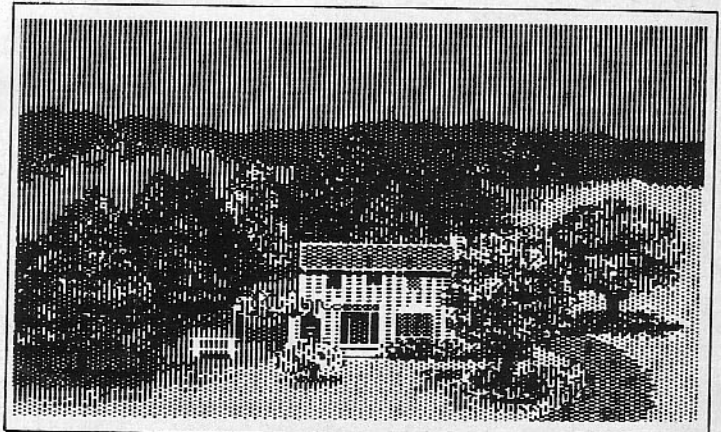
so your dealer should have no trouble in obtaining them. Prices will depend on the dealer mark-up, but the US prices are \$69.95 each for Interior Design and Landscape Design, with Architectural Design being \$99.95.

**Tim Shreeve**

*Title: Design your own home  
Authors: Don Fudge and Mary C. Smith  
Publisher: Avant-Garde  
Requirements: 48k Apple II,  
paddles, joystick or mouse*



Architecture - Deck house



Landscape

**t** Strings are somewhat alien things as far as Pascal is concerned, although the Apple version supports them with built-in procedures and functions. Unfortunately STRINGS and CHARs are not compatible. Even a one-letter string cannot be equated with a CHAR. Since at times the nicest way to solve a text problem is by mixing strings and characters, I have come up with a pair of possible ways around this limitation.

A STRING[n] consists of (n+1) consecutive bytes of memory, the first byte being the current active length of the string, and the rest being the actual characters stored.

This compares very favourably with a PACKED ARRAY[0..n] OF CHAR, as the 0th item of the array can be made to correspond with the string-length, and the rest of the packed array can match exactly the data in the string.

Having decided to match STRINGS with PACKED ARRAYS, there are two possible ways to set up the correspondence properly. Listing I demonstrates the VARIANT RECORD idea, where a single section of the Pascal memory can represent several different types of data at once, and the interpretation of the data depends on the name used to address it.

Listing II shows how the MOVELEFT (or MOVERIGHT) procedure allows you to copy data from one variable to another, even when the data types do not agree. These procedures simply copy a block of bytes from one memory location to another. The syntax is: MOVELEFT(destination\_variable, source\_variable, no\_of\_bytes) for example, the line: real1:=real2; could be expressed, in this case more clumsily, by: MOVELEFT(real1,real2,4).

One point to be wary of if you do set up your own string manipulation – you must be in control of the length-byte at all times, or you could run into great trouble.

J.P. Lewis

```

program stringtest;
type
  shortstring=string[10];
  charstring=packed array[0..10] of char;
  mystring=packed record case b:boolean of
    true:(password:shortstring);
    false:(myword:charstring)
  end;
var
  testword:mystring;
begin
  with testword do begin
    password:='short';
    writeln(password);
    myword[0]:=chr(6);
    myword[6]:='y'
    writeln(password)
  end
end.

```

Listing I

```

program strings2;
var
  counts:integer;
  mystring:string;
  myword:packed array[0..80] of char;

begin
  mystring:='Joe Bloggs';
  moveleft(mystring,myword,length(mystring)+1);
  counts:=0;
  while (count(ord(myword[0])) do begin
    counts:=count+1;
    write(myword[count])
  end
end.

```

Listing II

# apple classifieds

**APPLE-CP/M SOFTWARE.** Complete, unused: dBase II, £175. Micro Prolog, £75. Apple DOS: Visicalc IIe, £95. Format 80 Word-Proc, £70. Merlin assembler, £25. Ascii Express Professional, £50. Cards: ALS Z-Card (Z80 card + CP/M 2.2), £70. DMS RGB colour card, £40. SSM serial interface, £40. Tel: 01-274 6099.

**NIGHTINGALE MODEM,** interface card and software, £155. Also Data Highway software, £55. Tel: (0274) 603329.

**APPLE** disc drive controller card, unused, £20. Apple DOS 3.3 System Master Pack, System Master and basic discs, original and unused, £15. Tel: 01-387 0325 daytime.

**APPLE SILENTYPE** printer + interface, £75. IIe colour modulator, £12.50. 16k language card, £35. Disc controller, £25. Games paddles, £5. Apple sports bag, £3. All unused. Bourne End 25895 evenings.

**APPLE II+** 64k, disc drive, monitor, printer, Z80 card, 80 column card, Snapshot Copykit, discs, manuals, the lot, £825 ono. Phone Medway 683164.

**SOLICITORS** M.M. Lemer & Co, 18 Queen Street, London W.1 for all your legal requirements. Please write or phone for a free estimate. Ref:L. 01-493 3232.

**SILENTYPE PRINTER,** excellent condition with interface and 8 rolls paper, £100. Phone 041-637 6877.

**WANTED:** Documentation for Peachtree PAAS Accounting Software. Will accept photocopies. Please telephone 01-387 0325 daytime.

**SOUNDCHASER** Music System complete with 4 octave keyboard, £550. Tel: 0252-520724.

**APPLE MONITOR II** green, £85. Apple IIe TV modulator, assorted games, Pass 1.1. Ring Leon 01-202 5523 evenings.

**APPLE III SYSTEM,** 128k Disc II, Monitor III, 5Mb Profile Visicalc, Appewriter, Mail List Manager, integrated PL+SL+GL Pascal manual, business graphics, £1,650. May speak to: (0733) 65460. Also IIe 80 col card, DBase II, offers.

**APPLE III** computer, monitor, additional drive, software included: Visicalc III, Appewriter III, Mail List Manager, System software with Appewriter emulator, £995. Apple III disc drive, £140. Bourne End 25895 evenings.

**MACINTOSH** software. Hippo C, Frogger, MBasic, Multiplan, Lode Runner. Very low price. Tel: 01-251 4961. Room 701 Vivian.

**SYNTAURI** Music System for Apple includes Mountain Boards, Syntauri Keyboard and software, £400. Phone Geoff 01-340 7103 evenings.

**SILENTYPE PRINTER INC.** I/F 80 as new, £80. 01-427 5977 evenings.

**MACINTOSH 128k,** Imagewriter. Offer to Mr Martin, 01-432 3233, ext. 2. 9am to 4pm weekdays.

**WIZARDRY** Sargon 3, Zork 2, Zork originals, £15 each. Brian Kennel 01-385 7944 (office).

**ITT 202 48k,** Applesoft ROMs, disc drives, 14" B&W Ferguson printer interface with Transdata thermal printer and keyboard, games etc, £2500. Buckingham 812474.

**APPLE II+,** 48k twin disc drives, interface, monitor, joystick, modem power adapter, games, books, magazines, £600. 01-948 0488 evenings.

## apple classifieds

- Classified ads can only be accepted from private readers, not companies.
- The cost is 20p per word, with a minimum of 10 words prepaid.
- Your ad will be printed in the next available issue of Apple User.
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- Ads can only be accepted on this form (or a photocopy of the form).
- There is no maximum to the number of words you include in your ad.
- Ads too long for the form should continue on a separate sheet of paper.
- Ensure your phone number or address is included in the ad.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10 words £
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 words £
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 words £
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30 words £

Name \_\_\_\_\_ Address \_\_\_\_\_  
 POST TO: Apple Classifieds, Europa House, 88 Chester Road, Hazel Grove, Stockport SK7 5NY.

# Quite easy to digest but lacks meatiness

*Title: The Power of AppleWorks*  
*Author: R. Williams*  
*Publisher: MIS/Prentice-Hall*  
*Price: £21.55*

AS a devotee of AppleWorks, I was quite looking forward to reviewing MIS' "The Power of AppleWorks". The cover, though paperback, presented well and with the first quick glance through the 232 pages, I was reassured by the persistence of the typical American software tutorial style.

Here was "a book designed for users of the AppleWorks program who have little or no experience using a computer" – at last I could now speed the conversion of my secretary's efforts away from her typewriter!

I then began to read in earnest. True, I found that the MIS tutorial style was in some ways easier to digest than the AppleWorks Tutorial which comes with the software package, complete with its own tutorial disc – a very expensive extra with The Power of AppleWorks, which I did not get!

The book is fairly predictably broken down into three sections – word processing, spreadsheet and database.

The presentation of word processing belied "The Power of" title. The AppleWorks Tuto-

rial and Reference Manual are far more "powerful", especially in the areas of formatting and presentation, which is an aspect on which I was expecting to learn new techniques.

Not to be too ungracious however, I did relearn the use of "Group begin" and "Group end" printer options, though no mention was made of the very useful facility "Open-Apple:K", which calculates and displays the auto paging feature.

Another useful tip was the use of "Open-Apple:1" or "2" or "3" up to "8" for scrolling the cursor proportionately through the text. They only told half the story though, as those who try this trick will find out.

The spreadsheet section seemed longer and included useful applications on accounts payable, maintaining a stock portfolio, cost recovery, amortization and a chequebook ledger.

The coverage of the range of AppleWorks spreadsheet commands was incomplete, and I was particularly surprised to find that in none of the applications was the "cell protect" feature used. Instead there were sombre warnings about not over-typing cells which included formulae!

The book as a whole would also have gained considerable value had this section at least included practical applications of the lesser used spreadsheet functions like @CHOOSE,

@COUNT, @INT, @LOOKUP and @NPV.

A journey started in hope was beginning to pall as I launched into the database section – again a similar pattern.

Perhaps it is the current weakness of Sterling against the US \$ that makes "The Power of AppleWorks" seem so expensive for what it is. The AppleWorks Tutorial suddenly takes on a new value.

J.P. Rauch

## Visicalc for the beginner

*Title: The Visicalc Applications Book for the Apple IIe*  
*Author: Jack Grushcow*  
*Publisher: Reston/Prentice-Hall*  
*Price: £16.45*

IN this 272 page book the author gives an introduction to Visicalc in the first 85 pages and then develops useful accounting and forecasting spreadsheets in the second half of the book.

As a guide for the beginner it is easily readable and takes the

reader through the Visicalc commands. The reader is particularly encouraged to experiment with each command as it is introduced, and there are some particularly helpful hints on how to learn the Visicalc routines – "the pause that refreshes" etc. These tips help to take the heat out of the learning process.

Each of the introductory chapters ends with a summary for easy reviewing and there is a comprehensive index.

Topics covered in the applications include credit control, forecasting, budgeting, portfolio management and financial statement analysis. There are quite a few comprehensive spreadsheets, explained in detail and fully listed. There is also useful advice on further developments.

It would appear that this book has been prepared as a general guide for spreadsheet rather than a specialist AppleWorks guide. There are some unfortunate omissions in the commands described. No details are given of the /S(Storage

The  
Visicalc  
Applications  
Book  
for the  
APPLE IIe

Jack Grushcow

/P(Print), /M(Move) or /V(Version) commands. The built-in functions are also missing, so there is no mention of @IF, @MAX, @MIN commands or any of the maths functions. Also missing is any guidance on DOS files, and information on DOS commands is patchy.

In summary, this book seems to be a useful beginner's guide and has a good program collection for those interested in accounts packages, but is limited for those interested in more advanced applications.

R.V. Tansley

Title: *Machine Level Programming on the Apple II/IIIe*  
 Author: Graham Keeler  
 Publisher: Prentice-Hall  
 Price: £7.95

# Take the plunge to machine level

IF you're a programmer, the chances are that at some stage you've come up against the limitations of high level languages. You may have been trying to write a game and discovered that you just couldn't achieve smooth animation. You may have needed more precision in calculations than is available from Basic.

If you recognise this syndrome, you can probably recall when you first said to yourself "Oh well, I suppose I'll have to learn machine code".

If you've recently reached this point - or if you are just interested in machine code - you should take a look at Graham Keeler's book. It has a lot to recommend it.

Firstly, it's been tried and

tested before it reaches you. The basis of the book is a course which Keeler and colleagues run at the University of Salford.

Secondly, the book is aimed specifically at the Apple, rather than simply concentrating on the 6502 in general. Hence the book can tell you exactly what to expect to see when you perform a particular action rather than sending you scurrying to consult the memory maps in the Apple manuals.

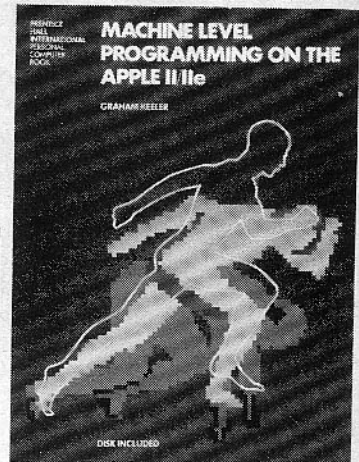
Unlike many books of this sort, this one comes complete with a DOS 3.3 disc containing all the larger examples and some utilities, and therefore represents excellent value at £7.95.

Keeler is refreshingly honest in his approach. On page 1 he

announces that "machine level programming is tedious and difficult!" Hence, he advocates the use of machine level programming only where necessary. If Basic will suffice, it's a whole lot easier to write and debug.

The book leads the reader in slowly, and it's not until chapter 5 that some machine instructions are introduced. The writing style is clear and concise, which isn't to say that you won't need to do a fair bit of work.

This is not the sort of book you'd take on a long train journey because it is written to be read while you're sat at your Apple. The exercises are integrated into the text rather than being relegated to the chapter ends.



Following the "main course" there are chapters on machine code graphics and interfacing. This latter makes mention of an interfacing demonstration board, and an appendix shows how the "reasonably handy electronics enthusiast" can make this board. If you're not handy you can always buy the board from an address provided.

**Cliff McKnight**

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*Apple Computer Inc, New York.*

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## Jailbreak — the hard and soft options

FURTHER to Dave Miller's article on ITT-Apple compatibility in the January 1985 Apple User, I would like to inform you that Jailbreak is no longer available.

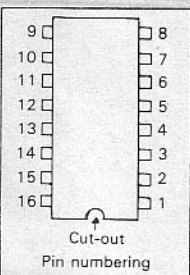
However, there is a hardware patch in February 1984 Hardcore magazine which considerably tidies up the display.

This patch causes the colour in the seventh bit to be copied into the eighth and ninth bits, causing a slightly lumpy but acceptable display. Unfortunately I have not been able to test this in colour.

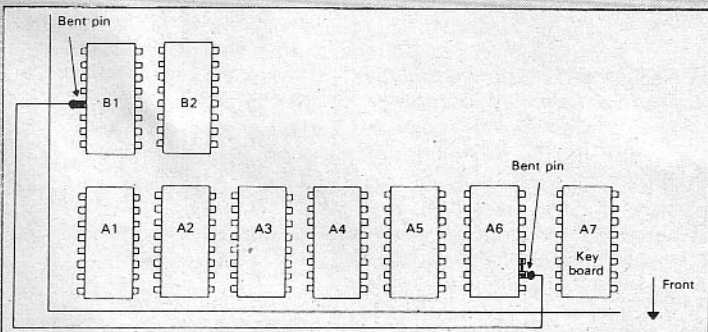
First remove the 10 screws which hold the bottom onto the top of the computer. Then locate chips B1 (74LS257) and A6 (74LS166).

Remove B1 and bend up leg 13 so that it won't connect with the socket and solder this pin to one end of some wire. Similarly connect pin 2 of A6, bending it up, to the other end of the wire. Finally connect this pin to pin 3, which should not be bent up.

I recommend extreme care when doing this. Make sure you are static-free before you start. It may be desirable to just wrap the wire round the pins at first so the display can be examined, for you might not like it. — D. Poirier, Bishop's Stortford, Herts.



Hardware patch



```

1 REM ITT 2020 SOFT JAIL
  BREAK
2 REM BY DUNCAN L.EADIE,
  1985
3 REM CLEARS LINES ON HGR
  SCREEN
4 REM
-----
5 HOME:VTAB 22:PRINT"ITT
  2020 SOFT JAIL BREAK":HGR
10 FOR A=768 TO 793: READ B:
  POKE A,B: NEXT
20 CALL 768
30 END
40 DATA
  163,0,138,141,94,192,160,3
  2,140,13,3,157,0,63,232,20
  8,250,200,192,64,200,242,1
  41,95,192,96
    
```

IN the January 1985 issue of Apple User Dave Miller mentioned a Jailbreak card for the ITT 2020 which tidies up the hi-res graphics display.

ITT owners may be interested in a short utility program I have written which serves the same purpose and at no extra cost. — Duncan L. Eadie, Beaconside, Staffs.

● We didn't have an ITT 2020 available to test these two tips so they are presented 'as is'.

## APPEND problem inherited

I HAVE recently experienced a problem with the APPEND command on the Apple II using DOS 3.3.

The trouble seems to occur when the data finishes at the end of a sector.

While reading Beneath Apple DOS I noted that a patch was

done on the APPEND command and released in January 1983. I have used this release of DOS and the problem still occurs. Can you help? — Peter James, Twickenham, Middlesex.

● There was an error with APPEND in the older DOS 3.2. Apple could not have been aware of it when developing DOS 3.3 because it reappeared there. Subsequently a patch was supplied, but as far as I know DOS itself was not patched.

I recommend you get hold of the August 1981 and June 1982 issues of Hardcore. You might also like to read "Apple Files" by David Miller (1982, Reston Publishing, ISBN 0-8359-0191-2).

Max Parrott

## This is why I hate Mac

APPLE Computer seems to be of the opinion that the Macintosh is a great advance in the development of computer science, if not God's gift to the poor unfortunate who is struggling to come to terms with 'BDOS ERROR ON A'.

But as a user I find that it is the box that I have grown to hate. The operating system has just lost another file, and I have suddenly developed an irresistible urge to tell someone about the inherent problems before I throw it through the window.

I am tired of:

● A disc operating system which is competing with the Sinclair Microdrive for the slowest access time.

● The 50 seconds that it takes to exit one file, or application, and call another.

● A near letter quality printer that is slower than a cheap daisywheel — it is absolutely useless if you have a 300 page manuscript to print out.

● An operating system that has to save a document (even if you have just done that) before it prints out, and then tells you that there is not enough room on the disc.

● An aching arm when I copy between discs.

● The bugs in MacWrite.

● Losing files (and even discs)

when MacWrite crashes.

● The lack of utilities that allow you to salvage crashed discs.

● The error messages which are a mystery even to Apple dealers.

● The absolute lack of documentation — has anyone ever seen a copy of Inside Macintosh?

● The lack of all this wonderful software that is alleged to exist in the States, and which looks as though it will not be as cheap as we were led to believe.

In short, I am absolutely sick of the way that Apple have taken a 68000, put it in a straightjacket, set it in treacle, nailed it to the floor, and then failed to provide the support for the resulting machine.

If this was not enough, your favourite manufacturer has also got a lot to learn about customer relations.

The last time that I visited a computer fair and spoke to someone on the Apple stand I was ready to sell the damned thing for the first reasonable offer. The corporate attitude seems to be one of deciding what the customer wants without asking the customer.

If I was asked to pick out any single feature of the Macintosh that makes it a real pain to use then it would be the operating system.

The Finder is to operating systems what Basic is to high level languages, very slow and written for computer illiterates, and I am starting to think that this is the user at whom the machine is targeted to the exclusion of anyone else.

An operating system that is user friendly to one owner is a set of nail-biting restrictions to another.

So much for my accumulated frustration with a machine that I am becoming reluctant to switch on, and time for some constructive comment.

I am in the fortunate position to have the opportunity to learn Unix and that, in comparison to the Finder, is an absolute godsend.

The concurrent and multi-tasking features, pipelining files and background processing in particular, are like manna from heaven.

There is no doubt that the Macintosh needs a lot of features of this operating

## FEEDBACK

system (if not a user-friendly version of Unix), some way of speeding the thing up, and also a reduction in price of both hardware and software – £800 for the RAM upgrade is way over the top.

The potential is there, but can Apple deliver the goods?

Fortunately there is still hope with the 512k 68000 Macintosh look-alike that Jack Tramiel will be selling for about £650, and if Apple doesn't make a move in the right direction then I will.

Goodbye Apple and hello Atari. – **M.H. Martin, New Eltham, London.**

● Many people have decided that, in order to be really useful, the Mac needs 512k and a second drive. However there are many other people who are full of praise for their Mac and wouldn't be without it.

The user-friendliness has to be balanced against the time taken to achieve it.

Although you make many valid points, let's face it – if the Mac was a total dog Atari wouldn't be launching a work-alike!

## Controlling printer

I HAVE had my Apple II Europlus for several years and been quite satisfied to use it in combination with a Videoterm 80 column board and the Appewriter II word processor.

I am now retired and have lots more time to delve into other uses for computers, but first of all I have to put my own house in order.

In the November 1984 issue of Apple User there was a letter to which you replied, entitled "My printer won't behave..."

Well, if D.G.N. had problems so have I. I was delighted to read of one's ability to contact the Epson MX-80FIT printer from Applesoft. I so many times want to condense and have never been able to.

There is no mention of this in my book of words. In fact, there is no mention of a Ctrl-V function.

My other problem concerns my Videoterm board. The book of words sent with it is very confusing because of the

various modifications they have made to it and the additional hardware I think they are trying to say is necessary for it to function properly.

Do you need to buy the thing they call an enhancer? You see, it starts in the wrong place on the screen and the first two lines cause an error message.

You can't tabulate over the 40 column – it just wraps around onto the next line and there are lots of other impossible-to-live-with irritations.

There must be thousands more people like me who would like things simplified than there are who "know these things".

Think about your enlarged readership as you bring us into the fold. – **Fred Alldred, Ramsey, I.O.M.**

● If you want to learn more about controlling your printer then there is at least one book on the market dedicated to the Epson but you won't do better than read the two part article by Mike Glover and Chris Roper which appeared in Windfall, May 1983, page 50 and June 1983, page 56. The October 1983 issue may also be of interest on pages 32 and 68.

The Ctrl-V function is used from within Appewriter II (and IIe) to send control characters verbatim to the printer, they are not a function of the Epson. That is, in Appewriter, if you type Ctrl-V, Ctrl-O, Ctrl-V you will not get the disc utilities menu but when you print your file via Ctrl-P you will turn on the condensed print.

I'm not clear about the 80 column board. What is the error message and what first two lines cause it? Is this from within a program accessed by PR #3 or Ctrl-D, PR #3? Or is it that the board is not working from within Appewriter?

If this latter is the case then what you need is a piece of software known as a pre-boot which is run immediately before inserting the Appewriter disc.

Then you will see an 80 column display of Appewriter. If you already have this and are using Appewriter in an 80 column mode then the 80 column board is working correctly.

At the moment you can presumably switch between upper and lower case using Ctrl-A as a kind of shift key. The

enhancer makes the keyboard more like a typewriter's. I wouldn't buy any more hardware until the present problems have been sorted out.

**Max Parrott**

## Speedway tuning

HERE are some variations I have made to Marcus Macrae's Speedway (April 1984 Apple User). I have added some routines to include a speed control and skill level factor.

The scores are varied according to skill level achieved, and the skill level also varies according to success throughout the game.

The game itself is a lot of fun – congratulations to Marcus for the listing. My additions simply give people a chance to work up to the game. – **Geoff Mascord, New South Wales, Australia.**

```
390 FOR J=1 TO 101-SL: NEXT
  J: SL=SL+0.01: IF SL>100
  THEN SL=100
520 HOME:
  SC=INT((SC*SL)/100): VTAB
  7: PRINT"YOU SCORED ";SC:
  PRINT"SKILL LEVEL ";SL:
  GOSUB 1050: GOTO 150
605 PRINT"CHOOSE YOUR SKILL
  LEVEL"
606 PRINT" 1 (EASY) TO 100
  (HARD)"
607 INPUT SL
1050 SL=SL-5: IF SL<1 THEN
  SL=1
1060 INPUT "ANOTHER GAME
  (Y/N)"; AG$
1070 IF LEFT$(AG$) <> "N"
  THEN RETURN
1080 END
```

## Recovery built in

MAX Parrott suggests using Bag of Tricks or CIA to recover lost text files in his reply to Stephen Lowe (Feedback, March 1985). In doing so he seems to have overlooked the more obvious way which is built in to the Pascal Filer.

The MAKE command creates a directory entry with a chosen

file name and file size, but without changing the information stored on the area of disk where the file is made.

Using this command it is usually possible to recover lost text or perhaps part of it though not, of course, if it has been written over. – **Shaun Hopson, Milton Malsor, Northampton.**

● You're right, of course. However, be sure you MAKE the files the correct length unless it was the last entry.

**Max Parrott**

## Setscreen

I HAVE tried to run the Setscreen program (Apple User, February 1985, page 65) but am experiencing some difficulties.

Firstly, the second set of parameters in Table II seems to be missing something – what are the correct parameters?

Also once the four screens have been set up I find that text continues to be printed into the second screen. For example when writing on the first screen (No. 3) the cursor moves past the bottom edge onto screen No. 4.

This seems to indicate that one cannot write on screen 4 without the possibility of being over-written from screen 3.

Any help you can give would be appreciated. – **F.A. Ripington, Canterbury, Kent.**

● Unfortunately there was a misprint in Table II. The parameters for screen 2 should be: &S,2,20,20,0,24.

With regards to your second problem, I think you will find that this does not now occur. I would suggest that you run the following demonstration program to see how the cursor is stuck at the bottom of screen 3.

**P.H.P. Harris**

```
3 TEXT : HOME
5 &S,3,0,40,0,12
7 &S,4,0,40,12,24
10 &V,4
20 FOR N=1 TO 479
30 PRINT"4";
40 NEXT
50 &V,3
60 FOR N=1 TO 1000
70 PRINT"3";
80 NEXT
```



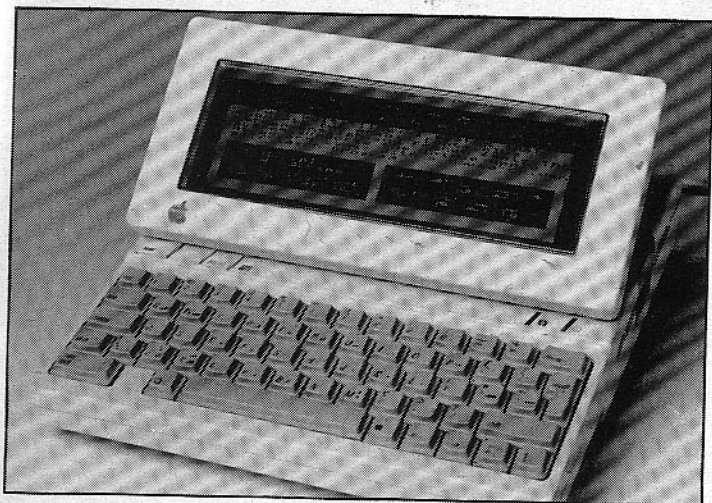
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Diwan multi-lingual system used on the new Apple liquid crystal display

### Arabic on tap

WHAT is claimed to be a unique multi-lingual system for the Apple IIc has been produced by Diwan Science & Information Technology and Attar Computers.

High resolution graphics can be mixed with text for business or educational purposes using the utility programs provided, and can be manipulated and enhanced with Apple's Mouse-paint program using the Apple mouse.

English and Arabic texts can have independent windows, with independent scrolling within each window setting.

The standard system comes with one English font and two Arabic fonts, a bilingual notepad program, an address book program, and Imagewriter printer bilingual driver routines.

The Arabic text supports vowel points and fully conforms to the ASMO 449 standard. French and German fonts are supplied at extra cost. Price is £300.

● Diwan, Science & Information Technology, London House, 271 King Street, London W6 9LZ. Tel: 01-748 2546.

### LCD panel

COMPLETE system transportability for the Apple IIc is achieved by the introduction of

a full function liquid crystal flat panel display from Apple Computer.

The panel, which weighs less than 2½lb and is the size of a keyboard, can display a full 80 column by 40 line screen of text or graphics.

It fits on top of the IIc where it can be adjusted for the optimal viewing angle. No external power supply is required. Price is £495.

● Apple Computer, Eastman Way, Hemel Hempstead, Herts. HP2 7HQ. Tel: 0442 60244.

### Compatible motherboard

APPLE compatible peripherals manufacturer U-Micros has launched an 8 bit personal computer – the System 2 – based on its U-Com2 motherboard. It will accept a range of Apple II add-ons.

This motherboard is already the basis of U-Micro's System 1 black box industrial controller. It features 64k RAM, eight accessory slots and one slot for a 40 column display board.

Also fitted is a 2k software support ROM for booting discs, driving the keyboard and providing O/S support software.

The micro will run DOS 3.3, CP/M and – with a 16k memory increase – UCSD p-system.

One slimline disc is fitted, with a second disc as an option. Prices from £638.

U-Microcomputers, Winstanley industrial Estate, Long Lane, Warrington, Cheshire. Tel: 0925 54117.

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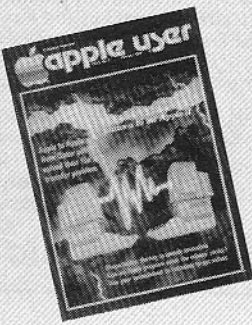
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**February 1985**  
 Steve Wozniak talks about Apple II developments - Quicksort algorithm in Fort and Basic - Games (Deadline, Witness, Planetfall, Enchanter, Scorcerer, Expedition Amazon) - Graphics DIY part XI - Targeting with a spreadsheet - Apple to Apple file transfer - Miners' strike resolved by computer? - Chemical formulae on Lisa - two Macintosh books reviewed - World of the 6809 Part III - Software reviews (Sales Edge and Management Edge) - Application: book publishing - Split screen techniques - PLUS News, new products and letters.



**March 1985**  
 Circle drawing algorithms - Super Pilot System Log - Summarising data with VisiCalc - Competitive estimating with Multiplan - Graphics DIY part XII - Ampersand editing - Macintosh (MacTerminal, Mouse Stampede, optical mouse, plus Mac book) - Reviews (Merl modem, Intec hard drive, Vision 128/256 card, the Editor, plus three educational packages) - Fun and Games (Xyphus, Fighter Command, Picture Writer) - PLUS News, New products, letters and Appletips.

# apple user

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Signed \_\_\_\_\_

Send to: Apple User, FREEPOST, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

(No stamp needed if posted in UK)

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