

Significant Bits

Journal of Brisbug PC User Group Inc



Next meeting

Sunday, 24th October

Vol 8 No11
October 1993
\$ 4.00

Main Event - 1:30pm

Borland - Major Product Launch

Lunchtime Special
Starts 11:30am

Introducing Lotus SmartSuite
Lotus Development Corp

BCF BOOKSHOP - *all day*

Corel PHOTO CD

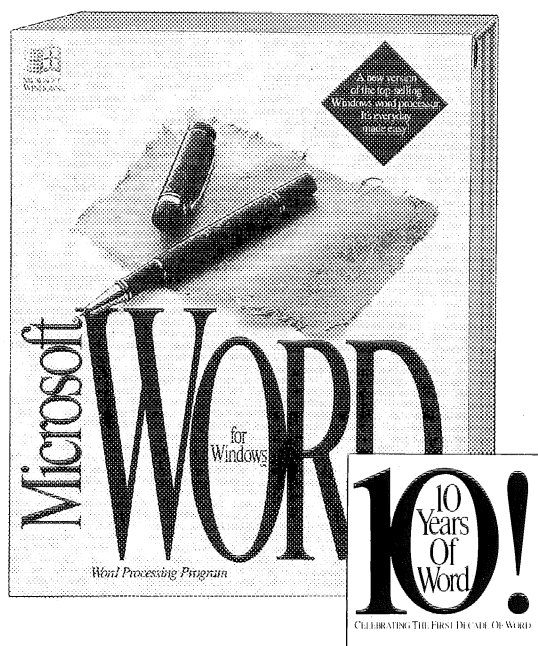
Presentation of life membership to Sylvia Wyllie - *1:00pm*

Inside

Learning Assembler
New Library listings
Microsoft Publisher 2
Practical Environment Monitoring

Change - A characteristic of icebergs and computer magazines

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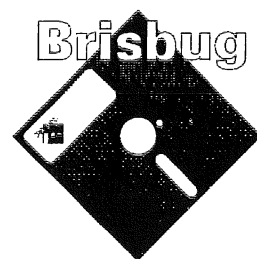
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Produced entirely using CorelDRAW4*, the background photograph is from the collection on the new Corel Photo-CD-ROM* of colour photographs.

Colour separation by Queensland Business Magazines.

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*donated to Brisbug by Corel Corp

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BRISBUG PC USER GROUP INC

*The Brisbane group for users of
PC-type computers.*

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or phone: (07)281-6503
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and 2 to 4pm ONLY!!

HELP LINES

Brisbug operates a system of
help lines for members only.
The telephone numbers for each
topic are listed at the back of
this magazine

From the Engine Room

Lloyd Smith

Joining Brisbug is the initial step to becoming a part of our club. Brisbug exists because of the effort and dedication that a small number of members provide to make the club viable. If you examine the facilities currently being provided this becomes very apparent.

Our classes and lectures held at the meetings are directly due to the effort that the lecturers input into organising and running their classes. They receive no remuneration for their efforts other than the satisfaction of being able to impart their knowledge to others. They have no back-up if they are unable to attend because of other commitments or illness. This was very apparent at the last meeting, when three lecturers were unable to attend, and so those members who wished to attend these classes, were left with no one to teach them.

Considering the size of our group, we must have many knowledgeable members who could have taken over in these circumstances. The Junior group relies very heavily on its co-ordinator to keep the group going. The juniors started initially as a supervised group for the younger members to give these youngsters a reason to belong to Brisbug. This group now has the willing assistance of quite a number of adults and has progressed from the "games" stage to dealing with computing in a far more adult fashion.

Our SIGs commenced because of the enthusiasm of individuals who wished to involve themselves with others in dealing with their particular interests in more detail. Just recently, the Accounting SIG lost its co-ordinator and has lapsed. When the Accounting SIG commenced there were 30 or more

interested members attending, but because of lack of interest or dissatisfaction in the group, many drifted away.

Brisbug has had a number of other SIGs which have been started with enthusiasm, but have lapsed because the co-ordinator has been unable to attend regularly. Many members have asked "Do we have classes on - Desktop Publishing - Wordprocessing - Spreadsheets etc?" The answer can be very embarrassing, because if we had volunteers to co-ordinate or run these classes we would certainly do so. The facilities are there at QUT, all we need is the manpower.

Other Brisbug facilities, such as the Magazine, Bulletin Board, Software Library all operate because of the dedication of a few members. Some of these volunteer members have been handling their area for quite some time and occasionally need additional assistance.

Brisbug is not only a club to join to learn about computers and computing, it is also a social organisation. Our members come from all walks of life and most are eager to share their experiences, knowledge and friendship with others. Getting involved with Brisbug and assisting in some of the chores is one way to get to know others in the club.

COMPUTER SHOW

The effort made by a number of members to staff our stand at the Computer Expo has, once again, paid dividends. From the thousands of membership applications handed to visitors to the stand, numerous enquiries have eventuated, and a number of applications already received.

Lloyd

From the Assistant Stoker

Ron Kelly

The success story of the moment would have to be our Junior Education Group. Some two years ago, with the help of a fellow member by the name of Les Cathcart, Management introduced a Special Interest Group for the children of Brisbug Members.

Les gathered around him a small group of very staunch parent helpers and established a platform on which our children could enjoy using a computer in the companionship of their own age group.

Yes, a lot of fun was had by playing games and learning from each other how to master these games, but in between times Les and his co-horts taught some valuable fundamentals on how to use computers other than for game playing.

It became evident to management that this success story needed a slight change in direction.

Early this year Management introduced the Junior Education Group still with Les, his helpers and the Juniors, doing much the same for the first two hours (from 10am to noon) as they were doing as an S.I.G. but then introducing two education sessions from noon to 3pm. During these 'Educational Periods' Les invites experienced senior club members to instruct the Juniors further into computer fundamentals also other programs which to date have included windows and Dos 6 among those presented...

Allowance has also been made for Juniors who are either experienced in the subject under discussion or find it... just a little above them at this time. These juniors are catered for in other

computer activity under the guidance of parent helpers while the main-stream talk/instruction is taking place. The success of this junior education group has another plus to it. A 'PLUS' which I never contemplated when, as Education Services Coordinator, it was necessary for me ensure that Les and his helpers were not hindered in the change, and that Management Committee were fully informed so as necessary approvals for the format within this directional change were forthcoming.

This 'PLUS' I refer to is:

...If you just happen to look in on this group any club day...count the parents who are sitting beside their children taking in the same instruction...there are quite a few...I think it's great...and I don't know about your thoughts as to this comment, but I just happen to think that this is one aspect of what Brisbug stands for and what life is really all about.

To the Juniors

At the August Club Day General Meeting I raised a possible extension of activity for our juniors.

I asked for Junior input into each month's edition of Significant Bits. Members attending Brisbug's August General Meeting will recall I raised junior input following a comment to me from a parent who said there was nothing in our magazine to catch the imagination of our juniors.

If entries are received our editor said he would establish a special sec-

Continued on Page 6 ...

MAGAZINE

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Belinda Gorrie

Contributions always welcome!

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SUNNYBANK HILLS 4109

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ADVERTISING

The rates, sizes and other information needed by advertisers is set out below. Significant Bits will take color or black and white ads. Position must be requested. Advertiser printed inserts can also be arranged.

DEADLINES

Normal deadlines are the third Friday of the month preceding publication. Space reservation deadline: 3rd Friday of month preceding publication.

Replacement artwork deadline the last Friday of that month. Artwork must accompany space booking. If booked by phone or FAX, booking becomes effective only when artwork is received. The magazine is usually printed the second week of the month of publication, so that changes to copy must be in the preceding week.

TERMS

Payment must accompany bookings unless an account has been established. Discounts are offered for multiple insertions when advance payment is made.

Members may advertise at half rate, but member payment must accompany ads (Classified ads not exceeding three lines are run free of charge. More than three lines attract attract a minimum charge of \$5.)

FORMAT

The magazine is A4 size, offset printed and saddle stitched. More than 2300 copies are printed of each issue and distributed throughout Australia and overseas. Artwork should be full size, paper bromide, film (right-reading emulsion down) or laser print. Postscript print or EPS files can be accepted by arrangement via modem. Brisbug does not typeset ads other than classifieds.

Text only ads 1/6 or 1/12 page can be FAXED. The layout for these must be at the editor's discretion and are accepted without proofs. All sizes are given as height x width in mm. Artwork must not exceed stated

Editorial

A Question of Bias

This month Brisbug was accused of being biased against a very well-known and widely used software package. The bases of this criticism appeared to be the comments, by one of our regular authors that he "*hated Product X*", and our letter of protest to the manufacturer concerning his failure to turn up for a presentation at our monthly meeting.

If "Significant Bits" wants to be taken seriously in the computer magazine field (*and we do*), then an allegation of bias is very damaging. We strongly reject the allegation as inconsistent with the evidence.

The guidelines for Editors published in our July issue (page 7) are for editors and presidents - in other words, those who purport to represent the official views of Brisbug. All other contributors are expressing their personal opinions and hard-won expertise.

As a matter of principle, authors' views differing from those of the editor, and/or those of Brisbug, will still be published provided that:

They are reasonably held

They are not defamatory

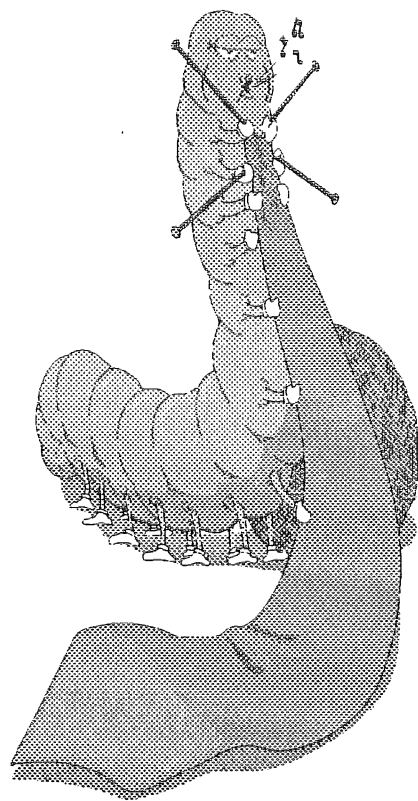
They are not are not sexist, racist, religious or party political.

As editor, I think I have a duty to my readers to present *accurate* reviews... that means they could be severely critical; some products deserve to be rubbished on the basis of actual deficiencies. Very occasionally, I read a review of a new product in a computer magazine and think "the reviewer could not possibly have tried the product... he's rehashed the publicity "blurb" put out by the manufacturer and put his name to it". Most of us have read glowing reviews of the classic "dogs".

We do publish copy provided by

manufacturers ... the "review" of WordPerfect SIX.0 (which is not yet available in Australia - at the time of writing this) is one such example. As a (clearly identified) manufacturer's contribution, one should not accept it uncritically, any more than you would accept a car ad on face value.

It is interesting to observe how manufacturers react to criticism and "bug" reports for their product. Take for instance Corel Corp who copped loads of "flack" for problems encountered using the new release (Ver 4.0) of their flagship product CorelDraw. Their reaction appeared to be to quietly and quickly fix the "bugs" and then offer a **FREE** update of the program to all registered users. It will be interesting to see the price of Ver 6.2 of Microsoft DOS to registered owners of version 6.0, or to remember that the price of the "new, improved" (and bug fixed) second version of WordPerfect for





Windows was \$30, unless you complained to your friendly retailer *before* he offered it to you, under which circumstances it was free.

Unfortunately for manufacturers, many of us have long memories of the frustration of buying software which was, despite the glowing text on the package, (to quote my teenagers) a "load of crap".

Add to that the embarrassment of those of us who are consultants who have recommended products to clients, on the basis of reviews which should have been factual, that turned out to be "dogs". I can still recall the scorn of a very good customer's secretary who pointed out that "*even you*" could out-run the WYSIWYG screen display of a well-known Windows-based word processor at my full four-finger typing speed! (worse still she was right).

It is an old, but still true adage, that

you *never* buy version X.0 of software. Smart buyers wait for version X.1 to allow the brave, or foolish, "must have" buyers to beta-test the software for them. Why buy two copies of a package to get one that works? This is the age-old argument advanced by some pirates who, having jumped in and bought the "buggy" version, then steal the next version (that works). Brisbug recommends that you try *legally* before you buy ... TAFEs such as the Electronic Learning Centre at Kangaroo Point, will allow you to use their legitimate copies of programs on their machines for the cost of a small TAFE fee. There is, very likely, a number of members of Brisbug who have jumped in before you, so why not ask around as to how they've found the package? You may even get a bargain ... but you'd have to wonder why the discount. Don't forget to check the licensing agreement...

Continued on Page 6

A Transformation

Anyone reading this issue of SigBits from the front will no doubt have noticed that we look considerably "different" ... a new typeface, a new layout, but the same burning ambition to inform and entertain.

This was no accident ... rather a good deal of hard work, and a great deal of talent from a young Queensland designer, Belinda Gorrie, who has loaned us her skills for this makeover.

We hope you like it, but most of all would like feedback from you, our audience, on your reactions to our changed face. As we move to involve a lot more people in production of the magazine there are sure to be more fresh ideas, but probably none so radical as this.

Let's hear from you.



ADVERTISING DETAILS (cont'd)

FULL PAGE SIZE DETAILS

Normal article text (3 col)
260x178
Page trim
295x208
Max assured print area
280x190
Optional bleed extent
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RATES

Color covers \$600
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1 column \$110
1/4 page \$70
1/6 page \$50
1/12 page \$25

Special positions:

Full page RH side,
1st 20 pages \$285
Inside covers,
B&W.....\$350

INSERTS

Inserts are subject to prior arrangement.

The charge is 1.5 times the full page rate. The inserts may be color and double-sided and may be in foldout or booklet form, but may not exceed A4 size.

To meet Post Office requirements, they must have been printed in Australia or New Zealand.

The required quantity of printed inserts are to be delivered to Significant Bits.

Quantity, delivery and other details will be advised on request.

Advertisers may contact Ron Lewis (07)273-8946, FAX (07)273-8954.

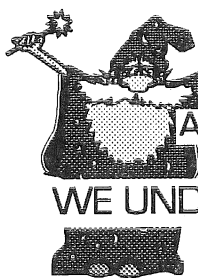
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From the Assistant Stocker (cont'd from page 3)

tion for juniors in each month's edition of SigBits.

A few ideas.....

The article could be 100 words or half a page or more, or perhaps a 'piece' of graphic, or it may be 'how you broke through level eight of a game which was real hard to break through...You may have a question you would like answered, or you might have the answer to somebody else's question.

The only criteria are : —

- The 'input' must be in your (juniors) words or design.
- At the end of your article enter your name, your age, Mum or Dad's Brisbug Membership Number and name of your town, shire or suburb.
- The Editor's requirements must be strictly followed. (I am sure Mum or Dad could help you with requirements). These requirements are usually found on page 2 or thereabouts, just below list of committee names or if you are unsure, give the editor a ring (07) 273 8946 (Ron Lewis). I am sure Ron wouldn't mind.....

So how about it, all you young lads and lasses of Brisbug.It dosen't matter if you can or cannot attend the Sunday Junior Group we want to get to know you in SigBits.

Ron Kelly

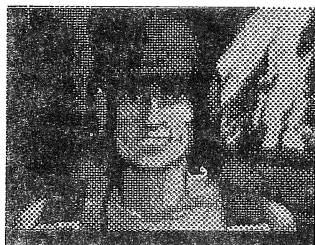
Editorial - (Continued from page 5)

some of them do not grant the original purchaser the right to resell. What's that if not bias (against the legitimate purchaser - it won't stop the pirates).

And don't forget Shareware ... if the author can't satisfy your needs then he won't get your money (all legal). Just make sure the evaluation period is sufficient to allow properly evaluation of the package - one major anti-virus product has a trial period of only five days! which is obviously ridiculous, and trending towards the pay-before-you-try philosophy of the commercial operators. Fortunately there are alternatives from authors with much more realistic expectations which are at least as effective and easy to use, even for new users.

Finally, if you did buy a "dog", make sure you tell the manufacturer in writing ... but don't defame the product. Point out the deficiencies you've found in a polite manner. Manufacturers have feelings too, and the more enlightened will try to make sure you have an operable package.

Ron



LIBRARY NEWS

GAME OF THE MONTH

And now for the latest in the Apogee Software Games selection -

It is the year 2030 A.D. Space Station Liberty drifts high above Earth's surface. An Earth that is no longer at war with itself but has found peace a more practical alternative. Manned by members of an elite squad of high tech commandos, Liberty's sole purpose is the protection of Earth's people from possible alien threat. A threat that until now has seemed very distant.

Led by HALLOWEEN HARRY, the most respected and experienced agent, the task force must pull out all stops in wiping the alien scum from the streets of New York. To make matters worse, the aliens have taken hostages and are using them to create an army of genetically engineered zombies.

Time is running out. The longer the aliens have to establish a foot hold on our soil, the higher the risk of further invasion forces breaching Earth's defenses. HALLOWEEN HARRY and his team may be the last chance for our survival. It's dirty work, but someone needs to save the world!

Guide Harry through the many levels in search of hostages held by the aliens. Blow away zombies and aliens while avoiding death traps.

The future of Earth is in your hands.

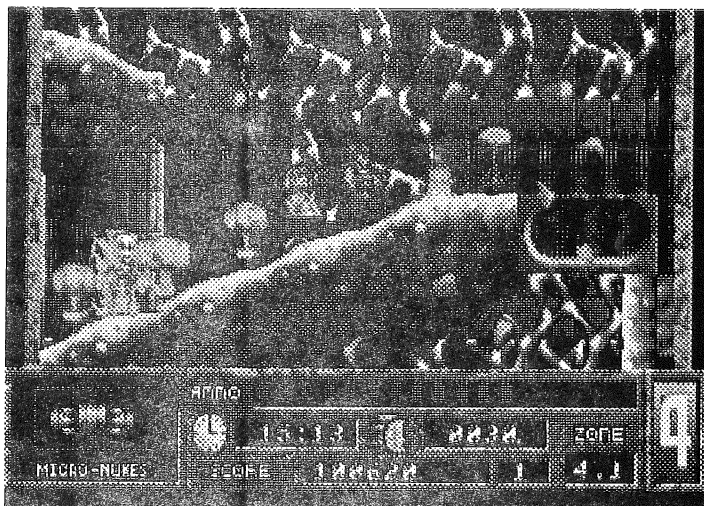
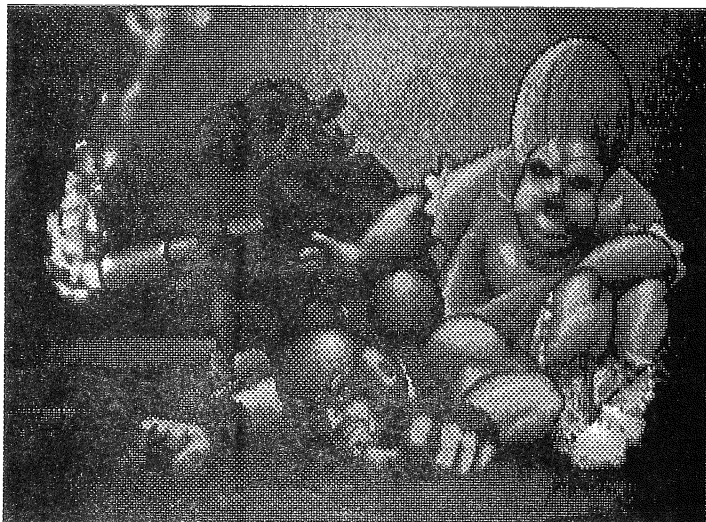
HALLOWEEN HARRY Version 1.0

Available on BBUG Disk No 9125 this game is available only on a high density disk and requires a hard disk, VGA or better monitor and supports a Sound Blaster and keyboard or joystick.

The program was locally written and this shareware version has been made available by courtesy of Manacomm.

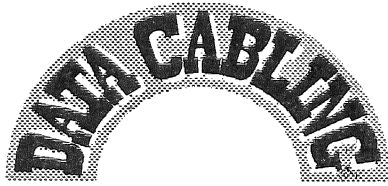
CATALOG CHANGES

Renumbering of CAT6.CAT has been almost completed. The disks which previously were numbered 3000, 5000, 6000 and 7000 have been reworked and checked and have been renumbered to 6000 and onwards. Quite a considerable number of old BASIC programs have been deleted from the listings as these are very old and often cause confusion to newer



Halloween Harry

Screen dumps courtesy of Manacomm Pty Ltd



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members who do not understand how to use BASIC programs. Other BASIC programs contained in the catalogs will eventually be deleted from the listings as the master disks are replaced. For those members wishing to obtain copies of BASIC programs deleted, a listing will soon be available, on request.

This months catalog disks will contain all the changes to this section of the library listings.

ANTI VIRUS PROGRAMS

Registered versions of SCAN and CLEAN are still available from the Library for \$75.00 and the latest version of VIRUS BUSTER will cost you \$120.00.

With regard to the upgrade of earlier versions of VIRUS BUSTER for \$50.00, please do not order this upgrade from the Software Library. Requests for upgrading to Version 4 must be made directly to Leprechaun Software as you will be required to provide the serial number of your version.

DISK PRICES

5.25" Disks \$4.00 each

3.5" Disks \$5.50 each

High Density Disks \$8.00 each

(Special Programs only as advertised)

Postage -

Up to 8 disks \$3.00

Over 8 disks \$5.00

Catalog Disk Exchange

\$2.00 at meetings or when accompanied with an order for other disks -

\$5.00 if ordered separately.

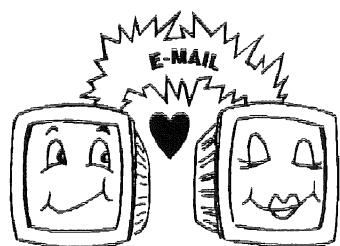
There are 5 - 5.25" disks or 3 -3.5" disks in our catalogs.

Don't forget to allow for these when calculating postage.

CREDIT CARD MINIMUM - \$25.00

From the Editor's desk calendar

Thesaurus: Ancient reptile with an excellent vocabulary



BBS News

October 1993

The last month or so has seen a number of changes made to the systems. Currently, the systems have 2,858 users, of whom 79 percent are Brisbug members. On average, 120 files are downloaded each day. And average usage is at around 75 percent of any 24 hour period. At the moment, the only system which is not being heavily used is Line 4 (probably in part due to difficulties some users may have with the modem running on that line at the moment). It looks as though we will have to give consideration to adding another line in the not too distant future.

2,858 Users

120 files/day
downloaded

Average
usage 75%

The machine which runs lines 3 and 4 has now been almost completely converted to the HPFS file system. The conversion is not quite complete due to a problem which was encountered during the conversion. One of the reasons for making the changes was to allow me to remove the Fujitsu 420 megabyte drive fitted to that machine. This drive has been showing signs of problems over the last two or three months, with those problems slowly becoming worse. Since I now have a second Conner drive in the machine, I was in a position to remove the Fujitsu and get it repaired or replaced (fortunately for me, it has a five year warranty).

I spent a good part of the Sunday following the Computer Expo moving files around to make space, and making maps of where things needed to go. After that was completed, I removed the Fujitsu and changed the Conner 1.3 gigabyte drive to SCSI ID0. And tried to install OS/2. Which was where the problem started....

What I hadn't realised is that, during the early parts of the installation, OS/2 uses DOS style INT13 services to access the hard drive. Unfortunately, neither DOS or the machine BIOS know anything about drives which have over 2300 cylinders. As a result, every time I tried to install OS/2, I ended up with an FDISK failure. In the end, I had to put the Fujitsu back in and change the drive setup back to the way it had been (or at least, as close as I could make it to the way it had been). It was only the next day that I realised what the problem was (which IBM technical support later confirmed for me). While I now have a way of making the installation

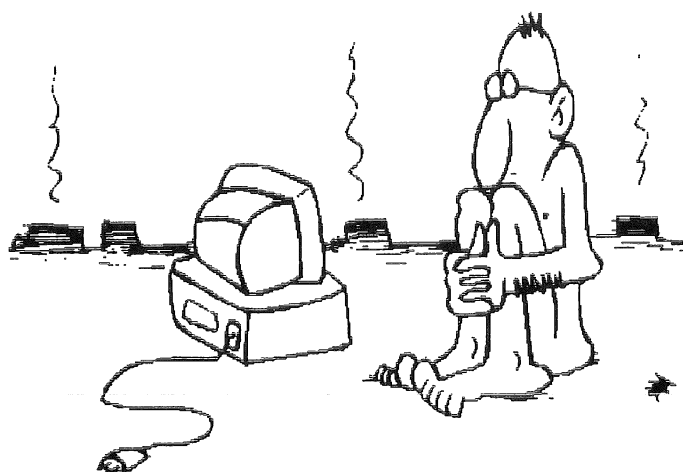
work, it means I've got to go back and move all those files again. Groan....

The one positive aspect of an otherwise wasted day was that I've now converted all but the boot drive to HPFS. This has had some interesting results. First of all, access speed to the drives has increased quite noticeably. For instance, midnight maintenance, which used to take about three and a half minutes has been reduced to around two and a half minutes. Message processing speed, which used to average around 12 messages processed per second is now averaging around 30 messages per second (a big increase, considering that message processing is done as a background task at idle priority).

Another effect of the change to HPFS will be immediately visible to users. The utility which maintains the files database for the BBS can make use of some of the extended attributes that OS/2 has when running HPFS. As a result, any new file scan will use the last accessed date of the file, rather than the last modified date of the file. This means that files will appear to be new when they are uploaded or moved from one place to another.

So, if you suddenly find a large number of new files, you should be aware that this may simply be the result of them having been moved.

Using the file list command on the same files will show their last modified date, rather than their last accessed date.



All I said was "I want to use QWERTY as my password"



SIG Reports

Reported by Ron Lewis

WINDOWS SIG - OCTOBER

For our October meeting (24th Oct), the format will be a presentation of Microsoft FoxPro database for Windows and a glimpse of the DOS version for comparison, by our able demonstrator, Peter Akers, this will be followed by a display of latest Shareware "goodies", again by Peter and finishing the day with a general Q&A session.

The November meeting (21st Nov) will be a BLOCKBUSTER. Micrografx, the leading graphics software company, will be coming up from Sydney, to the Windows SIG meeting (not the main meeting) to present their latest wares.

The main emphasis will be on showing the Graphics Works package. This contains drawing, photo editing, charting, graphing, slide show and organisation charting modules, complete with a CD-ROM packed with clip-art and photo images, all for the sensational price of \$245 RRP. This package is a more than worthy competitor to Corel Draw 3 at \$399 RRP, but come along and see for yourself.

To round off the day, Micrografx will show the top-line illustration package, Designer 4, and the top-line photo-editing package, Picture Publisher 4. Both of these are literally the "best of breed" and have features that no other package has.

As well as presenting their new wares, Micrografx will have some "give-aways", even I don't know what they are, but come along and be surprised. In fact, talk all your friends and clubmembers into coming along and see if we can pack the Auditorium for Micrografx and show them that we do things bigger and better in Brisbane, give them a real Brisbane welcome.

There are NO SIG meetings in

December, because of the Christmas meeting, but we have a range of interesting things in store for the new year, including Bernard Speight and myself doing a session on customising Word and Excel, a look at the new Microsoft Publisher 2.0 and other things to be revealed later. Over the next few months Microsoft has an avalanche of new products to be released, and we will show them as they become available.

So, see you at the next meeting, and especially in November.

Brian Bone-Shield

New Venue for Gold Coast SIG

The Gold Coast SIG have changed venues to Block B of Merrimac High School, Dunlop Crt, Mermaid Waters, QLD ... 4218

Meetings are now the first Tuesday of each month, from 7:00pm to 10:00pm.

Contact: Secretary, Joanne Ellis on (075) 710 113

Next meeting dates:

November 2

December 7 (Xmas Party)

SouthSide SIG

Next meeting is

Tuesday, 2nd November, at
114 Forestdale Rd Forestdale
(Rex Ramsey's home).

Starting time 7:30pm.

Topics for discussion: DBL Tools by Addstore, CD-ROMs and WAV files.

All welcome.

Contact: Rex Ramsey on 800 4827

Weekday SIG

Meets second and fourth Wednesdays of month (except school holidays), at 1:00pm at

10 Lamond Close, Calamvale.

Next meeting 22nd October

Topics are decided on the day.

SIG Co-ordinator

Bernard Speight

Phone: (07) 349 6677

6:00pm to 9:00 pm

MINUTES



Brisbug General Meeting 21/9/93

The crowd was still gathered after an enthralling session on Windows NT on a DEC Alpha given by Chris Vose (Digital Equipment Corp.) and Craig Spender (Microsoft). (The equipment was on special at \$10,000 - did anyone take them up on this half-price offer? Can only wish....)

The General Meeting of Brisbuggians did not actually start until 1-18 p.m. President Smith (a.k.a. Lloydall) opened the proceedings by passing on an apology from our stalwart Ron Kelly. A recent operation has seen him laid up (literally) but we hope to see him tripping the light fantastic next meeting.

Another Ron was also conspicuous by his absence - Mr Lewis phoned in sick (a touch of the sun). ALSO the C++ teacher was absent (Geoff Baker) and shortly following this General Meeting the Secretary did a bunk after being overcome with nausea (does Brisbug have this effect on everyone??)

First things first, Graeme Darroch (one of the few healthy persons present) gave a report on plans for the upcoming Computer Show to be held in Brisbane. (Too late, folks, it's already happened when you read this!). He appealed for all persons interested in lending a hand to please drop in at any time while the show is in progress.

Lloyd thanked Graeme for his encouraging report, and then reiterated the continual call for helpers at any time in the various club activities. The same old story of the same old faces doing the same old jobs (enough of the "old" already!)

Members were then advised that during the month the Management Committee had passed a vote of no confidence in Chris Ossowski in his role as Development Coordinator. A request for his resignation from that position has been conveyed to him.

The Treasurer (Max Kunzulmann) then gave a brief report:

Start of month	\$10,822-00
Income	\$ 7,362-00
Expenses	\$11,675-00
Finished with	\$ 6,510-00

Paul Marwick shouted his report from on high! The BBS report marked a major step forward in the history of Brisbug with the resounding words:

"Nothing to report!"

Bernard Speight hushed the trickle of excitement ebbing through the crowd after these immortal words and gave his SIG (Special Interest Groups) report. Only one group had bothered to submit a report to him this month (which makes Bernard's task only that much harder!). After passing on as much information as he could on the various groups which are to gather after this meeting, Bernard apologized for the incorrect address published in Significant Bits as that of the Gold Coast SIG. A correction will appear in the October issue.

Hang our heads in shame! The Accounting SIG has lapsed due to lack of interest (or enthusiasm). Maybe we should now have an Auditor's SIG to investigate what went wrong??

The October 24th meeting of the Windows SIG will see MicroGraphics making a special presentation (with apparently plenty of giveaways to members present....so be there if you are in to Windows!)

The President thanked Bernard for his continuing hard work, and then made a few general announcements.

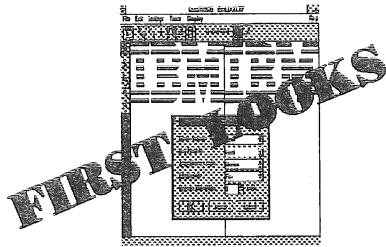
Firstly a plea to all those budding writers out there! If not for the Secretary's sometimes corny minutes the magazine can look a little lean some months.....If we don't start getting more articles of interest the minutes will have to be expanded to 35 pages per issue! (A threat, definitely not a promise!)

The club has received formal notice from the distributors of SCAN and its associated software that the club cannot legally issue "upgrades" of their various virus checking programs. As with nearly all shareware a user has an evaluation period in which to decide whether the package under consideration is right for her (or him) and then must register that package with the distributor (or obliterate it from the hard/floppy disk).

Brisbug has always been a strong supporter of the shareware concept, and regrets its oversight in making any promises to "upgrade" shareware products. Obviously upgrades defeat the mechanics of the system, and so we are unable to make such offers. If you like what you get from the software shop and continue using a particular program you are morally

The Accounting SIG has lapsed ... Maybe we should now have an Auditor's SIG too investigate what went wrong??

Continued on Page 26



CorelDRAW! 4.0a

by Ash Nallawalla

Corel Corporation recently released CorelDRAW! 4.0 (CDR4), a significant upgrade to version 3.0 of this feature-laden illustration package. I have been a CDR user since the first version was released over three years ago and I prefer it to some others that I have tried. Version 3 is still available as a parallel offering if you want it. Many users will welcome the ability to create multiple pages per file or the new animation capabilities.

In the Box

CDR4 comes with two large, untitled manuals: one appears to be the User's Manual or User's Guide (depending on which page you read) and the other is the clipart and font catalogue, for which I could find no title anywhere. Both books are titled "CorelDRAW!" on their covers or spines. An Installation Guide and a Quick Reference Booklet are also provided. A typographer's gauge is not provided any more. You get two CD-ROMs and twelve 3.5-inch diskettes. A catalogue of third-party products or services such as T-shirt embossing, laser engraving and the like is also supplied.

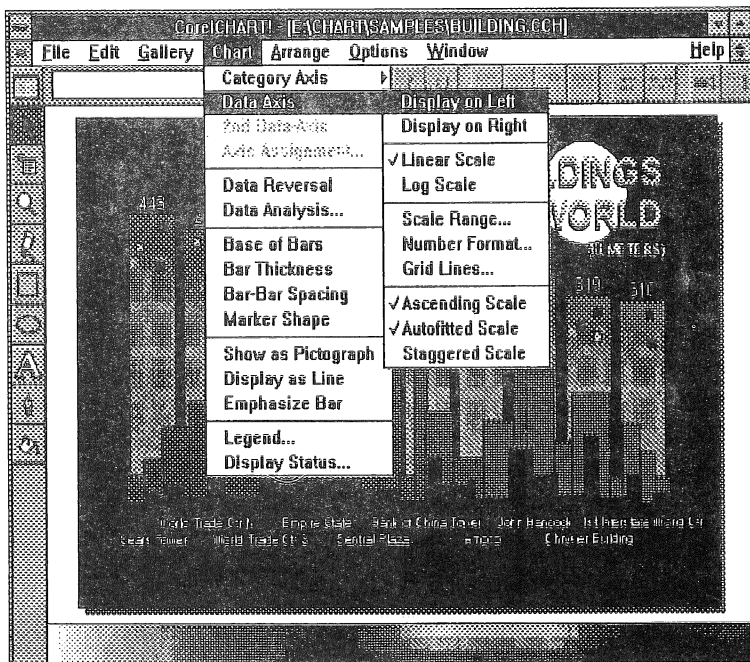


Figure 1. Charts don't have to be boring old bar graphs. Corel4 offers a wide range of backgrounds and clipart for dressing up your data. The program incorporates a data entry sheet for manual entry, or filters for many common data packages. DDE is available.

Quick Tour

CDR3 came with a video tape; CDR4 comes with a CD-ROM based Microsoft Video tutorial. If you don't own a CD-ROM player then you are out of luck. The Quick Tour uses a book metaphor to provide rather brief overviews of all the modules. You click on a tabbed divider and go to another part of this "book" or click on the presenter's image and she begins to talk about the topic in question. It is a good product but it will not replace the hour-long video in previous versions as a training aid. Nonetheless, it is an easy program to learn.

Draw

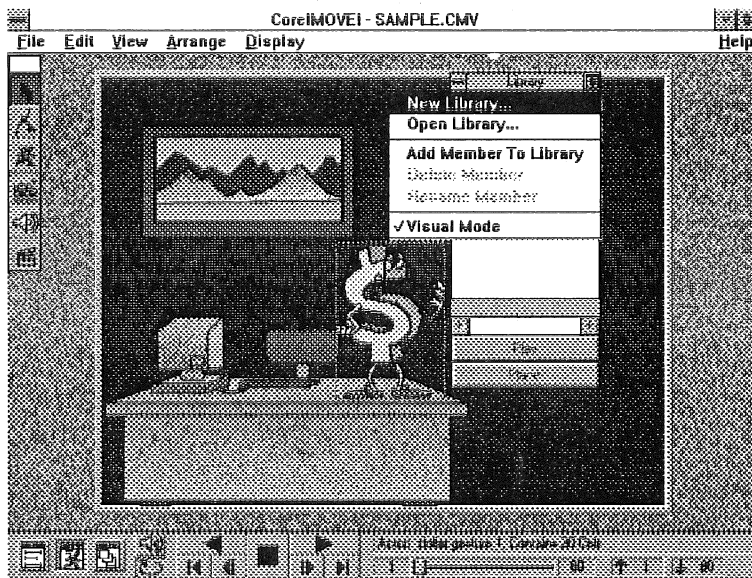
Draw is the main program in CDR4. These days, most products in this class enable you to draw simple or complex images, and so does Draw. Drawing circles, rectangles and more complex polygons are simply the building blocks for more complex images. If you simply need clipart, then you get 18,000 images on the CD-ROMs. Over 5000 symbols are also provided; symbols are also clipart but are less detailed.

There are 99 levels of undo, but you would need a lot of memory for that. The default is four levels but you can configure CDR4 for as many more levels as the amount of memory you can spare. Multipage capability means that you can now store many pages within one file per project instead of separate files for each page.

You can draw lines and arrows of any shape or thickness; the new "PowerLine" feature enables you to simulate a "hand-drawn" look. CDR can be operated with a pressure-sensitive tablet, so a professional freehand artist can achieve some pen-on-paper effects quite easily. You can set the thickness and shape of the "nib," the speed of the strokes, or you can use several canned line shapes.

You can fill an enclosed area with a single colour or with a pattern, a fountain fill, or one of the new fractal textures. You can reshape a curve by manipulating node points.

A large number of "rollups"—drop-down menus—make it easier to find an option. You drop down a desired menu and roll it up when you are done with it for the moment. The rolled-up menu occupies little space.



CorelMOVE is a rather cute, if rudimentary 2D animation package. Both DRAW and PhotoPAINT can be used to develop actors and backdrops. A feature for the imaginative.

Trace can directly scan with a TWAIN-compliant scanner and its new optical character recognition capability enables you to read text and forms within one program. I did not test this feature.

Mosaic

Mosaic enables you to manage your own CDR images or look at thumbnails of the supplied clipart. The clipart book now shows all colour images in full colour, so Mosaic is not needed for that purpose. If you run CDR without a CD-ROM drive, then Mosaic will also help you extract images from compressed libraries.

Ah Yes, the Bugs

An announcement from Corel Corporation on CompuServe states:

"Problems Addressed in the Maintenance Release

We have addressed the major issues that have been reported in the initial release of CorelDraw 4. The following list identifies some of the concerns that have been raised on the CompuServe forum which have been fixed. This list is not intended to be comprehensive—many other minor issues have been addressed as well—but it should give an indication of what you might expect to be fixed.

* Printing

The black rectangle around monochrome bitmaps printed to PostScript no longer appears.

Prepress controls are now optional, and problems relating to color separations have been corrected.

Problems relating to printing facing pages, and using resident fonts, have been fixed.

Printing of exotic fills from CorelChart and PostScript separations from Photo-Paint are improved.

* Import/Export

Support for the CMP format has been added.

Improvements have been made to EPS import and export, JPG and CGM.

Mosaic PhotoCD support is more robust.

* General

FINDER.EXE has been included on the CD to aid in finding clipart.

Copying to the clipboard is much faster.

Intermittent changes in text spacing have been addressed.

Problems opening files have been eliminated.

Conical fills and PowerLines should work on all hardware configurations.

Installation procedure has been improved to account for varying hardware configurations.

CorelTrace tracing quality has been improved.

CorelPhoto-Paint Out of Memory errors caused by specific drivers have been eliminated.

Yes, there were bugs in the first release, and the ones that affected me included the failure of the Scale with Image operation. When I tried to apply that effect, the lines became thick to the point of making the image unrecognisable. This one has been acknowledged by Corel. EPS file export has not worked for me. Unfortunately, there are bugs in the maintenance release 4.0b, according to CompuServe users who have received it. Some of the other acknowledged bugs don't concern me and will not affect many others because they involved doing some unusual acrobatics.

The Verdict

CDR4 is easy to use, although it will not give you any artistic ability that you do not have. It provides the best "bang per buck", when you consider the material that is supplied on the CD-ROMs. I recently revisited Adobe Illustrator, which has devotees among professional illustrators, to make a comparison and didn't feel a need to switch. For my needs, which are basically those of this magazine and occur less frequently in my paid work, CDR4 is more than adequate.

The new Move module is very appealing. I doubt that I will have the patience to create my own actors, so the canned ones will have to do. Yet, it has filled a hole that would have previously required a third-party product.

What did I think of the new "desktop publishing"

features? Yes, they are good but I would not think of CDR4 as a complete desktop publishing solution. It is fine for a 4-page colour glossy but not a magazine of this size or a book. I particularly welcomed the ability to create bulleted text. Now that the company has bought Ventura Publisher, one would hope that CDR will concentrate on being a drawing package first and foremost and leave the desktop publishing to Ventura (Corel?) Publisher.

What was it like to run CDR4 from a CD-ROM? Version 3 was fine to run from the single CD-ROM (if you were prepared to put up with the drive's slow speed) but CDR4 comes on two CD-ROMs. The annoyance is that most of the samples are on the second disc and I could not just replace it in the drive to take a look. The product itself ran well from the CD-ROM, although I will be making some room on the hard disk and install it there. From messages seen on CompuServe, the patched version cannot be run from the CD-ROM drive unless you press the Ignore button about 57 times.

The manuals will probably never come up to my standards but the user guide is a vast improvement over the previous efforts. All the indexes for the modules are bound at the end of the book, which many will appreciate. They remain woefully inadequate; try looking for PowerLines or Contours. It seems that Chapter 13 missed the indexing operation. Thankfully, the table of contents is up to date.

The clipart catalogue uses icons in the page headers to denote categories but you will have difficulty

finding the clipart on the CD-ROM. They forgot to print a list of the categories, so you will need to request a fax from Corel's robot at 0011 1 613 7280826 and choose extension 3080 when prompted. Don't be concerned when it asks you for a voice extension number. That is purely for the fax header, which reads in part, "Deliver this fax to the person at this voice telephone nnnn." Choose 4001 at the next prompt and a fax will be sent to the number you specify. A Melbourne number would be entered with the Canadian international prefix, such as 011 61 3 nnnnnnn (your fax number). You will receive the much-needed, two-page Clipart Index Categories list.

I have this aging 80386/33 PC with 4 MB RAM and I felt that the product would have been more comfortable to use on a 80486/66-class machine with much more memory. It needs to be run from a hard disk for best performance, not a CD-ROM.

Recommendation

CDR4 is the best product of its kind despite the few bugs that have surfaced. The last two issues of PC Update have been illustrated with it, and the patches are slowly reaching buyers. As at mid-September I have not received them, so I cannot confirm what has been fixed.

Availability

CDR4 is available from most resellers. RRP is \$799 and upgrades are \$395; street prices might be lower.

MEMBER'S PRIVATE SALE

Programming
Windows 3.0,
Charles Petzold,
2nd Edition
\$20

Quick C v2.5
\$50

XTree for
Windows v1.0
\$40

Where in the
World is Carmen
Sandiego?
Deluxe Edition
\$85
Wolfenstein 3D
Versions 1-6
\$40

Contact:
Kerry O'Shea
(07) 376-8940

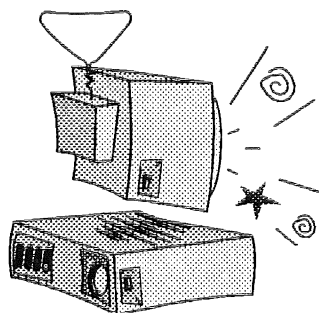
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MODEMS: 14.4kbs d/f & SW V42bis Internal: \$479, External:
\$529; 2400 data/9600 Fax & Software Int. \$159, Ext. \$229
MISCELLANEOUS: Keyboard \$49, XT FDD cont 1.2/1.44 \$49,
Mouse \$18, 4xFDD Cont for XT/AT \$89, 3 Com 286 Novell/
Ethernet Workstation (EGA) \$399; **MEMORY:** Simm 256kx9 \$22
Simm/Sip 1Mx9 \$110; 8087 \$59, 80287 \$79, 80387 2x40 \$195
DISKETTES: 5.1/4 360k \$5; 1.2M \$9; 3.1/2 720k \$9, 1.44 \$16
Quantity discount available. All above prices include tax.

UPGRADE AND SAVE ENHANCE YOUR COMPUTER POWER



SUCK IT AND SEE, YOU OLD BUFFER

By Ted Webber

Fine Tuning your Computer

Whether you have an ancient XT or the latest whizz bang Pentium box of tricks, its performance can be improved by testing and optimising various features to suit your particular application needs. The features may be hardware or software, but software manipulation is likely to be much easier on your hip pocket than hardware.

Whether you have an ancient XT or the latest whizz bang Pentium box of tricks, its performance can be improved by testing and optimising various features to suit your particular application needs. The features may be hardware or software, but software manipulation is likely to be much easier on your hip pocket than hardware. For example, you may wonder if an accelerator board will do all it is cracked up for in its advertisements, but the only way to find out normally is to buy it and try it: you cannot take it back if it is a disappointment. Software, on the other hand, is often designed to be tweaked this way and that so as to get the best possible performance. It is also well adapted to a "suck it and see" approach to performance testing. This may take quite a long time to complete, but the worst damage you can do is likely to cause no more than a hung machine: *CtlAlt-Del*, or a press of the reset button, and you are back in business.

Preplanning

Before you start such testing, careful planning is needed to ensure that you have considered all the relevant variables, and that you have benchmark programs appropriate to the test in hand. For instance, the speed of pure number crunching is often measured using a benchmark based on the "Sieve of Eratosthenes" method for deriving prime numbers, but such a benchmark is totally inappropriate for data-intensive work which has many reads and writes to disk.

To illustrate what is involved in

testing, a classic case is the insertion of a *BUFFERS* statement in a (MS/PC-DOS) *CONFIG.SYS*. First, you will need to have some idea of what is the function of a buffer and how it operates. To quote from Microsoft's glossary, a buffer is a "work area in memory which your computer uses to temporarily store data. Data in a buffer is always immediately available to the computer. Buffers often compensate for differences in the rate of flow from one device to another." This is seen most dramatically with the 64 kilobyte buffer I have attached to my slow printer. Most of my letters are only one or two pages long, much less than 64 kb. So when I give the wordprocessor the order to print, the letter shoots out to the buffer as fast as the printer cable can carry it. Printing then proceeds at a leisurely pace without tying up the computer, and I can get on with the next job without delay.

According to the manual

As my DOS 5 Reference Manual says, "you need to experiment with different values for *BUFFERS* to determine what is best for you. Normally, a number between 10 and 20 will provide the best performance." The default (no *BUFFERS* statement) is usually 15, which is in the middle of the probable best range, so you might think it is not worth worrying about. But the manual then goes on to discuss "secondary buffers" without any concrete suggestions: "the default setting for the number of secondary buffers is zero. Using secondary buffers can speed up certain disk operations."

Precisely what disk operations? For that, we turn to the DOS 5 User's Manual: "secondary buffers speed up word processing programs and language compilers more effectively than they do other programs. Secondary buffers can also make it faster to load programs." Furthermore, "Secondary buffers can be useful if you are not using a disk caching program."

Cache me if you can...

In fact, I use a PCKWIK disk cache to speed up disk operations. (PCKWIK is much faster than SmartDrive or Norton Cache: see Significant Bits, April 1993, page 36.) The PCKWIK manual recommends BUFFERS = 4 when the cache is loaded, with no mention of secondary buffers, but again testing on one's own configuration is needed to confirm.

A cache functions similarly to a buffer, but is much larger, perhaps 1 Mb in extended or expanded memory. Quoting from the PCKWIK manual, "a disk cache works by accumulating copies of frequently used disk locations (called sectors) in memory. As new sectors are used, it keeps a copy of them as well. There is not always room for a copy of a new sector and the cache (software) must determine which sector copy should be removed from the cache. The cache replaces the copy of the least recently used sector with a copy of the most recently used sector."

The More Buffers the Better?

Without a cache, one might expect that the largest possible buffer size would be best. Up to 99 primary, and 8 secondary, buffers are permitted in DOS 5. However, there are two practical objections to this strategy. Firstly, each buffer installed carries a penalty of 532 bytes lost to conventional memory. So *BUFFERS* = 99 would take 52 kb of precious RAM. Secondly, if you do a benchmark on disk operations several times, using a range of buffer numbers in *CONFIG.SYS* and re-booting between each test, you will normally find that the improvement in operating time is dramatic over the range of buffers from 4 to 15. As the number of buffers is increased, the improvement flattens out and then eventually the operating times start getting worse. (Fig. 1) Why should this be? I am not entirely sure, but I understand it is because all the buffers have to be scanned continuously. The more there are, the longer it takes even if many are empty.

Variables and Objectives

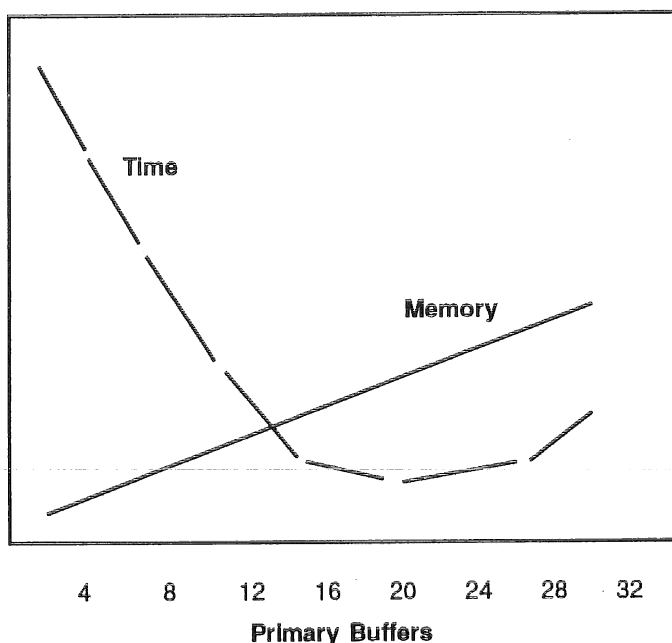
For a scheme to test the effectiveness of buffers and caches in speeding up disk operations, the variables to consider are as follows:-

- Drives - which type of disk drive do you want to

optimise? Settings which optimise one particular drive may not be optimum for all. A normal hard disk is used most frequently, so it might be considered critical for that reason. But diskette drives are very much slower than internal hard drives, and especially if there is a requirement to do frequent backups, the diskette drive (or drives) should be the basis of the testing sequence. Optimising floppy disk writes may save many minutes, where optimising the hard drive would save only seconds. One could, of course, have the best of both worlds by setting the optimum cache parameters in the batch file which starts up each application. This also requires the cache (assuming PCKWIK) to be unloaded, then reloaded with the new parameters.

- Buffers - primary and secondary, as discussed above. Because these are set at boot up by *CONFIG.SYS*, they cannot be easily changed for different applications.
- FASTOPEN usage - but Microsoft recommend only for database and compiler applications when no cache is loaded. It works well with buffers only.
- Cache - on or off; size; where in memory (conventional, EMS, XMS, etc); auto self-optimised or explicit parameters.
- Disk operations - is reading more critical than writing, or can a benchmark be used which contains a mix, such as PCKWIK's *BENCHPCK*?
- File size - are you concerned about many small or

Figure 1. The relationship between the number of buffers and Disk Operation Time/ RAM usage



a few large files in your disk operations? Do the files consist of many small records or fewer large records?

- Result significance - does your benchmark program produce closely repeatable results? If not, how many runs are necessary on the same data in order to compare average times with reasonable confidence that the differences are significant?

Clearly, to run benchmark tests on all combinations of these variables would take a prohibitively long time. Certain assumptions must be made to bring the scheme of testing within manageable proportions. For instance, most of my files are relatively small, so I use only the small model provided in the PCKWIK benchmarking software. As for size, my objective is to hold a complete 1.44 Mb diskette in cache so that backups can be compressed and written to disk without delay. Next, I am content with BENCHPCK's coverage of my type of disk usage; and with PCKWIK's recommendation of *BUFFERS=4*. I will also accept that FASTOPEN will not help me. I will allow PCKWIK to auto-select the type of memory it uses, after I have enabled all types. Finally, my objective will be to optimise diskette operation, and then check the effect on the other drives.

The golden rule, once your scheme of testing has been decided, is to change only one variable at a time while keeping all others constant. You may of course find that a variable which you expected to be critical - showing large variation of speed as you step through its values - is not critical or has only a marginal effect. In that case, its testing program can be curtailed. Or you may find a totally unexpected factor, such as the flushing described later, which needs to be explored in depth.

Test Significance

Using the benchmark program BENCHPCK provided by Multisoft with PCKWIK (Fig.2) I first did 30 runs on the C: hard drive using the same data with PCKWIK in default mode (i.e. auto-optimised parameters), in order to test repeatability of results. One might expect that a computer would behave as a deterministic machine - give it the same task many times, and it will take the same time to carry out that task on each occasion. This expectation was not fulfilled by BENCHPCK. Although the times for 20 of the 30 runs fell between 16.25 secs and 16.75 secs, 5 of the remainder were between 23.5 and 25.5 seconds. The average was 18.06, with a standard deviation of 3.07 seconds.

Such a peculiar distribution suggested that the runs were not truly independent. Information

stored in the cache from previous runs was affecting the outcome of subsequent runs. On rechecking the PCKWIK manual, I found that there is an option to flush the cache without unloading the program. So I repeated the 30 runs with a flush between each. Not only were the results more consistent, but significantly faster times were recorded. All but 3 runs fell between 15.38 and 15.98 seconds, and the outliers were a distinctly separate set at 23.34, 24.11, and 24.17 seconds. Disregarding these outliers, the average was 15.77 seconds, with a standard deviation (STD) of only 0.15 (Fig. 3). Bearing in mind that 3 STDs (e.45 secs) each side of the mean should include 99.9% of all measurements (apart from the distinct outliers), a difference of 0.9 second (5%) between average times measured over 3 runs of BENCHPCK for each set of PCKWIK parameters will be significant.

Repeating this test on the A: diskette drive, the results were even more dramatic. There were two outliers at around 116 seconds, but all the rest were between 47.68 and 48.88 seconds, with an average of 47.94 and STD of 0.20. Here, a difference of 4% in the times is significant.

Please Flush the Cache!

Compare these figures for drive A: with a best average over 3 runs of 120.80 secs using an unflushed cache; 490 secs with no cache but 8 secondary buffers; and 576 secs with primary buffers only. There seems to be a strong case for force-flushing the cache frequently: in practical terms this means an additional line in the batch file which loads each application, where the existing cache contents can clearly be discarded. If using PCKWIK, the extra line is just *SUPERPCK!*

PCKWIK Parameters for the Diskette Drive

I started this present exercise because I read in the manual for ARJ file compression software that the PCKWIK/D+ parameter for "advanced support of writing to diskette drives" had caused problems, not only with ARJ.

However, the ARJ manual predates version 4 of PCKWIK, so hopefully the problem or bug has been dealt with in the version I have. Testing needed to establish (a) whether /D+ is safe on my system, and (b) whether specifying /D- for merely generic cache support of diskette writes would result in a significant loss of speed.

Well, /D- increased the standard average test time for drive A: from 47.94 secs to 355 secs! Also, I had done more than 30 runs with /D+ without problems. Therefore I decided to retain /D-.

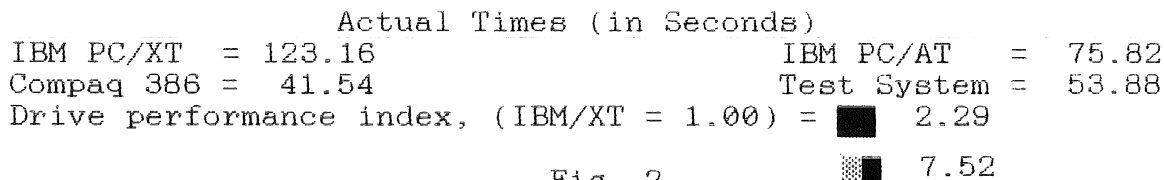
My purpose is to give an example of how you can increase your understanding of your machine, and at the same time improve its performance, by designing and pursuing a detailed testing scheme. I do not expect that the results I quote will be of direct application to the reader's equipment, but in

Multisoft's BenchPCK. Version 1.20.
Copyright 1988, 1991, Multisoft Corporation.
Small (256 Kb) file size test

Test currently running on drive C. Super PC-Kwik is not installed.

Test currently running on drive C.

Super PC-Kwik is installed with a 1632K byte Expanded memory cache buffer. The following parameters are in effect: /B+, /D+, /H+, /O-, /Q-, /T+, /V+, /W+



October 1993



A TALE OF TWO

Roger Cameron

The August Issue of PC User represented something of a small milestone for me; this issue arrived in my GPO box (on Tues. 27/7/93) before it was on display at the Wynyard Ramp Newsagent. What could possibly be behind such a seemingly insignificant event? For years (well, 2 years) I was "bugged" by the late arrival of PC User's "sister publication" - APC - at my GPO letterbox! Nearly every month, almost as certainly as Taxes and Death, APC appeared on the Wynyard Ramp Newsagent on the Tuesday and it would not appear in my GPO letterbox (say 350m away) until the following Monday!

Needless to say, I was often peeved about this. I imagined scenes of mean and nasty dispatch clerks at APC deliberately withholding all the subscription mailings - they were using the bundles as stools, gathering around a rickety table at the back of the store-room where they were playing poker. A dingy little lightglobe, suspended above the table, penetrated their gloomy bastion. Girly pictures were plastered around the wall, and they all had a cigarette hanging out of the corners of their mouths!

This unkind remark earns Roger the "Cockroach of the Month" Award - maybe he's a "Dragons" supporter?

Surely they were being bribed to withhold the subscription mailings! Where was ICAC? They must have been; their clear intention being that by Friday we would get so inquisitive as to the contents of the latest "word-from-on-high" that we would rush out and buy another copy (I didn't get terminating passes in Psychology I and Marketing I for nothing), and so we poor subscribers were driven to buying two copies of APC! Well, with a little exaggeration, I think I have made the point that late subscription deliveries was one of my grouches with APC.

Table 1. Showing a comparison of content of the two magazines under the categories outlined by the author

CATEGORY	APC June '92	APC June '93	PCU June '93
ADVERTISEMENTS	129 pages or 53.1%	169 pages or 54.2%	47 pages or 35.6%
NEWS, BRIEF REVIEWS OPINIONS & LETTERS	32 pages or 13.2%	57 pages or 18.3%	37 pages or 28.0%
COMPARISONS (Software)	8 pages or 3.3%	26 pages or 8.3%	0 pages
COMPARISONS (Hardware)	0 pages	25 pages or 8.0%	0 pages
TECHNICAL HELP ARTICLES	27 pages or 11.1%	21 pages or 6.7%	24 pages or 18.2%
MAJOR TECHNICAL REVIEWS	47 pages or 19.3%	14 pages or 4.5%	24 pages or 18.2%

I nurtured another developing grouch with APC; that concerned the changing character and the change in content. It seemed to me that APC ceased majoring on the technical and the technically helpful articles and started to emphasise the "corporate" aspects of computing. APC's world was one of constant upgrades, where everyone was a corporate buyer with access to Alan Bond's secret bank accounts! The need(s) for real-world production seemes to have become a side-issue; if a given package didn't fulfil your needs, or you couldn't interpret the manual, off you go and buy another package. APC was becoming our monthly high-tech "cargo-cult" plane, landing in our imaginations with overwhelming "techno-goodies". All right, I will concede that there were some technical tips lurking amongst the advertisements - but I am talking here about the relative proportions between the different types of articles. One matter that I will concede to APC, they are not quite as "cargo-cultish" as PC World, but then at least this magazine declares its leanings ("The magazine for business PC buyers") on the cover. I mean to say, the world is simply littered with business PC buyers; I wonder what the job qualifications are for a PC buyer? Perhaps there are BA degree courses in PC buying available from Creationist Universities in the "Bible Belt" and in Queensland? *** Perhaps we can have a show of hands at our next meeting - hands up all those - not employed in a dealership - who earn their living solely from buying PCs?

COMPUTER MAGS

OR WHY I SWITCHED FROM APC TO PC USER

However, I digress, let me quantify the disparities in content. My categories may be a little overlapping but it seems to me that any page in a computing magazine can be placed in one of the following six categories:

- 1: Advertisements,
- 2: News, brief reviews, opinions & letters,
- 3: Comparisons (software),
- 4: Comparisons (hardware),
- 5: Technical help articles, and
- 6: Major technical reviews.

A comparison of the relative contents between the June issue of APC and the June issue of PC User is most instructive. In the interests of justifying my recent subscription switch from APC to PC User, I tabulated the contents of both issues to see if I was perhaps being a little unreasonable, perhaps a bit subjective? The June issue of APC one year ago is also tabulated to demonstrate APC's shift in emphasis. Clearly, my figures below may carry a little statistical or sampling error, perhaps a +1.0% error, but the gross "story" shines through:

Clearly, the data in the table are only snapshots - certainly not definitive studies - I did not have a June '92 issue of PC User to test the degree of consistency. Two years ago, I held the view that APC was the premier commercial magazine and that PC User was a bit too "home-ish"; overly tainted with the games brush. Well, I've changed my opinion; I now feel that PC User (as its name implies) is certainly more oriented towards helping people who use computers as a tool for doing something or producing something that is ultimately not related to computing. That at least is the view of this Geologist; an Accountant, Lawyer or Engineer may well see different qualities and emphases in the commercial PC-oriented magazines (note that I am keeping out of the realm of Specialist Sun workstations etc.). It is an unfortunate(?) fact of life that if we want to stay up to date with these tools called personal computers, then we have to buy commercial computer magazines. If you accept this premise, then it follows that commercial PC magazines have a responsibility to define themselves, their objectives and their perceived clientele; and to write accordingly. I feel that with one possible exception

(PC User) this is not done. I really don't know what APC is now, is it a programmer's or developer's magazine, a PC support magazine, a user's magazine or, given the advertising space, a "buyer's" magazine? Even the July '93 issue of PC World had 9.3% technical help, 13.3% major reviews, 48.7% advertising and 0.0% hardware and software comparisons - and this is supposed to be oriented towards PC buyers?

I am well aware of the commercial facts of life - that magazines need advertising to survive ... but 54%?! In fact, a topic for another missive would be: computer advertisements - the useless, the informative and the ridiculous. The cynic may well argue that all the above justifies one taking the "Clive Robertson option" - scrapping all computers and going back to the typewriter! I for one always regarded Clive as an impetuous creature of extreme responses. If I took the "Robertson option" I would have to start reading books again, I would cease to be the office PC guru, I would have to resign from the Sydney PCUG, I would have to surrender my 386 at home to my Son as a perpetual games machine - I would become a new-age techno-luddite - me? Never! Was APC's lateral shift to the corporate section of the PC World (sensu lato) a contributory factor in Clive's computing demise?

Let me return to where I started - the Tuesday of July's WIN SIG; not only did I get my own back on APC's lousy distribution system, but I had also justified my switching subscriptions (at least to myself), and that evening I also won the door prize (Lotus Improv). The prize is still in its shrinkwrap, I don't know whether to flog it in its virginal state, or try to use it. What can a geoscientist do with a spreadsheet designed to be used by all those money-handling people? One thing I do know about that Tuesday - the great CPU in the sky was smiling down on me.

(As one who has given up subscribing to all except one DeskTop Publishing magazine which disappears all too rapidly from the news stands, I can understand Roger's frustration... however, maybe he's blaming the wrong party - did he speak to Aussie Post about delivery times? - Ed)

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Learning Assembler

Carlo Hamalainen

Thanks, DOS 6

This month, I'll be explaining how to use procedures in assembly, how to link assembly to C, and a brief intro to video hardware. If this month's article seems a bit messy or whatever, it's because I lost all of the Figure files because of MS DOS 6's backup system a few days before my deadline. It seemed to enjoy mutilating my backup disks, so now I've got a few 1.44 Mb and 720K disks with bad sectors on them. In desperation I tried to copy the files manually using *XCOPY*, but it copied them nowhere. Then *XCOPY* started saying that my disks had bad sectors in them. This led me on a ram-page through all of my 3.5" disks, trying to find one that didn't have 'important' data on it, or bad sectors. Not a good thing. *(Everybody knows that DOS6 code is perfect ... its the lousy hardware that users foist on the software ... at least that's what the authors are saying, and who am I to disbelieve them - Ed)*

Before I go into procedures, there's one thing that I forgot to include in last month's article.

The code:

```
;stuff up here
jmp ExitLabel
ExitLabel:
; Exit code
```

At the line *jmp ExitLabel*, execution would be transferred to *ExitLabel*.

A label is simply a name followed by ':' (colon). I wouldn't go overboard using jumps for two reasons:

(a) It takes programming back to the 'spaghetti code' style of the BASIC *goto*, and

(b) you can't make a jump more than 128 bytes from where you are without having to stuff around with the CS and IP registers.

Procedures

To declare a procedure, use the following syntax:

```
name          PROC NEAR
               ; Code goes
               ; here
               RET
name          ENDP
```

That's all there is to it. Just replace name with your own procedure name, and you can call it using this code:

```
call name
```

When a near call is executed, IP is pushed onto the stack, then it's made to point to the start of the procedure. When it gets to the end of the procedure, IP is popped off the stack so that execution continues where it left off. With a far call (use *PROC FAR*), both CS and IP are pushed. Figure 1 shows a sample program that takes advantage of procedures.

It simply *CALLs* the two procedures, which print their respective messages. At the end of the procedures, a *RET* instruction is executed and it returns to the main chunk of code. Simple. If you need to pass any arguments to an assembly procedure (assembly calling assembly), you can easily pass the argument in one of the general registers - AX, BX, CX or DX. In fact, it might be easier to create a few 'scratch pad' variables. A few bytes and words would take care of that problem - like this:

```
.DATA
ArgB1          DB 0
ArgB2          DB 0
ArgB3          DB 0
; More of this
ArgW1          DW 0
ArgW2          DW 0
; and so on.
```

The only problem that it creates is that memory access is slow. On a 386 DX you get 32-bit memory access. That's slow. On a glorious Alpha you'd

This month

*How to use procedures
in assembly*

*How to link assembler
to C*

*A brief intro to video
hardware*

get 128-bit access. That's quick. Then again, I wouldn't mind seeing a computer with 1024-bit memory access - that'd be quick (being a programmer heavily slanted towards game coding, I crave speed, RAM, and disk space).

It might look good, and be easier to write procedures using the *PROC*

```

.MODEL large
.STACK
.DATA
Msg1 DB 'In procedure one'
Msg2 DB 'In procedure two'
.CODE

call Proc1
call Proc2
.EXIT

Proc1 PROC
mov bh,0
mov bl,07h
mov dh,0
mov dl,0
push @data
pop es
mov bp,OFFSET ES:Msg1
mov cx,16
mov ah,13h
int 10h
ret

Proc1 ENDP

Proc2 PROC
mov bh,0
mov bl,07h
mov dh,1
mov dl,0
push @data
pop es
mov bp,OFFSET ES:Msg1
mov cx,16
mov ah,13h
int 10h
ret

Proc2 ENDP

END

```

Figure 1. Using procedures in assembler.

```

.MODEL large
.STACK
.DATA
Msg DB 'Printed with from a
      procedure', '$',
      hardware
.CODE
.STARTUP

call Proc1

.EXIT

Proc1:
mov dx,OFFSET Msg
push @data
pop ds
mov ah,9
int 21h

RET

END

```

Figure 2. Hardcore assembler.

directives, but it isn't the real way. Using directives in assembly language seems to defeat the real purpose of assembler - to write code for the hardware. The real way is shown in Figure 2. Apart from the *MODEL*, *STACK*, *DATA*, *CODE* and *STARTUP* directives, it's 100% pure assembler.

C and Assembly Interfacing

C and assembly code is easy - just follow a few simple rules and you've got nothing to worry about. Figures 3 and 4 show how a simple assembly procedure can be called from C with a parameter(s). Because the C code is 'pure' (i.e. it uses no Borland/Microsoft specific library functions) it will compile on an ANSI C compiler. Just supply either MASM or TASM.

Figure 3 shows the C code needed. You simply declare the *SetMode* procedure as if it were in your C code. It passes an unsigned char, which is a byte, which is needed to the AL register. Then it goes through the usual *blah-blah-blah* of calling and returning from the assembly code. You can also note that you call the assembly code as if it were normal C. That's about all there is to interfacing C and assembler. If you need to pass more than one argument, just separate them with commas in the assembler code. If the argument needed to be a word, you'd just replace the *BYTE* with *WORD*. In C, an integer (int) is 16-bits, which is a word. A character (char or unsigned char) is a byte.

If you don't want to fiddle around with these directives, you can access the arguments directly on the stack. To do this, you must first know if the procedure being called is near or far. When C code passes arguments, they get to

```

#include <stdio.h>

void SetMode( unsigned char Mode );

void main()
{
    printf( "In the C code\n" );
    getchar();
    SetMode( 0x13 );
    printf( "Just called SetMode, in mode 13h\n" );
    getchar();
    SetMode( 0x02 );
    printf( "Back now, in text mode\n" );
    getchar();
}

```

Figure 3. The C code needed to call an Assembler procedure.

```

.MODEL large, C
.CODE

PUBLIC SetMode

SetMode PROC Mode:BYTE
    mov     ah,00h
    mov     al,Mode
    int     10h
    ret
SetMode ENDP

END

```

Figure 4. Assembler needed to be called from C

```

.MODEL large, C
.CODE

PUBLIC SetMode

SetMode PROC
    push    bp
    mov     bp,sp

    mov     ah,00h
    mov     al,[bp+6]
    int     10h

    pop     bp
    ret
SetMode ENDP

END

```

Figure 5. Using the stack to get parameters

their destination by being pushed onto the stack.

The same goes for when C code calls assembler. If the procedure being called is near, only IP is pushed onto the stack. That means that the first arguments will be at offset 2 on the stack. It's not a good idea to push and pop to get the argument, so you use the BP register. Because BP is one of those volatile registers, it must be

pushed before anything is done. After that's happened, you can get the stack pointer from the SP register. This points to the stack offset 0.

Now, all you have to do is to use the following code to access the first argument:

```
MOV     AX,[BP+4]
```

It's BP+4 instead of BP+2 because the BP register itself was pushed, so this brings the pointer up to the fourth byte. You just have to remember that a word is two bytes, so when you change the BP+4 to whatever you need, you must remember to increment it the right number of times.

The only difference when it's a far call is that instead of using [BP+4] you use [BP+6]. This is because the CS register must also be pushed, and since it's a word, the offset goes up by two. Figure 5 shows the different assembler code that uses the BP offset method. One critical thing to note is that the BP register was popped before the RET. If this wasn't done, CS and IP wouldn't get their old values, which would definitely result in the system crashing.

If you need to return a value from some assembly code, just use the AX register. You'd get the return value just like any other C function -like this:

```
RetVal = MyFunction();
```

If you needed to return more than one parameter, you could pass the assembler a pointer to a variable where the value will end up.

This code can do that:

```

push     @data
pop      es
mov      si,Ptr_Passed
; code goes here
mov      es:[di],4
; can now exit

```

This code would take the pointer 'Ptr_Passed', get the data segment, and return a 4 in that memory location. You'd simply pass more than one pointer to return more than one value.

Now that you know how to interface C and assembly, you can tackle one of the biggest challenges with the IBM PCs - writing to a video display monitor.

Video Basics

The IBM series of computers use a memory mapped display. This means that an area of memory corresponds to what's on the screen. Using the string manipulation commands (*MOVSB*, *MOVSW*, *MOVSD*), you can move

```

.MODEL large
.STACK
.DATA
message DB 'This was printed directly
          to the video RAM'

.CODE
.186

mov     ax,0B800h ;change to
                0B000h for mono
mov     es,ax
mov     di,0
mov     cx,4000
mov     al,0
clear:
mov     es:[di],al
inc     di
inc     di
loop    clear

mov     ax,0B800h
mov     es,ax
mov     di,0
mov     cx,42
push    ds
push    @data
pop     ds
mov     si,OFFSET message
WrLoop:
mov     al,ds:[si]
mov     es:[di],al
inc     di
inc     di
inc     si
loop    WrLoop
pop     ds

mov     ah,00h
int     16h

.EXIT
END

```

Figure 6. Direct video write

chunks of memory around at a reasonable speed. When the IBM is in a text mode (with a colour video card), the video buffer can be found at 0B800:0000. With a mono card, the buffer starts at 0B000:0000. But since this is only 64K, how can a video card with the full 1Mb cope? For the moment you won't need to know, because it only effects the graphics display modes, which will be covered in great detail later.

Each character on the screen is represented by two bytes of RAM - one for the ASCII character and one for the attribute. On an 80x25 text display, you'd need to address a total of 4000 bytes (2000 for the ASCII codes, and 2000 for the attributes). With this knowledge, you can easily write an extremely quick version of the printf() function. First though, I'll show you how to write an ASCII string to memory without any attributes. Figure 6 shows this.

The program starts off by clearing the 4000 bytes of video RAM. Notice the two INC DI commands. This is needed because with only one INC, it'd clear the attribute bytes as well. This would make all the text printed on the screen invisible, which isn't easy to see.

Next up, it writes the string to

```
#include <stdio.h>

void Print( int r, int c,
            int w, char * b
);

char Buf[] = { "Lucky I didn't lose
               these two files
               with MS DOS 6, eh?" };
int r, c, w;

void main()
{
    char i;
    for( i = 0; i < 25; i++ )
        Print(
            i,0,sizeof(Buf),&Buf[0]);
}
```

Figure 7. C code to call Assembler Print

video RAM. Using the usual methods, it sets up ES:DI to point to the video buffer, and DS:SI points to the message. The only new thing to note here is the OFFSET directive. After @data is pushed and then popped into DS, SI is given the offset of message. It's important to note that the DS register was pushed before the write. The DS register is one of the important ones (including CS, IP, SS, BP) that shouldn't be messed around with. You should make it general practice to save any of these registers to the stack before fiddling around with them.

As with the code that clears the screen, there must be two INC instructions, but with one difference. When you're writing a string, you need to move the pointer that points to the message as well. This explains the need

```
.MODEL large, C
.CODE
.186
PUBLIC Print
Print PROC USES ES DI, Row, Col,
        Num, BFR:WORD
    pusha
    mov  si,BFR
    mov  ax,0B800h
    mov  es,ax

    mov  ax,Row
    mov  bx,80
    mul  bx
    add  ax,Col
    shl  ax,1
    mov  di,ax
    mov  cx,Num
    WrLoop:
    mov  al,ds:[si]
    mov  es:[di],al
    inc  di
    inc  di
    inc  si
    loop WrLoop
    popa
    RET
Print ENDP
END
```

Figure 8. The assembler code that prints text

for the INC SI line. After that, it pops back DS, waits for a key, and exits.

This might look OK, but who on earth would be using only assembler to write some program that only uses text screens? No-one, that's who. You'd be more likely to be writing most of the code in C, with assembler handling the time intensive parts. Figures 7 and 8 show the C and assembler code that

Bits	Meaning
7 6 5 4 3 2 1 0	
0	Normal foreground
1	Blinking foreground
bbb	Background colour
fff	Foreground colour

Figure 9. The colour attribute byte

Bits	Colour
0000	Black
0001	Blue
0010	Green
0011	Cyan
0100	Red
0101	Magenta
0110	Brown
0111	White
1000	Grey
1001	Light blue
1010	Light green
1011	Light cyan
1100	Light red
1101	Light magenta
1110	Yellow
1111	High intensity white

Figure 10. Binary numbers and their colours

```
#include <stdio.h>

void Print( int r, int c, int w,
           unsigned char Attr, char * b );

char Buf[] = { "Hello World again"
              };int r, c, w;

void main()
{
    Print(
        Row,0,sizeof(Buf),23,&Buf[0] );
    getchar();
}
```

Figure 11. C code that prints text with an attribute

you'd use to write to the video hardware.

There's nothing really new here - the only exception is the way I got the assembler to find out where the string was. Apart from passing the row, column and length, it passed a pointer to the string's offset. After that, it's just the matter of getting DS:[SI] pointing to it, and ES:[DI] pointing to the video RAM. Actually, the only difference to the last example is that C code gets the offset. The assembler does the same job.

Colour! I said earlier that there are two bytes for each character on the screen - one for the ASCII code, and one for the attribute. Then how can you fit the foreground and background colours into one byte? Figure 9 shows

```
.MODEL large, C
.CODE
.186

PUBLIC Print

Print PROC Row, Col, Num,
        Attr:BYTE, BFR:WORD
        pusha

        mov     si,BFR
        mov     ax,0B800h
        mov     es,ax

        mov     ax,Row
        mov     bx,80
        mul     bx
        add     ax,Col
        shl     ax,1
        mov     di,ax
        mov     cx,Num
WrLoop:
        mov     al,ds:[si]
        mov     es:[di],al
        inc     di
        mov     al,Attr
        mov     es:[di],al
        inc     di
        inc     si
        loop    WrLoop
        popa
        RET
Print ENDP
END
```

Figure 12. Print with attribute

how it's done. The first bit says whether or not the character will be blinking. The next three bits hold the background colour. This poses a problem because with only three bits the largest number can be 7, which means that you can't use the lighter colours for backgrounds. The last four bits hold the foreground colour.

Setting screen colours

So, it isn't too taxing on your brain to figure out what the attribute byte would be for a white foreground on a blue background (like DOS's EDIT.COM). Here's the byte: 00010111b.

The first bit is zero, so it won't be blinking, then the next three bits are 001b. This's binary for decimal 1, which is the blue colour. Last of all, 0111b corresponds to decimal 7, which is the white colour.

The whole byte is 23 decimal. Figures 11 and 12 show the enhanced version of the previous example. The difference being that this version prints the string with an attribute.

Next Month

Next month, I'll show how to use the mouse in text modes.

Continued from Page 11

obliged to adhere to any conditions distributed with that software (usually "registration" after a certain number of days).

Wendy Dellenre from Wordperfect then took the stage for a few minutes to profusely apologize for the mix-up between Brisbug and Wordperfect Corporation which led to the non-appearance of their company at our last meeting. Several software packages were presented to the club as a token of their continuing support of user groups. The club accepted the offers with thanks. Judging by the applause from the crowd, those disgruntled members from the meeting last month had decided to "live and let live" and all is

forgiven. Wordperfect is still one the the great Wordprocessors, after all!

Microsoft - will you please get it right! Our address is STILL incorrect in Communique magazine in spite of repeated advices of our new abode!

For next meeting the President has lined up some screens to be placed across the entrance doors to the auditorium in an attempt to block out the intense light (and hopefully some oil for those squeaky doors!)

Another general meeting thus ended for Brisbug and the crowd warmly welcomed Brett Grotshorn from Symantic (Sydney) for his much awaited presentation on the product "Q&A for Windows".

Associated Clubs - Profile

PINE RIVERS IBM COMPATIBLE COMPUTER CLUB INC.

The club's philosophy has been one of education for members and, of course, enjoyment of our computers. We have regular club meetings, usually on the second Monday of each month, at 7:30pm, in the Uniting Church Hall, Marshall Street, Strathpine.. If the meeting falls on a public holiday, other arrangements are made.

The club has a large printed material and software library. Our printed library contains journals, PC magazines and the like which members can borrow at any time. Our software library contains both Public domain and shareware software (over 4000 programs on CD-ROM). This is provided free to members with a small charge on handling and disk costs only. Shareware programs must still be registered.

The club also runs Sunday workshops from 10am to 5pm once a month, usually the fourth Sunday of the month, at a member's house with a view to

helping members solve their computer problems on their own computer.

The club produces a monthly newsletter with a circulation of approximately 40 members. The club committee of eight (8) members endeavours to organise club meetings around members' ideas. Each meeting runs for about 2 hours after which tea and coffee are provided. Membership of the club, (Family or Personal), entitles you to receive a monthly newsletter, use of the libraries and other events put on by the committee.

Address all correspondence to:

The Secretary,
Pine Rivers Computer Club
P.O. Box 511,
Strathpine, QLD 4500

Next Meeting: Monday, 8th November

For early-in-the-month meetings of a small, well-run club in Brisbane, the only choice is Pine Rivers Computer Club

ASSOCIATED CLUBS DIRECTORY

Club Name	Centred in	Telephone	Contact
Coffs Harbour Computer User Group	COFFS HARBOUR	066-538283	Janell Rose
Gold Coast SIG (of Brisbug)	MERRIMAC	075-710113	Joanne Ellis
Dalby PC Users Group	DALBY	076-621381	Peter Allen
Beaudesert Computer Club	BEAUDESERT	075-411050	Bernie Williams
Pine Rivers IBM Compatibles C C	STRATHPINE	07-8881452	B Schultz
Sunshine Coast Computer Users Group	MOOLOOLABA	074-914680	Ernie Camilleri
Landsborough Computer Club	LANDSBOROUGH	074-923205	
Noosa Hinterland PC User Group	COOROY	074-852052	Colin Sheehan
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Bundaberg PC User Goup	BUNDABERG	071-531449	Bob Wright
Gladstone QRI Computer Club	GLADSTONE	079- 723083	Dave Franklin
Gladstone Computer Users Group	GLADSTONE	079-783941	Cec Wilmott
Rockhampton Group	ROCKHAMPTON	079-282554	Nick Quigley
Mackay Computer Users Group	MACKAY	079-573998	Gabriel Barbare
Burdekin Computer Club	AYR	077-834630	Rod McRae
Townsville Computer Users Group	TOWNSVILLE		
Johnstone PC User Group	INNISFAIL		Lyndelle Coianiz
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Hard Disk Organisation

© Seagate Technologies

Many users will be curious as to how the information on their hard drive is organised.

Any sector editor, such as the Norton's Utilities, can display the user data written to a sector, but ignores the HEADER information - that information written either side of the data in a sector so that the drive can locate it and check the accuracy of a read or write of that information. The following information

was abstracted from the documentation file for the Seagate Technologies program SGATFMT2 available on Seagate's Support BBS.

If you want to understand the techniques of hard drive information management, we recommend you seek access to their BBS... BUT, as the intro says, read the whole documentation before you run the program, otherwise you could do your drive and data a real injury.

ANATOMY OF A SECTOR (17-sectors/track , 512 bytes/ sector)

The purpose of a track format is to organize a data track into smaller sequentially numbered blocks called sectors. The beginning of each sector is defined by a pre-written identification (ID) field which contains the Logical sector address plus cylinder and head information. The ID field is then followed by a user supplied data field.

Table 1.

Details of the fields comprising a single sector on a hard disk. Both user data and control fields are referenced. Details are for a 17 sector per track (MFM formatted) disk with 512K bytes per sector. Refer to Figures 1 and 2 opposite for sector and field locations

Field No.	Bytes	Field	Description
1	13	ID	VFO Lock A field of all zeros to synchronize the VFO for the ID.
2	1	Sync. Byte	A1h with a dropped clock to notify the controller that data follows.
3	1	Address Mark	FEh: ID data field follows.
4	2	Cylinder Address	A numerical value in Hex defining the detent position of the actuator.
5	1	*Head Number	A numerical value in Hex defining the head selected.
6	1	Sector Number	A numerical value in Hex defining the sector for this section of the rotation.
7	2	**CRC	Cyclic Redundancy Check information used to verify the validity of the ID information field just read.
8	3	Write Turn On	Zeros written during format to Gap isolate the write splice created. This field assures valid reading of field number seven and allows the 13 bytes required for data VFO lock.
9	13	Data Sync.	A field of all zeros to sync the VFO Lock VFO for the data field.
10	1	Sync. Byte	A1h with a dropped clock to notify the controller that data follows.
11	1	Address Mark	F8h: User data follows.
12	512	Data	User Data.
13	2	**CRC	Cyclic Redundancy Check information used to verify the validity of the user data field just read.
14	3	Write Turn Off	Zeros written during update to Gap isolate the write splice created. This field assures valid reading of field number 13 and allows the 13 bytes required for VFO lock for the ID field of the next sector.
15	15	Inter-Record Gap	A field of 4Eh which acts as a buffer between sectors to allow for speed variation.

Notes to Table 1

Index : This is a signal which occurs once per revolution and it functions to indicate the physical beginning of the track.

*** Head Number :**

- bits 0, 1, 2 = Head Number
- bits 3, 4 = '00'
- bits 5, 6 = Sector Size = '00'
- bit 7 = Bad Block Mark

**** CRC** : These codes are generated by the controller, and written on the media during formatting. Data integrity is maintained by the controller, recalculating and verifying the ID Field check codes when the ID Field is read. An acceptable polynomial is:

$$X^{16} + X^{12} + X^5 + 1$$

In the case of the Data Field CRC, instead of two bytes of Data CRC, the controller may implement a multiple byte Error Correction Code (ECC) Data Field integrity system. An ECC system provides the possibility of data field read correction as well as read error detection. The correction/detection ability is dependent on the code chosen and the controller implementation.

Notes to Figure 2

Gap1 : Provides a head switching recovery period and controller decision making period, so when switching from one track to another, sequential sectors may be read without waiting the entire rotational latency time (additional time may be required on 1 to 1 controllers by adding a head skew).

Gap2 : This gap follows the CRC bytes of the ID field and continues to the data field address mark. Written by the controller, it provides both a pad to ensure a proper recording and recovery of the last bits of the ID Field check codes and to allow time for controller decision making plus a byte for a write splice. The write splice will be created on the media as soon as the interface Write Gate is activated when performing a Data Field update function.

Gap3 : Also known as the inter-record gap, this gap follows the CRC bytes of the Data area.

In addition to similarities to Gap2, it also provides a means to accommodate variances in spindle speeds. A track

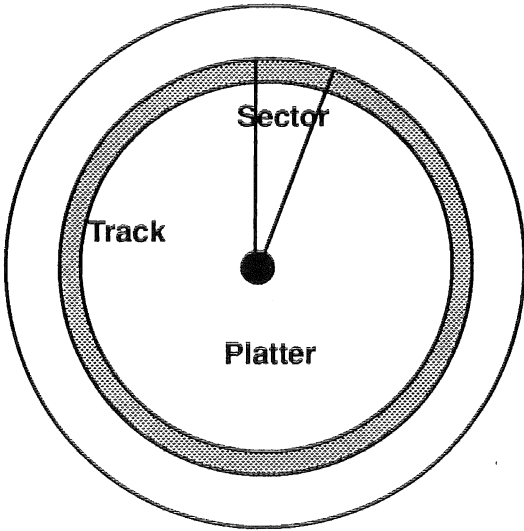
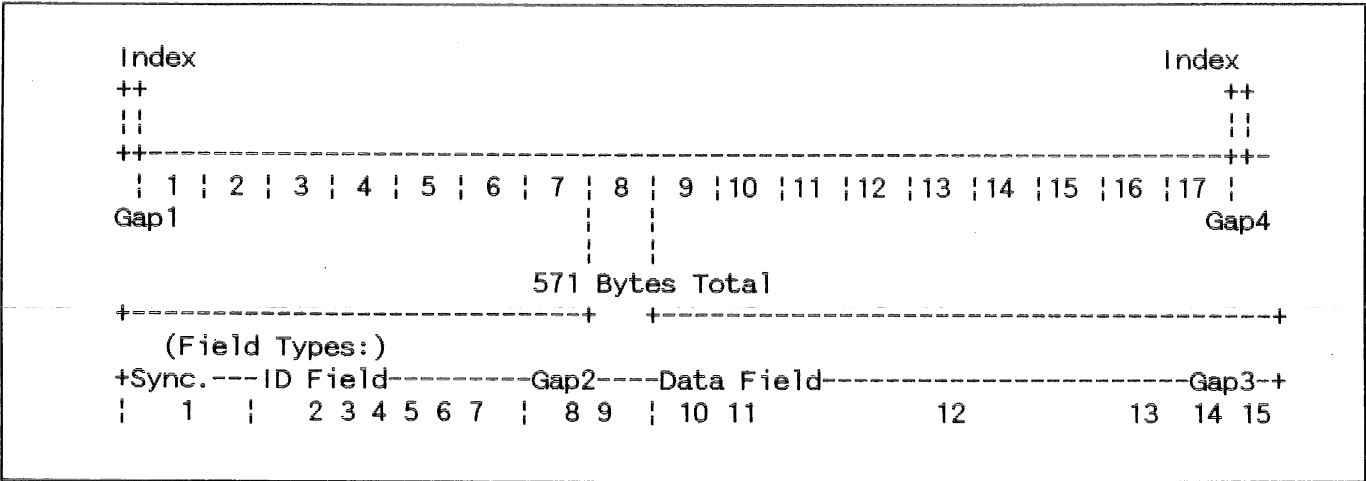


Figure 1. Schematic representation of single platter division in a hard drive

may have been formatted while the disk is running slower than nominal, then write updated with the disk running faster than normal. Without a gap, or if the gap is too small, the sync bytes or ID field of the next sector could be overwritten. The actual size of this padding, initially provided by the format function, will vary, affected by on the disk rotational speed variations when the track was formatted and each time the Data Field is updated.

Gap4 : This is the speed tolerance gap for the entire track. It is required to insure that the entire track can be formatted during an Index Pulse to Index Pulse Track Format operation. This Preindex gap will vary in actual size, depending on the disk rotational speed (+/-0.5%) and write frequency tolerance (+/-0.01%) at the time of formatting.

Figure 2 (below). Showing the organisation of fields within an individual sector on a hard drive platter. Note that the user data is contained in Field No 12, the other 59 bytes are used by the hard drive



PUBLISHER 2.0

DESKTOP PUBLISHING
ON A BUDGET

So you want to get into desktop publishing (DTP) without spending a fortune? You don't want to do colour separations, and you are not interested in setting up a 500 page catalogue. In fact you probably just want to do some flyers, a bit of stationery, and perhaps do the newsletter for the local P&C association. Well, stop looking and buy a copy of Microsoft's *Publisher V. 2.0*, which can at present be picked up for about \$150.00, which makes it one of the bargains of the year.

It must be about 18 months ago when Publisher 1.0 hit the deck. It was a good program, but it had some severe limitations. Most of us put it aside and went back to Pagemaker etc.

Publisher 2.0 has matured with a vengeance, and can now be considered a major player in the DTP stakes. An American reviewer condemned version 1.0 for its 'cutesey' features, and with some justification. Publisher uses 'Page-Wizards', a form of automated macros which assist you in the creation of a variety of publications, such as a newsletter layout, office stationery or greeting cards. It also employs 'funny' pointers (i.e. a truck to 'move' text or graphics), which are just too much for some people, and Cue Cards to hold the beginner by the hand. However all these aids are there for the benefit of newcomers to DTP and, once you are experienced with the basic concepts, you can turn them all off and forget about them.

The new version really scores in, what I would like to call, its 'hidden' features. As an example, *grouping* a graphic with its frame and text is simplicity itself (as is ungrouping), and is a tremendous help when you want to re-position objects on the page. Some very expensive DTP programs don't even offer this feature. The ability to line up a series of objects is again as close as the menu bar, as is the ability to 'nudge' your text or graphic block in increments a small as 1 pixel at a time.

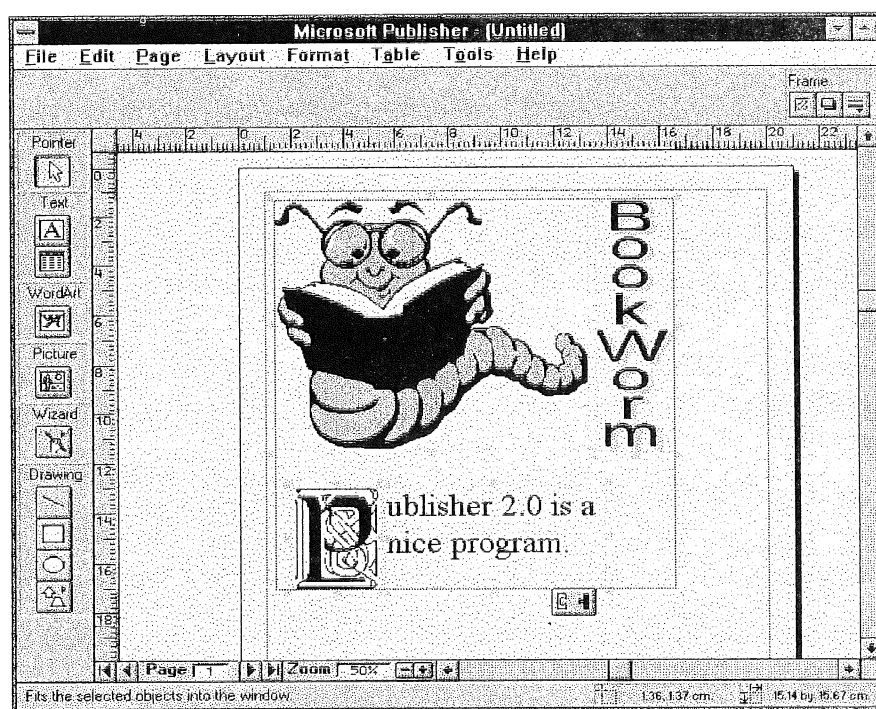
But back to basics. Publisher comes on 5 HD 3½" disks, and takes up about 7 Mbytes of hard disk space, which is pretty reasonable for a Windows application (tongue in cheek).

The program comes with a good 400 page manual and a separate booklet which illustrates the templates and clip art. Here are some of the new features:

- ☐ 20 TrueType fonts
- ☐ Vastly improved WordArt, now using TrueType fonts.
- ☐ Irregular word wrap around graphics, which can be modified.
- ☐ Table Editor with some nifty features.
- ☐ New 'PageWizards' and Templates
- ☐ 125 clip art pics in a 'gallery'.

Installation of lots of TrueType fonts is a sure way to bloat your Windows System Directory. I have about 80 font entries, which is more than sufficient for all 'normal' purposes.)

The Publisher desktop has a totally new look (see illustration). On the left side we find buttons for the Pointer, Text Editing, Table Editor, WordArt, Picture Gallery, Page Wizard access, and four drawing tools. To insert or enter text, one 'draws' a frame on the page, which will act as a holder for text. The shape of this object is flexible and can be changed at any time. As Publisher supports Master Pages (called Background pages), it's quite feasible to setup text frames on these background pages, which will then appear automatically on all pages of



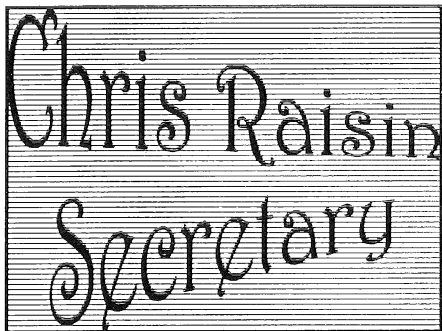
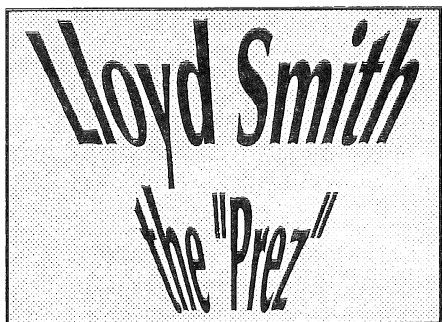
The main Publisher 2.0 screen

If, like me, you have TrueType fonts coming out of your ears, the prospect of another 20 odd TT fonts, will not exactly fill you with glee. However, the 'PageWizards' do use some of these fonts, so perhaps it's a good idea to install them temporarily. (In case Windows Users haven't noticed it yet, in-

your publication (i.e. headers and footers). Columns are set up within a text frame. A text frame can be moved or copied. Text flow from frame to frame can easily be controlled, and changed at a later stage, if so desired. Yes, there's also an Autoflow feature.

There's no Text Editor as such, but Publisher supports imports from Write, Word and Works for Windows (naturally!), WordPerfect 5.0/5.1 and AmiPro 1.0-3.0, amongst others.

As regards the appearance of text on the page, don't expect all of the expert control features which the high end DTP packages offer you. You can control Kerning Pair settings, as well as manually set spacing between characters. 'Leading' - the space between lines of text and paragraphs can also be controlled quite accurately. You will not find features such as widening or narrowing of fonts, but this is rather an esoteric function, limited to high end packages. If you are happy with the appearance of your text, you can then save the setup as a 'style', which, at some later stage, can be applied to other text.



WordArt

For real fancy effects one needs *WordArt*. This was a fairly primitive addition to Publisher 1.0, but the new version

supports TrueType fonts and offers a great many effects, which are very useful for newsletter headings, advertising flyers, logo designs, etc. etc. (If you use Word or Works for Windows, or Excel, you can access this new WordArt as well.) Publisher supplies quite a few examples of WordArt amongst their templates and Wizards, and above we offer you a few examples.

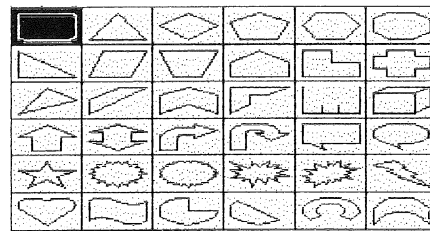
The *ClipArt Gallery* allows you to preview thumbnail views of your clip art. Publisher supplies 125 .CGM images, but if you have more clipart you can add this to the gallery. Again, thanks to OLE, other Microsoft applications (as well as certain non-Microsoft apps) can also access this Gallery. It supports quite a few formats including WMF, CGM, PCX, DRW, TIF, WPG, and EPS. This makes for a wonderful 'previewer' if you have a lot of clip art, and you have forgotten what the difference is between your *cat1.cgm* and *cat2.cgm* files (it happens to me all the time).

When you have inserted a picture in a page of text you can create a specific offset between pic and text, or you may decide to have the text wrap around the picture object itself, rather than round a frame. Again Publisher offers fine controls to obtain the right effect. It's not possible to rotate pictures, but by editing them in *Draw* it's possible to have control over a limited amount of rotation (ideally a more sophisticated drawing package would fit the bill).

Publisher also supports the 'Twain' standard, which means that Scanner owners with Twain support can directly scan in images - with my own HP ScanJet IIP this procedure is simplicity itself and works very well indeed.

The *Drawing tools* - We have the standard line drawing, as well as the circle (ellipse) and box drawing tools, but the fourth drawing tool has a series of predefined shapes,

which can be modified by the user (see illustration). As these shapes can also be filled, as well as be given different line thicknesses, they offer plenty of scope for a user with a bit of imagination.



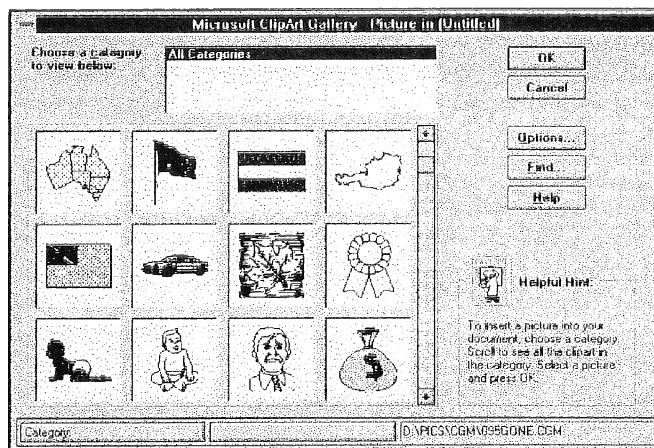
The Shape Menu

I found that, after using Publisher 2.0 for a few hours, I would have no trouble putting a (black and white) newsletter together with this program; in fact this review was set up and printed with Publisher 2.0. In the case of complete newcomers to DTP it might take a few more hours to become really comfortable with the program, but, with Page Wizards and other 'aids' supplied, you will be up and running in no time.

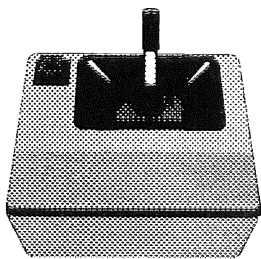
I have not struck any real 'bugs' with the program yet, although I found that even on my 486 DX-50 screen redraws were on the slow side. Regretfully it does not support the interruptable screen redraws that can be found on some other DTP and drawing programs.

Taking into account the limitations which I mentioned in the first paragraph of this review, I can only come to the conclusion that Publisher 2.0 is excellent value for money.

Ralph De Vries



The ClipArt Gallery Screen



Reading the Games

Environmental

Sensing
Notes

by David O'Shea

Following are the declare statements needed for accessing the games port under Visual Basic for Windows.

These can be found in the file \VB\WINAPI\WINMMSYS.TXT in Visual Basic 3.0 Professional Edition. This file was not included in previous versions of Visual Basic.

In C they can be found in the file MMSYSTEM.H and in Turbo Pascal for Windows 1.5 they are in the file MMSYSTEM.PAS. Before you can access the games port you must install the joystick driver (available on the Brisbug BBS lines 1 and 2) through the Control Panel's Drivers section. You will need Windows 3.1 or higher or Windows 3.0 with Multimedia Extensions.

Portions of the following code are Copyright (c) 1990-1993, Microsoft Corp. and are used with permission.

```
*****
' String resource number bases (internal use)
*****/

Global Const MMSYSERR_BASE = 0
Global Const WAVERR_BASE = 32
Global Const MIDIERR_BASE = 64
Global Const TIMERR_BASE = 96
Global Const JOYERR_BASE = 160
Global Const MCIERR_BASE = 256

Global Const MCI_STRING_OFFSET = 512
Global Const MCI_VD_OFFSET = 1024
Global Const MCI_CD_OFFSET = 1088
Global Const MCI_WAVE_OFFSET = 1152
Global Const MCI_SEQ_OFFSET = 1216
```

These constants are needed for internal use, eg. **MMSYSERR_ERROR** = (MMSYSERR_BASE + 1) is used over.

```
* *****
*
* Multimedia API Declares adapted from MMSYSTEM.H
*
* Copyright (c) 1990-1993, Microsoft Corp. All rights reserved.
*
* *****
* General constants and data types
*
* *****/
*
* general constants
Global Const MAXPNAMELEN = 32      * max product name length (including NULL)
Global Const MAXERRORLENGTH = 128 * max error text length (including NULL)
```

These constants are used to make sure the fixed-length product name and error strings are the correct length.

```
Type RECT * Same as Windows API
    left As Integer
    top As Integer
    right As Integer
    bottom As Integer
End Type
```

If you are using the file WIN30API.TXT (declarations, data types and constants for the Windows 3.0 API) with or without WIN31EXT.TXT you will need to comment out this section.

Port Under Windows

David O'Shea is 14 years old and has been using a computer for 5 years. He has been programming in Visual Basic for 2 years.

```
' *****
'
'           General error return values
' *****/

' general error return values
Global Const MMSYSERR_NOERROR = 0
Global Const MMSYSERR_ERROR = (MMSYSERR_BASE + 1)
Global Const MMSYSERR_BADDEVICEID = (MMSYSERR_BASE + 2)
Global Const MMSYSERR_NOTENABLED = (MMSYSERR_BASE + 3)
Global Const MMSYSERR_ALLOCATED = (MMSYSERR_BASE + 4)
Global Const MMSYSERR_INVALHANDLE = (MMSYSERR_BASE + 5)
Global Const MMSYSERR_NODRIVER = (MMSYSERR_BASE + 6)
Global Const MMSYSERR_NOMEM = (MMSYSERR_BASE + 7)
Global Const MMSYSERR_NOTSUPPORTED = (MMSYSERR_BASE + 8)
Global Const MMSYSERR_BADERRNUM = (MMSYSERR_BASE + 9)
Global Const MMSYSERR_INVALFLAG = (MMSYSERR_BASE + 10)
Global Const MMSYSERR_INVALPARAM = (MMSYSERR_BASE + 11)
Global Const MMSYSERR_LASTERROR = (MMSYSERR_BASE + 11)

' no error
' unspecified error
' device ID out of range
' driver failed enable
' device already allocated
' device handle is invalid
' no device driver present
' memory allocation error
' function isn't supported
' error value out of range
' invalid flag passed
' invalid parameter passed
' last error in range
```

These error return values can be returned by any **MMSYSTEM** function, so they must be checked for after every call.

```
' *****
'
'           Manufacturer and product IDs
'
'   Used with wMid and wPid fields in WAVEOUTCAPS, WAVEINCAPS,
'   MIDIOUTCAPS, MIDIINCAPS, AUXCAPS, JOYCAPS structures.
' *****/

' manufacturer IDs
Global Const MM_MICROSOFT = 1
' product IDs
Global Const MM_PC_JOYSTICK = 12

' Microsoft Corp.
' Joystick Adapter
```

I have removed all of the product IDs except for MM_PC_JOYSTICK. If you are using the joystick driver from the Brisbug BBS then the wMid field of the JOYCAPS type should return MM_MICROSOFT and the wPid should return MM_PC_JOYSTICK.

```
' *****
'
'           Joystick support
' *****/

' joystick error return values
Global Const JOYERR_NOERROR = (0)
Global Const JOYERR_PARAMS = (JOYERR_BASE + 5)
Global Const JOYERR_NOCANDO = (JOYERR_BASE + 6)
Global Const JOYERR_UNPLUGGED = (JOYERR_BASE + 7)

' no error
' bad parameters
' request not completed
' joystick is unplugged
```

Joystick-specific error return values. They should also be checked for after a joystick-related call to **MMSYSTEM**.

```

' constants used with JOYINFO structure and
MM_JOY* messages
Global Const JOY_BUTTON1 = &H1
Global Const JOY_BUTTON2 = &H2
Global Const JOY_BUTTON3 = &H4
Global Const JOY_BUTTON4 = &H8
Global Const JOY_BUTTON1CHG = &H100
Global Const JOY_BUTTON2CHG = &H200
Global Const JOY_BUTTON3CHG = &H400
Global Const JOY_BUTTON4CHG = &H800

```

To check for these constants, use *BUTTON = (JOYINFO.wButtons AND JOY_BUTTON*)* where *JOYINFO* is the name of a variable declared as type *JOYINFO*, *JOY_BUTTON** is the constant above to check for, and *BUTTON* is a variable, which will contain 0 if the button is up or *JOY_BUTTON** if it is down.

```

' joystick ID constants
Global Const JOYSTICKID1 = 0
Global Const JOYSTICKID2 = 1

```

These joystick IDs simply refer to joysticks 1 and 2 respectively

```

' joystick device capabilities data structure

Type JOYCAPS
    wMid As Integer          ' manufacturer ID
    wPid As Integer          ' product ID
    szPname As String * MAXPNAMELEN ' product name (NULL terminated string)
    wXmin As Integer          ' minimum x position value
    wXmax As Integer          ' maximum x position value
    wYmin As Integer          ' minimum y position value
    wYmax As Integer          ' maximum y position value
    wZmin As Integer          ' minimum z position value
    wZmax As Integer          ' maximum z position value
    wNumButtons As Integer    ' number of buttons
    wPeriodMin As Integer     ' minimum message period when captured
    wPeriodMax As Integer     ' maximum message period when captured
End Type

```

The JOYCAPS type is discussed in more detail below. The wPeriod* fields are not needed in Visual Basic as they are for "capturing" joystick input, where instead of the program needing to call the **JoyGetPos** function, it can capture joystick input using the **JoySetCapture** function, supplying it's window handle, the joystick it wishes to capture and the length of time it wishes to capture for, and until the capture is released using the **JoyReleaseCapture** function it will be notified when the joystick is moved or a button is pressed.

```

' joystick information data structure

Type JOYINFO
    wXpos As Integer          ' x position
    wYpos As Integer          ' y position
    wZpos As Integer          ' z position
    wButtons As Integer       ' button states
End Type

```

This data type simply returns the x, y and z positions of the joystick and a variable containing button states. It is discussed further below.

‘ joystick function prototypes

```
Declare Function joyGetDevCaps Lib "MMSYSTEM" (ByVal uJoyID As Integer, lpCaps As JOYCAPS, ByVal  
    uSize As Integer) As Integer  
Declare Function joyGetNumDevs Lib "MMSYSTEM" () As Integer  
Declare Function joyGetPos Lib "MMSYSTEM" (ByVal uJoyID As Integer, lpCaps As JOYINFO) As  
    Integer  
Declare Function joyGetThreshold Lib "MMSYSTEM" (ByVal uJoyID As Integer, lpThreshold As  
    Integer) As Integer  
Declare Function joyReleaseCapture Lib "MMSYSTEM" (ByVal uJoyID As Integer) As Integer  
Declare Function joySetCapture Lib "MMSYSTEM" (ByVal hWnd As Integer, ByVal uJoyID As Integer,  
    ByVal uPeriod As Integer, ByVal bChanged As Integer) As Integer  
Declare Function joySetThreshold Lib "MMSYSTEM" (ByVal uJoyID As Integer, ByVal uThreshold As  
    Integer) As Integer
```

These are the function declarations for joystick support. I will discuss the more important ones below. The **joySetCapture/joyReleaseCapture** functions are not available in Visual Basic so I will not describe them further, and I still have not been able to find out how to use the **joyGetThreshold/joySetThreshold** functions. I have fully removed the callback function support as this is not available in Visual Basic without special custom controls.

Before accessing the games port, you must check to see if a joystick driver is installed. To do this you call the **joyGetNumDevs** function. If it returns 0 then the joystick driver is not installed.

```
returnvalue% = joyGetNumDevs()  
If returnvalue% = 0 then                                'No joystick installed  
    MsgBox "Joystick driver not installed", MB_ICONSTOP  
End If
```

To retrieve the device caps (capabilities) of the joystick, use the **joyGetDevCaps** function:

```
Dim JoystickDevCaps as JOYCAPS  
returnvalue% = joyGetDevCaps(JOYSTICKID1, JoystickDevCaps, Len(JoystickDevCaps))
```

Before accessing the **JoystickDevCaps** type, you should first check the return value:

```
Select Case returnvalue%  
    Case JOYERR_NOERROR  
        'No error, safe to access JoystickDevCaps  
    Case JOYERR_PARMS  
        'Invalid parameters were passed to the function  
    Case JOYERR_NOCANDO  
        'Request not completed  
    Case JOYERR_UNPLUGGED  
        'The joystick is unplugged  
    Case Else  
        'Unexpected Error  
End Select
```

This type of error checking should be used whenever accessing the games port. You should also check for the **MMSYSERR_** errors. To retrieve the stick co-ordinates (analog) and button states (digital) you use the **joyGetPos** function:

```
Dim JoyPos as JOYINFO  
returnvalue% = joyGetPos(JOYSTICKID1, JoyPos)
```

After you have checked the return value you can then retrieve the x and y values through **JoyPos.wXpos** and **JoyPos.wYpos** respectively. To retrieve the button status, use the following code:

```
Button1% = JoyPos.wButtons AND JOY_BUTTON1
Button2% = JoyPos.wButtons AND JOY_BUTTON2
```

And so on. Button1 and Button2 will contain 0 if the button is up, or a positive, non-zero value if it is down. To invert this value use **NOT**, e.g.:

```
Button1% = NOT (JoyPos.wButtons AND JOY_BUTTON1)
```

These values can be converted to words. In Visual Basic 2.0 and higher use **Format\$** if you want On/Off, True/False or Yes/No values, e.g.:

```
Button1$ = Format$(JoyPos.wButtons AND JOY_BUTTON1, "Yes/No")
```

If you are using Visual Basic 1.0 or want values other than those mentioned above, use the following code:

```
Function DownUp$ (ButtonVal As Integer) 'Or whatever you want to call it
    True$ = "Down" 'Or whatever values you want to use
    False$ = "Up"

    If ButtonVal = True then DownUp$ = True$ else DownUp$ = False$
End Function
```

KIDS

ORNER

Letterbox

Hi,

My name is Jason Gough. I think it is great to have a section for the Juniors in the SigBits magazine. Here are some suggestions for the name of the Juniors' section of the magazine:

Micro Minors

Bits and PC's

A little Byte

Micro Chips off the Old Block

Data Dudes

Tiny Twips

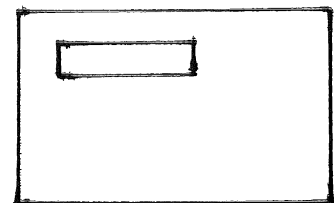
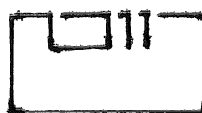
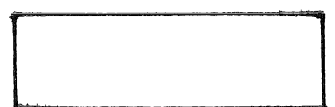
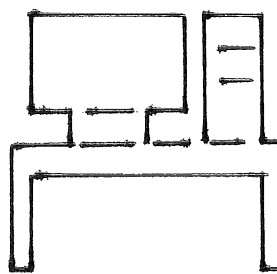
Insignificant Bits

Jason

What do you think??

NEWS FROM THE JUNIOR GROUP

BRISBUG'S JUNIORS GROUP



Last month we (tried to) published a logo suggestion by Glenn Harwood. Unfortunately the logo, printed on a dot matrix printer badly in need of a new ribbon, failed completely to reproduce. Above, courtesy of Ron's black biro, is the missing diagram

Syndicate - a Great Game

Warwick Finch

This month I have the pleasure of reviewing one of the best games of the year, namely *Syndicate*, the latest release from Bullfrog productions. Having said that, it is not that easy to review *Syndicate* because it is unlike any other game that I can remember playing.

Syndicate is set on Earth early in the 21st Century with world domination as its goal (ah, the sweet smell of global domination). You are in control of an organisation which could be said to combine the Mafia, the CSIRO and Cyborgs Inc. To achieve your dreams of global conquest you will need to eliminate those who would oppose you and recruit valuable individuals to your cause. You will also need to raise taxes and direct those funds into research, weapons procurement and agent modifications. There are of course several obstacles in your way, such as local police and rival *Syndicate*'s, not to mention the occasional rebellion if you crank the taxes up too far.

The *Syndicate* works by persuading people (with the aid of burly and uncompromising recruitment officers) to become agents. This minor process involves having most of your body parts replaced by synthetic limbs and organs in order to enhance your capabilities. You are then equipped with various instruments of destruction including pistols, shotguns, flamethrowers, mini-guns, and the list goes on and on. Sounds fun already, eh?

The graphics are nothing less than excellent. Each of the 50 missions gives you a different 3D view of part of a city. The map is highly detailed with pedestrians walking about, futuristic cars driving through the streets, lights on in the buildings and so on. Since you are controlling the actions of your agents from a blimp-like flying machine that hovers menacingly over the city, the perspective that you get is from above and slightly skewed (a-la the *Ultima* series). You are close enough to the action to manipulate each of your 4 agents either singly or as a team. Animation is smooth and flowing even with dozens of objects (people, cars and so on) moving about in mostly random patterns.

Combat takes place either when you uncover your objective or when an opposition syndicate tracks your people down. The local constabulary will also take pot shots at you if you start waving weapons about indiscriminately (and who can blame them for that). When the action happens it is fast and furious with machine guns and explosives all used to their

best effect. Unfortunately for the local populace the cross-fire is unforgiving and a rocket-propelled grenade has much the same effect on civilians as it does on the bad guys.

Sound is very good, although I recommend turning off the background music cos it gets a little grating after a while. The digitised effects for gunfire, screams, shouts etc. are well done and add to the immediacy of the game.

My only complaints really are that sometimes your agents disappear from view when they walk down the side of a building which is away from you. This makes return fire hard to deliver if you are ambushed. This can be compensated for by hyping your guys up on drugs that boost their perception and adrenalin levels. In this state, it is very much a 'let's lay down the artillery barrage first and see what they wanted when the smoke clears' kind of attitude.

The major whinge though is the clumsy combined Save/Load menu which has no built in 'idiot detection' so that it is all too easy to 'save' instead of 'load' thereby flashing your savegame with the mission that you just hopelessly bungled. Pretty common at 2.00am, because *Syndicate* is the kind of game that will keep you up way past your bed-time.

Syndicate scores very highly as one of the truly original games of the year (or last year for that matter). As far as I know there has never been a game like it for the PC and Bullfrog went to a lot of trouble to get it right before they released the product. Sadly this is one title that will keep you up late at night, contributing in its own small way to bags under the eyes, premature ageing and broken relationships. Highly recommended.

Summary

Game:	Syndicate
Publisher:	Bullfrog Productions
RRP:	\$99.95
Playability:	Brilliant
Concept:	Awesome
Graphics:	Brilliant
Sound:	Brilliant
Manual:	OK
Value:	Brilliant

Evaluation Software supplied by ActCom Computer Centre,
Level 3 Belconnen Shopping Town, Belconnen ACT

*Shotguns,
flamethrowers,
mini-guns,
and the list
goes on.
Sounds fun
already,
eh?*

Minimum Requirements
4 Mb RAM (3 Mb as EMS)
386-16
VGA
12 MB hard disk space
DOS 3.3



A Path for Beginners

Tom Coleman

Lately I have come across a number of horrendous PATH statements. Let's take a look at one.

```
PATH=C: \; C: \DOS; C: \WP51;C: \TEMP; C: \NORTON;  
C: \UTIL; C: \QUICKEN; C: \GAMES; C: \ PARADOX; C:  
\WINDOWS; C: \WINDOWS\BIN; C: \GAMES \GAMES; C:  
\XTREE; C: \TELIX
```

Does yours look anything like that?

First, let's look at where PATH fits into the overall scheme of things and then take a look at what is wrong with this particular one, and many other PATH statements I see from time to time.

When you enter something on the command line (that is, at the DOS prompt), for example:

```
XCOPY * * A: \ /M
```

DOS looks at the whole line and gives each part between separators (in this case, as in most, the separators are spaces) a number starting at 0. In order that it can identify what the numbers mean it puts a "%" in front of each number. Nothing to do with percentages, just an identifier.

Thus, "%1" is the "*" and "%2" is "A:X". We can use the "%" identifier in batch files, but that is outside the scope of this discussion. The bit we are interested in is %0, the first item on the command line.

How about we take a brief pause here and all repeat after me

The first thing on the command line is a command.

Now off you go for five minutes meditation on this simple mantra. Doubtless you will have been enlightened if you followed the above instructions. You will now realise that "*Bad Command or Filename*" means there was something wrong with the first thing on the command line when you pressed the <Enter> key.

This raises the question, how did DOS know there was something wrong? The simplest answer is to follow DOS through as it tries to execute a command.

For the purposes of illustration we will enter a meaningless command. You can try it if you like.

I am going to enter the command, *QQQ*, which

is pure garbage on my computer. DOS dutifully scans the line, takes the first thing on it (*QQQ*), and tries to execute it.

First it looks in the environment to see if it matches any of the variables in there.

The environment is a bit of conventional RAM (memory). It's part of your 640 kB, that holds a number of variables like *PROMPT*, *COMSPEC*, *PATH*, *TEMP*, and so on.

Failing to find *QQQ* there, DOS now takes a look in a bit of memory used by *DOSKEY* if you have it loaded. If it is a *DOSKEY* variable then it gets interpreted and executed. I don't have one called *QQQ*.

Now DOS takes a look at the current directory. You know, all the files that get listed when you type *DIR*. It looks first of all for a file named *QQQ.COM*. Failing to find it, DOS then goes looking for a file in the current directory named *QQQ.EXE*. Still no joy, so it has another look, this time for a file named *QQQ.BAT*.

Everybody stop. Now read that last paragraph again. Look at what has happened. DOS looked first for a .COM file, then for an .EXE file, and finally for a .BAT file. **Most important.**

Suppose I had files named *QQQ.EXE* and *QQQ.BAT* in the current directory and, to make life difficult, I wanted to execute the file, *QQQ.BAT*. It can't be done. *QQQ.EXE* is found first and then DOS stops looking.

Aha, you say, how about we put *QQQ.BAT* on the command line. Shouldn't that find it? Sorry. When DOS looks at the command line it sees the dot and tosses it out along with everything that follows it up to the next separator. In other words, the dot and extension are dumped before anything else happens.

What this means is that putting a file extension in the command is always a waste of time and is bad technique.

Having looked for the *QQQ* in the current directory and not found it DOS now goes looking for other places to search. Those other places to search are contained in the *PATH* statement.

Continued on Page 40

ELF —

Extended Lisp Functions library for AutoCAD

Shareware review by Geoff Harrod

The ELF AutoCAD programming library is available on the Brisbug Bulletin board in the AutoCAD file area. The following descriptions include extracts from the 62 page text file manual.

ELF is a library of commands and functions designed to supplement AutoLISP and greatly enhance the things possible for an AutoLISP programmer. The ELF library contains 15 utility and file management commands, and over 150 functions for AutoLISP all contained in a single EXP file.

It is a set of compiled C functions written in the AutoCAD ADS programming system. That system is beyond the scope of many AutoCAD programmers as it requires access to rather expensive 32-bit protected-mode C compilers such as Metaware High-C/386 and to a 32-bit protected-mode DOS extender module and associated linker, such as Phar Lap 386.

The compiled module is an EXP file that gets loaded into extended memory by the Lisp command (xload "..."). Then the functions contained within it become accessible as though they were Lisp functions, but they execute much faster, and can manipulate aspects of AutoCAD and the system that are not accessible to AutoLISP.

ELF gives the AutoLISP programmer a professional programming language rivaling many commercial compiled language libraries. The range of functions include those for text screen video and window control; popup menus and data entry with a built in help system; sound; keyboard; string manipulation; math; sorting and searching; list handling; file and directory handling; entity creation; and several utility functions.

Non-programmers will also appreciate the mini-applications (ELFapps), including the ELF notepad; and the several utility commands. In addition, ELF contains ELFDOS, which implements many DOS commands within AutoCAD for file management, a file and symbol browser, and integrated help.

The supplied version of ELF can only operate with AutoCAD extended-DOS/386 versions (release 10-386 and above) on MS-DOS systems. It links with the Phar-Lapp extender module in memory that is provided as part of AutoCAD. The system could only be made available for other platforms by the producers recompiling the C code with the appropriate compiler-linker systems.

For the Windows version of Rel-12 the Microsoft C/C++ 7.0 compiler with Windows SDK would be needed, and for Unix workstations the C compiler that is supplied with those would be needed. However, anyone wanting to use those platforms would need to contact Mountain Software in West Virginia to enquire whether a suitable compiled version could be obtained. Registration of this 386 shareware version costs US\$35 plus \$6 overseas delivery which is excellent value. \$50 plus \$8 gives a printed manual and one free upgrade.

The source is Mountain Software, 1579 Nottingham Road, Charleston, WV 25314-2453 USA Tel: +304-744-7748.

ELF Features

Over 150 new functions for AutoLISP programmers:

Video

- fast direct video writes to the text screen
- printf for C programmers

- color attribute control
- screen save, fill, and restore

Text screen windowing

- 22 functions for full window management
- multiple overlapping windows with shaded borders and drop shadows
- menus and line editor with integrated user defined help system

Cursor

- cursor positioning
- cursor size shape

Keyboard

- getkey, getch, getche, and kbhit functions
- keyboard status
- stuff keyboard buffer with keystrokes

Directory

- create / remove / change directories
- read / verify / log to all disk drives
- read disk directory and disk statistics
- copy, move, erase, and rename files.
- file path manipulation
- fast one step ASCII file read and write

Math

- expanded trig, logical, and bit manipulation

List Handling

- insert, delete, and replace items in a list
- sort and search a string, integer, or real list
- view a string list using the internal browser

String Handling

- full C library string scanning and manipulation
- a full featured line editor for flexible data entry

Utility / Misc

- sound routines
- dump a list for debugging
- run other programs under program control
- clock and timer routines
- An ASCII file browser (like the shareware program LIST)
- ELFDOS - "DOS-like" file management commands from within AutoCAD, no more shelling out to copy a file or perform other DOS functions.

ELF-apps

Three useful "ELFapps" that utilize the ELF library including:

- + **NotePad** - a windowed / full screen ASCII file editor written in AutoLISP using ELF
- + **Etables** - an AutoCAD "stock" application modified to utilize the ELF menus and symbol browser to display all tables within a drawing.
- + **Demo** - a program that demonstrates many of the functions of the ELF library

Conclusion

The ELF library is a rich resource that overcomes many of the common frustrations of programming complex systems in Lisp, yet avoids the complications, expense and learning time associated with adopting the ADS programming system yourself. The only drawback for me is the current probable unavailability of versions for Windows, SUN, SG etc. However, those might be made available.

At present, DOS/386 is far and away the most prevalent AutoCAD platform anyway, but the new Windows version is proving very popular, and the forthcoming

NT version might well replace DOS/386 in due course. I'm not sure but I think ADS is not supported on the Mac platform, which is very unpopular for AutoCAD anyway. The currently most widespread system after DOS/386 is the SUN SPARCstation, which Mountain Software might be able to accommodate if there was sufficient demand. It would require some code reworking though to suit the differences between DOS and Unix file systems in the file routines, mainly concerning the routines that involve "drives" which do not exist in Unix.

Perhaps it is more likely that developers who deal with Unix sites would have their own ADS capability and not need ELF. But for the larger number of DOS based developers and small scale customisers the ELF product has a lot to offer, and being distributed as Shareware is accessible for free trial and adoption at very low cost.

I think anyone who does any significant Lisp programming should give ELF a try.

□

Continued from
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If you examine the PATH statement at the beginning of this article you will see it consists of a list of directories separated by semicolons. DOS searches every item on the list of directories for, first, a COM file, then an EYE file, and then a BAT file. In our case, one called QQQ.

Finally, when it has exhausted the list of directories in the PATH, DOS displays the message "*Bad Command or Filename*", and starts sulking. Even without having the latest versions of software, there is likely to be well over 10 MB of files searched on each occasion you make a *typo*.

Remember, there are only two or three executable files in each directory and none are files you are likely to want at a moments notice. Often when there are many directories, there is a good chance you will execute a file of the same name in an earlier directory.

I remember one class I was running when we all had a jolly time trying to bail out of installing *WordPerfect*—I had forgotten to tell the students to change to drive A: before entering INSTALL. Talk about a thieves' picnic. We ran a bit overtime that night.

The argument that you need to be able to get access to, say, your word processor, at any time, really does not hold up when balancing the penalties of having it in the PATH against the advantages of writing a batch file to do exactly the same thing.

All you can do from the command line is execute the word processor. If you want to move, say, the dictionary into a RAMDISK to speed things up, it must be done manually each time. It could be done in the same batch file that starts the word processor, as well

as automatically copying a custom dictionary back to drive C: when you have finished. It guards against forgetting, too.

All you need is a special directory to hold all your batch files and put it in the PATH. That way you can always find it. Take all your application programs out of the PATH and write batch files to start them.

Another thing about that PATH statement. Why on earth is the root directory there? The only things you should have in the root directory are `COMMAND.COM`, `CONFIG.SYS`, and `AUTOEXEC.BAT`. You may have some bloody-minded program that insists on writing its log file to the root directory, but generally the root directory should be clean, bare, and bald.

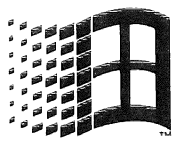
So just what should be in your PATH statement? Think about it. You want the files that you need to be able to access at any time from anywhere. Your DOS files, so C:\DOS should be in the path. I have suggested a directory for your batch files, so C:\BAT would be appropriate.

Then there is a bundle of utilities like *LIST*, and *MEM*, *WHEREIS*, and a bucket of others that are handy to have around. Put them all in a UTIL directory and put C:\UTIL in the PATH.

That's it. You don't need anything else.

The only decision now is which order do you put them in. The rule is to put the most frequently used directory first and the least frequently used directory last. Exactly which is most and which is least is a reflection of how you choose to use a computer, and that is up to you.

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Windows Watch

An Occasional Column, compiled by Ralph De Vries

Tested your system lately?

If this means absolutely nothing to you, I am fairly safe in assuming that you are not using one of several Windows testing programs, which you can pick up from several sources, including the Brisbug BBS. Even better, they are all Freeware, so you don't waste your hard earned cash.

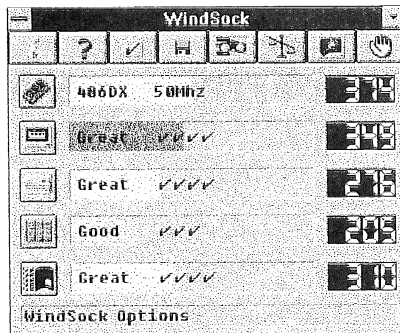
Two of the best known Windows testing programs come from the USA, and the third one is an Australian program. Probably the most popular is the one from PC Magazine; *WinMark*. The other American contribution comes from Texas Instruments, and is called *WinTach*.

The reason why there are several Windows-only testing programs can be summed up in one word - *graphics*. Because Windows with its Graphic User Interface can be used in various graphics modes, speed becomes very important indeed, hence we have to pay particular attention to this aspect of Windows when we are testing our computer's performance.

WinMark takes quite some time to do all its testing, and benchmarks your computer against a Compaq computer. I have never seen a computer come remotely close to the benchmark speeds, which means that either Compaqs are very good computers, or the tests are 'cooked'. In fact there have been several suggestions that some graphics cards manufacturers have been able to modify their cards to give higher readings with this particular testing program. I am unable to verify this information, but this program is definitely not my favourite test program.

WinTach is purely a graphics testing program, and is optimised to give the best readings with T.I. graphics accelerator chips. Strangely enough, this program asks you to turn off any TSR's you may have running, prior to testing. I find

this very strange, because I don't turn off any TSR's when I run a word processor or graphics program. Hence I take the results of this program with a pinch of salt.



WindSock Screen

My favourite Windows Testing program is *WindSock*, written by Chris Hewitt of Melbourne. I have managed to obtain the latest version of this program (version 3.3), which has now some very interesting new options, such as detailed Graphic Device Interface tests, and a new module to check out your Systems Resources. All test results can be saved and compared against earlier tests. Hence, if you change a video card or a video driver (or your CPU, hard disk, caching software etc.), you can do a series of *before and after* tests. As an example I tested my computer's performance with the video driver which was supplied by

Detailed GDI Analysis			
GDI Operation	Dps/Sec	Index	
BitBit	224	364	
Ellipse	159	279	
Polygon	194	323	
LineTo	7,637	478	
ExtTextOut	2,685	247	
Rectangle	1,358	274	
InvalidateRect	1,468	223	
MoveTo	280,588	273	
Overall	383		
Word Proc.	388		
Spreadsheet	382		
CAD/Draw	289		
Paint	273		

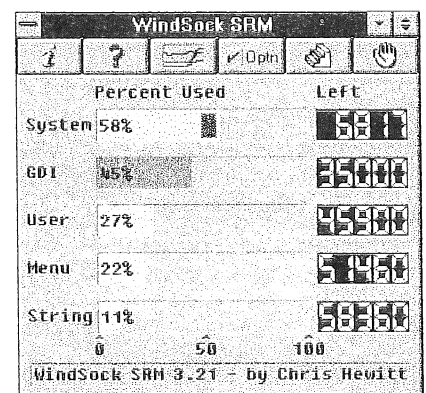
GDI Test Results

the video card manufacturer (Tseng Labs). When I changed to the new Microsoft SVGA driver, graphics per-

formance increased by at least 10%, hence the testing is certainly worth doing. If, for example, you want to see if your computer works faster with 256 colours or 16 colours, it's a simple matter of changing drivers, and run the tests again.

In my humble opinion, *WindSock* is now so good, that I would like to see it used as the standard testing program for all Windows based equipment in Brisbug.

I have submitted a copy of this program to our BBS, so look for the WSK330.EXE file (self-extracting *WindSock* program), and the WRM321.EXE file (self extracting system monitor program).



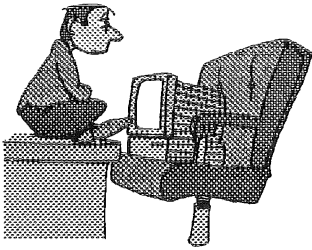
System Resource Monitor

Microsoft's new Super VGA driver.

Released a few months ago, I found that with certain video cards this particular driver which supports most non-accelerated Super VGA display types may well out-perform some original equipment video drivers. For 800x600 256 colors and 1024x768 256 colors resolutions you will need 1Mb of memory on your video card. It supports the following modes:

Super VGA 640x480 256 colors
Super VGA 800x600 256 Large ; Large fonts
Super VGA 800x600 256 Small ; Small fonts
Super VGA 1024x768 256 Large ; Large fonts
Super VGA 1024x768 256 Small ; Small fonts

Communicé members can obtain this driver from Microsoft. As the driver and its associated files are close to 1 Mb in size, it's doubtful if we can install it on Brisbug's BBS, but it will soon be added to our software library.



Hints and Tips

John McCranor

UNDELETING DIRECTORIES

MS-DOS 6's HELP says that the only way to undelete files if you remove the directory they were in is to use **UNFORMAT**. You'd have to be desperate to recover the files to try this:

UNFORMAT may destroy current directories or files on the disk and might not work if the directory wasn't an immediate subdirectory of the root. The only time you should use **UNFORMAT** to recover a directory is if you have formatted the disk or you're using DOS level delete protection.

If you've removed the directory using **RD** or **DELTREE** and you're running **TRACKER** or **SENTRY** level delete protection there's an easier way: just recreate the directory using **MD** (**MKDIR**) and do a normal undeletion. Any files you could have undeleted in the old directory can be undeleted in the new.

Using **MD** and **UNDELETE** will work for any directory at any level and will not harm other directories or files. For example, if you use

```
DELTREE NOGOOD\RUBBISH\USEFUL
```

and then realise that **USEFUL** contained important files, you can use:

```
MD NOGOOD
MD NOGOOD\RUBBISH
MD NOGOOD\RUBBISH\USEFUL
```

then:

```
CD USELESS\RUBBISH\USEFUL
```

and:

```
UNDELETE /ALL
```

to recover all the files in **USEFUL**.

As usual, **UNDELETE** will restore multiple deleted versions of a file to names with different first letters.

Even if you've forgotten the path or directory name you can retrieve it. **UNDELETE** in both **TRACKER** and **SENTRY** modes creates a file which stores the full path and filenames of deleted files. **TRACKER** uses **PCTRACKR.DEL** in the root directory and **SENTRY** uses **CONTROL.FIL** in the **SENTRY** directory. The path and filenames are plain ASCII characters (normal text), but they are embedded in a

non-ASCII file so you can't use **MORE** or **TYPE** to see them. Use **DOSSHELL**'s View contents (**F9**) command or any other file browser which will handle control characters instead. Both files have their system attribute set so you may have to adjust Dosshell's display options to get them to show in the file list.

One thing to note is that **PCTRACKR.DEL** and **CONTROL.FIL** can contain obsolete entries. Some of the files listed in **PCTRACKR.DEL** may have had their sectors overwritten and those in **CONTROL.FIL** may have been purged to make room for new deletions. Once you've found the path and directory, the easiest way to tell if any of its files are still undeletable is to recreate it and try to undelete them.

These techniques only apply to Undelete for DOS. Undelete for Windows has a built-in routine to undelete directories.

*Note: if you have to use **UNFORMAT** to try to recover a directory do a full backup of the disk first so you can restore data that may be lost.*

EXCLUDING DIRECTORIES FROM SENTRY

It isn't mentioned in the documentation but you can exclude directories from Sentry level delete protection. The **sentry.files** line in the **UNDELETE.INI** file accepts all legal DOS paths, filenames and wildcards.

To exclude a directory from protection add a minus sign, path, and all files wildcard to the end of the **sentry.files** line in your **UNDELETE.INI** file. For example to remove protection from **C:\TEMPRY**, add **-I\TEMPRY*** to the end the exclusion list:

[sentry.files]

```
sentry.files=*. * *.TMP *.VM? *.WOA *.SWP
*.SPL *.RMG *.IMG *.THM *.DOV
-I\TEMPRY\*
```

(all one line - Ed)

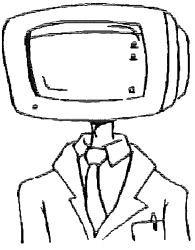
Next time you start **UNDELETE**, files deleted in the specified directory will not be stored in the **\SENTRY** directory and will revert to default DOS level protection.

Continued on Page 46

Undeleting
Directories

Excluding
Directories
from
SENTRY

Using
MORE
Safely



OS/2 Column

Paul Marwick

Whoops! First of all, an apology. Last month's column made reference to a figure 1. Trouble is, there wasn't a figure 1 - I forgot to supply it, and the editor didn't notice that it wasn't there. So, here is figure 1 from last month's column, which is two sample OS/2 batch files to use the ported GNU Tar for tape backups:

These two batch files illustrate using Tar to make backups. The first one will erase all data on the tape before starting, the second one will append data to any data that is already on tape.

Both batch files make use of an OS/2 utility which inserts the Julian day number into the command line, thus allowing unique volume labels and map files to be created, allowing for easy tracking of when backups were made, and easy retrieval of data from backup sets.

Which Machine for OS/2

This month I'd like to attempt to answer a question that I've been asked a number of times - what would I recommend as the best hardware for an OS/2 system.

Recently, I had a customer bring me a machine he was having problems with. His requirement was that I stabilise the machine so that it would effectively run OS/2. Even though he had gone out to buy a machine specifically to run OS/2, and told the dealer he went to to make his purchase (not us, I'm glad to say!) that the machine was to run OS/2, he was having a number of problems, which made the machine effectively unusable under OS/2. For others in a similar situation, maybe I can offer some recommendations as to a suitable hardware platform.

You should note that the suitability of this platform is MY opinion. While that opinion is based on extensive experience of OS/2, it remains mine and does not necessarily agree with the opinions of others just as experienced with OS/2.

Some of the requirements are mandatory. For instance, you must have a 386sx or better processor before you can even contemplate running OS/2 2.x. And you must have at least 4 megabytes of RAM (though I still think that this is an underestimate - for effective use of OS/2, 8 megabytes is a practical lower

Figure 1

```
@echo off & cls
if %1. == . goto syntax
cd\ & %1: & cd\
tape -3 st
tape -3 rewind
echo.
tape -3 erase
echo.
dates /q tar -3 -cppP -E -V %1@### -D d:/tar/%1@###.map -X d:/tar/nobak
-reset-archive .

tape -3 rewind
tape -3 unload
goto end
:Syntax
echo.
echo.
echo Tape Backup batch file rev 1.2. PDM 21-8-93.
echo.
echo This batch file will make a complete backup of a single drive. It will
echo erase any data on the tape before starting. Make SURE that there is
echo nothing you need on the tape before starting!
echo.
echo It will also create an index file, consisting of the drive letter being
echo backed up, plus the Julian day number on which the backup is made. This
echo file can be used for selective restores from the tape archive.
echo.
echo Usage is 'eback x' where 'x' is the drive to backup. Note: do NOT use a
echo colon following the drive designation!
echo. echo Now go back and do it right...
echo.
:End

@echo off & cls
if %1. == . goto syntax
cd\ & %1: & cd\
tape -3 st
tape -3 rewind
echo.
echo.
echo Starting backup. Wait..
echo.
echo.
dates /q tar -3 -cppP -V %1@### -E -D d:/tar/%1@###.map -X d:/tar/nobak
-reset-archive .

tape -3 rewind
tape -3 unload
goto end
:Syntax
echo.
echo.
echo Tape Backup batch file rev 1.2. PDM 21-9-93
echo.
echo This batch file will make a complete backup of a single drive. It will
echo append data to the end of any data already on the tape, so make sure
echo there is sufficient room on the tape before starting.
echo.
echo It will also create an index file, consisting of the drive letter being
echo backed up, plus the Julian day number on which the backup is made. This
echo file can be used for selective restores from the tape archive.
echo.
echo Usage is 'back x' where 'x' is the drive to backup. Note: do NOT use a
echo colon following the drive designation!
echo.
echo Now go back and do it right...
echo.
echo.
:End
```

limit). You must have at least an 80 megabytes hard drive (OS/2 will load in around 30 megabytes, but, by the time you leave space for virtual memory swapping and a few applications, 80 is a practical lower limit - more would be a lot better...).

Given these basic requirements are met, the rest is up to personal preference and budget. From my experience, there are few modern motherboards which are likely to give trouble with OS/2. As an entry level, I'd suggest a 386DX-40. There is not a great deal of cost difference between the 386SX motherboards and the DX-40 motherboards, and the DX-40 will provide a considerably better level of performance. On the same subject, if you have to choose between a 386DX-40 and a 486SX, my personal recommendation would be to go for the 386DX-40. While people keep telling me that 486SX's offer better performance, my experience certainly does not bear this out. Not only would I expect to get better performance from the 386DX-40, it will also be cheaper (and offer a relatively cheap upgrade in the shape of a maths coprocessor should you need it).

Then the optionals

Beyond the basic hardware requirements, there are an almost infinite range of choices that can be made. The type and number of floppy drives, the type of hard drive, the type of video card and monitor, along with other items such as tape backup units, CD-ROMs, sound cards, mice (or other assorted pointing devices).

There are no definite correct choices. To a degree, any of the choices are going to be dictated by budget, and beyond that, by what is physically available to you. However, when making these sort of purchase decisions, there are a number of things that should be kept in mind.

First, any computer purchase is going to be fairly expensive. And while you can almost guarantee that any machine you buy will be obsolete before you get out of the showroom (in fact, before it even gets to the showroom...), you will want to maximise its useful life. Most machines have some possible paths to follow in order to upgrade them. Choosing a path which allows you to extend the life of your purchase by upgrading an existing machine rather than having to go out and buy a new one is obviously going to be beneficial.

The single most expensive component in the average PC is liable to be the monitor (this of course ignores such things as gigabyte+ hard drives and a few other very expensive options, but they are not all that likely to be a factor in most people's purchase decisions, at least not for home use machines). As a result, it is probably well worth while to allocate as much cash to the purchase of a good monitor as

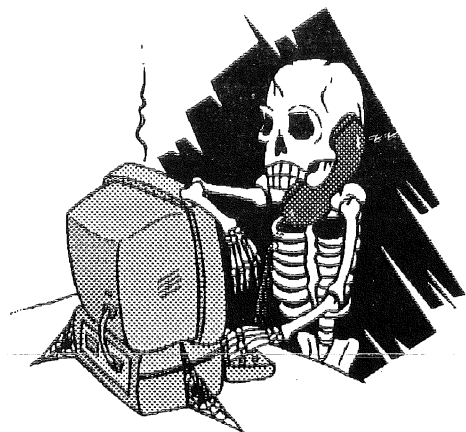
possible, even if that monitor seems to be overkill for your present use. Buying a good quality non-interlaced monitor is a very good starting point. This is especially true when looking at a graphical environment such as OS/2 - the better the quality of the monitor, the better the final results will be (having just spent a week using a monitor other than my normal Viewsonic 7 17" monitor, I can recommend that you spend as much as you can afford on a good monitor, especially if you spend a lot of time using your machine...).

To go with a good monitor, you need a good video card. Here, choices are somewhat more restricted, mainly by the number of cards that are fully supported by OS/2, or come with suitable OS/2 drivers.

While OS/2 2.1 has a reasonably extensive array of support for video cards, best results will be obtained from a fairly limited range of cards. In the lower price range, Tseng ET4000-based cards provide a good reliable video standard. Their only real disadvantage is that they are fairly slow in high resolution mode. In the higher cost cards, there are a number of good solutions. XGA-2 provides a good combination of speed and resolution, but unfortunately XGA cards are hard to come by, unless you purchase an IBM PS/2 machine (and nice though PS/2 machines are, they're expensive enough to be out of most people's reach).

In the lower price range, the Cirrus Logic cards (either ISA or VESA Local Bus type) offer good performance. Native drivers are provided with OS/2 2.1 for these cards, and accelerated drivers (to take advantage of their more advanced features) are now becoming available. Given their relatively low cost, they offer very good value for money.

Of all the cards that are supported, the one least likely to give good results is the Trident. Not only are the Trident cards slow, they have problems with colour palettes which do not seem to affect any of the other supported cards. Overall, a good item to avoid.



Some video cards are VERY slow

As a further sidenote to the Computer Show, we sold every copy of OS/2 that we had during the course of the show, and could easily have sold more, had we had more stock. A good indication of how much interest is being attracted by OS/2 2.1.

Another item that I think is worthy of consideration is the hard drive subsystem in general. IDE drives are common, and their performance is generally very good. As a result, the majority of new machines sold will be sold with IDE drives. However, I consider it well worth while going to SCSI as a starting point, especially for a system intended for OS/2 use. There are a number of good quality, supported SCSI host adaptors available. While going this way increases the entry costs involved (an IDE paddle card or multi I/O card is a very cheap item compared to a good quality SCSI host adaptor), it offers a good deal in terms of long term upgradeability.

Under DOS, there is likely to be little difference in performance between an IDE based system and a SCSI based system. Under a multi-tasking operating system such as OS/2, the SCSI offers potentially much better performance, at least when using bus mastering adaptors, since much of the processing load for disk I/O is off-loaded to the adaptor, leaving the CPU to get on with more important things. This, combined with the inherently multi-tasked nature of SCSI interfaces, means that even with very similar performing hardware, the SCSI solution is likely to provide better performance than the IDE does. From my observations, this still applies when the SCSI drive system is compared to hardware-cached IDE systems.

Once you have paid the price for a good quality SCSI host adaptor, you can easily add more hard drives, CD-ROM players, or tape units. In the long term, it is liable to be a cheaper alternative than going the IDE route, then finding that you need another controller when you want a CD-ROM reader, and yet another controller if you need to add a tape backup unit as well. In addition to which, once you have the SCSI host adaptor, adding other components is a great deal simpler than it is in the case of using IDE drives - there is unlikely to be any question of compatibility between different drives (which can often be a problem with IDE drives, especially older IDE's), and so long as you have some spare SCSI ID's to use, you can simply add a new device into the SCSI bus and be quite confident that it will work.

OS/2 provides good native support for a number of SCSI host adaptors. The Adaptec and Future Domain ranges are probably the best known of these, but in addition to them, OS/2 supports several of the DTP cards. Of the natively supported cards, the Adaptec is probably the best choice.

As well as native support for SCSI cards, other manufacturers can provide supported adaptors. Buslogic is one that fits this category - they provide a good quality OS/2 driver for their cards, but it must be purchased from them, rather than coming with the operating system. To offset this, Buslogic provides performance at least as good as the Adaptec cards,

The OS/2 Machine Specs...

Minimum

386Dx-40
8 Mb RAM
80Mb Hard disk
14" SVGA monitor
mouse

Optional

17" monitor
faster video card
SCSI hard disk
- min 200 Mb
cacheing controller

and Buslogic adaptors are somewhat cheaper than Adaptec's are.

OS/2 is something of a pain to use without a pointing device of some sort. Most common mice will work quite well with OS/2, though some of them are a little difficult to install (the A4Tech mouse, for instance, will work fine with OS/2, but will not be recognised during the install process, becoming available only on the first boot after the installation is completed. To a large degree, the choice of a mouse is up to individual preferences. The majority of mice will be recognised by OS/2 as soon as it begins the second stage of installation, and the user will not have to do anything special to get them to work.

For those interested in multi-media, the choice of a sound card and/or CD-ROM is a bit more complex. The Sound Blaster range is quite well supported and works well. Unfortunately, a driver for the Sound Blaster CD-ROM interface is not supplied, either with the card or with OS/2. However, a suitable driver is available, and can be obtained from many BBSs. It can be found on Line 3 or 4 under the name SB CD2.ZIP.

In addition to the Sound Blaster range, OS/2 provides native support for Pro Audio Spectrum cards. I've seen a number of reports of problems with these cards under OS/2, but have no direct experience with them to verify these reports.

We've made use of the Sound Galaxy range of sound cards with good results as well. These cards work well with the Sound Blaster drivers, and are generally easier to configure than are the Sound

Blaster cards, since they use a software setup routine, instead of having to have jumpers moved to change such things as IRQ's, base address or DMA channel. I've not had the opportunity to try the Sound Blaster CD-ROM driver with the Sound Galaxy range, but there is a chance that this might also be usable under OS/2.

Hopefully this will provide prospective users of OS/2 with a few guidelines to help make purchase decisions.

Wonderful utilities department.

While at the recent Brisbane Computer Expo, we were unfortunate enough to suffer the loss of the desktop setup for one of the demo machines we took to the show. Running a very poorly behaved Windows application without due care was the original cause. The end result was that a machine which had been highly customised to show off the features of the OS/2 interface was left with a very bare, standard desktop. Rebuilding it would have required a number of hours, and would also have required access to tools which we did not have with us at the show.

Fortunately for me, I had installed the latest version of the Gammatech Utilities on that machine for demonstration purposes. Amongst the other utilities provided by the package is a utility called Sentry. This utility is designed to be run in background all the time, and serves a number of different functions. First of all, it allows for monitoring of a number of different hard drive partitions, including locking files on those partitions and giving warnings if any attempt is made to modify the specified files.

Secondly, it can produce a timed backup of the vital elements of the OS/2 WPS. This includes backing up the OS2.INI and the OS2SYS.INI files, as well as the Desktop directory structure (which defines the way in which the WPS interface appears to a user). The intervals at which these backups are performed can be set to whatever figure is desired.

When I installed the utilities, I set up Sentry, and set it to back up the WPS desktop once every 24 hours. For which I was very grateful. When disaster struck, I was able to boot from a floppy, and with only a few minutes work (which involved copying the two .INI files back to where they belonged, and XCOPYing the Desktop directory structure back to where it belongs), I had the system back to normal, with all the special features that Leon Percy had installed for us back in place (while doing so, I discovered a switch in XCOPY that I had been unaware of before - the /E switch, which instructs XCOPY to copy directories, even if they are empty).

A very useful tool, well worth the purchase price. Highly recommended. ○

Continued from Page 42

There probably aren't a lot of directories you would want to unprotect because you can't know which one you'll be in when you accidentally delete a file, but one good candidate is the directory pointed to by your TEMP or TMP environmental variable. This is the directory in which programs like DOSSHELL and UNDELETE itself create and delete their temporary files. By excluding it from SENTRY protection you can stop UNDELETE from possibly purging files you might want to recover to make room for temporary files you won't.

USING MORE SAFELY

In the MS-DOS 6 manual the recommended method of displaying files is to use the command: *MORE < filename*. While this displays a file faster than using *TYPE filename | MORE*, it's dangerous. If you use ">" instead of "<" your system will hang and if you press *Control + C* to get back to the command prompt, *MORE* will replace the contents of your file with a carriage return and linefeed.

Instead of betting valuable data on perfect typing every time, create a MACRO called PAGE so you only have to get right once and its right forever. ("*\$L*" is the DOSKEY symbol for "<").

```
DOSKEY PAGE=MORE $L $1
```

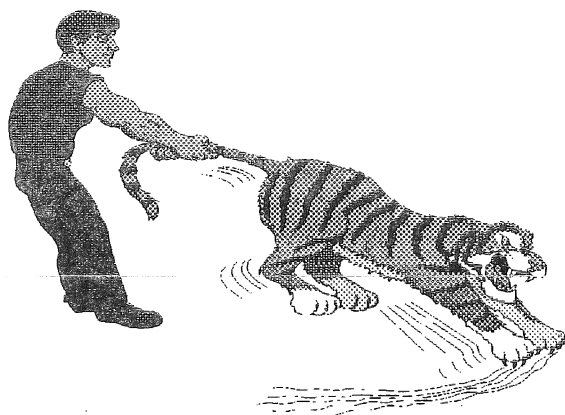
Then you can type *PAGE filename* to view files without risk.

If you don't run DOSKEY, you can do the same thing with a batch file:

```
PAGE.BAT
@ECHO OFF
MORE < %1
```

Test *PAGE* on a junk file first in case you've made the mistake you were trying to avoid.

Note: Files overwritten by *MORE* can be UNDELETED if you're running SENTRY level delete protection, but not if you're using TRACKER or DOS.



Your User-Friendly DOS is here to serve!

More on scrolling Pick Lists in dBase

Geoff Harrod

Soon after my item on dBase pick lists in the last issue appeared in print, I found a way to fully parametrize the module. That is, to make it so that one unchanging procedure could be kept and called with various parameters to adapt it to suit all needs.

The trick is that a macro-expansion can be used with a ? statement but not with an @ SAY statement. So if we can use ? instead within the confines of the display window that the program creates, we can put the field list specification that we want to display into a variable and use ? with the & macro-expansion operator. The problem is getting it to work within the defined window.

If we use

```
@ row,col SAY ""
```

to position the cursor, we can then use ?? to display the data, since ?? does not shift the current cursor position from where the @ SAY left it.

So here is the procedure again with this modification. It now has a lot of parameters so the caller can specify what is wanted.

I also found that FoxBase-plus does in fact have a function for finding the current setting of things like colour. But it has a very obscure name: SYS(2001, "..."), would you believe! There is a matching function in dBase-IV but with a better name. Fox+ is equivalent to dBase-III+ which has no such thing at all to my knowledge. The matching product for dBase-IV is FoxPro.

Anyway, I have added the code for saving the initial colors and to restore them on exit. If using this with dBase-III you would need to remove those lines.

The listing here shows also the support procedures called and a couple of others that I use frequently and may be of interest. Their purpose and operation should be obvious to any dBase programmer.

□

PROCEDURE PICK_DB

```
** Geoff Harrod Oct 1993
** GP module for Foxplus to pick a db record from a list.
** ver 2.0 - Now fully parametrized.

** Displays a scrollable list window of a database table and returns with
** the current record as selected by ENTER or eof() if exit by ESC.
** For IBM-PC compatible systems only.
** Cursor movement is by arrow etc keys with moving arrow cursor, or initial
** letter of a name. Select by ENTER. Abort by ESC.
** F1 key pops up panel explaining valid keys.
** Operates on currently opened table in currently active area.
** Starts with current record at cursor at top of window.
** If file is indexed user can jump to a record by its initial letter.
** If wanted to pop off after pick, caller must clear, or use screen
** save & restore. This allows for other actions to be popped
** over the list display. Restores original color setting.
** May call POP_MSG. Calls GETCOLOR.
```

PARAMETERS wid,rec,idxok,title,footer,txtcol,fracol,k_exit

```
** wid - window width incl borders
** rec - display spec for 1 row, eg: "NAME,TRIM(ADDR1)+", "+ADDR2"
** idx - indexed jumps enabled if .T.
** title - Title string for top border ("" if not reqd.)
** footer - Text to put on bottom border ("" if not reqd.)
** txtcol - window text color string, eg: "N/BG"
** fracol - window frame color string
** k_exit - returns key pressed to exit as key-code.
** "rec" can hold any string valid for record display by ?? command.
```

```
** Internal variables:
store 20 to brow && - Row # of bottom frame
store 0 to lcol && - Col # of Left side of window (automatic)
store 4 to trow && - Row # of top frame of window (automatic)
store 16 to curs && - cursor character,
store 0 to row && - current display row #
store 0 to nrow && - number of useable data rows
store 0 to kp && - to get key presses
store 0 to crow && - cursor screen row #
store .F. to pickd && - loop controller & return state flag
store .F. to scroll && - T=display needs to scroll
store space(6) to iclr && - to store initial colour setting
```

```
** Key definitions for inkey **
store 5 to up_k
store 24 to dn_k
store 3 to pgdn_k
store 18 to pgup_k
store 1 to home_k && - go to top (Not as in dBase4 book!)
store 6 to end_k && - go to bottom (Not as in dBase4 book!)
store 27 to esc_k && - ESC to abort & exit
store 13 to ret_k && - Return to select & exit
store 28 to fl_k && - F1 for help pop-up
```

```
dimension hlp(10)
hlp(1) = "Uparrow = cursor up 1 row"
hlp(2) = "Dnarrow = cursor down 1 row"
hlp(3) = "PgUp = up 1 window-full"
hlp(4) = "PgDn = down 1 window-full"
hlp(5) = "Home = goto top of table"
hlp(6) = "End = goto bottom"
hlp(7) = "Enter = select row at cursor"
hlp(8) = "ESC = exit without selecting"
hlp(9) = "Any other key: goto 1st row"
hlp(10) = " with that sort initial."
```

```
k_exit=0
if eof()
go top
endif
```

```

store recno() to topln  && - initial top of display
go top
if eof()
  do pop_msg with &txtcol,"Empty table! **","Cannot browse."
  return
endif
store recno() to first
go bottom
store recno() to last
goto topln
nrows = brow - trow - 1
lcol = (80-wid)/2
iclr = getcolor()
set color to &fracol
@trow,lcol to brow,lcol+wid double
if len(title) > 0
  @trow,lcol+4 say title
endif
@trow,lcol+wid-10 say "F1=help"
if len(footer) > 0
  @brow,lcol+4 say footer
endif
set color to &txtcol
@trow+1,lcol+1 clear to brow-1,lcol+wid-1
crow=trow+1
do while .not. picked
  @trow+1,lcol+1 clear to brow-1,lcol+wid-1
  row = trow+1
  do while row < brow .and. .not. eof()
    @ row,lcol+3 say ""
    ?? &rec
    skip
    row=row+1
  enddo
  && - while row < brow
  crow=trow+1
  @ crow,lcol+2 say chr(curs)
  goto topln
  ** current file record & cursor always start on top row.
  store .F. to scroll
  do while .not.scroll
    kp = inkey(0)
    do case
      case kp=up_k
        if crow > trow+1
          @ crow,lcol+2 say " "
          crow = crow-1
          skip -1
          @ crow,lcol+2 say chr(curs)
        else
          skip -(nrows-1)
          topln = recno()
          store .T. to scroll
        endif
      case kp=dn_k
        if recno() <> last
          if crow < brow-1
            @ crow,lcol+2 say " "
            crow = crow+1
            skip
            @ crow,lcol+2 say chr(curs)
          else
            skip nrows-1
            if eof()
              go bottom
              skip -(nrows-1)
            endif
            topln = recno()
            store .T. to scroll
          endif
        endif
      case kp=pgup_k
        skip -(nrows-1)
        topln = recno()
        store .T. to scroll
      case kp=pgdn_k
        skip nrows-1
        if eof()
          go bottom
          skip -(nrows-2)
        endif
        topln = recno()
        store .T. to scroll
    endcase
  enddo
  && - while not scroll
enddo
set color to &iclr
return

```

```

case kp=home_k
  go top
  topln = recno()
  store .T. to scroll
case kp=end_k
  go bottom
  skip -(nrows-2)
  topln = recno()
  store .T. to scroll
case kp=ret_k
  picked=.T.
  store .T. to scroll
  k_exit=kp
case (kp=esc_k)
  picked=.T.
  store .T. to scroll
  k_exit=kp
  if idx
    seek chr(1)  && force eof()
  else
    go bottom
    skip
  endif
case kp=f1_k
  save screen to pophlp
  i=1
  set color to &fracol
  @ trow+3,lcol+5 clear to trow+14,lcol+42
  @ trow+3,lcol+5 to trow+nrows-1,lcol+42
  @ trow+14,lcol+7 say "(any key to clear)"
  do while i < 9
    @ trow+3+i,lcol+6 say hlp(i)
    i=i+1
  enddo
  if idx
    do while i < 11
      @ trow+3+i,lcol+6 say hlp(i)
      i=i+1
    enddo
  endif
  kp=inkey(0)
  set color to &txtcol
  restore screen from pophlp
otherwise
  if idx .and. kp>31  && indexed jump is allowed
    seek upper(chr(kp))
    if eof()
      goto topln
      ? chr(7)
      store .T. to scroll
    else
      topln=recno()
      store .T. to scroll
    endif
  endif
  && - if idx true
endcase
enddo
&& - while not scroll
&& - while not picked
set color to &iclr
return

```

PROCEDURE POP_MSG

** Pops up a box at screen centre with 1 or 2 line message
 ** & prompts "(Any key..)".
 ** Box sized to suit msgs. Msgs truncated if > 74 wide.

PARAMETERS col,msg1,msg2
 ** col - colours to use
 ** msg1 - message-1 string
 ** msg2 - message-2 string

```

private clr,key,w,w1,w2,l,r,t,b
save screen to pop_msg_
store "" to key
w1 = len(msg1)
w2 = len(msg2)
if w1 > 74
  msg1 = substr(msg1,1,74)
  w1 = len(msg1)
endif

```

```

if w2 > 74
  msg2 = substr(msg2,1,74)
  w2 = len(msg2)
endif
if len(msg1) < len(msg2)
  w = w2 + 2
else
  w = w1 + 2
endif
if w < 14
  w = 14
endif
if w2 = 0
  h = 2
else
  h = 3
endif
l = ((80 - w) / 2) - 1
r = l + w + 2
t = 10
b = t + h + 1
store sys(2001,"color") to clr
store substr(clr,1,at(".",clr)-1) to clr
set color to &col
@ t,l clear to b,r
@ t,l to b,r double
@ t + 1,l + 2 say msg1
if h = 3
  @ t + 2,l + 2 say msg2
endif
@ t + h,l + 4 say "(Any key..)"
accept to key
restore screen from pop_msg_
set color to &clr
return

```

PROCEDURE POP_YN

** Pops up a box at screen centre with 1 or 2 line message
 ** & (Y/N): prompt & gets a Y or N answer.
 ** Returns result in YN parameter.
 ** Box sized to suit msg. Msgs truncated if > 74 wide.

PARAMETERS col,msg1,msg2,yn
 ** col - color string
 ** msg1 - message line 1 string
 ** msg2 - message line 2 string
 ** yn - string var to return "Y" or "N" response

```

private w1,w2,w,conf,h,l,r,t,b,clr
save screen to pop_yn_
store sys(2001,"confirm") to conf
set confirm off
set bell off
w1 = len(msg1)
w2 = len(msg2)
if w1 > 74
  msg1 = substr(msg1,1,74)
  w1 = len(msg1)
endif
if w2 > 74
  msg2 = substr(msg2,1,74)
  w2 = len(msg2)
endif
if len(msg1) < len(msg2)
  w = w2 + 2
else
  w = w1 + 2
endif
if w < 16
  w = 16
endif
if w2 = 0
  h = 2
else
  h = 3
endif
l = ((80 - w) / 2) - 1
r = l + w + 2
t = 10
b = t + h + 1

```

```

store sys(2001,"color") to clr
store substr(clr,1,at(".",clr)-1) to clr
set color to &col
@ t,l clear to b,r
@ t,l to b,r double
@ t + 1,l + 2 say msg1
if h = 3
  @ t + 2,l + 2 say msg2
endif
@ t + h,l + 4 say "(Yes/No):"
@ t + h,l + 14 get yn picture "Y"
read
restore screen from pop_yn_
set color to &clr
set confirm to &conf
return

```

PROCEDURE GETCOLOR

** A UDF to return the current primary color setting.
 ** It can later be restored by SET COLOR TO &var
 ** Usage: var = getcolor()

```

private clr

store sys(2001,"color") to clr
store substr(clr,1,at(".",clr)-1) to clr
return clr

```

PROCEDURE POP_OK

** 1-line prompt & get Y/N answer;
 ** eg: "OK to delete? (Yes/No): N".
 ** Returns result in YN parameter. Adds the "(Yes/No):"
 ** Prompt & Y/N entry on one line.
 ** Call with default in YN or "".
 ** Box sized to suit msg & centered. Msg cut if >60 wide.
 ** Pops box off on exit & restores color set.

PARAMETERS row,col,msg,yn

** row - top row of 3-line box
 ** col - color string
 ** msg - message string. Keep short.
 ** yn - string var to return "Y" or "N" response

```

private clr,l,r,w,conf
save screen to pop_ok_
store sys(2001,"confirm") to conf
set confirm off

w = len(msg)
if w > 60
  msg = substr(msg,1,60)
  w = len(msg)
endif
w = w+16
l = ((80 - w) / 2) - 1
r = l + w + 2
if row > 21
  row = 21
endif
store sys(2001,"color") to clr
store substr(clr,1,at(".",clr)-1) to clr
set color to &col
@ row,l clear to row+2,r
@ row,l to row+2,r
@ row+1,l+2 say msg+ " (Yes/No): " get yn picture "Y"
read
restore screen from pop_ok_
set color to &clr
set confirm to &conf
return

```

Hard Disk Recovery-

John Carroll

That old hard drive may not be beyond recovery

Recently I was given an old Tulin MFM hard disk drive which had stopped responding to DOS. My system recognised it and was able to low-level format it, and FDISK also seemed to work successfully, but when I subsequently ran the DOS FORMAT command it couldn't "see" the disk. After a variety of tests I concluded that Track 0 was damaged. The Tulin Corporation is defunct, parts are not available, and several repairers said that the drive could not be rebuilt. With nothing to lose, I tried a little lateral thinking, as follows.

MS-DOS uses the first track of the primary DOS

partition for boot sector information. By default, this is Track 0 of the disk. However, a disk can be configured to support multiple operating systems, each with its own partition(s). If the first partition is not assigned to DOS, then DOS will create its own boot record and FATs not in Track 0 but further into the disk. So I decided to make DOS use another (hopefully undamaged) track instead, by telling it that Track 0 was part of a non-DOS partition.

There was a problem of course—I don't have another operating system to set up as the first partition, and even if I did it would most likely have had

problems with the bad track. The solution was simple. FDISK did work, and had created a partition—all that was necessary was to modify the partition table so that it didn't look like a DOS partition any more! And also to make that partition as small as possible, leaving room for DOS on the rest of the disk.

I tried it—it worked! I now have a usable spare hard drive, and have lost only about 1 Mb out of 32 Mb.

The procedure, step by step

If you want to use this procedure, these are the steps to follow:

1. Do a low level format of the damaged disk, using whatever method is appropriate. (I used the AMI BIOS Setup facility.)

2. With MS-DOS *FDISK*.EXE, create a single DOS partition of the smallest possible size (for example, 1%).

3. Using a low-level sector editor, change the partition table information recorded by *FDISK*. (I used the editor included in Norton Disk Doctor [*NDD.EXE* Version 4.5] —the following steps will vary slightly with other editors such as PC Tools.)

- a) Run *NDD.EXE* from the A: drive and select "EXPLORE DISK" from MAIN MENU.

- b) From "EXPLORE DISK" Menu, select "CHOOSE ITEM".

- c) From "CHOOSE ITEM" Menu, select "CHANGE DRIVE".

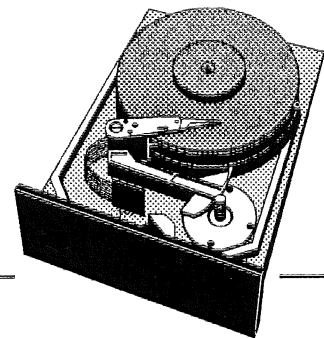
+ Sector 0 ----- Hex format +									
Sector 0 in Boot Area									
EB3C904D	53444F53	352E3000	02040100	02000200	00F85200	Offset 0, hex 0			
11000500	11000000	FE440100	800029F1	6ACA1820	20202020	_<EMSDOS5.0.....R			
20202020	20204641	54313620	2020FA33	C08ED0BC	007C1607D..Ç.)±-			
BB780036	C5371E56	1653BF3E	7CB90B00	FCF3A406	1FC645FEFAT16.....3+A+			
0F8B0E18	7C884DF9	894702C7	073E7CFB	CD137279	33C03906	+x.6+7.V.S+> ...n.ñ.[E			
137C7408	8B0E137C	890E207C	A0107CF7	26167C03	061C7C13	ñi... èMoëG...> _ry3+9.			
161E7C03	060E7C83	D200A350	7C891652	7CA3497C	89164B7C	t.i... è...á...&...			
B82000F7	26117C8B	1E0B7C03	C348F7F3	0106497C	83164B7C	... ä...P è.R I è.K			
00BB0005	8B16527C	A1507CE8	9200721D	B001E8AC	0072168B	+...& i...+H...I ä.K			
FBB90B00	BEE67DF3	A6750A8D	7F20B90B	00F3A674	18BE9E7D	+...i.R iP E.r...k.r.i			
E85F0033	C0CD165E	1F8F048F	4402CD19	585858EB	E88B471A	_ ...+µ}_ä...i... _st.+P}			
48488A1E	0D7C32FF	F7E30306	497C1316	4B7CBB00	07B90300	...3+...Ä.ÄD.-XXX...iG.			
505251E8	3A0072D8	B001E854	00595A58	72BB0501	0083D200	HHè... 2...I .K +...			
031E0B7C	E2E28A2E	157C8A16	247C8B1E	497CA14B	7CEA0000	PRO...rt+...T.VZXr+...ä-			
7000AC0A	C07429B4	0EBB0700	CD10EBF2	3B16187C	7319F736è... è.\$ i iK _			
187CFEC2	8B164F7C	33D2F736	1A7C8816	257CA34D	7CF8C3F9	p...+t) ...+..._ s._6			
C3B4028B	164D7CB1	06D2E60A	364F7C8B	CA86E98A	16247C8A	_è.0 3_6_ è.% _M +o			
36257CCD	13C30D0A	4E6F6E2D	53797374	656D2064	69736B20	+ i.M _µ.60 i-ä_è.\$ è			
6F722064	69736B20	6572726F	720D0A52	65706C61	63652061	6% _+_Non-System.disk			
6E642070	72657373	20616E79	206B6579	20776865	6E207265	or.disk.error.Replace.a			
6164790D	0A00494F	20202020	20205359	534D5344	4F532020	nd.press.any.key.when.re			
20535953	000055AA	Press Enter to continue				adv...IO.....SYSMSDOS...			
1Help	2Hex	3Text	4Dir	5FAT	6Partn	7	8Choose	9Undo	10QuitNU

Figure 1

+ Sector 0 ----- Partition Table format +									
Sector 0 in Boot Area									
Extended Partition Editor									
System	Boot	Starting location		Ending location		Relative Sectors		Number of Sectors	
		Side	Cylinder	Side	Cylinder	Sector		Sector	
?	Yes	82	368	37	97	357	35	1684955424	1701998624
?	Yes	11	97	32	12	107	32	1998616933	544105832
?	Yes	10	356	33	13	0	10	538988361	538976288
?	Yes	89	333	19	68	339	15	1394614304	21337
Press Enter to continue									
1Help	2Hex	3Text	4Dir	5FAT	6Partn	7	8Choose	9Undo	10QuitNU

Figure 2

Track 0 Bad



d) From "CHANGE DRIVE" Menu, select the drive you want to reconstruct.

e) You will be returned to the "CHOOSE ITEM" Menu, where you should select "SECTOR".

f) At "SELECT SECTOR" Menu, enter "0" for both "STARTING SECTOR" and "ENDING SECTOR".

g) You will be returned to the "EXPLORE DISK" Menu, where you should select "EDIT/DISPLAY ITEM". You will see a hexadecimal display similar to that in Figure 1.

h) As indicated in the bottom line of the display (in Norton), press function key F6 to edit the Partition Table. A screen similar to Figure 2 will appear.

i) Move the highlight to the first '7' in the "System" column. Use the spacebar to cycle through the operating system options. (Options that should appear are: ? DOS-12 DOS-16 EXTEND BIGDOS XENIX NOVELL PCIX CP/M BBT)

j) Select an operating system which you are never likely to use—I chose XENDL (Do not select any of ? DOS-12 DOS-16 EXTEND).

k) A dialog box will appear as in Figure 3—confirm (Write) the change. At this stage, you may receive a warning that the data has not been written—ignore this message.

l) You will be returned to the "EXPLORE DISK" Menu, where you should select "CHOOSE ITEM", change back to your original drive (A:), and then return to the MAIN Menu, and QUIT.

4. Once again FDISK the hard disk. Using FDISK Option 4, display the partition information. You should see the effect of your editing reported as a small non-DOS partition. Never delete that partition or low-level format the disk unless you want to go through the whole process again!!! (It would be a good idea to label the drive casing with this warning.)

5. Now use FDISK Option 1 to create a (new) DOS partition, and set it as active using Option 2.

6. After exiting FDISK and rebooting from a floppy, use MS-DOS FORMAT.COM to carry out a high-level

format of the repaired drive. (If FORMAT still can't find the disk, it may be because the drive is more extensively damaged than just the first few tracks. If so, repeat the whole foregoing procedure, but making the initial partition 2% of the available space instead of 1%.)

7. If FORMAT is successful, you should now be able to transfer the system files from your boot floppy using SYS.COM, and then load other files using the COPY command.

Warning: The procedure described in this article is not to be used lightly, and will not necessarily work on every damaged drive! (In particular, it will not work unless there is an undamaged area on Track 0 sufficient to hold the partition table.) It is offered in good faith as a last resort for users who have "lost" the outlying tracks on a drive, but I can offer no guarantee that it will work, and I take no responsibility for the results. (Certainly, all that FDISK'ing and FORMAT'ing will have destroyed any data you may have had on the drive.)

(Note: You may have noticed that the screen dumps are not consistent with the disk I describe—this is because the process was simulated later on a different machine, to illustrate this article. Also, the ASCII dump in Figure 1 has been cleaned up to remove some characters because of problems I was having printing out the screens.)

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Read John's caveats, but what have you got to lose?

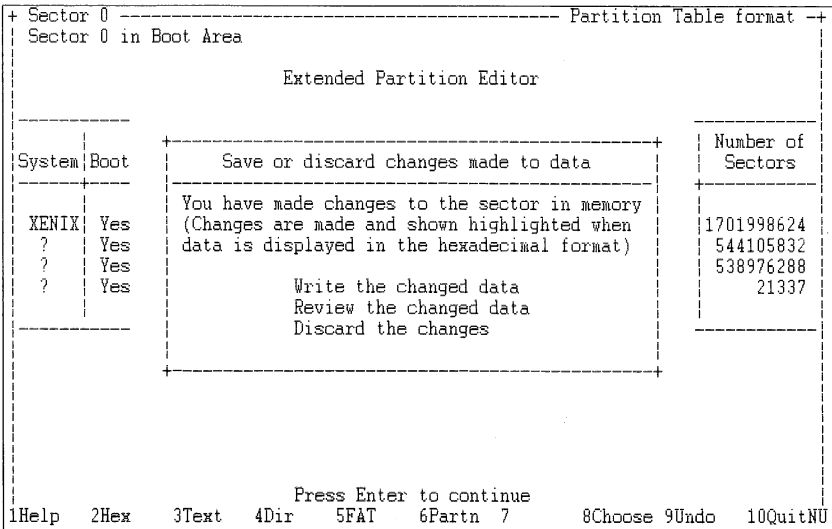
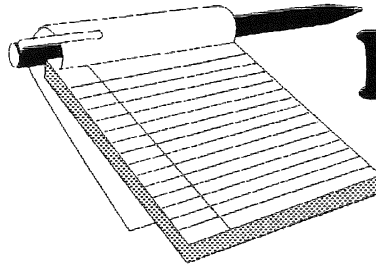


Figure 3

Consultant's Notepad

Geoff Harrod



PC-DOS 6.1

Usually IBM have released their PC-DOS version to correspond with Microsoft's MS-DOS directly after Microsoft, but they have been quite a long time with their 6.0 upgrade. That might be assumed to be something to do with IBM and Microsoft's current lack of cooperation, or IBM's interest in either OS/2 or DR-DOS. However, they have now released an equivalent of MS-DOS 6.0, and have made much noise about the delay being due to the fact that THEY wanted to get the bugs out of it properly.

That sort of comment might seem typical of the two companies' political scoring, but in fact it does seem to have good foundation by all accounts. There has been a lot of press about problems with MS-DOS 6.0, and Microsoft have gone to great lengths to try to disprove or explain away the various claims of problems. (See the InfoWorld report notes in a previous issue.)

Now that everyone has gained more experience with MS-DOS 6 it appears that to avoid problems with it you should only install it on a virgin or reformatted hard drive, do not use DoubleSpace, organise the memory management without using MemMaker, and either be careful about shutting down, or configure Smartdrive to no write-caching.

Microsoft have recently released an updated version of the new SmartDrive with modified write-back behaviour to answer the objections. It is distributed for posting on Bulletin Boards and is on the Brisbug BBS. Otherwise ask a dealer or ring Microsoft.

During the InfoWorld testing, they reported that the systems managers of the major U.S. corporate PC users were advising their people not to install MS-DOS 6.0 but to wait for IBM's PC-DOS release. It would appear they had some foreknowledge, probably through Beta testing licences. Now that PC-DOS 6.1 is released we find it has been dubbed "6.1" to signify that they have modified all the

matters subject to complaint in Microsoft MS-DOS 6.0.

They provide full versions of commercial utilities for data compression, virus protection, memory management and backup from Adstor and Central Point, to overcome the problems with DoubleSpace and MemMaker. It also includes support for Pen computing and PCMCIA card facilities. I haven't seen it myself yet but it sounds worthwhile. It is priced at \$109 as an upgrade but there is an introductory price of \$75 until 31 December from IBM Direct, phone 008-805109.

WINDOWS 3.11

Microsoft have very quietly released what appears to be a minor update to Windows for Workgroups called W for W 3.11. However, many pundits are puzzled by the low key release and minor version numbering, as it is in fact quite a major upgrade. They wonder why it hasn't been called at least 3.2 and applied to the non-network Windows package also.

It seems that it incorporates several key elements from the Windows ver 4 currently still under development. That is expected next year, and will be a full operating system that does not require any DOS. The new elements drastically improve performance over both Windows 3.1 and Windows for Workgroups 3.1. Some reports have found the new version doubles the WinMark benchmark rating for disk activity.

Both disk and network facilities are handled by 32-bit systems, including virtual memory swap file mapping. I hope that is more universally satisfactory than the optional 32-bit disk access already available in Windows 3.1. That is only claimed to work with a limited number of disk controllers, and I have yet to find one that it does work with reliably. However a lot of effort has been put into such things since 3.1 for the NT system, so that has quite likely been fixed. Certainly NT uses

32-bit disk access without being too fussy about drive types.

Although the new release is supposedly only for Win for Workgroups; the network version of Windows; the networking facilities are implemented totally differently and you can install it without any. It then serves as an upgrade for ordinary Windows, and a very desirable one at that. The networking facilities have been improved and extended and now also include built-in fax support and remote user facilities.

The 3.11 version sells for \$225 compared to the still current Windows 3.1 at \$195 (RRP). Upgrades from Win 3.1 cost \$119 or \$89 for Communicate members, or from Win for Workgroups 3.1 it is \$105 or \$75. Various commentators consider all users of Windows 3.1 wanting the best performance should upgrade to W-for-W 3.11. I will comment further when I've tried it.

DONGLES

"Dongle" is the popular name for "Hardware Lock Device", probably because they poke out the back of the PC like a sore thumb or something. They have been in common use with expensive CAD and engineering software for some years but are becoming more generally prevalent now.

They are an anti-piracy device. The idea is to avoid all the problems associated with software copy protection or "once-only-install" systems (which are really bad) by selling completely copyable original disks. The installed software will not run however unless the dongle is plugged into one of the port sockets and remains in place.

Dongles are double ended so that even though occupying a socket, that socket can still be used for normal purposes by plugging a cable into the back of the dongle. Most early dongles used a serial

port socket and often interfered with other uses passing through them. Most current systems use a parallel port which offers less potential for conflict.

The protected software sends codes through the port that get intercepted by the dongle circuitry and it sends an answer code back. There are several levels of complexity in dongles and some have memories and can be programmed by the software producer. Mostly they are locked to a particular program but not to a particular copy of that program. However the smarter ones can be programmed to only work with the one program and with only one serial number of that program.

These devices come from several sources all claiming superior protection. They are a significant cost to the program developer, both in terms of the licence to the protection company and the cost of the physical thing to supply with the software. Consequently the use of dongles has been generally restricted to high cost software such as CAD — typically packages costing over \$2,500.

Obviously such software has a much more smaller market than common word processor and similar packages, which is the main reason for its higher price — there are far fewer potential buyers to defray the development costs. That also means each sale lost through piracy represents a much more significant loss than in mass market lower cost products.

A further factor is that a large proportion of users of such software run multiple copies even if not networked. The piracy problem in these markets is more that of buying fewer copies than are used rather than not buying any legitimate copies. Dongles fix that situation quite definitely.

Although many users complain about having to use a dongle, many contract drafting people who move their equipment around like them because they can leave their own equipment in the employer's workplace unattended without risk of anyone else tampering with the program and their files, by carrying the dongle with them. They also make it perfectly legal to install copies on several machines so that work can be done in different locations such as at home on week ends. Only the one that currently has the dongle plugged in will actually run.

Problems do arise though in offices where more than one dongled program is used. This is often the case in engineering of-

fices where there may be more than one CAD program, various stress analysis programs, survey processing systems, and special purpose design programs.

Usually dongles can be stacked in the back of each other and left in place, but some programs or dongle types sometimes interfere and make it necessary to change plugs when running different software, which is a major nuisance.

More practically, a stack of dongles is a physical problem. They stick out so far they start to need support by sticky tape, string or resting on other objects, and can suffer damage or damage the port socket if the computer is moved and they catch on something.

I always recommend users buy a very short ribbon cable so that the dongles can be laid parallel to the back of the PC resting on the table. This can also make it easier to change them. You have to be sure to limit the cable to not more than about 100mm though otherwise the dongle may not work.

I have seen a single program suite (for electronic design) that used a separate dongle for every optional program module. Most users needed a stack of three just for that one system! That's enough to make you look for an alternative. Some of the smarter dongles can fix that by allowing various program modules to add in to the one dongle at installation.

In some situations, users prefer to mount the dongle inside the PC case. This is easiest if the connector on the port card uses an internal cable to a separate connector. Otherwise they have to plug in a ribbon cable and take it back inside through some aperture. This method is highly advisable in schools! A lost dongle usually entails considerable difficulty in replacement. In effect the dongle is worth the full cost of the package, so guard it well.

A disturbing trend seems to be emerging to use dongles on more popular software. I have even heard of an AutoCAD display driver software for a high performance VGA accelerator board that uses a dongle. That is quite absurd. I suggest anyone buying such things should check this and refuse to buy products that use a dongle for device driver software.

Most producers of add-on software for AutoCAD, such as the one I worked for, have in the past written into their soft-

ware systems to check the AutoCAD serial number and to abort if it is not the one they are licensed to run with. That is a neat and simple form of protection since AutoCAD has a dongle.

It does suffer some loopholes however. Since dongles are rarely specific to individual copies of a product, a user who had bought six copies of AutoCAD for use on six machines (because the dongles forced then to) can install from only one of the sets of disks so that all copies have the same serial number. Then they can get away with buying only one copy of the add-on product.

Usually there is quite a close relationship between the producers of such add-ons and the users for on-site training etc., so that practice is not widespread.

However, when sold to distant sites it is more of a problem, and those add-on producers are now often selling into the Asian market where the use of pirated copies of AutoCAD is rampant. Those copies usually have all-zero serial numbers, pre-release version numbers, or just one or two American serial numbers.

The producer asks the user for the serial number so that the add-on can be programmed to lock onto it. When it is apparent that the CAD program is a pirate they must either decline to do business or sacrifice their copy protection.

As a result, more and more add-on producers are adopting dongles. Being advised of a known pirate serial number is also an invitation to report the situation to the copyright authorities of course. If the client is in Asia that is largely pointless as enforcement is so lax.

Protecting themselves against unlawful multiple use is important to producers of specialised add-ons, as their potential market is quite limited. That's why their products are quite costly (\$1,800 to \$3,000 is typical), and every loss is significant, especially as they are mostly very small businesses.

I hope we will not see a major escalation of dongle use into mass-market software. They are a legitimate and satisfactory technique in the areas I have outlined, but would quickly become intolerable in more widespread use.



New Library Listings

Library Hours

9:00 am to 1:00 pm
2:00 pm to 4:30 pm
Monday to Friday
ONLY

BBUG NO 9125 HALLOWEEN HARRY Version 1.0

*CLASSIFICATION * Games * Hard Disk
* VGA * Sound Blaster HIGH DENSITY
DISK*

It is the year 2030 A.D. Space Station Liberty drifts high above Earth's surface. An Earth that is no longer at war with itself but has found peace a more practical alternative. Manned by members of an elite squad of high tech commandos, Liberty's sole purpose is the protection of Earth's people from possible alien threat. A threat that until now has seemed very distant.

Led by HALLOWEEN HARRY, the most respected and experienced agent, the task force must pull out all stops in wiping the alien scum from the streets of New York. To make matters worse, the aliens have taken hostages and are using them to create an army of genetically engineered zombies.

Time is running out. The longer the aliens have to establish a foot hold on our soil, the higher the risk of further invasion forces breaching Earth's defenses. HALLOWEEN HARRY and his team may be the last chance for our

survival. It's dirty work, but someone needs to save the world!

Guide Harry through the many levels in search of hostages held by the aliens. Blow away zombies and aliens while avoiding death traps.

The future of Earth is in your hands.

BBUG NO 9126 ACTION GRAPHICS Version 1.5

*CLASSIFICATION * Graphics * Hard Disk * VGA * Mouse*

Action Graphics is an amusement program based on the old "Erector Set" concept of building things (on your screen) and making them move. The mouse is used to select any of several graphic objects (circle, ellipse, line, triangles, rectangles, gear, etc.) or action icons which include Move, Resize, Burst, Rotate, Attach, Set Speed, Equate, Align, Duplicate, Scale, Undo, and several others.

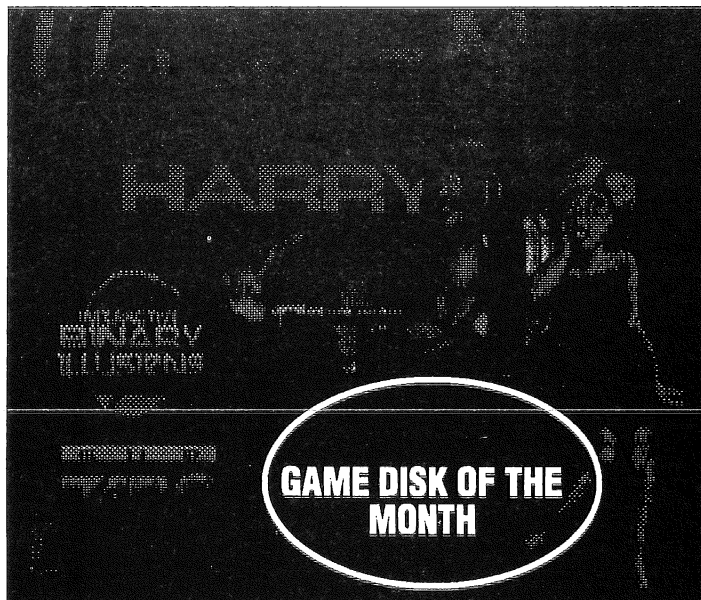
The ability to attach objects to each other, and have the actions affect the entire group, makes this a unique and fun program every computer enthusiast will want to try.

BBUG NO 9127 PATHMASTER Version 4.0

*CLASSIFICATION * Utilities * Hard Disk*

PATHMASTER is the Ultimate Path Utility! Choose your path from a menu. Use your mouse. Expand your environment, use 500 character paths, del/add/change/stack/edit/list unlimited number of paths, batch file usable, check for file existence in your path and edit your environment.

PATH MASTER beats all other path utils HANDS DOWN. 44 awesome options that allow complete control of your path and active/master



environments. PATH MASTER can:

_ Choose paths from a menu. Even use your mouse.

_ Quick edit current path, or stack your favorite paths up to 500 characters.

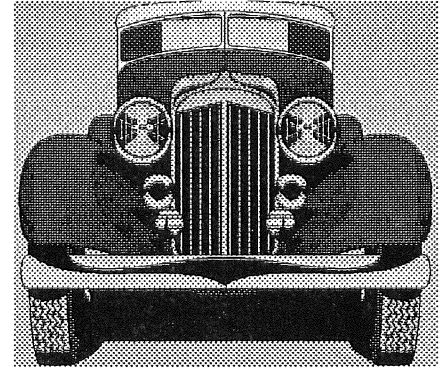
_ Set active/master environments, save or restore your environment for later use. _ Add/del/change/expand/list directories with ease.

_ Save your configuration in PATH MASTER's own variable.

_ Show 15 pages of information on the path, and see your working environment on a colorful graph.

_ Simple enough for a beginner, yet powerful enough for even the most advanced user.

PATH MASTER distinguishes itself among the crowd. Trash all of those cheap Add & Del utils, and TAKE COMMAND!



BBUG NO 9129 WHAT VEHICLE HISTORY Version 2.3A

*CLASSIFICATION * Business * Database * Hard Disk * Printer*

WHAT VEHICLE HISTORY provides any easy way to track the service history on many cars, trucks, campers, dozers, grading equipment, what-have-you. You may identify vehicles by VIN or manufacturer's number (for non-VIN equipment).

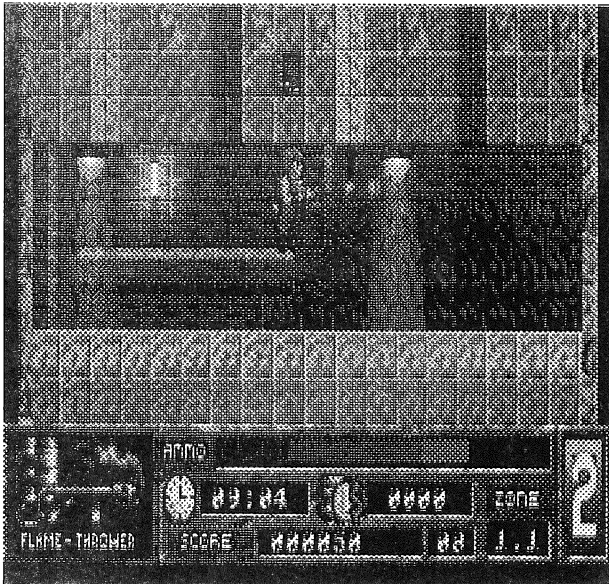
WHAT VEHICLE HISTORY contains five data bases: 1. Vehicles 2. Mechanics, employees, or places of service. 3. Divisions, departments, locations, etc. 4. Types of service. 5. Service history.

WHAT VEHICLE HISTORY provides printed reports which include maintenance history, billing and mouse support on menus is installed.

BBUG NO 9130 HONG KONG MAHJONG

*CLASSIFICATION * Games * Hard/Floppy Disk * VGA * Mouse*

MAHJONG is played around the world, by various cultures in many forms, with variations in play and scoring that may differ from house to house. The precise history of the game is incomplete, but it is clearly a Chinese game, and,



Halloween Harry



BBUG NO 9128 TERMINATE Version 1.00

*CLASSIFICATION Communications * Hard Disk * Modem HIGH DENSITY DISK ONLY*

TERMINATE is the final terminal program! TERMINATE comes with the on-line help for novices and features the advanced features and flexibility that experts require!

TERMINATE contains a Fido-net point system, mouse support, a cost manager, hostmode, IEMSI logins, a CD-Audio Player, and has system information, and can even be used for voicecalls. A superb file manager boasts tagging and requests. Also included is a great translation /keyboard editor. You can load keymap/table for each phone book entry!

since the People's Republic frowns on all forms of gambling, the most common version today is surely that which is played in Hong Kong, where it is as large a part of daily life.

HONG KONG MAHJONG is fashioned in the Hong Kong mode, using tile images copied from the plastic sets one would find in the typical Kowloon household, adhering to locally accepted rules.

The game consists of 4 rounds: East, South, West, and North. Within a round, each player rotates through being in the seat corresponding to each Wind. The East player retains his seat through winning hands and dead hands. Once he has lost, the Winds rotate. A complete hand, then, will last a minimum of 16 hands, and often many more. The object is to accumulate 13 tiles with which a 14th tile would result in 4 sets and a pair. A set will either be Chow or Pong or Kong. With Kong, you are allowed to pick another tile to even up your hand.

This is the program used to capture screens used in this listing.

It will NOT run with Windows! so unload it first

BBUG NO 9131 SCREEN THIEF and OTHER UTILITIES

*CLASSIFICATION * Utilities * Hard/ Floppy Disk*

SCREEN THIEF is a screen capture program that will capture the screens other programs cannot reach! Captures directly to .GIF, .PCX, .TIF or .BMP format, supports all VGA modes, plus extended support for Trident and Paradise controllers in Super VGA modes. Will even capture re-defined fonts in text mode (such as those used by DOS 6). Requires 286 or better with VGA display.

BIOSDATE simply tells you the BIOS Date of your system.

CACHETEST Version 5.0A allows users to objectively test the effectiveness of their disk caching software.

BBUG NO 9132 SONGANIZER Version 2.01

*CLASSIFICATION * Music * Database * Hard Disk * Printer*

Keep track of your record collection with this easy to use music organizer. SONGANIZER is a full featured database for the casual and serious music collector.

It features full mouse support, with fast entry and search screens, reports, and user configurable options make this program easy to use, yet does not limit the user. Support for both laser and dot matrix printers is provided and on-line context-sensitive help always available. See why SONGANIZER is called "The Song Organizer" - from Candlelight Software. Windows compatible.

BBUG NO 9133 COLORING BOOK Version 1.4

*CLASSIFICATION * Games * Hard/ Floppy Disk * VGA * Mouse*

COLORING BOOK is an electronic version of the classic children's coloring book. It presents the user with 10 pictures (35 pictures in the registered version) that can then be colored in using a palette of 15 colors.

Features include: All graphical controls, Easy color selection, Color Erase, Undo, and Quick picture selection.

The program is very easy to use. All the necessary commands are on the screen at all times. Children can learn to use the program with little or no help from adults. They can be coloring pictures less than a minute from the time the file download is completed.

Give COLORING BOOK a try. It's a great way to keep the kids busy for a while, and provides a nice diversion for you.

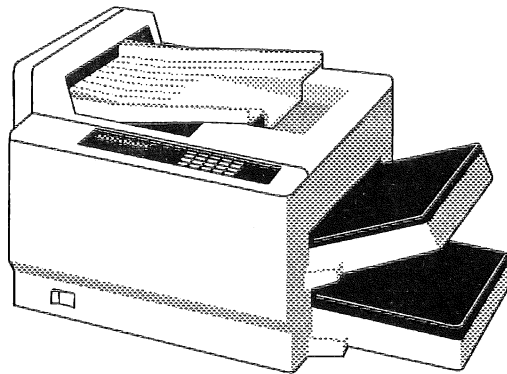
For the Kids

BBUG NO 9134 BITBOP II

*CLASSIFICATION * Games * Floppy/ Hard Disk * VGA/MCGA * Mouse*

BITBOP II is an incredible, mindblowing game for gamers with a thirst for adventure. It features: * 256-color graphics and art! * real time 3D rotation effects! * raytraced game pieces * hypnotically flowing backdrops! * DIGITIZED ANIMATION!

BITBOP II Supports mouse or keyboard, and has over half a meg of graphics data (compressed, for your convenience and our sanity), has a built in screen saver on a time delay and a great plot that's so subtle, you won't even know it's happening.



BBUG NO 9135 LASR-MAN Version 5.00

*CLASSIFICATION * Printing * Hard Disk * Laser/Ink Jet Printer*

LASR-MAN prints ASCII text files on a laser/ink jet printer in any of 36 styles. Great for program manuals and listings, wide spreadsheets, database listings, legal documents - save up to 93% of your paper usage!

Available styles include: normal portrait or landscape orientation each with five font sizes ranging from 10 to 33 characters per inch; multiple text pages per paper sheet - 2, 4, 8 or 16; individual files where each is printed in the form of a pamphlet; file groups printed together, each file as a chapter, in the form of a book with 4, 8 or 16 text pages per sheet.

Many options including custom covers and header/footer page titles,

"rubber stamp", and menu selection of options/files. The editable configuration file includes commands to print on letter, legal or A4 size paper.

BBUG NO 9136 THE CAR RESTORATION DIARY Version 2.2

*CLASSIFICATION * Business * Hard/
Floppy Disk * Printer*

THE CAR RESTORATION DIARY will keep track of all expenses and time spent while restoring vintage cars. It will also maintain a database of parts dealers and car shows.

Featuring an appointment calendar, and a pop-up calculator, you can keep track of your progress and expenses while you complete your project. Reports can easily be prepared for viewing and results can be printed, as well as mailing labels to spare parts dealers.

Easy to learn and use.

BBUG NO 9137 RLIST Version 1.2

*CLASSIFICATION * Mailing List * Hard
Disk * WP 5.0/5.1 * Printer*

RLIST is a contact and mailing list management program that creates WordPerfect (v5.0 & v5.1) secondary merge files from selected records and fields. You can invoke WordPerfect from within RLIST and create mail merge letters, labels and envelopes using these files. Text fields exist for name, title, company, full address and user-defined information.

RLIST has powerful search and sort capabilities, an auto phone dialing (business, mobile, fax, home) with redial on busy and seconds to wait between calls, date, time and incremental timer field for tracking phone calls.

A pop-up NotePad for each record holds up to 3,300 characters, and editing features include selective or global search/replace, text block copy, move and delete functions. Keystroke/mouse record and playback (macro) files. RLIST has complete documentation and on-line help with full mouse support. Uses R:BASE databases.

BBUG NO 9138 DOALL Version 2.4

*CLASSIFICATION * Database * Hard
Disk * Printer*

DOALL is a Front End for any Dbase/FoxPro/Alpha4/Compatible database Manager - The only Data Base MANAGER you'll need

DOALL features include:

- * A DATA CONVERTER - Import from spreadsheets, Word Processors and data bases, (DO a Search/Replace to change data?) and Export to other data bases, spreadsheets or word processors.
- * Use the SAME engine for accessing all files (Minimizes learning time for DBASE/FOXPRO/FOXBASE compatible file).
- * Add/Edit records
- * Move records from one system by importing, finding Duplicates and automatically mark them for deletion, then move them back again by exporting.
- * Produce reports in any sort/for any records Do the same thing for labels.
- * Use DOALL just to move file data from one system to another using Import/Export.
- * Use DOALL to easily change values in selected records, proper capitalization, replace one field with another, replace with blanks, etc.
- * Control printer functions for all printers
- * Modify/Change your data file structures.
- * Add your own "help" files to validate your data.
- * Complete sorting and record selection control with Flexi-Sort and Flexi-Select.
- * Extensive and Flexible data entry control available for "add record" screens. Easy to "fill-in" repetitive data from a look-alike .REP data file.
- * Browse screen ready to go on ANY data file WITHOUT setup. Instant access to lookup files using existing .dbf files.
- * Use modem to automatically dial phone numbers.

DO-ALL will give you comprehensive access to your Dbaseiii, Dbaseiv, FoxBase, FoxPro or compatible file without having to worry about formats, setups, learning a new system each time

you want to use a data file. (Note: FoxPro2.0 data files have unique memo fields).

BBUG NO 9139 KERMIT Version 3.13

*CLASSIFICATION * Communications *
Modem * Hard Disk*

KERMIT is a high-quality, full-function communications file transfer protocol for DOS, OS/2 and Windows applications.

KERMIT can run in a window of OS/2 2.x and also in a full screen. KERMIT's flow control has no effect because OS/2 itself is controlling the device.

KERMIT will also operate under Microsoft Windows 3.0 and 3.1 in fullscreen mode on all machines, and in a window on 386-class or higher machines that have enough memory for Windows to operate in Enhanced Mode (3-4 megabytes are required).

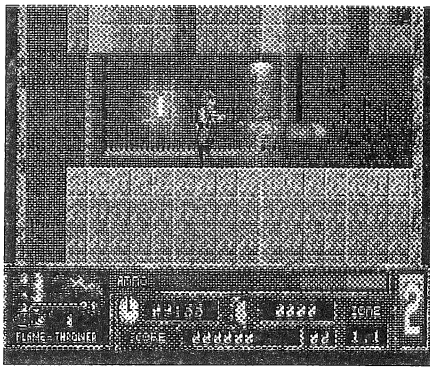
KERMIT performs emulation of the following terminals: VT100/200/300, VT220/330 and VT320/340. Speed depends on the quality of the UART IC in your computer. With a high-quality buffered UART, KERMIT can be used at speeds up to 57600 bps under DOS (under Windows, the maximum speed is probably lower). 115200 bps works only with a very short shielded cable, and the async adapters of the two machines in perfect tune. If the serial port interfaces are in tolerance, speeds of 19,200 bps and faster are possible.

*Replaces BBUG NO #0041 and
#0042.*

BBUG NO 9140 THESAUR PLUS Version 3.0

*CLASSIFICATION * Word Processing *
Hard Disk*

THESAUR PLUS is a pop-up Thesaurus, whenever you need a different word or a different shade of meaning than the word that comes to mind, pop-up THESAUR PLUS and get just the word you wanted, but couldn't quite remember! As a memory resident program (25k) THESAUR PLUS comes with 15,000 main words and a library of over



80,000 synonyms.

Designed with simplicity in mind, you only need to remember your Hot-key (the key combination you use to pop THESAUR PLUS up over what you are doing now) to use the THESAUR PLUS, and you only need to start Thesaur -All available commands are shown in a menu after you get started! And both programs use the same commands to make it even easier!

Also included is a program that allows adding new words and synonyms to the database, and removing unwanted words.

Great for letters, novels, and crosswords.

BBUG NO 9141 JEFF'S GRAPHIC UTILITIES

*CLASSIFICATION * Graphics Utilities * Hard Disk * VGA * Mouse*

JEFF'S GRAPHICS UTILITIES are a menu driven collection of programs for everyone who works with graphics.

These utilities includes PUZZLE which will turn any standard .gif or .pcx file into a puzzle which users can reassemble with mouse or arrow keys; super show, one of the very best ways to display groups of images.

FAST is a drawing program which makes very small files, great for sending graphics via modem or putting many pictures on a single disk.

PICTURE MENU is a totally freeform GUI, and more.

All of these programs are small and simple, easy for beginning users and fun for the whole family and small enough to use as runtime programs for use with your own products.

BBUG NO 9142 MULTIMEDIA MAKER Version 2.0 (Disk 1 of 2, also 9143)

*CLASSIFICATION * MultiMedia * Hard Disk * VGA * Sound Card*

MULTIMEDIA MAKER is a new business and educational tool that has endless potential. Imagine turning dull meetings and boring classrooms into show-stopping presentations and tutorials, complete with speech, music, special effects and high quality graphic images. You can use this package to create your own custom AUDIO/VIDEO SHOWS on any subject, place, product or procedure you desire.

Jump on the MULTIMEDIA band wagon! Produce state-of-the-art graphic and text presentations, tutorials, advertising, demo's, courseware authoring, reports, educational projects with outstanding SPEECH, MUSIC, and sound effects that sound great on your PC speaker or SOUND BLASTER card. Incorporate your own PCX, GIF, TIFF or TARGA graphic image files in EGA, VGA or SVGA(1024x768x256) formats. Add incredible graphic effects, motion, and use some of the pre-recorded speech, music and sound effects or record your own speech and music to create dynamic, attention-grabbing interactive AUDIO/VIDEO SHOWS.

You can use this package to create a new product/service presentation which can be given to your sales staff to use on sales calls. The sales person can play the demonstration on the customer's computer (no special hardware needed). Better yet, you can mail a presentation disk to all of your customers and new prospects (direct mail marketing).

Need to train someone? With MULTIMEDIA MAKER you can create a tutorial on your product or service. The tutorial you create can interact, teach and test your trainees. MULTIMEDIA will help convey what text alone cannot. VGA and hard drive required, sound board recommended.

BBUG NO 9143 MULTIMEDIA MAKER Version 2.0 (Disk 2 of 2, also 9142)

BBUG NO 9144 WHAT MAILING LIST? Version 2.2B

*CLASSIFICATION * Business * Hard Disk * Printer*

WHAT MAILING LIST provides easy tracking for up to 250 mailing lists, each containing hundreds or even thousands of names (theoretical limit of 5.5 million names per list). Entries within a mailing list can be organized into groups (e.g., customers, Christmas list, people trying not to be seen, etc.).

Lists can be printed on envelopes or labels and on a dot matrix or laser printer. PCL 1-5 lasers are supported, including scalable fonts.

"Make my life easier" touches include context-sensitive help, an on-line manual, and Back-up, Restore, and Format functions.

Full documentation on-disk is provided in ASCII and WordPerfect 5.

BBUG NO 9145 FILE BUDDY Version: 3.03

*CLASSIFICATION * Graphics * Hard/L/ Floppy Disk * VGA * Printer * Mouse*

FILE BUDDY is a unique file viewer that allows you to view and manipulate ASCII, dBASE, ARC, ARJ, LZH, PAK, ZIP, BIF, GIF, PCX, TARGA, and TIF files.

dBASE support includes database management and a report writer.

Archive support includes archiving, extracting, and deleting files.

Image support includes processing, cropping, saving across formats, "slide-show" viewing, and printing to a HP LaserJet or compatible printer.

Windows compatible.

BBUG NO 9146 FERNDAL FASHIONS Version 1.20

*CLASSIFICATION * Business * Hard/ Floppy Disk * Color Monitor*

FERNDAL FASHIONS is a Business Management Simulation, endorsed by the Canadian Institute of Management. The simulation involves the student being hired on as the President of a clothing manufacturer, that

uses a growing franchise network for its distribution method. The student is responsible for and has control over every facet of the company during the simulated year. The student will also face and must complete 12 mini-cases, which presents an opportunity or a threat, depending upon how you look at it.

Students can "sit in the Managers chair" for one full simulated year (12) periods. Program provides instant and delayed feedback concerning the decision choices being made. This feedback takes the form of real life through numerous financial statements, ratios, graphs, employee feedback and more.

The software is FUN and easy to use with the main-menu headings being separated into functional departments of the company, namely; Finance, Marketing, Production, Personnel and Other. Fully menu driven.

BBUG NO 9147 PRINTING UTILITIES NO 2

*CLASSIFICATION * Printing Utilities * Hard Disk * Printer*

People who do a lot of downloading from bulletin boards usually collect large quantities of documentation they want to print out. FINE PRINT Version 1.00 lets you print 4 FULL PAGES on one sheet of paper, and will keeping the original page formatting.

FINE PRINT has the following advantages:

Filtering of extended characters like the one use to draw box, replacing them with +, -, | for printing on almost any printer.

Pull down menu and/or command line operated.

Keeps the page format of the original document, so reference to a page number are still usable.

Unprintable characters will be "filtered" out. (i.e. A .exe file could be printed, without generating error or hanging computer.)

Configurable page layout.

Printing of unformatted document, line wrap.

REPRINT Version 1.2 takes an (input) ASCII file that has the pages separated with an ASCII character 12 and copies selected pages to a second (output) file. It should be very helpful to anyone who prints out large reports, or to anyone with a laser printer or cut-sheet feeder.

BBUG NO 9148 DOS UTILITIES NO 24

*CLASSIFICATION * Utilities * Hard Disk*

KEYWORD SEARCH Version 1.40 is a small, fast program that searches for keywords within text and binary files. KWS has many features and options: Handles grep, boolean, prefix, suffix, whole word, case-sensitive, and adjustable fuzzy searches. Supports wildcards and @filelists, and can span subdirectories. Can display matches in bold onscreen, and can also display line numbers, file offsets, and totals. Can read data from standard input, from hidden/system files, and from text files created on other platforms. Accepts input lines up to 2k in length, and can handle 4DOS/NDOS 256-character command lines.

LOOKDISK Version 1.51 easy to use disk utility with a DOS window interface with mouse mouse and/or keyboard support. LOOKDISK features: Search Files - Fast file finder. Search multiple files by name - Finds all files with identical names. Search multiple files by content - Finds all files with identical contents. Search text - finds any text in any file.

THE ULTIMATE TOOLBOX Version 2.0 - Over 85 utilities combined into one small file. Great for batch files: encrypt files, change attributes, make sounds, multiple commands one line, change cursor, control keyboard, binary conversions, and much more!

BBUG NO 9149 DOS UTILITIES NO 25

*CLASSIFICATION * Utilities * Hard Disk*

LASER Version 1.00 is a Screen Saver that supports just about every graphics card out there. From Hercules with 2 colors To Super VGA with 32k colors.

BEEPER RELAY Version 1.1 notifies you of messages as they are left on your answering machine by sending a special code to your beeper. This product is perfect for small business owners, real estate agents, consultants and salesmen, etc. It eliminates the need to try and call in and check for messages before they are received. Don't wait around for important calls. Feel free to leave your office or home. If you are expecting an important call, you will probably want to call your answering machine as soon as you are notified of a message. If you are not expecting an important call, it may helpful to have an idea how many messages have been left on your answering machine. REQUIREMENTS: Beeper - Answering Machine - Modem,

TIME AND DATE Version 1.26 allows changing the time and date on files. The program supports wildcards and also will keep logs on files that it has changed. For batch processing a quiet mode is included.

BBUG NO 9150 MENU SMARTS Version 1.4

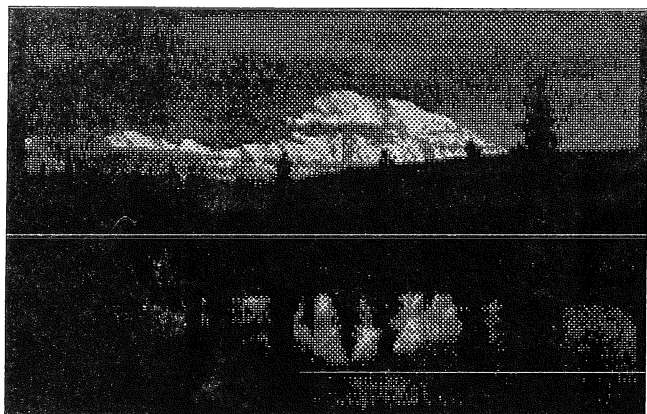
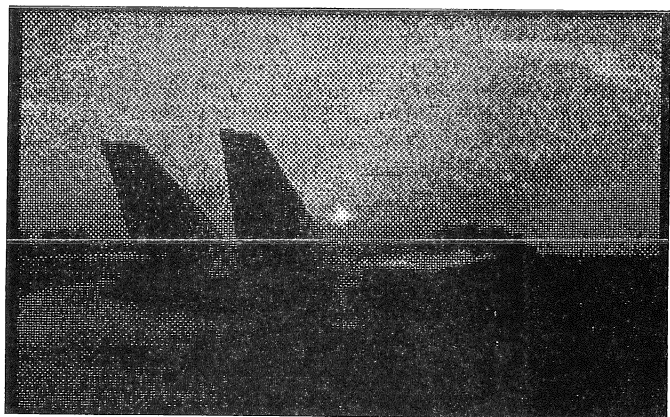
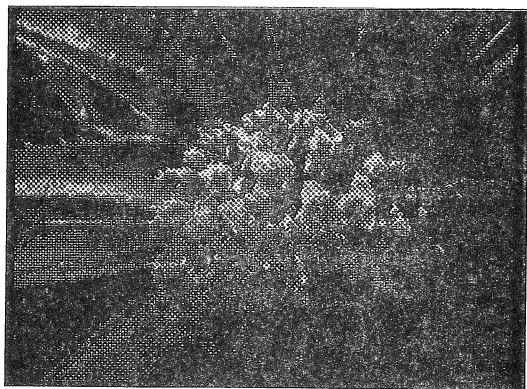
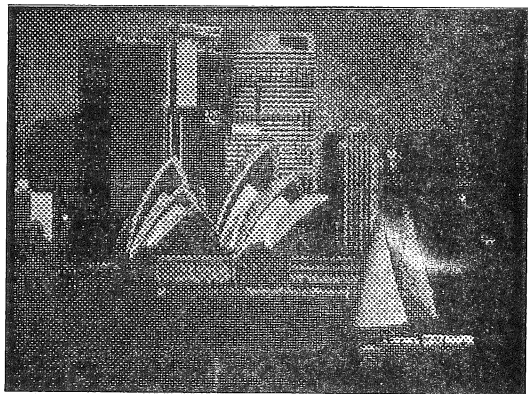
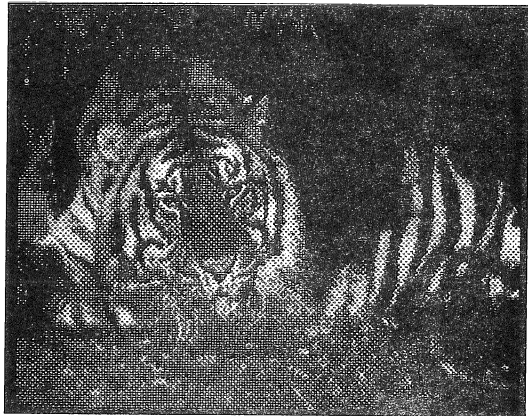
*CLASSIFICATION * Utilities * Hard Disk*

MENU SMARTS and CONFIG QUICK are two DOS utilities that should have come with the advent of PCs and MS-DOS. Working together or separately they fill in the conceptual gaps left by MS-DOS and traditional menu programs. These utilities will most likely be appreciated by advanced users, avid game players, consultants and MIS managers who understand the frustrations involved with multiple configurations.

MENU SMARTS is a menuing program that, most importantly, is configuration specific. This means that Menu Smarts provides a better way to load programs that require different configurations. Simply, select a program from the menu. If the selected program requires that a different config.sys and or autoexec.bat be loaded Menu Smarts will automatically reboot your PC, load the required configuration files and execute the program originally selected from the menu.

CONFIG QUICK is a configuration management program that links with MENU SMARTS. CONFIG QUICK

provides greater flexibility and organization in changing config.sys and autoexec.bat files. Create as many configurations as you need and easily load configurations at a moments notice. The user interface in CONFIG QUICK is nearly identical to MENU SMARTS.



BBUG NO 9151 PERSONAL STOCK TECHNICIAN Version 1.01

*CLASSIFICATION * Business * Hard Disk * EGA/VGA*

PERSONAL STOCK TECHNICIAN is the the complete stock market tracking and analysis program from RazorLogic Systems.

All financial data used by PERSONAL STOCK TECHNICIAN are kept in ASCII text files and the program has standard manual data file creation and update capabilities, but the ASCII text format allows for editing by any text editor.

PERSONAL STOCK TECHNICIAN does not support automatic data acquisition from any financial database. However, the program comes with several utilities that will import data from "screen capture" files generated during a Dow Jones News/Retrieval, Compuserve, or Prodigy session.

PERSONAL STOCK TECHNICIAN's data file format allows for any time base you prefer (daily, weekly, monthly, etc.) but each file should have all its entries dated the same way. Mixing daily data with monthly data will create confusing plots. Also, just like apples and apples, you can only compare two files that have the same date increments. PERSONAL STOCK TECHNICIAN won't let you try to match a file with weekly entries against a file with monthly entries. PERSONAL STOCK TECHNICIAN

will position one file relative to the other so that the dates match up vertically, however, and will even do so if one file is larger or smaller than the other as long as the date spans overlap.

BBUG NO 9152 TRACKPRO PC Version 1.0D

*CLASSIFICATION * Racing * Hard/L/ Floppy Disk*

TRACKPRO PC is a harness racing handicap system for PC computers and compatibles that was designed to improve your results in race track wagering. It is a scientific alternative to race track "tip sheets" or the favourite selections that are listed in the race track program schedule. It uses a statistical approach to determine the strongest competitors in the race based on their past performance.

TRACKPRO PC uses a "dynamic" scoring method, which takes the competing contenders into account. With TRACKPRO PC no scores are calculated until the data for every contender in the race has been entered. The statistics for each contender are compared to the others, then a score for each contender is calculated, based on individual performance in relation to the best performance in each of these statistics areas.

Only with TRACKPRO PC can you perform "what-if" type handicap calculations. Assume you have entered and saved all the data from your race track program schedule for a given date, the race is over, and you also have the race results from your local newspaper. In all probability, you would have come up with several winners.

There is no other handicapping software with the features that TRACKPRO PC offers!

BBUG NO 9153 MAPIT
Version 1.00 (Disk 1 of 2,
also 9154)

*CLASSIFICATION * Educational * Hard
Disk * VGA * Mouse*

MAPIT is a user-extensible world map of the detail normally found only in mainframe databases. MAPIT enables you to investigate, analyze, organize, record, track, reproduce, and communicate your graphical and textual data and concepts in pictures as well as words.

A powerful vector-based reference tool, MAPIT contains a wealth of information and is just plain fun to use.

Create private databases to distribute your own graphic and textual data to co-workers and friends with lines and figures inserted to within 200 feet ANYWHERE IN THE WORLD. Seven scalable Stroked Text faces, map or screen relative, and Hidden Text collapsing to small markers support your text needs.

The World Database, which includes coastlines, lakes, rivers, canals, reefs, saltflats, national boundaries, and US state and Canadian provincial borders, supports zooms of 750 or more without degradation. Also included are 6,000 international cities as well as 20,000 US cities with 1990 census population figures.

Whether you are a secretary, scientist, salesman, or sea captain, MAPIT enables you to investigate, analyze, organize, record, track, reproduce, and communicate your graphical and textual data and concepts in pictures as well as in words.

A powerful vector-based reference tool, MAPIT contains a wealth of information and is just plain fun to use.



RECENT UPGRADES

**BBUG NO 1056 MANAGING
YOUR FOOD** Version 4.09

*CLASSIFICATION * Health * Hard Disk
* Printer*

MANAGING YOUR FOOD (MYF) is a complete food manager designed for food manufacturers, institutional food planners, restaurant managers, dietitians, diabetics, and the home shopper. Its use is easy enough for the novice, yet comprehensive enough for a professional dietitian.

MYF will track cost, protein, carbohydrates, fat, calories, cholesterol, fatty acids, fiber, vitamins, minerals, food exchanges, and %RDA.

BBUG NO 1172 DMAIL
Version 5.1

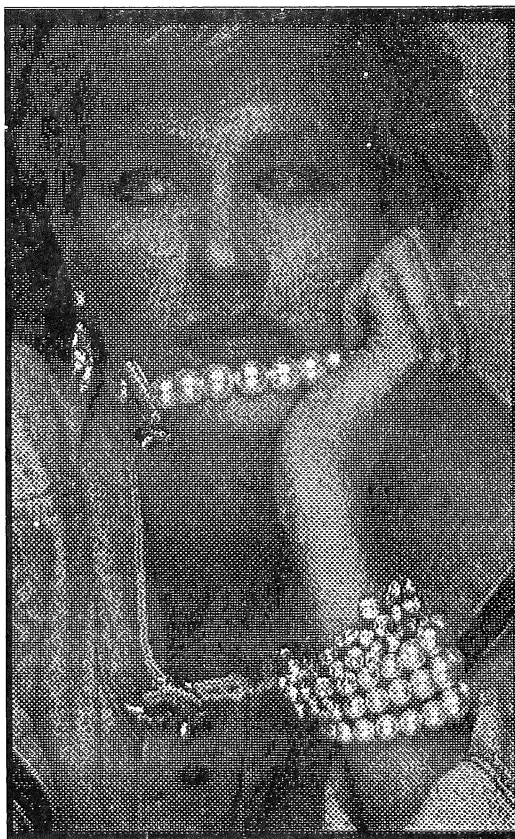
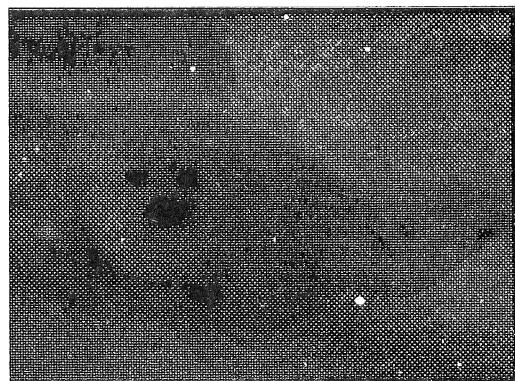
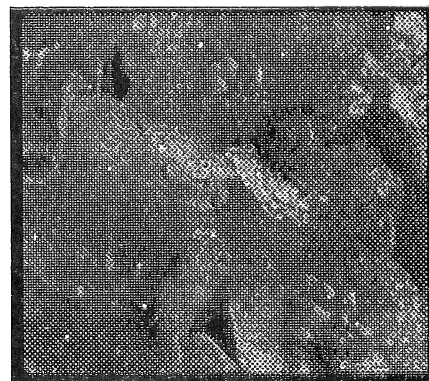
*CLASSIFICATION * Business *
Hard Disk * Printer*

DMAIL is an advanced mailing list system for all MS-DOS microcomputers. Managing mailing lists has never been so fast and easy.

DMAIL uses pull-down menus, pop-up windows, and has a complete help system. There are advanced features including address selection by search target, creating sub-lists from master lists, address classification, a text field for notes, user defined fields, fast

phone
number
look-ups,
laser
printer support,
and much
more.

From the Corel Photo CD-ROM



BBUG NO 2128 MEAL MASTER Version 6.1

*CLASSIFICATION * Cooking * Hard Disk * Printer*

One of the toughest parts of being in charge of family meals is deciding, week after week, what you're going to cook. Another tough part is trying to remember to put all the important ingredients down on one shopping list so you can actually cook the meals. If you're rich, you avoid the whole problem and get a housekeeper. If you're smart, you get MEAL MASTER.

MEAL MASTER is the program that home users dreamt about when the computer industry said, "... and you can keep recipes in it, too!" Now you really can. MEAL MASTER stores up to 500 recipes, automatically schedules up to 14 days of meals, and creates and prints a shopping list of ingredients in all the meals on your schedule.

Even if normal meal planning is a breeze for you, MEAL MASTER can prove invaluable for those special occasions when you find yourself catering a family reunion or having to plan two weeks worth of meals for a nursery school program. Whatever size family you're feeding, MEAL MASTER can make the process almost painless.

BBUG NO 2286 ELFTREE Version 1.E45

*CLASSIFICATION * Utilities * Hard/Floppy Disk*

ELFTREE packs hundreds of extremely fast file, directory and program management utilities into an easy-to-use package.

ELFTREE works with over 16,000 files across 26 disks as if they were in place!

You can copy, move, protect, edit, print, rename, locate and hide files quickly and easily. Rename, protect, hide, locate, copy, move, make and remove directories just as easily. You have eight ways of tagging a group of files for use.

ELFTREE will remember your last 15 commands and give you a convenient way to retrieve them when desired. You

may also attach short notes to files in any directory.

There's an editor that can handle as many files as will fit into RAM. It will let you edit multiple files by tagging them and selecting a menu option. It has 11 storable keyboard macros for complex editing, a speedy search-and-replace, many block commands (cut, paste, copy, save, print, convert to upper, lower, proper case), and it's small!

Instruct ELFTREE to run a program for you by simply pointing to it and pressing ENTER. ELFTREE can be programmed to recognize up to 40 extensions per directory, so your applications are automatically launched with the corresponding data file. When you use ELFTREE to run a program, it will reserve less than 2K for itself, leaving you with the room to run memory-hungry programs, and can use filespecs like *A*B*C*.

BBUG NO 2606 FINANCIAL WIZARD Version 5.3

*CLASSIFICATION * Financial Calculator * Floppy Disk * Mouse*

FINANCIAL WIZARD is a financial calculator for investment and loan analysis. The program has 22 options which cover not only standard financial calculations, like future and present value, interest rate, and amortization schedule, but also depreciation (straight-line, double-declining balance, and accelerated), discount rate, Treasury Bills, and tax-free investments.

There are also three calendar options that make short work of yield analysis. Results from one calculation can be copied to a notepad for use in another calculation. Short-cut keys and a pop-up calculator further enhance this well-designed program. FINANCIAL WIZARD handles any amount less than \$10 million.

BBUG NO 2914 INSTALL-PRO Version 2.11

*CLASSIFICATION * Utilities * Hard Disk*

INSTALL-PRO is a user friendly installation program for programmers that safely copies application files from instal-

lation diskettes to a hard drive. Far superior to a batch file, it validates and verifies all destinations before starting the file transfer process.

INSTALL-PRO features: User customization of multiple welcome screens and good-bye screens to your own needs. Up to 999 installation disks and unlimited installation files. Comprehensive environment detection, including minimum CPU, floating point processor, installed RAM, and MS-Dos version. Intelligent FILES= update for Config.sys and PATH update for Autoexec.bat Files may be split into up to 9 pieces for huge files spanning multiple disks. Files in the .zip format may be extracted. All directories stored in a .zip file are automatically created. Define the directory prompts and the default destination directories that the user sees. Specify the disk space requirements associated with all portions of the installation, including optional portions.

BBUG NO 2915 FINISH LINE - PCX ALBUM

*CLASSIFICATION * Utilities - Graphics * Hard Disk * VGA*

FINISH LINE - Version 1.10 - is a smart little program that makes using your PC faster and easier by allowing you to finish a line with just one key-stroke. Especially useful in a setting where repetition or consistency is required, FINISH LINE shines by automatically learning a writer's style and displaying likely words and phrases in a window.

As a resident program, FINISH LINE works with WordPerfect, MS-Word, Professional Write, Lotus, dBase, Brief, Crosstalk, ProComm, and most other IBM-PC compatible programs in text-mode.

PCXALBUM - Version 1.0 - organizes pcx file into a page of an album along with sound messages for each of the pages (if a recording and playback board is installed such as Voice Master Key by Convex Inc). Pages can be added or removed at any time. An album can have up to 127 pages. The sound messages can also be changed at any time.

○

BRISBUG HELP LINES

The following members have generously offered to give telephone assistance on the topics listed. Please be sure to observe the restrictions on times specified by each person. This service is not intended to serve as on-going training or a substitute for reading the manuals, or for

not having manuals. It is for assistance with particular difficulties and for general advice such as when considering becoming involved in that topic.

New offers of help are always welcome, and there are some topics absent from the list.

Subject	Name	Phone	Days & times
4DOS	Chris Raisin	379-1415	Any time
Accounting	Ian Haly	870-1463	After 5:30 & W/Ends
As-Easy-As	Dan Bridges	345-9298	Anytime
	Dan Emerson	288-6070	
AutoCad	Geoff Harrod	378-8534	Evenings, W/E
C language	Danny Thomas	371-7938	Mon-Fri 6pm-9 & W/E
	Ian Haly	870-1463	After 5:30 & W/E
Clarion	Ray Creighton	354-1107	eve & W/E
Clipper	Chris Raisin	379-1415	Evenings
	Don Andersen	881-2432	after 7pm & W/E
	Dan Emerson	288-6070	
	Mike Theocharous	824-1450	Anytime
CodeBase	Ian Haly	870-1463	After 5:30 & W/E
Communications	Ron Lewis	273-8946	8am-8pm
Dataflex	Tony Obermeit	2875534	Mon-Sat A/Hrs & Sun
dBase	Ian Haly	870-1463	After 5:30 & W/E
	Mike Theocharous	824-1450	Anytime
	Sylvia Willie	393-3388	Evenings
	Bob Boon	209-1931	M-F 8am-5pm
	Chris Raisin	379-1415	Any time
	Dan Emerson	288-6070	Evenings
DBXL	Ian Haly	870-1463	After 5:30 & W/E
DisplayWrite 4	Mike Lester	275-1742	(343-5703 a/hrs)
DOS	Ron Lewis	273-8946	8am - 8pm
Forth	Danny Thomas	371-7938	M-F 5-9, W/E
Fortran	Cec Chardon	870-1812	Evenings
	Rob Andamson	266-8353	Evenings
Fox/Fox-Pro	Leon Percy	808-1570	Evenings
Genealogy	Rob Adamson	266-8353	Evenings
	Colin Cunningham	263-3005	9-9 all days
	Bob Gurney	355-4982	Mon-Sat 8-8
Hardware	Chris Ossowski	274-4144	9-9 all days
	Ron Lewis	273-8946	8-8 weekdays
Help!	Dan Bridges	345-9298	Anytime
Lantastic	Adrian Goldsworthy	345-5004	M-F 7pm, and W/E

Meta 5	David Shaw	870-3633	9-9 all days
MS Word	Chris Raisin	379-1415	Any time
Multimate	Frank Mehr	397-3984	Anytime
Multi-user DOS	David Shaw	870-3633	9am-9pm
Novell Netware	Dan Emerson	288-6070	Evenings
Open Access 2	Cec Chardon	870-1812	Evenings
OS/2	Alan Gibson	207-2118	6:30-9:30pm
PostScript	Danny Thomas	371-7938	M-F 5-9 & W/E
PowerBase	Mike Lester	275-1742	(343-5703 A/hrs)
Project Management & planning	Brian Doyle	355-1328	9am - 9pm all days
Quick-BASIC 4.5	Harry Strybos	288-5145	4pm-7pm Weekdays
Quicksilver	Ian Haly	870-1463	M-F after 5:30 & W/E
R-Base	Tony Luck	279-3033	9-9 all days
Spreadsheets	Sylvia Willie	393-3388	Evenings
SQL	Cec Chardon	870-1812	Evenings
System Manager	David Shaw	870-3633	9-9 all days
True-Basic	Bob Gurney	355-4982	Mon-Sat 8-8
Unix	Paul Watts	892-2226	Mon-Sat a/hrs & Sun
Windows	Bernard Speight	349-6677	6pm-9pm
Wordstar (all ver)	Neil McPherson	075-971240	A/hrs
Wordstar-2000/4	Bob Boon	209-1931	Mon-Fri 8-5
Xenix	Paul Watts	892-2226	Mon-Sat a/hrs, Sun
	Mike Lester	275-1742	(343-5703 a/hrs)

MEETINGS

Meetings are held on the 3rd Sunday of every month, except under unusual circumstances, at

QUT KELVINGROVE CAMPUS
Victoria Park Road
Kelvin Grove, Brisbane 10am to 5pm.

Brisbug occupies the main lecture theatre and several other lecture rooms in "B" Block. Please note that other groups are usually using the campus at the same time, and that parking is permitted only in the designated areas. Disabled access is available

Food and refreshments are available 11:30-2:00. Alcohol is not permitted.

Members and visitors must wear an identity badge available from the Membership desk.

Program for Sunday, 24th October, 1993

10:00am	CLASSES	
	Introduction to DOS	John Tacey R315
	Introduction to dBase IV	Dan Emerson R302
	Hardware	Ron Lewis Theatre
	BASIC Languages	Rex Ramsey R309
	C++	Geoff Baker R312
	xBase	Leon Percy R310
11:30	Lotus Smartsuite	Theatre
12:00	JUNIOR GROUP	Les Cathcart R301
12:15	NEW MEMBERS ORIENTATION	R309
1:00	CLUB MEETING	Theatre
1:05	Presentation of Life membership	Theatre
1:30	Borland Launch	Theatre
3:00	Environment Monitoring	Dan Emerson R302
	New Users Course	Chris Raisin R309
	SIGs	(Check noticeboard for locations)

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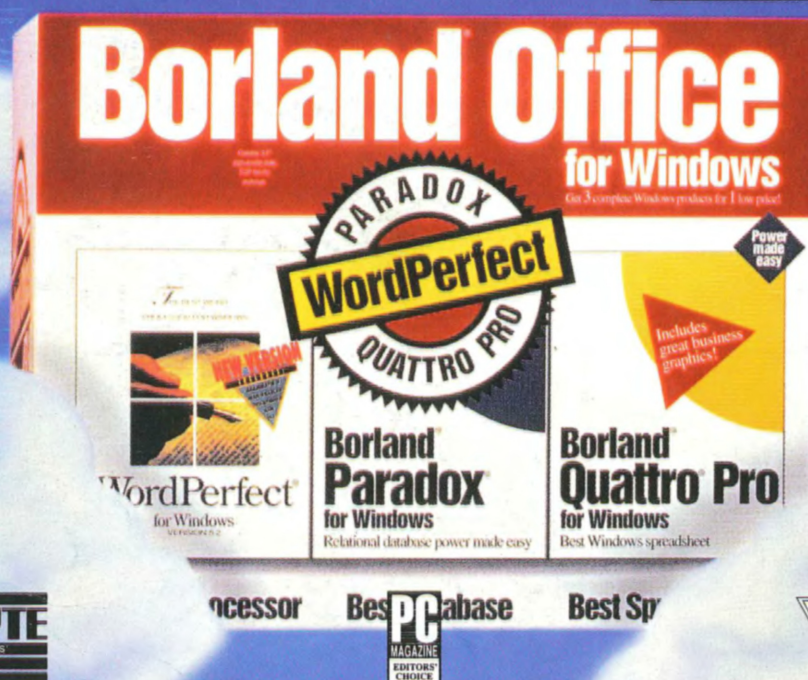
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