# Significant Bits

Journal of Brisbug PC User Group inc

Vol 9 No 7
June 1994
$4.00

*Next Meeting* **Sunday, 19th June**

*Main Event* Dell Computers *1:30pm*

*Lunchtime Special* Borland *12 noon*

*Opening Special* Norton's 8, Act II *10:30am*

**Classes 9, 10:30 * New Members 12:15 * SIGs 3:15**

*Inside*

Brisbug connects to Internet
Adventures via E-Mail

**More**

REXX for OS/2
Windows Watch
Assembler programming

RL

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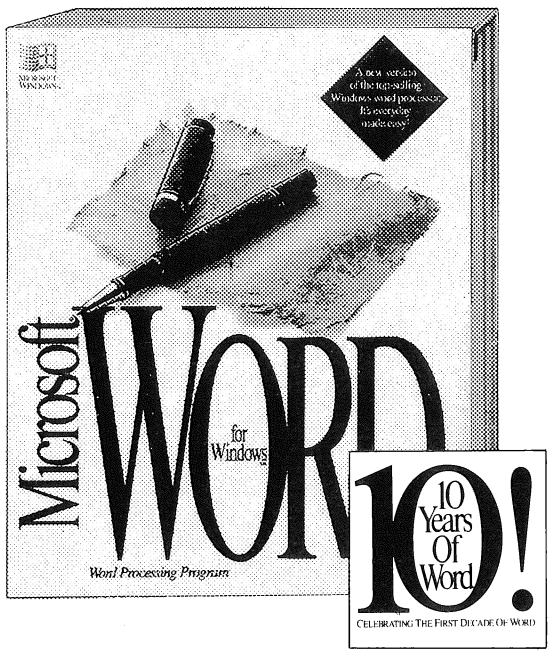


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**MEMBERSHIP FORM PAGE 31**

**Program for Sunday, 19th June**

| | |
|---|---|
| 9 am/10:30am | CLASSES |
| 9:30 am | Junior Club |
| 10.30am | Symantic |
| 12.00 noon | Borland |
| 12:15 | New Members Orientation |
| 1 pm | Brisbug Club Meeting |
| 1:30 pm | Dell Computers |
| 3 pm | New Members' Tech Chat/SIGS |


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*The Brisbane group for users of PC-type computers.*
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*Membership only:*
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Brisbug Software Library,
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Booval 4304
or phone: (07)281-6503
MONDAY-FRIDAY, 9am to 1 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

## Yet more changes....

A Volunteer as defined by my dictionary is "A person who offers services or enrolls himself for enterprise - having free will, depending on the exercise of will, not subject to or done or brought about by compulsion, to proffer, propose, present, tender or assist"

Ron Lewis certainly qualifies as "A Volunteer". Ron has been a willing worker for Brisbug for almost his whole time in Brisbug..Joining in January 1986 he immediately became actively involved with our club as a BBS Sysop and was elected to the position of Agenda Coordinator in November 1988. The following year saw Ron elected both as Vice President and as Operations Director (purely a name change from Agenda Coordinator). From October 1990, Ron took over as Temporary President and Editor until the elections in January 1991 when he was elected as President. He continued his association with the magazine as an Associate Editor under the leadership of Geoff Harrod until January 1993, when Chip Karmatz took over as Chief Editor.

In June last year, Ron took over the job of Editor following Chip's resignation, and he announced to the meeting that month, that he was resigning as President. Filling Ron's shoes as President has not been without difficulties. (I think he left some tacks sticking out specially on purpose.) Since that time he has continued to almost single-handedly to produce our magazine.

Unfortunately all good things must come to an end, eventually. Ron has now resigned as our Editor. To Ron, I say a very big "THANKYOU" for all the effort you have put into Brisbug as Editor of our very popular monthly magazine. Your input and creative ability will be sorely missed by all. (By the way, Ron is not resigning completely from Brisbug. He will still be very involved in his regular classes at the Sunday meetings, and he has indicated that he wishes to continue producing our colourful covers as well as become involved in Brisbug Development under the leadership of the Development Director, Carl Planting.)

Which leaves me with another problem, to organise a replacement Editor to produce our monthly magazine. The May issue was his last, and this issue is being put together by Geoff Harrod and myself in an attempt to continue the tradition which Ron has established. Persuading Geoff to fill in for the time being was not easy and he has indicated that he will only be able to produce this one issue and cannot continue as Editor permanently, so if there are any aspiring Editors in our club, now is the time to come forward and declare yourselves.

## Membership Drive

Last month saw the first draw for intermediate prizes in our current Membership Drive Promotion. Six lucky members names were drawn from the "barrel", in fact one member had his name drawn twice. Over 100 new members joined Brisbug during the month, which was an excellent start to the drive. Keep up the good work and we may possibly reach our target of 1000 new members over the six months.

# From the Assistant Stoker

## Graeme Darroch

Well the big news this month is the magazine. Ron has resigned as editor, and I'm sure I speak for everyone when I say that the huge amount of work Ron put into making our magazine the professional looking product that it now is, has been greatly appreciated. Thanks Ron for a great effort.

### Where do we go now?

Lloyd has been organising a team of people to produce the magazine, and that will not prove to be an easy task. The co-ordination of the production will be a major task, and we are looking for as much help as we can get on this. I am sure there will be some comments from Lloyd on this subject in his column so I will leave it at that.

Next Months meeting will see a bumper meeting yet again. We will have three major companies coming along to give us the lowdown on their products.

Dell computers will be talking to us on their method of marketing computers, their product range, etc. etc. Look for that in the main presentation slot at 1:30

Borland will be sending Richard Norris along to talk to us about their latest developments in their programming software. This will be the lunch time special starting at 12:00.

An extra presentation will be taking place at 10:30 this month and Symantec will be showing Norton V8.0 (look for a review in this issue) and ACT v 2.0. This is an extra event slotted in at the request of Symantec to coincide with the release of this software. I encourage everyone to come along as Symantec will be giving away copies of ACT v2.0 for users to try, these will be time protected and will only run for 30 days but will give you the opportunity to try the software out for a limited period of time to decide whether the program is for you.

Once again we will be having prize draws for the ongoing Membership drive. So remember to qualify you must have introduced a new member to the club. Last month the same person won two prizes, and while this may seem unfair to some, if you give it some logical thought you must realise that this was achieved but getting out there and selling the club to people, the only way for the club to expand. Expansion is important if we wish the club to stay the interesting group that it is.

Anyway enough from me for the moment.

PS The Introduction to Comms Course will take place again at 9:00am this meeting. This will be the last of the planned three sessions. But don't despair you will find that the course will be repeated after a two month rest period.

See you at the Meeting.

*Graeme*

**MAGAZINE MEETING**

SOFTWARE SHOP
ROOM B307
3.45pm

Volunteers Welcome

**MAGAZINE**

**Editor (acting)**
Lloyd Smith

**Associate Editor**
Geoff Harrod

**Reviews Editor**
Ash Nallawalla

**Layout Design**
Belinda Gorrie

**Photography**
Ian Adcock

Contributions always welcome!
Disks, artwork or copy to:
Lloyd Smith, 95 Station Rd,
BOOVAL

**Artwork Separations**: Queensland Business Magazines

**Printer**: MARLIN PRINTING
37 Caloundra Rd. Caloundra
(074) 915-833

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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 usally 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 sizes.

# Minutes - Meeting on 15 May

Neil Krause — Secretary

### Minutes Brisbug Meeting Sunday 15 May 1994

President Lloyd Smith opened the meeting at 1.00 pm

### The Magazine

Lloyd apologised for the delay in printing the magazine. He explained to the members present that the Magazine Director and Editor, Ron Lewis, had recently resigned and this resulted in rearrangements for printing the magazine and hence the delay.

The President told the meeting that Ron had almost single handedly produced the magazine with assistance from Geoff Harrod. The quality of the magazine was a tribute to the Ron's skills and his resignation has left an enormous hole that will be difficult to fill. All present showed their appreciation of Ron's efforts by enthusiastic acclamation.

The President pointed out the burden of producing the magazine falls on just a few volunteers and he encouraged members to get behind the magazine and assist in its production to continue the tradition. The President then confirmed that next month's magazine would be produced with the assistance of a few volunteers.

Lloyd told members present that the Club had to address the issue of who will be responsible for the production of future issues of our magazine. New volunteers are needed to help the already overworked volunteers. Proofreaders are needed and anyone with Pagemaker experience will be welcomed.

The President reminded members that closing date for contributions to the next magazine was 27th May. These contributions can be placed on the Management BBS by that date with the article in ASCII text. A meeting of interested members was then scheduled for 3.30 pm later in the day to discuss production of future magazines.

### Volunteer of the Month

On a happier note, the President told the meeting that the Volunteer chosen by members for a reward this month is Earl Gray. From a selection of Club Software, Earl chose Microsoft Virtual Basic and the applause following the presentation showed that this was a well-earned reward to a hard-working member.

### Request for Assistance

The President reported to members that the Club had received a request for assistance on behalf of a young lass suffering from cancer who needed a computer printer and software, including a Wordprocessing program, Learn to Type, DOS tutor, etc.Members who were in a position to help were asked to contact the President.

### Membership Drive

The President reported that the first month of the membership drive had been very successful with over 100 new members enrolled.

The Membership Secretary then began the long awaited draw for the first series of prizes. The lucky prizewinners were from Toowoomba, Rockhampton and Brisbane. Prizewinners not present at the meeting had their prizes delivered.

### Education

Education Officer Mark Mullins introduced Geoff Baker (C++ Sig Coordinator) who explained to Sig members that a fee of $25 would be levied this year.

*Continued on page 10*

# Editorial

Lloyd Smith - acting magazine director

## Under (New) Management...

The sudden resignation of Ron Lewis as Editor has left our club with a big problem. We don't immediately have anyone available to typeset and produce our magazine on a regular monthly basis.

We are all guilty of complacency. For too long we assumed that our volunteers will continue in their positions without change. When a change occurs, or when someone resigns, we are left with a vacancy that has to be filled. But, who will be the replacement? Where are the "back-ups"? Where are the volunteers?

With a club the size of Brisbug it is inconceivable that there are only a handful of members sufficiently interested in being involved in operating the club. The are a number of "key" positions necessary for the successful operation of Brisbug, of which the Magazine Editor is one. Others, not necessarily in order of importance are the Membership Secretary, the BBS Sysop, the Librarian and all the other members of the Management Committee.

It seems to me that when the call goes out for volunteers, there is always the dependable few that offer their assistance, even though they may personally not have the time to really do the job, but if they volunteer, you can be sure that the job will be done.

Following the main presentation at the last meeting, a small group of members met to discuss the future of the magazine. Their concerned offer of help was very much appreciated, but their overall lack of knowledge and practice in using desktop publishing programs precludes the majority from immediately taking over from Ron Lewis.

Fortunately, I was able to persuade Geoff Harrod to produce this issue, and I must express the gratitude of all to Geoff for his assistance. But it is imperative that a Magazine Committee be immediately implemented to carry on in the future.

A Magazine Committee is currently being organised. with four divisions - Editorial - Layout or Typesetting - Advertising - Dispatch.

The Editorial division will be responsible for collecting and organising articles and contributions for inclusion in the magazine. Not just for the current months production, but for inclusion in future editions. Members of this division will be responsible for proof reading, and converting printed material to ASCII text on disk ready to be imported into Pagemaker.

The Layout or Typesetting division will, after receipt of the text on disk, be responsible for importing the articles into Pagemaker and arranging the physical layout of the pages prior to their final printing. Members wishing to be involved in this division will be required to have some experience in working with Pagemaker, Corel Draw or other desktop publishing programs.

The Advertising division will be required to acquire paid advertising for inclusion in the magazine. Their duties will include telephone and possibly personal contact with prospective advertisers.

Once the magazine has been completed and printed, the Dispatch (or Baggers) division will have the task of bagging each edition together with any insertions.

The call goes out to all members - Volunteers are wanted to assist on the Magazine Committee. Experience would be advantageous, but not entirely essential.

Volunteers please contact me, personally on 281 6503 Mon. - Fri. 9am - 1pm, 2pm - 4pm.


**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
300x215

**RATES**

| | |
|---|---|
| Color covers | $600 |
| Doublepage spreads | $500 |
| Colour page | $450 |
| Colour 1/2 page | $250 |
| Colour 1 column | $110 |
| Colour 1/12 page | $50 |
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| 2/3 page | $175 |
| 1/2 page | $160 |
| 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 time 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 Lloyd Smith (07) 2816503

***We welcome your decision to support your club by advertising in the magazine.***

# SIG News

Dulcie Haydon

## Business & Finance SIG

### Sharing Your Enthusiasm: Better computing presentations

*A talk to Business and Finance Special Interest Group by Brisbug member Graeme Gardener*

Report by Alan Weeks

Brisbug member, Graeme Gardener, skillfully demonstrated how to make your presentation more successful. Graeme encouraged members to use these simple steps—

1. Make a plan or outline of your presentation
2. Prepare well in advance
3. Rehearse your presentation
4. Note your effect on others, e.g. your movements.
5. Allow time for questions.

Graeme said that your outline can prepare the three essential parts of any presentation. These are (a) the introduction (b) the body (c) the conclusion.

(a) The introduction should include - what you are to present - your reason for making the presentation - the standard that you plan to achieve.

(b) The body is broken down into teaching stages. These are determined by the topics to be covered. - present the information in logical order and demonstrate where possible. - confirm that your audience has understood by asking questions. (Beware of any "red herring" questions from your audience!) - close each stage and link each to the next stage of your talk.

c) The conclusion should clear up any doubtful points. - it contains a summary of the whole presentation. - it emphasises the relevance of the topics covered.

Graeme said that the overall factors which help make a memorable presentation include - good explanations - pictures - demonstrations.

The single most important feature of any successful presentation is thorough rehearsal. According to Graeme, rehearsal provides you with prior knowledge of how the talk will go, boosts your confidence, and allows you to iron out potential problems before they become real problems in your actual computing presentation.

**SouthSide SIG**

Meets on Monday, 28th June at 7:30pm at Rex Ramsey's home, at 114 Forestdale Dr, Forestdale.Topic: Microsoft Professional 4.2 (BYO questions). Contact: Rex Ramsey 8004827

Business & Finance SIG meets about 3:15 in registration room Alan Weeks 870 8183

### VISION: New multi-user Windows(tm) accounting

Reported by Alan Weeks

The SIG enjoyed a "sneak preview" of VISION, a new multi-user Windows accounting programme, at the May group meeting. Release of VISION is scheduled for September/October this year. Derek Blair from Sybiz said that he expected VISION to soon displace the DOS-based Elite as the flagship accounting solution for his company.

Derek said VISION was fast but friendly. The fast speed resulted from Vision's database engine, FoxPro for Windows. The user-friendliness nature resulted from the optimum use of the Windows graphical user interface.

VISION is modular. Thus the business person was able to start with those modules required, then add other modules as the need arose. VISION is also able to be customised to meet unique business needs. This is done by using custom third party add-on modules. Hard disk requirements are 8 Mb, plus 1 Mb per 1000 accounts.

## Genealogy SIG

A new version of Brothers Keeper has been released - Version 5.2. At the Family Center, Kangaroo Point - the computer is available for use. A reminder of the forthcoming Conference at the Queensland University for 4 days from July 4th.

*Rob Gurney (07) 355-4982 (Rob will be absent for two weeks or more.)*

## Windows SIG

### JUNE MEETING

The Windows presentation at the June Meeting will be Hewlett Packard's HP DASHBOARD illustrated by Mark Wibaux. A Q & A session will follow.

*Main Theatre - 3.15pm*

*Brian Bere-Streeter (07) 349 4696*

# News Bytes

## Camcorder Modem To be Released By Sharp

TOKYO, JAPAN, 1994 MAY 13 (NB) — Japan's Sharp has officially announced that it will release a modem for its LCD (liquid crystal display)-based camcorder on June 1. This modem costs 45,000 yen ($US450). Sharp will also release upgraded camcorders for this modem.

Sharp's camcorder modem, called the Viewcam Teleport, is based on the JPEG-standard of data compression and decompression system. This modem enables users to transmit still frames of data via telephone lines — it does not yet support the transmission of motion picture data. The modem supports three transmission speeds per picture screen: 20 seconds, 11 seconds, and 8 seconds.

The camcorder has a 3-inch color LCD. The retail price is 178,000 yen ($US1,780) for the 8-mm version, and 223,000 yen ($US2,230) for a High-8 version.

Sharp's LCD-based camcorder has been selling well since it was released two years ago. Sharp claims to have control of 29 percent of the LCD-based camcorder market which is also populated by Sony and Fuji Film. Matsushita and Hitachi are also planning to release LCD-based camcorders. These firms also expect to enter the camcorder modem market in the near future.

## Microsoft Files Software Piracy Complaints In Spain

BARCELONA, SPAIN, ENGLAND, 1994 MAY 13 (NB) — Microsoft Iberica has revealed it has filed a series of criminal complaints against Siesse and Supermercado Informatica, two Spanish computer assembly companies.

According to Microsoft, the companies are accused of breaking Spain's intellectual property legislation, which came into force at the beginning of this year. The two companies have been charged with selling PCs with unauthorized copies of DOS and Windows.

The charges follow on from raids carried out during March of this year on the two assembly companies, during which time police confiscated PCs with the two programs installed on their hard disks.

Although Microsoft UK and Iberica are refusing comment on the case, which is classed as "sub judice" (a legal term meaning no comment possible), Newsbytes notes that Siesse handles Silicon Valley PCs in Spain, while Supermercado builds the Carrie brand of machines. Both brands of the machine are still available in Spanish outlets, although neither are bundled with DOS and Windows — an unusual state of affairs in the computer business.

Microsoft claims it has another eight companies in Spain that may be violating its copyright. The company says that it intends to stamp on the problem of piracy once and for all.

Sig News continued

## Visual Basic SIG

*Reported by Graeme Darroch*

Last month we had a presentation from Ashley Hubbard and Analyst/Programmer for South Pacific Chevron an oil company engaged in exploration throughout Australasia but at the moment specialising in exploration in Papua New Guinea.

Ashley's visit was planned as a what you can create type demo for Visual Basic 3, and as such was a great success. Displayed were several Database type applications including Infirmary Patient tracking, Fight Scheduling for Airline Bookings and Drill Well tracking. What Ashley showed was some very professional, very smooth, programs that looked like a million dollars, despite the fact that the only laptop Ashley could get was a 386 the demo worked very well to show everyone what can be done, and the professional results that are obtainable by using, VB3.

Next meeting I would like to get several people to bring machines along and we will start looking at how programs are actually put together. So if you want the SIG to succeed bring your machine and lets start looking at what we need to do to get a program up and running.

I have an assurance from Ashley that he will return whenever we need someone to come and show us anything in the future. I have also spoken to Microsoft who have pledged to help us in whatever way they can within the constraints of their budget. So look for things in that department as well.

Many thanks Ashley for a job well done.

*Contacts: G Darroch (07) 209 1999 & Alan Bridges (07) 801 3520*

# EDUCACHEON News

Mark Mullins — Education Director

**classes... note the start times**

9.00 am Graeme Darroch's Introductory Communications Course

Note: There is NO OS/2 class

How time flies and wouldn't I like a dollar for every time I've said that. The May meeting went on without a hitch or at least none that I've heard of. Graeme Darroch's presentation was well received and we had a bit of fun (I hope) in the Introductory Spreadsheet talk. Some may not appreciate the unprepared nature of my talks but I feel that the free flow approach leads to some interesting learning for all, especially me!

An example was the question raised during the spreadsheet discussion about what the number which appeared in the top left corner when a date was inserted in a date formatted cell. Together we worked out that it was in fact the number of days since the beginning of the century and I have since been told that all spreadsheets work in this way as far as handling dates is concerned. I also found out that I was 35.86 years old and so I have drawn up my last will and testament.

All other classes were well attended, in particular the Junior Group which had amongst other things a presentation by Brad from Vital Signs at Caloundra who gave a longer than expected (for Brad) demonstration of computerised vinyl sign design and cutting. A good vinyl sign designer such as Brad demonstrates how computers can reduce time and therefore cost to the client all be it at the expense of the old fashioned sign writers. Many trades will cease to exist as technology forges on. I don't really know whether it's a good or bad thing but it's happening none the less.

At the June meeting we have a feast of presentations in the theatre from various companies as the magazine cover will no doubt attest. What is of great interest from the education perspective is that Graeme Darroch will be doing a further class in ***Introductory Communications in the theatre commencing at 9.00 am where connection to the Brisbug Electronic Bulletin Board will be demonstrated.*** A very kind gentleman from QUT who I will thank in a subsequent article has offered to arrange a telephone line. Just when I had purchased the correct sized spanner to remove a telephone booth too! This is a "don't miss" particularly for those such as myself who suffer from boardaphobia. This leads to today's technical tip which is that the word modem was derived from two other words, modulate and demodulate. You'll have to ask Graeme what those words mean!

This is the only feature at 9.00am as the main presentations start at 10.30 am. No class will therefore commence until 10.30 am apart from the Junior Group under Les Cathcart's gentle guidance who will proceed as normal around 9.30am. This coming meeting the Junior Group will be served up such goodies as a business program presentation, DOS, Windows, the latest games, assembly of a desktop computer (pieces forthcoming) and tips on how to load those games that want all and I mean all of your conventional memory. Les also tells me that the Groups logo competition has been extended for another month until the end of July so that the creative city and country members alike get ample opportunity to display their ability. These entries should be forwarded to the Junior Group Co-ordinator, Brisbug PC User Group, PO Box 985, Toowong Qld. 4066.

The C++ class must have gone off all right because today is the 25th of May and it was held on the 22nd May. I hope Geoff Baker is OK and not nonplused. Another woeful pun ! I promise I won't add any more ! Paul Marwick's OS/2 class has finished for the moment and will recommence in a few months. ***John Tacey recommences his cycle of six DOS lectures at the June meeting***. I highly recommend that you get in at the start because like it or not DOS knowledge is essential in the desktop world.

Clarence Stock has my gratitude for taking over the New Users Technical Chat at 3.00pm which allows me time to chase those things that require my attention. He is doing a fine job and attracting a good crowd. Drop along if you want to learn some very handy basics in an informal atmosphere.

I haven't had any letters this month so I will tell you a little story which may come in useful if you use version 4 of a popular spreadsheet. My problem arose when due to a new printer installation the user was required to use a swiss non-scaleable font in their spreadsheets if they were to print out as they appeared on the screen. The manual said go to "Style", select the font option and change it to swiss 12 point and then save as "Normal Style". No worries thinks I although after nearly ten attempts and fifty or so prints my attitude towards the printer and the software was somewhat volatile.

I telephoned technical support as a last option and recited over the phone the instructions in the

## CLASS TIMES

| | | | |
|---|---|---|---|
| 9.00am | Introductory Communications | Graeme Darroch | Theatre |
| | Junior Group | Les Cathcart | B301 |
| | BASIC Languages | Rex Ramsey | B309 |
| | dBase | Leon Percy | B312 |
| 10.30am | Introductory Spreadsheets | Mark Mullins | B310 |
| | Introduction to DOS | John Tacey | B315 |
| 12.15 | New members Orientation | Rex Ramsey | B309 |
| 3.00pm | New Users Technical Chat | Clarence Stock | B309 |

**CLASS TIMES HAVE CHANGED - PLEASE NOTE**

manual and how I had implemented those instructions. I fully expected a gentle reminder that this term or that meant do this and not that. To my amazement the answer was "Yes that's what the manual says but it doesn't work." I was so stunned at this announcement that I did not even gasp. I simply collapsed in a comatose state. When I came to (and there are those who would say I'm still comatose), I was told that I had to open the appropriate .ini file in Windows and add the line Font=swiss,12 and yes this appears nowhere in the manual. So there you go, an example of shockingly honest technical support and another example of useless manuals and how computers can be bad for your health! On the subject of health and computers the monitor radiation debate continues with an expert stating that if you sleep with your head within three feet of an illuminated digital clock-radio you are subjected to five times more radiation than that produced by a computer monitor and on average for a longer period.

Anyway, I'm off to catch up on a little radiation. See you at the meeting.


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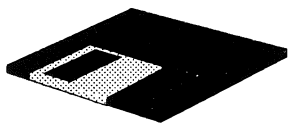

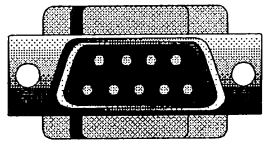

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*Continued from page 4*

**Minutes of the General Meeting 15 May**

## BBS

Sysop Paul Marwick told the meeting that there had many attempts of unauthorised access to the Club BBS and he was presently going through the process of denying access to those people who are not financial members of the Club.

## SIGs

Sig Coordinator Dulcie Haydon told members that Business and Finance Sigs may be established and she invited members interested in other topics to contact her with a view to establishing further Sigs.

## Treasurer's report

Max reported that the Club's opening balance for the month was $9074, income for the month was $10813 against expenditure of $9994 leaving a balance at the end of the month of $10193.

## Vice-President's report

Graham drew members' attention to the Symantec offer of a registered copy of Norton Utilities Version 8.0 for the very special price of $75. Brochures giving details of this offer were made available to those present.

## Pet and Hobby Expo

The Vice-President confirmed that Brisbug will have a stand at this Expo on 3rd, 4th and 5th June at the RNA Exhibition Grounds. He invited members to volunteer their services to assist at the Club's stand for some of the time during this popular expo.

Graham confirmed the members working at that Expo were entitled to sponsor any new members gained at that event and could benefit from the wonderful prizes on offer in the membership drive.

Anyone wishing to volunteer should ring Graham on the contact number shown in this magazine.

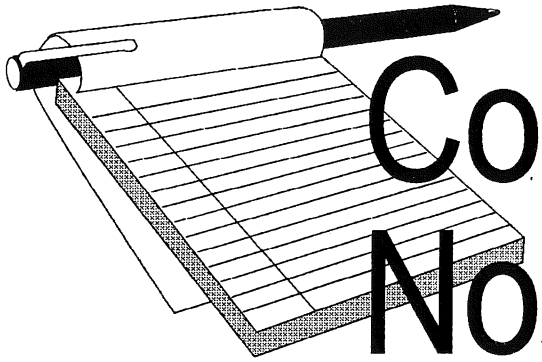
## Software Library

The President drew members attention to the new registered copies of software available in the software shop. He again raised the question of censorship of computer games and confirmed that games needing to be submitted for censorship rating will attract a cost of $350. This would result in many games being out of reach as Shareware programmers would not pay such high fees.

## Conclusion

Meeting again placed on record a very big thank you to Ron Lewis for all he has done in producing the magazine.

President then closed the meeting at 1.35 pm



# Consultant's Notepad

Geoff Harrod

## Upgrades

There's always a race on between the major rival software houses to put out new versions to out-do their rivals. By now, in many fields such as Windows based word processing, the top names all make very fully featured and easily used systems, and the new releases are more and more introducing "bells and whistles" of decreasing utility. Sometimes you wonder at the need to keep up to date and pay for the upgrades. Also, too often, they introduce new incompatibilities with things that worked fine before, and invariably consume more disk space and require more memory than the previous version.

WordPerfect took a while to get their act together in Windows, and the latest version 6 could well be considered their first wholly satisfactory Windows version. Upgrading to it has caught a number of users out with its disk and memory needs though. Microsoft have always had a good product in their Windows versions of Word, and I'm not sure that my new ver 6 is really a worthwhile improvement on its predecessor, ver 2. (The odd 2-to-6 switch is due to bringing version numbers into sync across DOS. Windows and Mac versions.) I've had nothing to do with the Lotus products, so can't comment on Ami.

Having just installed Word 6, I'm seriously considering sticking with version 2, which was entirely satisfactory in every way. I still think it is by far the best word processor made. It's not that version 6 has bad bugs (I haven't struck any at all so far), but just that it works a bit differently to what I'm used to and doesn't seem to add anything that I find really useful. More particularly, and this applies to other makes also, it introduces a new file format version. Like many others, I use other programs such as Pagemaker and import word processor files into it. As soon as a new version appears the problem of support for its new file format arrises.

The main thing that caused me to get the Word 6 upgrade (actually as part of Office 4) was the need to be able to read Word 6 format files that I began to receive from contributors to Multi-CAD Magazine. Another reason for upgrading the Office package was to get PowerPoint 4.0, to be up-to-date with versions used by presenters at shows that I'm involved in as part of Multi-CAD Magazine. PowerPoint is the undisputed de-facto standard for electronic presentation at lectures, and version 4.0 does provide some worthwhile new features. Visiting speakers generally assume the latest version of PowerPoint will be available.

## Format conversion

Before WinWord 6 and WP-for-Win 6, I could easily import Word and WP files (and Ami) into Pagemaker. I could also use WP 5 files in Word 2, edit and save them either as WP 5 or Word 2. Now I start getting files I can't view, edit or import. I've no intention of buying copies of every major word processing program and keeping them up-to-date just to be able to use their files. Even if I did, or even if I pirated some of them, I'd have trouble fitting them all on the disk, the size they are now! Word's ability to work with all popular systems is a great boon, but thwarted by upgrades.

I've now obtained the Pagemaker 5.0A update which includes extra import/export filters for WordPerfect 6 and various other new versions (but not Word 6 alas) as well as several minor bug fixes and improvements to Pagemaker 5. That has enabled me to deal with WP 6 files I receive. I can place them into an empty Pagemaker document, and then export as a Word 2 format file. Aldus will release a Word 6 filter but it won't be ready for a while yet.

Whenever I get a text file in a format for which I don't have the proper program, I have usually been able to access its text information by using the QEDIT text editor and deleting all the binary font and formatting data that shows up as garbage. That's almost entirely grouped in a large block before the actual text, which makes it easy. Then I can handle the resulting file as plain ASCII text. Of course I've lost any font data and formatting information, but I ignore all that in Pagemaker anyway. Losing any bold and italic attributes is the only drawback. However, this technique seems to be too difficult with the WordPerfect 6 file format, which appears in a text editor more like an entirely binary file.

## WP DOS version trap

One point related to the above... Both Microsoft and WordPerfect (now Novell) have accepted the fact of a continuing market for DOS based word processors. However there is a very noteworthy difference in their approaches, and many people are likely to get caught out with the WordPerfect DOS upgrade.

The main reason for continuing to produce DOS versions of course is the large body of PC users who don't have machines suitable for running Windows. That includes, as well as older desktop machines such as 286s, most portables, including quite recent ones. To run the Windows word processors you need a 386 with an absolute minimum of 4Mb memory, and plenty of disk capacity, preferably at least 80Mb. The old WordPerfect 5.1 for DOS is very widely

used on such machines, and once the users have mastered its hard-to-learn operation, it does very good work, and can perform just about any text-based task. The same applies with Microsoft Word for DOS, although with much easier operation in my opinion.

Now both companies have released new DOS versions. The Microsoft one is designed to continue to cater for users of 1Mb 286s (or even XTs) while extending its capabilities, and adopting a more modern type of menu system. The new WordPerfect DOS version, however, seeks to mimic the Windows version as closely as possible, and to provide as much of its capabilities as possible. The result is that the new WordPerfect DOS version 6 requires a similar level of machine as the Windows version, thereby barring its use from all those with non-Windows-capable hardware, which is most of those who have continued to use WP 5.1 for DOS.

So, beware! Don't upgrade your WP 5.1 to ver 6 for DOS assuming it will run on your 286 or in 1Mb memory and a small hard disk. Many have been caught by this, and WordPerfect have been obliged to keep 5.1 as a current version as a consequence. On the other hand, Microsoft's DOS version 6 of Word will run on almost anything and give worthwhile extra facilities.

## Upgradeable CPUs

A lot of sales pitches have been stressing the claimed upgradeability of CPUs in new computers recently. This has particularly been so in the case of 486 machines, claiming upgradeability to Pentium. I'm not convinced this is really a significant feature however. It is true those main boards and their BIOS ROMs are designed to allow for chip swaps, but it doesn't generally work out all that advantageously. A swap from 486SX to 486DX or from DX2 to DX4 might be wholly satisfactory, but swapping to a Pentium introduces additional factors.

The SX to DX swap is the only reasonable way to overcome the lack of maths co-processor in the SX chip, but works out as a rather money wasting exercise that is better avoided by never buying the 486SX in the first place if there is the slightest likelihood of ever needing copro facilities. That means, if you are ever likely to use CAD, graphics programs like Corel, or calculation programs, don't even consider buying a 486SX. Those categories cover just about everyone who uses Windows don't they?

Many 486DX2/66 systems are now advertised as upgradeable to Pentium. However, they usually are built around an ISA bus with VESA Local Bus extension sockets. That scheme works very well indeed for a 486, which is what the VESA LB system was designed for. It was acttually a rather rough or "kludgey" addition of a 32-bit bus facility as an "add-on" when existing 32-bit bus systems such as EISA were not gaining acceptance. The VLB is tacked directly onto the 486 processor's 32-bit bus, bypassing the usual buffering circuitry that busses such as the old ISA or the EISA or IBM's MCA all use. The result is that it works very well with a 486 provided the bus facility is not overloaded by plugging in too many devices or devices that load the bus too heavily.

That is why VLB never has more than three LB sockets, often only two, and why it can cause erratic hangups or other general system malfunctions if three VLB boards are used, or not very well designed VLB boards, or when VLB is used on a DX50 motherboard. It is really only rated for up to 33MHz and two devices. Its main benefit is for accelerated video boards and hard disk interfaces, so two is usually enough.

Despite its technical design deficiencies, VESA Local Bus remains a very good solution for 486 machines.

## The PCI Bus

Intel developed a new 32-bit bus system to complement the greater performance of the Pentium chip, and called it PCI — *Peripheral Component Interconnect*. Because it is a properly isolated bus system it is far more adaptable and expandable than VESA, and it also has considerable future development possiblilities catered for in its design.

It is so good in fact that it is becoming the new standard even for systems that have nothing to do with the Pentium or Intel CPUs at all! The PCI bus looks like becoming the new (and first ever) standard bus for the graphic workstation computers running Unix or NT with various RISC processors. Digital have already committed themselves to it, to replace their own 100MHz 32-bit bus in their Alpha workstations. Even Apple are adopting it for the next line of PowerPC Macintoshes instead of their own NuBus. PCI is actually a 64-bit design capable of 2400Mbit/s transfer, so is well placed for long-term compatability.

The main point here is, if you are going to spend money on a Pentium you really need the proper bus to go with it, otherwise the money is going to be largely wasted by the bus system throttling the processor. You need a Pentium machine that has its main board and bus designed around it, not a 486 design with a Pentium chip. Certain makers have been saying the Pentium doesn't deliver the goods; it's not significantly better than a 486. That is be true for those makers' Pentium machines, because their main boards have not been properly designed, but are rather upgraded 486 designs.

The good Pentium machines all have PCI bus, as well as either with ISA or EISA bus sockets, and generally provide an on-board 32-bit disk control interface, either IDE or SCSI-II, sometimes with an on-board accelerated video system also. The trend is to provide an on-board SCSI-II FAST peripheral interface with a direct socket for internal hard drives or CD-ROM and an external socket for tape, etc. Many also have integrated dual RS232 channels with high-speed UART chips, an on-board PS/2 style bus mouse, and sometimes an Ethernet interface. The new Pentium 90MHz chip is quite a major improvement on the 60 and 66MHz ones; not just in speed.

If all that sounds like too much, then a 486DX4/100 will probably serve you extremely well. The Pentium really is a new order of capability, that demands a complete break from the constraints of the old IBM-PC/XT hardware architecture, with an operating system that supports its needs, such as Unix or Windows-NT. It's quite an eye-opener seeing full motion interactive video with stereo sound running in resizeable windows on a Windows-NT Pentium-90 PC. It even impresses personnel from Silicon Graphics and Sun Microsystems, when they consider the cost of the hardware compared to their own!

# Doctor DEBUG

This short story was presented in the Dr.Debug echomail area on 20th May 1994. It was posted by John Kristoff who claims that it was "written by the Legend of the Lab himself, Doctor Debug."

**Those of you who have been with the lab for any amount of time know that the Doctor is occasionally called upon to perform some feat of public service for the US and other governments - being the world renowned expert in Computer Psychotherapy puts him in great demand. In the last 3 years you have read of the Doctor's exploits in Chernobyl, East Germany, London, Seoul and many other ports of call, always fighting for truth, justice, and as much money as can be siphoned from a given situation.**
**I have just returned from my latest adventure, in which the Doctor was called upon to once again save America from the spectre of godless communism...**

# The Tell-Tale Processor

## Part I

The Doctor was right in the middle of a hot game of Candyland with Baby Debug when the phone range. Actually, THE phone. The red one which sits right above the Doctor's cherished Ohio Scientific Challenger (wow! 4K!). After Seoul, when the Lady nearly got to cash in my life insurance, I had vowed to never again go on a risky assignments, sticking instead to simple Microprocessor therapy and an occasional S-100 exorcism. But there was than Red phone, ringing off of the hook. As I reached for the receiver, the Lady stomped into the room and gave me one of her "I am more than capable of making the rest of your life a living hell" looks. I picked it up anyway, and she turned on her heel, heading for the kitchen to take out her frustrations on the roast (which incidentally had been having a rather bad time of it already).

On the phone was Colonel Mutt, operational head of the secret government agency known as the Technical Intelligence Office, or TIO for short. I had done some work for them back in the early 80s when the Japanese were so desperate to steal our computer technology they could... and did... kill for it. Those were the days, and although we lost the war the Doctor won many a glorious battle. (I will tell you sometime... what do you think REALLY happened to the great Japanese 5th Generation project?) "Look, Colonel," I began stiffly. "I don't do this sort of thing anymore." I was going to unceremoniously hang up on him when he said "Doc, Number 5 is dead." He needn't have said anymore.

Number 5 had been my partner at TIO, an always grinning French-Canadian whose real name was Henri Chanel. But of course, we went by code numbers only in the field. I had been number 2, and hearing the news the Colonel related made me feel like it. Henri had been on a mission in South Florida investigating rumors that some stolen high tech hardware was being collected and sold by the same people who bring you your morning drugs. He had called into headquarters, his voice shaken. "Number 2..." he had gasped, and then the connection had been broken. Two days later the body of my friend and former partner had been found stuffed in an AT chassis on a beach in Key West. Whoever had done it hadn't even taken out the power supply.

"I know it's risky, Doc," said the Colonel. "But there is something very wrong going on down there, and number 5 obviously thought you could help. We are hearing some really scary rumors - there could be a lot at stake here. For Henri, for me, and for your country, Doc. You've got to do this for all of us." Tears were actually beginning to form in my eyes. I told him it was nice talking to him and I'd see him around. There was an audible sigh. "It pays 500 a day plus expenses plus $50,000 when you've figured out what's up." he intoned.

"I'll be there by morning," I said, and as I hung up the phone I heard him say "Good show! Be careful and don't trust ANYBODY..." I quickly packed a few belongings, grabbed my trusty (if battered) Zenith laptop, and was off. (I told the Lady I was going to the 7-11 for a magazine... forgiveness is much easier than permission, especially when your wife has the two-handed frying pan swat down to a level where she should consider turning pro). As I boarded the flight for Miami I considered that if I ran into the same people as number 5, I may never feel the cold yet comforting feel of that frying pan on my skull ever again.

What will happen next to the Doctor?

To be continued....

Watch for the continuing exploits of the Doctor in future issues...

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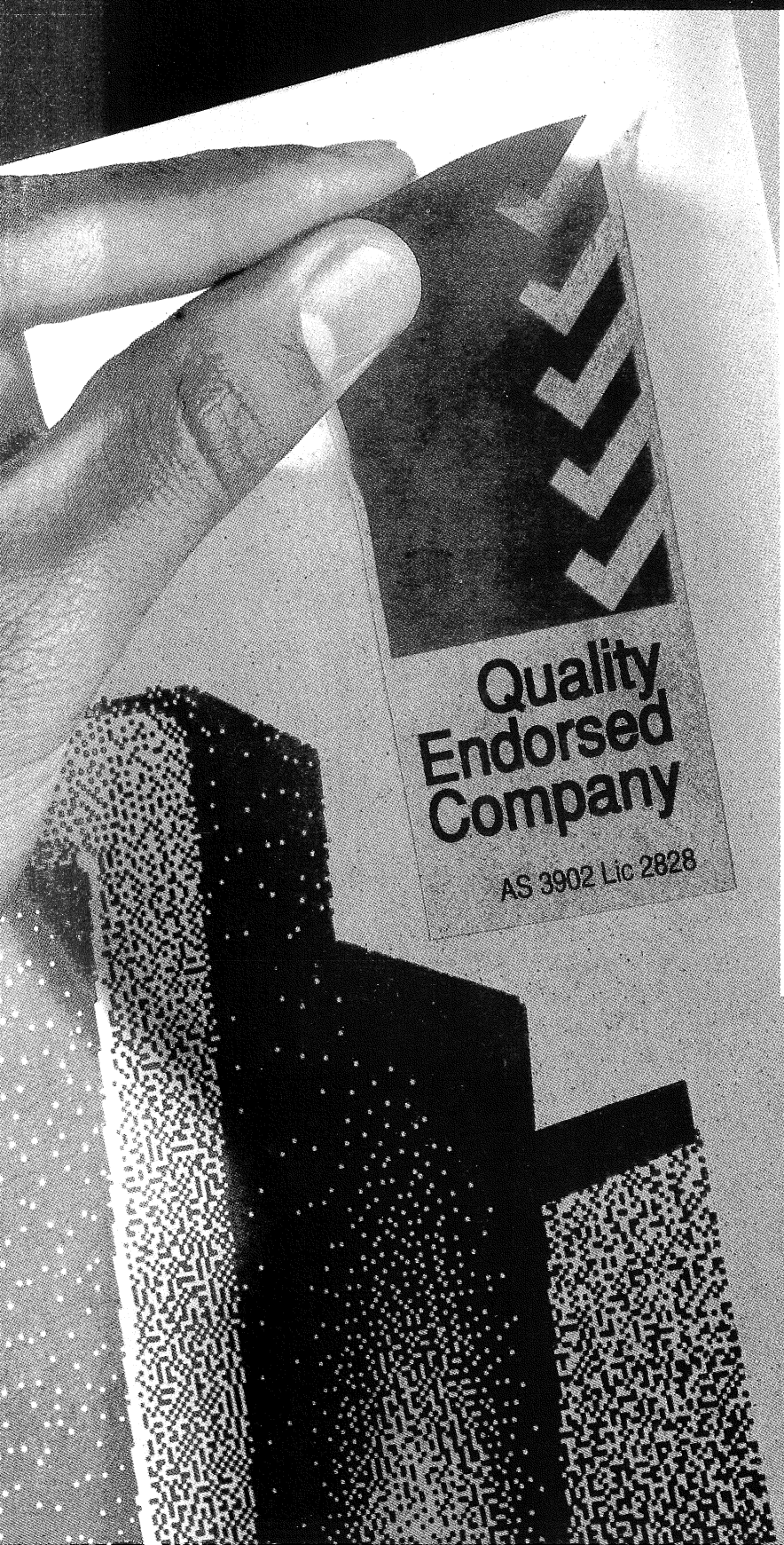


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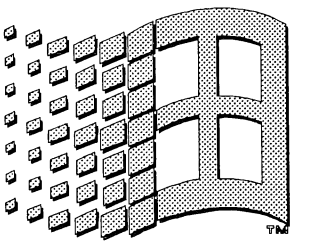
# Windows Watch



An Occasional Column, compiled by Ralph De Vries

## Looking Ahead

It was interesting to see the (postponed) WordPerfect for Windows demonstration at Brisbug's April Meeting. Our bright and breezy presenter did his job very well indeed; even to the extent of making his audience laugh when he managed to lock up his beta test version (6.0a) of WordPerfect with a GPF!

It appears that this new update of WordPerfect is not only a bug-fix; the program has shrunk in size by about 7 or 8 Mbytes, and it runs faster as well. Good on you WordPerfect. The official Oz release of 6.0a is expected to be some time in May '94.

Although I use Word for Windows, it's not my intention to start a meaningless comparison between WordPerfect and Word for Windows; they are both extremely powerful packages, and both will have their adherents.

What is becoming abundantly clear, is that powerful programs such as the above two are starting to look more and more alike. Our audience was applauding madly when the presenter showed of the capability of modifying text appearance (textart) and the program's capability to 'remember' spelling errors. It might surprise the loyal WordPerfect fans to know that both these features are also part and parcel of Word for Windows 6.0, which was released either at the same time or, if my memory serves me correctly, slightly earlier than WordPerfect for Windows 6.0!

I'll stick with Word for Windows (just received the 6.0a bug fix), but it appears that the new WordPerfect for Windows 6.0a is now a truly worthy opponent.

The rumour mill has it that the long awaited Windows 4.0 will now not be seen till early 1995. Are you surprised? If you have followed the evolution from Windows 3.0 to 3.1, you will know that this is just a re-run of that event. Oh well, better late than never...

Although this new 32 bit operating system (Windows 4.0?) will have the capability to run existing software (ie. software written for a 16 bit operating system), it does mean that in due course we will see a complete new range of upgraded software to maximise performance under a 32 bit operating system.

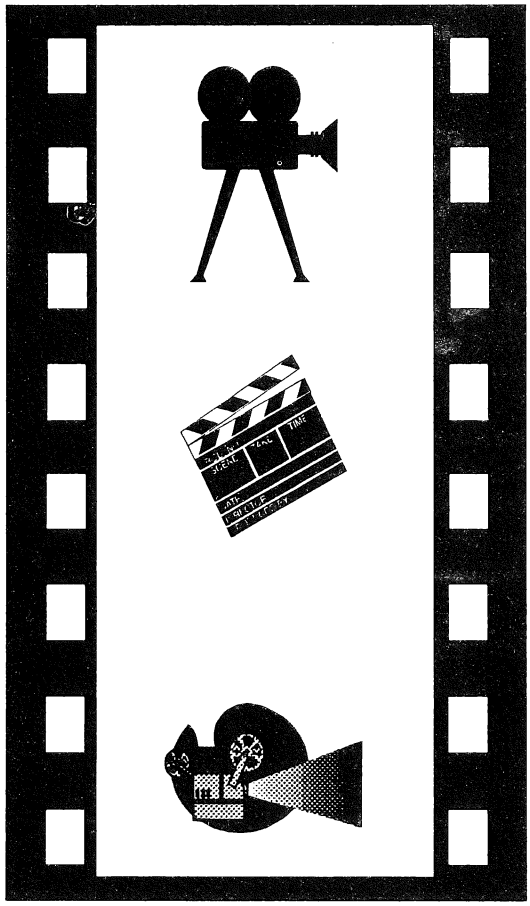
Yes, most existing Windows software will run under Windows 4.0 (how slow or fast, or how well, we don't know at this stage), but only software optimised for 32 bit operation will ultimately give acceptable (which means *faster*) results.

And that brings us to hardware. Apparently it's Microsoft's aim to make the new Windows 4.0 work in a minimum configuration of a 386 computer with 4 Mbytes of memory. I hope that they succeed in these aims, but I tend to be rather sceptical. I run my Windows for Workgroups (3.11) on a 486 DX-50 with 8 Mbytes of memory, and probably will increase memory by another 8 Mbytes when Windows 4.0 arrives.

My advice to anybody who is about to upgrade is to go for a *minimum* of a 486 DX-33 with 8 Mbytes of memory (and as large a hard drive as you can afford) if you intend to use Windows 4.0. Anything less, and very soon you will regret your purchase. If you study the pricing of computers, you will discover that there's now very little difference between 386 and 486 computers, hence my advice to go for a 486. If you are going to do a lot of graphics, desktop publishing or sound/midi under Windows, you would have to start looking at a 486 DX2-66 or a Pentium based computer, with at least 16 Mbytes of memory, and on top of the large hard drive, you may as well install a CD-Rom drive too, because you are going to need it.

I know that all this talk about upgrading hardware makes me sound as if I'm in league with the hardware vendors. Not so - my advice is purely based on my own experience. At Brisbug meetings I still hear regularly comments about the instability of Windows. As I use the Windows environment at least 95% of the time, I can categorically state that

GPFs are seldom encountered in my day-to-day computing. I attribute this to having stable hardware, which meets or exceeds the specifications set out by Microsoft and other software suppliers (and please, do take their so-called minimum hardware requirements with a pinch of salt, ie don't believe them, if you want to get the best out of the software in question!). If you try to run Graphic User Interfaces such as Windows or OS/2 on underpowered hardware, you are just wasting your time, and you end up by blaming Windows or OS/2 for not performing.



I can understand how painful it must be to those computer users who bought their equipment some five or more years ago at the astronomical prices which then applied, and who now find that, as far as resale pricing is concerned, they may as well take this equipment to the scrap yard. If it's any consolation, I feel that the current range of hardware will probably depreciate even more rapidly in price. Regrettably a computer is not like some musical instruments or certain wines, which improve with aging. Even if your five year old computer is still running smoothly, you will find that most software manufacturers have just about deserted you by now, which means that, if you want to keep up with the latest trends in software, you will sooner or later be forced to upgrade your hardware to run a graphics user interface.

As an example, take a powerful graphics package such as *Corel*. To run it, you need Windows or OS/2, and a high performance computer. It will *not* run under DOS on an XT or AT computer.

I do believe that the next version of Windows will in due course offer us the stability and speed that we are all craving for, but only if we are prepared to invest in the appropriate hardware. As an example, a 40 Mbyte hard disk drive may have been the ultimate in storage five years ago, but they aren't much good if some of your programs take up to 30 Mbytes of disk space! Hence the minimum hardware requirements mentioned earlier on in this article.

## Cinemania '94

During April I managed to pick up a copy of the Microsoft *Cinemania '94* CD-Rom for a mere $45.00 at a Strathpine computer market - quite a drop from the RRP of $99.00!

In previous issues of this column I've given my reactions about Microsoft's *Art Gallery* and *Encarta*, which I liked all right, but with certain reservations. For my money Cinemania '94 is the pick of that particular bunch; probably because it sticks to one subject only and treats it in a great deal of detail.

Not only does it have the virtually complete text of Leonard Maltin's *Movie and Video Guide 1994* (the 'bible' for TV movie watchers), but also several additional volumes of reviews (some with outlines of the film's plot), plus lots of other interesting bits of movie information.

Want to find out what the 'best boy' or 'gaffer' do in film production? This CD-Rom will tell you. Not only are there biographies of famous actors and actresses, but also of famous directors, screenwriters, composers etc. You want a list of all the films in which Clint Eastwood appeared? No problem, and you can print it out as well. If, after browsing through this CD, you want to make a list of the films which you want to hire on Video, the program will oblige again.

On top of all these goodies there are some 20 video clips, a 100 examples of film music and theme songs, 150 famous lines of film dialogue and some 900 movie stills. For the movie buff this CD-Rom is a definite must, and sets a standard for future information based CD-ROMs. Top marks.

## *Desktop* Magazine

I don't buy this locally produced magazine very often, because it is largely aimed at the high end of the DTP market. However the May '94 issue does take a look at low cost (???) desktop publishing packages for Windows. The question marks in the previous sen-

tence are there because the review includes both Pagemaker 5.0 (list price $1445) and QuarkXpress 3.1 (list price $1799), which I find difficult to classify as 'low in cost'.

Some half dozen radically different types of document types were tested (from a logo to a book), and then the results were tabulated under the headings of 'home user', 'small business user', and 'professional and power users'. These were further sub-classified under feature ratings, ease of use and a price/power score.

Without going into too much detail here (you'll have to buy a copy of the magazine for that!), it becomes abundantly clear that Microsoft *Publisher 2.0*, scoops the pool for home and small business use. It's claimed that recently (in the six months to Dec '93) Publisher 2.0 has been the biggest selling DTP package in Australia - apparently 10000 copies were sold here, whereas *Pagemaker 5.0* is the preferred option for the professionals and power users. This bears out my own conclusions when I reviewed Publisher in these pages some time ago.

According to *Desktop*, Aldus are about to release, or have released a new Windows package called *Pagemaker Classic* (RRP $249), which is a scaled down version of *Pagemaker 5.0*. This could be the start of an interesting battle of the low-end DTP giants!

## That *other* DTP package

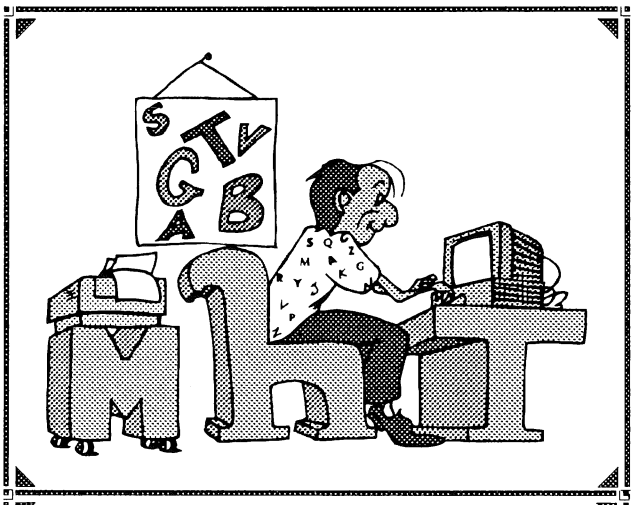
Having virtually slid into oblivion during the last couple of years, *Ventura Publisher* has now been taken over by Corel, who have released version 4.2. I know that this program had some very keen supporters in the past (and probably still has some now), but from a Windows user's point of view I find the interface 'unconventional' to say the least. If Corel wants to regain market share, they will have to bring it in line with more standard Windows menu conventions.

## Adobe/Aldus Merger

These two companies are to merge, and this may well cause some more industry re-alignments, as well as rationalisation of their product range. Will Pagemaker now only support Adobe Type Manager and force the likes of Corel to become become TrueType strongholds? And what's going to be Microsoft's response to all this? Isn't the computer industry interesting!

## ATM Again

I felt that it was time to try out Adobe Type manager again. It must be some two years ago when I ran a comparison between TrueType and Adobe Type manager, which was rather inconclusive. I did the test this time with ATM's latest version (2.6), using their Helvetica font, against True-



TrueType or ATM?

Type's Arial font. I used the first page of this column, and printed it out on my LaserJet IIIP printer, using the latest HPCL drivers.

**To all intents and purposes there were no differences in the output**, apart from a minute difference in letter and line spacing - and minute being the operative word. If you own a Postscript laser printer you may well find that ATM has advantages, but on a HP or HP compatible laser printer I defy you to pick the difference.

Unless you do own a Postscript laser, or have to send your files to a DTP bureau, I would strongly advise to stick with TrueType, because it's part of Windows, and because extra TrueType fonts are normally cheaper than their ATM equivalents.

## QUICKEN for Windows, V. 3.0

At long last version 3.0 has been released locally. Basically it's not very different from version 2.0, but it has a few more fancy touches, such as a Portfolio view for your shares, and a Financial Calendar, etc. etc. Upgrade price not known at this stage.

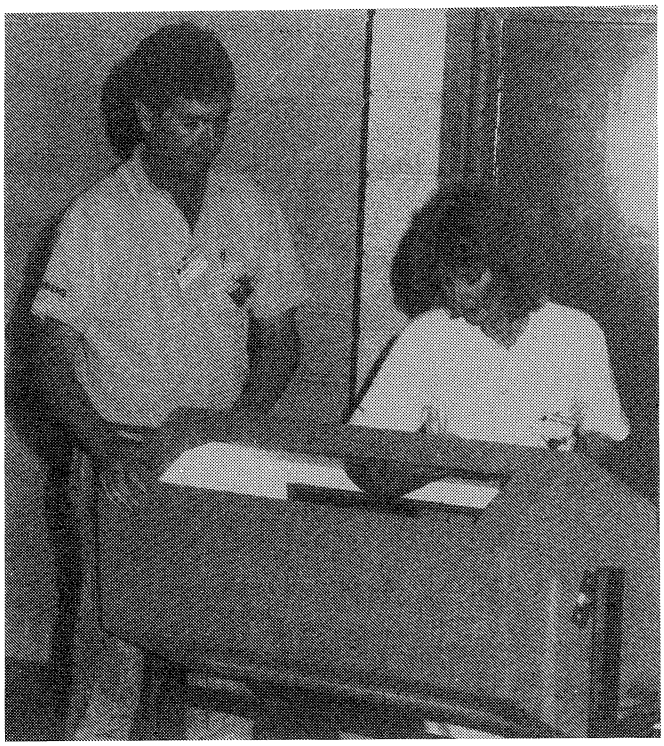
*Ralph*

# The HUGE Membership

## 6 Lucky Members win prizes in Membership Drive

Last month saw the first of the draws for intermediate prizes in the current membership drive.

Six times our Membership Secretary dived into the barrel for names of members who had introduced new members to Brisbug.

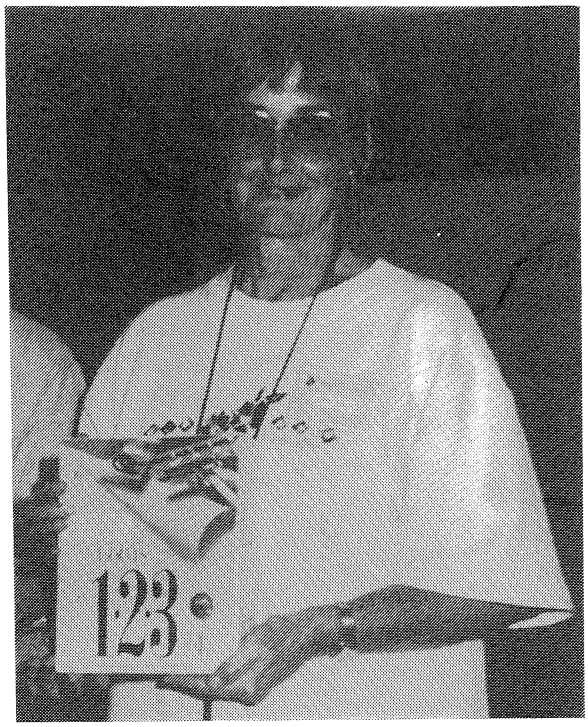


*Membership Secretary, Jan Ausburn prepares to "dive" into the barrel to select the first winner while Education Director stands-by to rescue her*

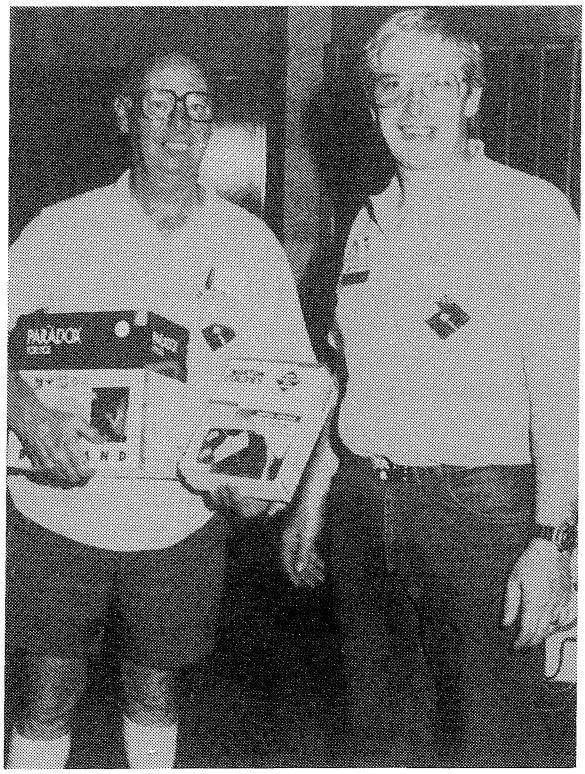
Five lucky members won a prize (actually one member had his name drawn twice) and presentations were made by Vice President Graeme Darroch to those who were present at the meeting.

### The lucky winners were:

Bill Latham - (2 prizes) Paradox for Dos and Norton's Utilities. Judy Gray - Lotus 1-2-3 Rita Copeland - Paradox for Dos Melitta Kelly - Paradox for Windows Nicholas Quigley - Paradox for Windows.



*Above: Judy Gray proudly displays her prize.*
*Below: Bill Latham "staggering" under the weight of two prizes with our presenter, Vice President, Graeme Darroch*



# Drive - 1st Drawing

New members were not forgotten, and the lucky new member to win was Bill Cochran who won Symantec Q & A.

Those members who were not present at the meeting have had their prizes delivered to them.

### Still time to win...

You too could be a lucky winner. There are still many prizes still to be won, so get out there and sell memberships to all your friends and acquaintances.

All members names will be entered into the major prize draw in October, when the Compaq 486 VGA (colour) Laptop and the major prizes from Microsoft are drawn. New members will be eligible for the BytePro 486 Desktop computer complete with multimedia in November.

Membership Application Form and details of the competition are included in this issue. Additional forms are available from the Membership Secretary or Software Library.

*Vice President Graeme Darroch presents Rita Copeland with her prize from the membership Draw*

## Brisbug MEETINGS

Meetings are held on the 3rd Sunday of every month at

QUT KELVIN GROVE CAMPUS
Victoria Park Road,
KELVIN GROVE. BRISBANE
from 9.00 am to 5.00 pm.

Brisbug occupies the Main Lecture theatre and several other lecture rooms in "B" Block. Please note that other groups may be using the Campus at the same time, and that off-street parking is permitted only in the designated areas.

Disabled access is available.

Food and refreshments are available from the Canteen from 11.00 am to 2.00 pm. Alcohol is not permitted on campus.

Food and drink may not be taken or consumed in the lecture theatre or classrooms. Smoking is PROHIBITED indoors.

Members and Visitors must wear an identity badge available from the Membership desk.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*Australian PC User magazine, February 1994 (9 out of 10 rating).*

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- ✓ ***FILE NEW***- Keep track of templates, using full descriptions. Stick documents in the right directory, first time.
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- ✓ ***ADDRESS BOOK*** – Keeps track of your most frequently needed names, addresses and phone numbers.
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# BBS News — MAIL SERVICES

Paul Marwick

**This month provides more details on the BBS mail services mentioned last month. Having decided that you are interested in the mail services provided, you need some way of accessing them. The amount of mail that the systems carry online is quite large (something well in excess of 100,000 messages are available at any one time). As a result, attempting to keep up with mail in more than a few small areas while you are online is likely to be frustrating at least.**

You can read a reply to mail, online. Maximus offers two different types of editing facility for this purpose, plus some options in terms of reading messages.

Reading messages is simply a matter of selecting the message area that you are interested in using the Area Change command from the message area menu. Once you are in your selected message area, pressing return will display the next message in that area (which may be the first message in the area if you have not been in the area before, or if new messages have pushed your lastread pointer off the bottom of an area. In some areas, messages may be private, in which case you will not be able to see them unless they are addressed to you.

## Listing messages

You can also list the different messages in a particular area, using the L)ist command. This will prompt you for a message number to begin the listing (if you enter an "=", the listing will start from the message that you are currently on), then display a list of messages, with indication of who they are from, who they are to, and what the subject of the message is. Messages to you (if there are any in the area) will be highlighted.

In addition to simply pressing the enter key to display the next message, you can press the N key to display the next message, the P key to display the prior message, or enter a message number to have a specific message displayed. If you use P)rior, you reverse the direction that you are traveling in the message area, and from that point on, pressing return will display messages going back from the point at which you started.

## Replying to messages

The systems provide what is called "reply linking". This means that when there are messages which have replies, the BBS will display a "reply to xxx" or a "see xxx" message when it has displayed such a message. If a message has a reply, pressing the + or - keys will allow you to see the replies to that message, or the original message, to which the one you are reading is a reply.

This facility is somewhat limited, since the standards used to provide the links between messages are not universally followed, and many of the common message storage formats used by other BBSs do not provide sufficient flexibility to allow true reply linking. However, in many instances, you will be able to view an original message and all the replies to it using the"+" and "-" keys.

If you read a message to which you wish to reply, pressing the R key will allow you to do so. You will be prompted as to whether you wish to change the subject of the message. In some areas (though not most echomail areas), you may be able to make the message private as well.

## Editing your message

Once you have confirmed the subject, you will enter the message editor. Maximus provides two different message editors. One is a full screen editor (much like any standard text editor), the other is line oriented in its operation.

You may chose which of the two editors to use from the C)hange menu (though you will only be able to use the full-screen editor if you have Ansi or AVATAR graphics enabled in your user setup, and if your screen dimensions are set to at least 80 columns by 24 lines.

## BRISBUG NOW HAS *internet* ACCESS

I mentioned in this month's BBS News that *internet* access might become available through the BBS systems.This has now been arranged.

As also mentioned, this will not be a normal part of BBS services. Anyone who is interested in this access will need to pay a yearly subscription to gain access to *internet* services. At present, a figure of $15 per member per year is required. This figure may be revised depending on traffic (and consequently cost).

The *internet* services will provide the following:

- An *internet* address for any member who takes up the service.
- Access to Email.
- Access to Newsgroups (the latter being contingent on availability through my local hub).
- Access to ftpmail (the latter being contingent on my working out the full mechanics of making ftpmail work, and also on the size of files requested by this means).

### Lines 3 or 4, only

For the moment, *internet* services will be available only through Lines 3 or 4, though this will hopefully be extended to Lines 1 and 2 in the near future.

These services will be available either online as normal message services, or through QWK message download facilities. Anyone who wishes to make use of ftpmail will need to have some form of uudecoding software as well.

Any member who is interested in *internet* access through the BBS should leave me a message on the BBS or phone me on (07)871-0611.

One word of warning for people who wish to use the full-screen editor. Because there is no universal standard for sending commands over a modem link, the full-screen editor employs WordStar type CTRL-<key> combinations to send commands.

While there is good online help for using the editor, it can take some getting used to, and may be difficult to use unless you are already familiar with WordStar command entry. For many users, it may be simpler to use the line editor, though its capabilities are less than those of the full-screen editor. Figure 1 illustrates the online help for the full-screen editor.

**Full-Screen Editor Help**

| Command | VT-100 | Ctrl | IBM-PC |
|---|---|---|---|
| Save message | ^z | ^k^d | Alt-s |
| Abort message | Esc-Esc | ^k^q | Alt-x |
| Backspace | Bs | ^h | Bs |
| Delete char | Del | ^g | Del |
| One line up | Up | ^e | Up |
| One line down | Down | ^x | Down |
| Previous page | PgUp | ^r | PgUp |
| Next page | PgDn | ^c | PgDn |
| Move Cursor left | Left | ^s | Left |
| Move cursor right | Right | ^d | Right |
| Move one word left | | ^a | Ctl-Left |
| Move one word right | | ^f | Ctl-Rght |
| Start of line | Home | ^q^s | Home |
| End of line | End | ^q^d | End |
| Toggle insert mode | | ^v | Insert |
| Edit menu | | ^k^h | F10 |
| Clear to EOL | | ^q^y | |
| Delete line | | ^y | |
| Redraw line | | ^l | |
| Redraw screen | | ^w | |

**QUOTING**

| Command | Ctrl |
|---|---|
| Quote on/off | ^k^r |
| Next 4 lines | ^r |
| Prior 4 lines | ^c |
| Copy Lines | ^k^c |

**Quoting can only be used when you're replying to a message. Press ^k^c to open quote window, and use ^c and ^r to position it where you want. Press ^k^c to copy quote window into message.**

**Fig 1 Full-Screen Editor Help**

(Note the IBM-PC commands listed will not function when calling in via modem, though the VT100 commands will if your software uses the VT100 command set.)

## You can quickly use up your online time

These facilities provide a good means of reading and replying to messages. However, given the amount of mail available, their use is somewhat limited. If you are interested in any message area that carries much in the way of traffic, you will soon find that your online time is rapidly used up.

Not only that, you will often find that it is not convenient to read and reply to messages while online.

As an alternative, you can turn on the logging facility provided by your communications software and capture messages to read into a file, which can then be read at leisure offline. However, even doing this, you may find that you do not have enough time available online to capture all the messages in areas that interest you. And, given the amount of traffic that passes through some of the areas, you may find that the next time you call, all the messages that were in an area have been replaced by new messages (not to mention that others may have gone past without your seeing them).

## Why not become a point?

There are two solutions to this problem. One is to do what I did years ago when I first became interested in the electronic mail that was available from my favorite BBS - become a "point". A point is effectively a mini-BBS, with all the mail facilities normally associated with a Fidonet BBS, but without the external user interface which makes a BBS. A point picks up mail in exactly the same way as a full BBS system does, by calling with mailer software and collecting prepacked mail in the areas that are of interest.

While the option of becoming a point provides the greatest flexibility in terms of mail collection, it requires a fair bit of dedication on the part of the operator. You must have the necessary software - a mailer to communicate with the collection point, a mail "tosser" to separate the various areas and put them in the correct places. You will also need a message reader/editor to allow you to read and reply to messages. In addition, you must be prepared to call to collect your mail fairly frequently - most BBS sysops are unlikely to be happy with a point who does not call for weeks, leaving large amounts of mail waiting on hold for them. Apart from the disk space used, when such a point does finally call in to collect their mail, it may be a long mail session, tying up the BBS system for an unacceptable amount of time.

One major advantage of running a point system to collect mail is that all mailer software allows for scheduling of calls. So you can set your mailer up to call after the middle of the night to collect mail, when it is least likely to have problems getting through, and when you do not have to be around to supervise the mail transfer (or have it interfere with your using the computer for that matter).

While it is not all that complex to set up a point system, it is probably not something that most people will want to do. The other alternative that is provided is offline mail, which requires a good deal less effort on the part of a BBS user who wants to be able to read mail.

## Offline Mail Facilities

Offline mail facilities are provided under Maximus using the QWK standard. This packing method was developed initially for PCBoard systems. As such, it is not ideally suited to Fidonet mail. However, it can be used quite effectively, and was chosen by Scott Dudley (the author of "Maximus") as the most widely supported offline mail standard when he decided to add direct support of offline mail into Maximus.

Using the QWK facilities offered by the systems allows you to select a number of areas, which are scanned for mail (using the BBS's internal record of the last message you read in any one of those areas as a starting point). Once the messages have been scanned, they can then be packed into an archive (you can chose to use Zip, Lharc or Arc formats for this packing), and you can then download the messages. This is a much more effective way to use your online time than trying to read messages online, since they are compressed and provided for you in a form which allows you to read the messages at your leisure. Since the messages are archived before you download them, you can also gather far more messages than you would be able to by capturing the message text to a file from your communications software.

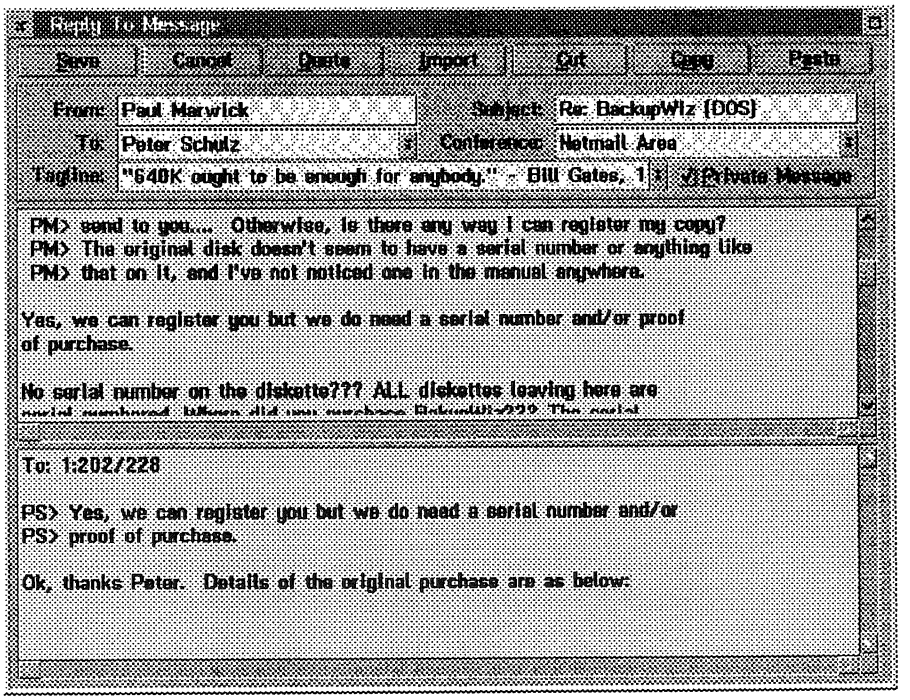


*FIG 2. Entering a netmail message using a QWK reader/editor (in this instance, the reader in question is the shareware KWQ reader, an OS/2 Presentation Manager editor.*

In order to make use of the packed QWK mail, you will need a QWK compatible reader. There are a number of shareware QWK readers available - you will need to try a few and see which of them you like. (e.g. DOS's SLMR or OS/2's MR2 or KWQ) Any of the QWK readers will sort messages into the relevant areas and allow you to read and reply to messages in those areas. When you are finished, they will pack up any messages you have entered, ready to be uploaded to the BBS on your next call.

There are a few things to note about QWK packages. First, they are specific to the BBS from which they came. As a result, a QWK package downloaded from Lines 1 or 2 will always be called BRISBUG.QWK, whereas a QWK package downloaded from lines 3 or 4 will always be called MADHOUSE.QWK. Any replies you enter will be packed into a bundle which uses the same root names as the received package (BRISBUG.REP for lines 1 or 2, MADHOUSE.REP for lines 3 or 4). In the same way, you MUST upload the package to the correct system. Uploading a QWK reply package called BRISBUG.REP to lines 3 or 4 will result in an error, since the internal index kept of message areas will not tally with the existing areas on the BBS. If you upload a reply package to the wrong system, the BBS will reject it and send you an error message.

While QWK handles echomail quite transparently, because the standard was not originally developed using Fidonet technology, it does not handle netmail quite as easily. Scott has produced a workaround (commonly known as a "kludge" for obvious reasons..) which allows a user to enter netmail using a QWK reader. However, for this kludge to work, the user must be careful about how he enters the netmail message. See figure 2 for an illustration of a netmail message being entered.

For a netmail message to work from a QWK reader, the message must have its first line as "To: <a valid fidonet address, including zone, net, node and (optionally) point number>". That must be the first line (with no blank lines preceding it), it must be the only information on the first line, and that first line must be followed by a blank line.

If these conditions are met, it is quite possible to send netmail using your favorite QWK reader.

## Use your common sense

There are a few other things that you should be aware of when using the QWK facilities offered by the systems. First, while I can limit the number of messages packed in any single QWK run, I have chosen not to do so, leaving it to the common sense of the user to determine what is a suitable amount of mail to be packed. This means that if you are calling with a fast modem, you will be able to pack significantly more mail for download than you will be able to if you are calling at 1200 or 2400. However, it means that users MUST employ common sense when using the facilities.

If you chose to pack all the messages in 40 areas, don't be surprised if you end up being unable to download them. It will take some time to scan the various message areas collecting the mail, and it will then take some time more to pack them with the archiver of your choice. Until the final (archived) file size is known, the BBS software will not be able to tell whether you have sufficient online time to download the package it has just generated. If you become too enthusiastic in your collection of mail, you may well have the frustrating experience of waiting all the way through the scanning and packing process, only to find that you don't have enough time to download the results.

The QWK standard implements a method for users to connect and disconnect from particular areas. This employs messages entered to "QMAIL" in the area involved, using either an "add" command or a "drop" command. You should note that this is currently NOT implemented in the version of QWK support provided by Maximus. To add an area or disconnect from an area, you will have to manually tag/untag areas while online.

A new addition to the QWK facilities which is implemented in the current beta versions of Maximus is the ability to restrict mail collection by date. This can be useful if you have not called for a while and don't want to end up with too many messages. It operates globally over all areas tagged for mail download.

## The alternative - *internet*

There is another type of mail which seems to be of increasing interest to users. That is *internet* mail. *internet* mail consists of two different types, which are in many ways similar to netmail and echomail in a Fidonet system. Email is direct, person-to-person mail, and the various newsgroups provide a close parallel to echomail conferences (with the distinction that some of the newsgroup areas are "moderated", so there is not

```
File Areas :

OS2.New      ... New OS/2 Software
OS2.Apps     ... OS/2 Applications
OS2.Arc      ... OS/2 Archivers
OS2.Comm     ... OS/2 Communications
OS2.Drv      ... OS/2 Drivers
OS2.Edit     ... OS/2 Editors
OS2.Font     ... OS/2 Fonts
OS2.Graph    ... OS/2 Graphics & Icons
OS2.Prog     ... OS/2 Programming
OS2.Olr      ... OS/2 Offline Readers
OS2.REXX     ... OS/2 REXX
OS2.Util     ... OS/2 Utilities
OS2.IBM      ... OS/2 Files from IBM
OS2.Inf      ... OS/2 Information
OS2.Game     ... OS/2 Games
OS2.Futil    ... OS/2 File Utilities
OS2.Fix      ... OS/2 Fixes & Patches
OS2.EWS      ... OS/2 EWS Software
OS2.LAN      ... OS/2 LAN related Software
OS2.MM       ... OS/2 Multi-Media

Type ".." to go up one level. Type "/" for the top-level menu.
File area [Area #, "["=Prior, "]"=Next, "?"=List]: new_
```

*FIG 3. Users view of a file area subdivision list from Line 3*

direct ability to enter messages in such areas).

In addition to Email and Newsgroups, there are a number of mailing lists maintained by various people. A mailing list is usually devoted to a particular software package, and provides a means of keeping people updated on developments in that area, by sending Email to all those people who have requested to be connected to that mailing list.

While there are no direct connections between Fidonet and the *internet*, there are a number of "gateways", which provide the facility to move mail between *internet* and Fidonet. Using these gateways allows BBS users to communicate with people connected to the *internet*. Currently, the gateways are effectively limited to gating Email, which means that for most BBS users, they are limited to netmail services.

In order to get a netmail message to a user on the *internet*, you must know a valid *internet* address for that person. *internet* addressing is a rather different format to that commonly used in Fidonet, but it should not be too hard to understand.

Sending a netmail message to a user on the *internet* requires that you know the Fidonet address of one of the gateway systems. For most users in Brisbane, the easiest gateway to use is located in Victoria, and uses the Fidonet address of 3:50/40. To enter a message to someone using this gateway, the message must have "UUCP" as the To: field, followed by the gateway address. Once you have entered a subject and begun the message, the first line of the message must have "To: <valid *internet* username & address>. As in the case of sending netmail via QWK, that must be all that is on the first line, and the line below it must be blank.

There is a strong possibility that a more direct *internet* connection may be available shortly. However, if this does become available, it will not be a part of normal BBS services, but will be an extra cost option available to those that are interested. At the moment, I'm uncertain of the costs involved, but if anyone is interested, let me know and I'll provide costing details once they become available. This extra service will include the provision of an *internet* address for users, plus the availability of both Email and Newsgroup services. Mail FTP services may also be available.

## File Areas are being re-organised

Finally, a word about the re-organisation of the file areas on the systems. At present, this re-organisation has only been carried out on lines 3 and 4, but it will be taking place on lines 1 and 2 fairly soon.

The file areas can now be subdivided. This allows grouping of areas which have some element in common. It means that instead of being presented with a list of 60 or more areas, users will be presented with a much shorter list of areas, which is part of a multi-tiered set of areas. Moving between the areas within a subdivision should be simpler than moving between areas under the old single-tiered system.

In each instance, the areas are divided into two parts - the subdivision name, then the individual name (for example DOS.Arc for DOS archiving programs). If you are already in the DOS subdivision, entering "A ARC" will take you to DOS.Arc. If you are in the DOS subdivision and you want to get to the OS/2 archiving programs, entering "A OS2.Arc" will move you to the OS2 subdivision and the area containing archiving programs in that subdivision. Figure 3 shows one of the subdivision areas currently implemented.

In order to get a list of all the major divisions, you can enter "A .." or "A /". This will take you up one level and show you a list of the major area divisions (at the moment, there are only two levels in the subdivision, though this may change in the future). From there, selecting a particular division will show you a list of the areas within that division. So, entering "DV" from the top division list will present you with a list of all the DESQview related areas. Figure 4 shows the current top level file areas on lines 3 & 4.

```
File Areas :

Upl      ... Upload Holding Area
DOS      ... DOS Areas
DV       ... DESQVIEW Areas
Info     ... The Information Section
Prog     ... Programming
OS2      ... OS/2 Areas
BBS      ... BBS Related Software
74       ... Special Area

File area [Area #, "["=Prior, "]"=Next, "?"=List]: _
```

*FIG 4. Users view of the top level file area menu from Line 3*

## Numbers -v- names

At the same time as I was implementing the new file area divisions, I changed all the areas from using numeric designations to using names. While this may involve a bit more typing than entering a two or three digit number, names should be easier to remember.

The same division system will also be implemented for message areas. I have not yet started on this, since it will require a fair bit of work, and will also result in users having some problems with QWK mail during the changeover. However, it will be implemented for the message areas as well fairly soon. When it is done, QWK users will need to re-tag all their tagged areas, and any messages uploaded during the changeover period will have to be manually sent to the correct areas.

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| July 3 rd | July 24 th | July 10th |
| August 7 th | August 28 th | August 14 th |
| September 4 th | September 25th | September 11th |
| October 2 nd | October 23 rd | October 9 th |
| November 6 th | November 27 th | November 13 th |
| December 4 th | December 11 th | Dec NO Market |

Dates are published regularly in the Computer Section of Saturday's Courier Mail & Gold Coast Bulletin.

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REVIEW

# NORTON UTILITIES 8.0

Graeme Darroch

**EVERYONEwho has used a computer, and made a few mistakes, has heard of Norton Utilities. Such is the fame of this program that it has universal acceptance as a fix-all, for all sorts of ailments of the hard disk, floppy disk and other parts of your machine.**

So what could be done to improve such an accepted piece of software? Well Norton seems to have succeeded in doing a fair amount. How many times have you installed a program in windows and seen flashing past, while the installation was proceeding, all sorts of funny files that were going to strange places such as your windows directory, or the system subdirectory of windows, well in the tradition of "Norton Desktop for Windows" you now have a way of finding out precisely what happened during the installation process.

Several new sections have been added to the Norton Utilities which help the windows user keep track of their ini files, find new files in their important windows directories, and generally watch their system (See Fig 1). In this review I will concentrate on the new features that have been introduced with this release, as I believe most people have a reasonable appreciation of what Norton did in the past and this release carries on that tradition. The main changes on previous DOS utilities are the recognition of the DOS Compression techniques, for DOS 6.2, (see Fig 2) which was available for the previous release as a patch to apply to the executables.

## Disk Doctor

Disk Doctor, windows version, is now a utility which can be run as background task in windows, and will detect any problems with your hard or floppy disks as they arise, giving a warning that a problem has occurred, and repairing these problems immediately. Optionally you can start disk doctor on demand, and watch as disk doctor performs a disk check, including a clever little animation (see Fig 3), and informs you of any problem areas on your disk that it encounters. As in previous versions speed disk will check Boot Record, File System, Directories, Compressed Disks and Disk Surface. Any changes that are made can be undone, and reports may be generated that inform what has been done and why. Preferences may be set for this operation that customize your automatic process to do whatever you wish, of the selection available.

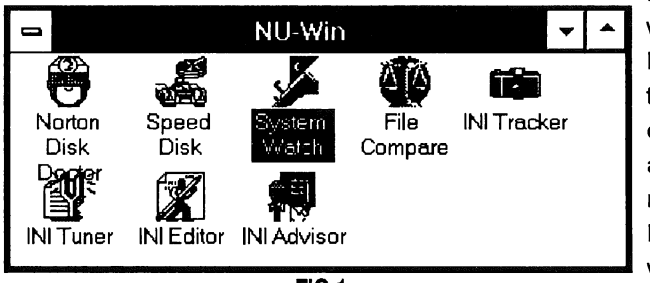


FIG 1

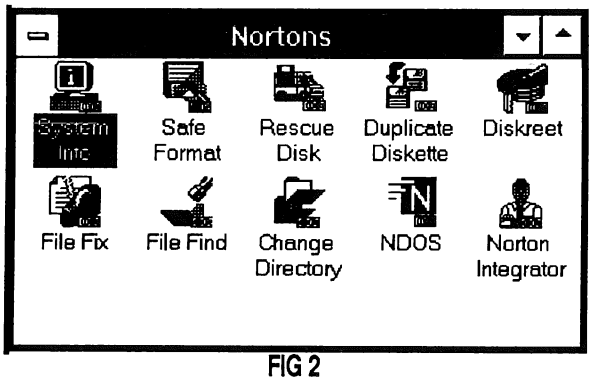


FIG 2

## Speeddisk

Speedisk, windows version, (see Fig 4) is again a new feature which may be run as a background task. This operation takes cognizance of files that are open for use by active programs, and deals with them in a safe manner. When being run as background task in conjunction with Disk Doctor Speedisk and Disk Doctor co-operate with each other and wait for periods of inactivity to perform their duties. This is described in detail in the manual, supplied, with a rider that if you are using a program that makes frequent access to files, it may be advisable to run these programs as foreground tasks. One nice touch with Speedisk is that when the program displays a map of the fragmentation, or otherwise, of your hard disk, you can obtain more information on specific blocks on your hard disk by simply clicking on the block. Detailed information on the files contained in that block will be displayed in the block detail box at the bottom of the screen. Once again detailed reports are available, and preferences may be set for the operation of this program.

Configuration management and recovery for DOS and windows is addressed in new utilities which allow the following

**File Compare** - Side-by-side file comparison in windows which can highlight differences only.

**INI Tracker** - The first time INI tracker is run, it takes a snapshot picture of each file and directory that is being tracked (see Fig 5), and records this in the snapshot data files. The next time INI tracker is run, it takes another snapshot and compares it to the previous snapshot of each file and directory. When a file or directory has changed a new snapshot of the file or directory is added to the snapshot data files. Over time INI tracker builds an audit trail. If changes are made to a tracked file, and the result is not what you expected, INI tracker can reinstate the file from a previous snapshot to return the file to its the way it was before the changes were made. A DOS version of the tracker is included for the times when changes to the system files, have the dramatic effect of not allowing windows to start at all.

**INI Tuner** - Allows you display values in your INI files, modify them, and advises on how to increase you windows performance on your system. It provides a direct route to the configuration options available from the windows control panel, such as changing the desktop colours, setting up printers, or installing drivers, in addition to options hidden inside your INI files, such as restricting access to File Menu operations from the Program Manager. INI Tuner lists settings for the following windows INI files: WIN.INI, SYSTEM.INI, PROGMAN.INI, WINFILE.INI, CONTROL.INI, DOSAPP.INI.

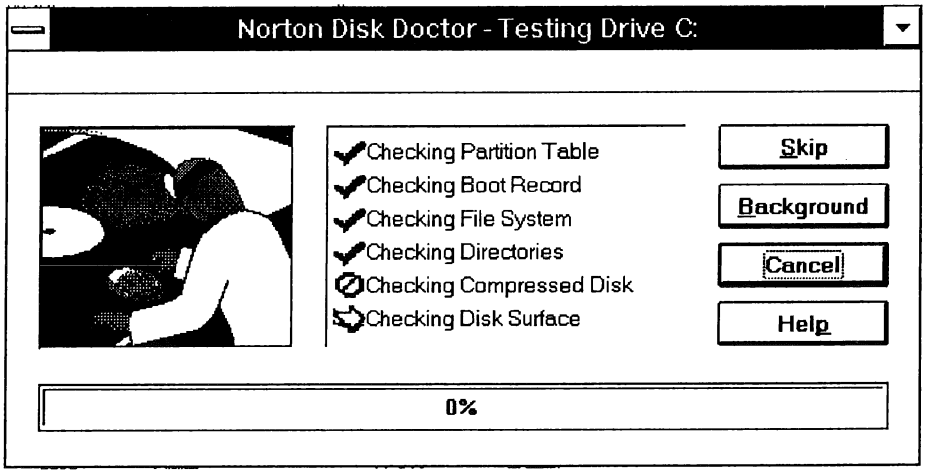


FIG 3

**INI Editor** - An editor which allows access to INI files and edit them.

**INI Advisor** - Provides an on-line reference for learning about INI files and how to fine tune them. INI Advisor provides specific information about statements found in common windows INI files. In addition INI Advisor provides tips on how to optimize windows and how to troubleshoot common windows problems.

**System Watch** for Windows Monitors memory ,disk, and other critical resources (see Fig 6). This program allows you to monitor just about everything going on within your windows environment. This includes DOS and windows memory usage, windows resource management, number of open files and drive usage. This information is presented in window which may be made to stay on top always. Alarms may be set that warn you when resources reach a dangerous level, and many options are available to make this utility display exactly what you want to see.

**Norton Diagnostics** - Have been upgraded to show interrupt status, and high-light possible conflicts. The other systems have been updated to now include joystick tests, and the video test have also been enhanced.

**Wipeinfo** - Has been enhanced to include compressed disk support.

**File Fix** - Now supports WordPerfect 6.0 file support.

**System Information** - Now includes Pentium support, and if anyone wishes to donate a Pentium board I will thoroughly test this function. (Honest)

The Program comes with a comprehensive manual which is an invaluable reference book for anyone who is interested in looking a little deeper than a DIR. command. The amount of information which is given would surely get any one who is having system problems pointed in the right direction. With at least an idea of what is causing the problem.

One other tool which has been included in several of the latter versions of NU is the ability to create a RESCUE DISK.

*Continued on page 29*

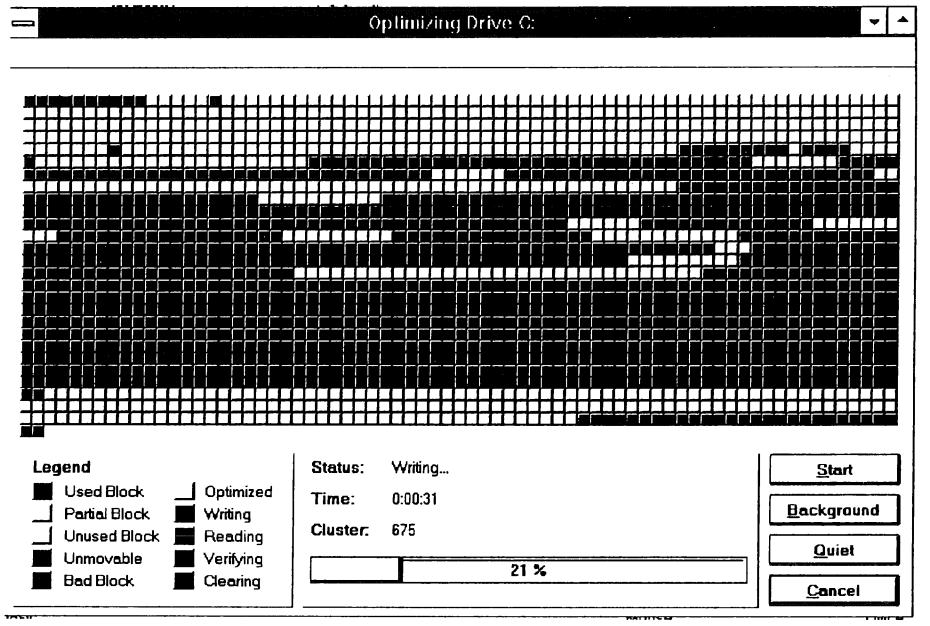


FIG 4

# The OS/2 Column

## REXX Part 2

Paul Marwick

**This month, we're going to look further at REXX. We'll be looking at using loops, some of REXX's arithmetic functions, and the TRACE function which provides debugging facilities to check for program errors.**

### Loops

In REXX, loops are used to group instructions. They can be either repetitive or conditional. In the simplest case, a loop can be used to repeat instructions a set number of times. For more complex cases, conditional loops can be used to repeat instructions until set conditions are met and the loop is terminated.

Loops are started by the DO instruction. DO has a number of modifiers that can be used to change its behavior, and is also used in single instructions as well as in loops.

The simplest form of loops is a DO <count> loop. This will repeat the commands between the DO instruction and the end instruction by whatever number has been given as the count:

```
/* Do something silly 5 times */
Do 5
      Say 'Hello'
End
```

This will print "Hello" to the screen five times, then terminate. Not exactly useful, but it illustrates the simplest form of loop. Multiple instructions can be used between the DO <count> and the END.

Conditional loops have a wide range of control options. DO While or DO Until allow for repetition of a group of instructions until a specified condition is met. We can illustrate this type of options with a simple guessing game (see figure 1)

This procedure sets a variable (ans) to 42, then prompts for entry. Until the user entry is the same as the value set for the variable, it will simply keep prompting for a two digit number.

Since we can use multiple instructions within the loop we've created, it might be useful to add an element of feedback to the procedure. So we'll add a bit of condition testing and use that to tell the user that their entry is incorrect (see figure 2).

This version will tell the user that the entry is wrong until such time as they get it right. To get this element of feedback, we have used one of the comparison operators provided by REXX. In this case, = with the \ modifier (which reverses the sense of the =. So we're testing for the value '42' and returning an error message whenever the user input is not equal to the value of the 'ans' variable.

We could get exactly the same effect using a DO WHILE loop instead of the DO UNTIL loop - all that would be required would be to change the first argument to 'do while ans \= 42'. In this case, the loop remains in effect while the answer returned by the user is not 42.

Loops can also be used to manipulate the contents of arrays. REXX stores arrays as compound variables. The elements of an array are held as <stem>.1, <stem>.2 etc. A loop can be used to input data into an array, as shown in figure 3

This doesn't do anything terribly useful, but it illustrates using a loop to control repetitive entry of data. In this instance, we set the number of iterations with the variable 'limit', and we then use the loop counting function to repeat the 'enter numeric data' prompt the number of times that is defined in the limit variable. With each pass through the loop, we add another element to the stem variable 'key'. Then, just to check that the data is really there, we use say to read out the contents of each element of the array.

In each instance of giving a variable a value, the variable is on the left of the equals sign.

So far, we've looked at only the most basic of loop constructs. However, for the moment, we're going to leave them there and take a look at some of the arithmetic functions that REXX has.

### REXX and arithmetic functions

REXX can handle most arithmetic functions. The normal arithmetic operators used by REXX are + (sum), - (subtract), * (multiply) and / (divide). In multiple step operations, terms are evaluated from left to right, though some operations will take precedence (for

**Figure 1**

```
/* Guessing Games v1.0 */

DO Until ans = 42
        Say 'Enter a two digit number'
        Pull ans
   End
        Say 'Congratulations, you got the magic number.'
   Exit
```

**Figure 2**

```
/* Guessing Games v1.1 */

Do Until ans = 42
        Say 'Enter a two digit number'
        Pull ans
        If ans \= 42 then say 'Sorry, wrong number.  Try again.'
   End
        Say 'Congratulations, you got the magic number.'
   Exit
```

**Figure 3**

```
/* Data entry loop */
limit = 4
do i=1 to limit
  say 'Enter numeric data ('i' of 'limit')'
  pull data
  key.i = data
end
say ''
say ''
say 'Data item 1:' key.1
say ''
say 'Data item 2:' key.2
say ''
say 'Data item 3:' key.3
say ''
say 'Data item 4:' key.4
```

example, if you have 10 + 6 / 2, the division would be carried out before the addition, so the answer returned would be 13). As in normal algebraic operations, parentheses can be used to group elements in an equation so that they are treated separately. Using the same numbers as before, (10 + 6) / 2 would return an answer of 8.

We can illustrate the use of arithmetic operations in REXX quite simply. The following procedure prompts for a number, and then provides the square of the input number as output:

```
/* Silly little arithmetic operation v1.0 */
Say 'Enter a number'
pull num
say 'The square of the number is' num * num
```

As a final step in this first, brief, look at REXX arithmetic functions, we can build ourselves a very simple calculator which operates from the command line. See figure 4.

This routine uses PARSE PULL to separate two entered numbers and assign them to two separate variables ('num1' and 'num2'). The numbers can be integer or decimal. They can be separated by either a space or a tab.

Once the two numbers have been collected and assigned to variables, the user is prompted as to the type of operation that is wanted, with addition, subtraction, multiplication or division being offered as choices. The user response is assigned to a third variable which is used to invoke the operation.

```
say ''
```

**Figure 4**

```
/* Silly little arithmetic operation v1.1 */
'@echo off'
Say 'Enter two numbers for your equation'
parse pull num1 num2
Say 'Do you want to 1)Add, 2)Subtract, 3)Multiply or 4)Divide the numbers?'
        pull op
        if op = 1 then say 'The answer is' num1 + num2
        if op = 2 then say 'The answer is' num1 - num2
```

As with all the samples shown so far, there is nothing like error checking in this routine. If you enter characters instead of numbers, you will get some interesting error messages... We'll look at adding error checking at a later stage.

### Still to come...

I had hoped to have a look at the TRACE function provided by REXX, but I've run out of time, so that will have to be left for next month. Hopefully TRACE and error trapping in general will be looked at in some detail next time.

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*Norton Utilities 8.0 Continued from page 27*

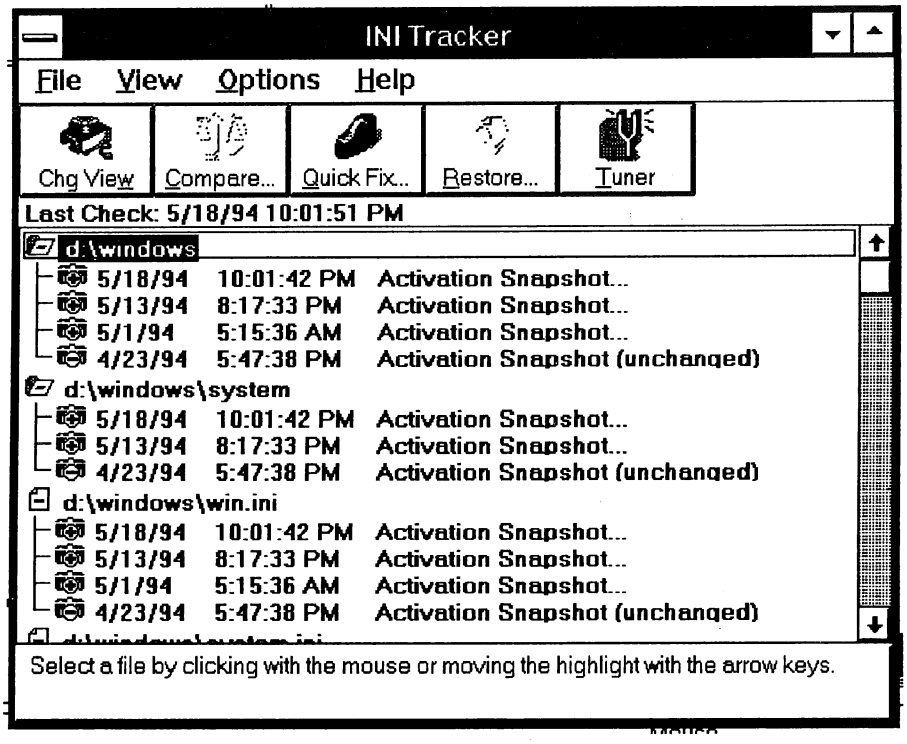


FIG 5

This disk will contain all the files from your machine that are required to get a dead hard drive up and live again. The FAT table, BOOT Record, CMOS etc. are all backed up, and may be reinstated on your hard drive that has suffered a terminal loss of FAT, or other malfunction. But remember if you are using a Rescue Disk, it must be kept up to date regularly, anytime you change things you must re-create your rescue disk.

With all these functions, the offer that was distributed at the May meeting, to supply NU v8.0 for $75 must be great value for money.

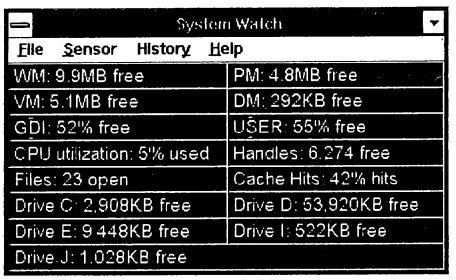


FIG 6

Book Review by Ian Shortt

# HARD DRIVE

## Bill Gates and the Making of the Microsoft Empire

by James Wallace and Jim Erickson

Published by John Wiley and Sons, 1993 452 pages with photographs and index

**IT'S hard to imagine any PC user who does not use, or has not as some stage used, software from Microsoft. For all their faults and the criticism they receive, DOS and Windows are practically ubiquitous, and Microsoft has strong-selling applications in word processing, spreadsheets, presentation graphics, project scheduling, E-mail, and so on. The company has become sufficiently successful, even dominant, to attract the attention of the US Federal Trade Commission, and murmurs about "monopoly" and "anti-trust" abound.**

This book tells the reader about the origins, growth and success of Microsoft, with particular emphasis on its extraordinary Chairman, Bill Gates. The reader is treated to Gates' family origins, early life school years (when he discovered, and immediately became obsessed with, computers), university, and the foundation of Microsoft. Its first product was a BASIC language implementation for the world's first personal computer, the ALTAIR (256 bytes of memory in its most elementary manifestation, and input and output devices to match - paper tape and flashing lights respectively). Then on to early successes in writing versions of BASIC for the flood of other early PCs, and eventually to the now-legendary deal with IBM to provide the operating system for their first PC, only after another firm (Digital Research) had knocked back the offer from IBM!

From there, ever onward and upward to further successes with applications, refinements of DOS, and the eventual wide acceptance of Windows. The later is a story of the triumph of persistence and push over almost every accepted principle of logic and sound management. Those who (still) believe Windows to be a disaster as an operating system/user interface will feel entirely justified when they read about the way it was messed about by experts at Microsoft and elsewhere. From there, Microsoft proceeds through an incredibly successful public flotation, which made Gates and others in the company paper billionaires, or multi-millionaires, either instantly or as the price continued to climb. Finally, the current position of dominance in the PC software market is reached, and it is here that the really unpleasant side of Microsoft comes to the fore. Some of Microsoft's practices in dealing with other software and hardware companies, at the kindest, only be described in the American capitalist tradition of Jim Fisk, J P Morgan and J D Rockefeller. (Did you know that Rockefeller's most effective way of dealing with rivals in the oil business was to send gangs of thugs to their depots and... but I digress.)

There is no doubt that Microsoft plays hardball in the software market, and the book gives an insight into why this is so. It has to do, like so much else, with the personality of the remarkable Gates - a man who brings a unique approach to business practice. The book paints a picture an extraordinary person - a mixture of tantrums, screaming matches with business rivals and fellow workers alike , sarcasm, total lack of any social grace, extraordinary intelligence, overwhelming competitiveness, practically complete understanding of all aspects of PCs and the industry, and a clear, and more often than not correct, view of how and where the industry will develop. From such diverse and, some would say, unpromising material has the Microsoft ethos evolved. That ethos, apart from the characteristics described above, seems also to include overwhelming dedication to the company. Working until you drop, sleeping at work, and then carrying on when you wake up, sustained by a diet of pizza, hamburgers and soft drink is nothing unusual at Microsoft. This is again largely a function of the Gates style, and the youth of the Microsoft workforce, mostly recruited straight from university.

As to the book itself, perhaps it is sufficient to say that it is written by two "investigative journalists". It reads more like a series of newspaper or magazine articles strung together without any editing, rather than a continuous narrative. It is disjointed, repetitive and discursive. If we are told once, we are told a dozen times, that executives of other companies are surprised at how young Gates is; that Gates favourite terms of abuse are "random" and "stupid"; that Steve Ballmer (another Microsoft heavy) was once equipment manager of the Harvard football team; and so on and on. However, don't let this put you off the book - it still reads easily, despite these faults.

One final point. The authors claim that the book was written without the help or cooperation of Microsoft. It therefore represents one of the few things connected with the PC industry that you can buy without increasing the wealth of the Microsoft empire.

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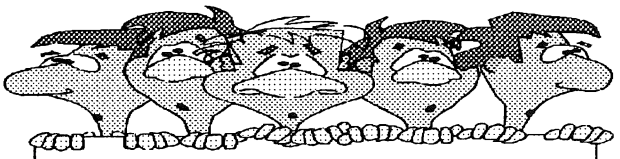
# The HUGE Membership Drive Competition

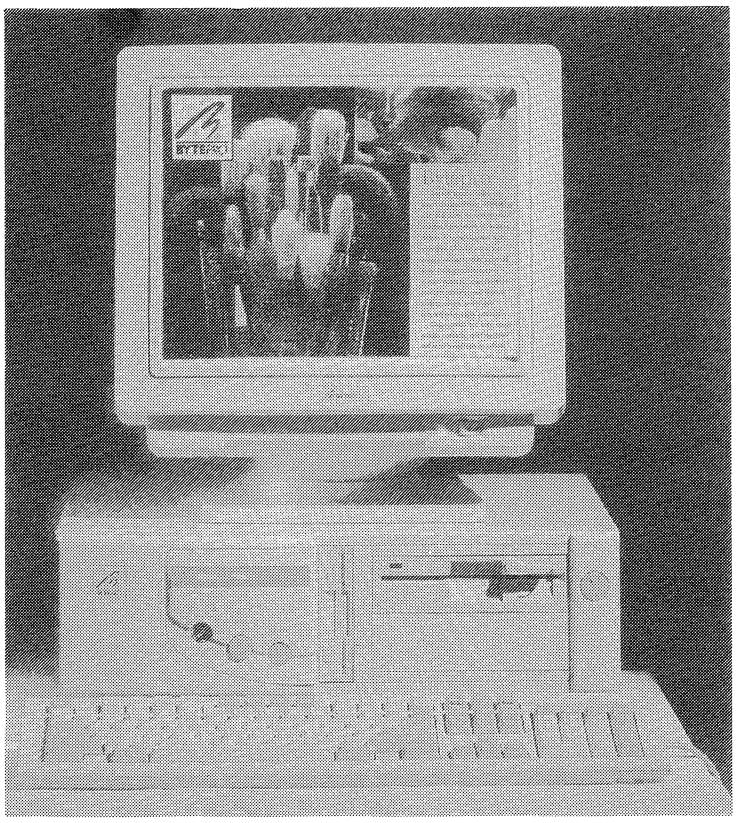


*All members of Brisbug are invited to participate in a Membership Drive promotion to be conducted over the 6 months from 17th April until 13th October 1994. Thousands of dollars worth of prizes can be yours for simply introducing a new member to Brisbug.*

## What you can win

***Thousands of dollars worth of prizes can be yours for simply introducing a new member to Brisbug.***

The major prize you can win is a Compaq 486 Laptop Computer valued at $5050. Other prizes including Microsoft Office Professional, Lotus 1-2-3, AMI-Pro, Q & A for Windows, Nortons Utilities, Borland C++, Paradox, Wordperfect and many others will be won by lucky members each month.



The new members introduced by you are not forgotten. The major prize for new members is a BytePro 486 Desktop computer complete with Multi-Media facilities valued at $5000. Also new members will be eligible to win valuable software prizes.

## When do I win?

Each month during the competition, the names of both lucky members and new members will be chosen to receive a prize from the great range of software available.

To enter, simply introduce a new member to Brisbug using the membership form provided in this magazine, or obtain a form from the Membership Secretary or Librarian and you will become eligible to win a prize in the month the new member joins our club.

The new member will also be eligible to win a prize in the same month.

## The Grand Finale...

At the General Meeting on the 16th October, all the names of members who have introduced new members will be placed in the draw for the Compaq 486 Laptop Computer, and the Microsoft software.

## And Gand Finale 2

The following month at the General Meeting on the 20th November, the names of all the new members who have been introduced to and joined Brisbug will be placed in the draw for the BytePro 486 desktop computer.

There is no limit to the number of times you can enter - for each new member you introduce you receive an additional chance. So if you introduce 10 members, you get 10 chances, 30 members - 30 chances, and so on.

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Each month, at the General meeting, a draw for lucky winners will take place for the entries submitted in that month, for both existing and new members. If you can't get to the meeting, your prize will be forwarded to you. The names of the winners will be published in the succeeding months edition of Significant Bits.

## The closing dates are:

### Intermediate Win Competitions:

16th June 1994
14th July 1994
18th August 1994
15th September 1994.

### Main Competition -

13th October 1994.

## The rules of the competition are:

You must be a financial member of Brisbug to be eligible to participate. (*Associated Clubs, and Corporate Members are also eligible).*

The introduced member must join Brisbug and must not have been a financial member of Brisbug for the previous 12 months.

You must use the special membership application form (or a good photocopy) to be eligible. (Additional forms are obtainable from the Membership Secretary or Librarian.)

The membership application must be in the hands of the Membership Secretary by 5pm on the closing dates listed. Aplications received after the closng date will be carried forward to the next month, but applications received after the expiration of the contest (13th October 1994) will not be considered.

The Judges' decision is final and no correspondence will be entered into.

The aim of the Competition is to expand our membership and by so doing, we can expand our services and benefits to all.

## BRISBUG MEMBERSHIP DRIVE PROMOTION

### CONDITIONS OF ENTRY

1. Information on how to enter and prizes form part of these conditions of entry.

2. Employees of L. & L. Electronics, the Brisbug Software Librarian, the Brisbug Membership Secretary, the agencies or suppliers of prizes associated with this promotion and their immediate families are ineligible to enter.

3. Entries close 5pm 13th October, 1994.

The draw for the 486 Laptop Computer valued at $5050 and subsequent draws for Software including Microsoft Office Professional valued at $1210; Microsoft Office Standard valued at $1095; Microsoft Works valued at $199 will take place during the Brisbug General Meeting to be held on Sunday 16th October 1994 at QUT Kelvin Grove Campus, Victoria Park Road Kelvin Grove.

The draw for the 486 Benchtop Computer with Multi-media equipment valued at $5000 will take place during the Brisbug General Meeting to be held on Sunday 20th November 1994 at QUT Kelvin Grove Campus, Victoria Park Road Kelvin Grove. Winners in each draw will be notified by mail and their names published in the Brisbug monthly magazine Significant Bits in the month following each draw.

Judges' decision is final and no correspondence will be entered into.

4. Each month during the promotion, intermediate draws for prizes will be conducted. The closing dates for each intermediate draw will be 5pm on the following dates:

12th May 1994, 16th June 1994, 14th July 1994, 18th August 1994 and 15th September 1994.

The draw for each intermediate prize will be held at the Brisbug General Meeting on the Sunday following the closing date for each intermediate draw.

Judges' decision is final and no correspondence will be entered into.

Intermediate win prizes and their values are as follows: 1 copy Lotus 1-2-3 valued at $735; 1 copy AMI-Pro valued at $735; 1 copy cc:Mail valued at $375; 1 copy Freelance valued at $737; 1 copy Organizer valued at $195; 2 copies Q & A for Windows valued at $399 each ; 2 copies of Nortons Utilities Volume 7 valued at $299 each; 1 copy Borland C++ with A/F valued at $795; 12 copies of Paradox 4.0 for DOS valued at $795 each; 16 copies of Paradox 1.0 for Windows valued at $795 each; 2 copies of DR DOS valued at $135 each; 1 copy WordPrerfect 6 for Windows valued at $695. Total Value of intermediate win prizes $28293. Intermediate win prizes are not transferable or exchangeable and cannot be taken as cash

5. During the period of the Membership Drive Promotion, all financial members of Brisbug with the exceptions as listed in condition 2, as above shall be eligible to enter the competition.

6. The following shall be the conditions of entry to the Membership Drive Promotion:

(a) During the continuance of this promotion, every financial member of Brisbug who intro-duces a new member who joins Brisbug shall be eligible to participate in the monthly draw for intermediate win prizes for that month.

(b) The new members so introduced who join Brisbug shall also be eligible to participate in the monthly draw for intermediate win prizes for that month.

(c) The new member must not have been a financial member of Brisbug during the 12 months previous to the commencement of this competition.

(d) All entries shall be on the Membership Application Form available for the duration of this promotion.

(e) At the conclusion of the Membership Promotion, the winners of the major prizes shall be selected from the names of all introducing members in the draw for the major prizes to be conducted on the 16th October 1994.

(f) On the 20th November 1994 the winners of the major prizes for all the new members who have been introduced and have joined Brisbug shall be drawn.

(g) The prizes allocated for each intermediate win draw shall be decided by the Management Committee of Brisbug and such prizes cannot be exchanged for alternate prizes.

(h) The winners of each intermediate draw for prizes shall be eligible for the major prize in each category.

7. The promoter is L. & L. Electronics of 95 Station Road, Booval, QLD 4304.

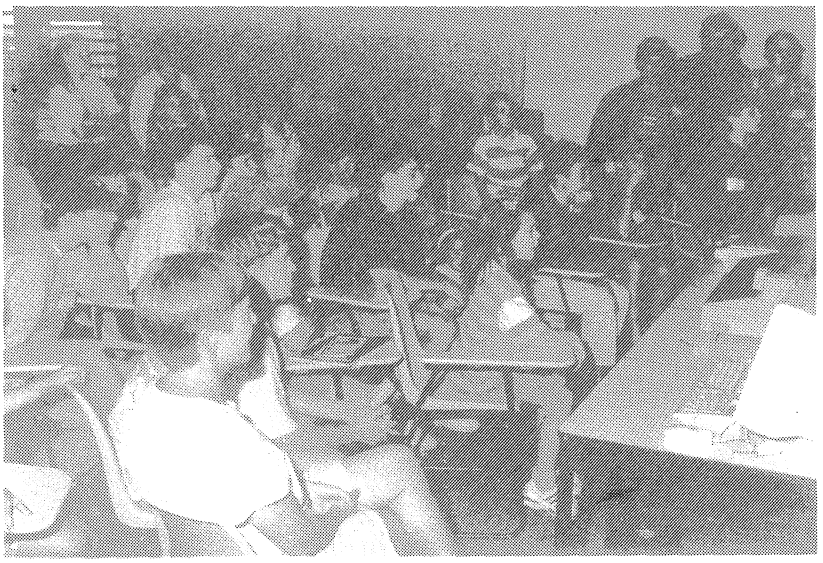
# Junior Group News

**Junior Group Meeting commences at 9.30 am Room B310**

## Reported by Annette Bulmer

Well June has come around again and we are half way through the year. Hasn't it gone quickly Christmas is nearly here again, and already I can hear the groans from the parents.

Here at Brisbug we had a really good April meeting although the numbers were down a little. Could it have been because the magazine was not delivered to remind people that Brisbug was on. Oh well that's life I guess.



We should thank Brad Angie for his three or more hours of his time. I can really say that the Juniors had a ball. Brad kept us enthralled and we learnt how signs and other vinyl products were produced. You will probably see the end products in this magazine. Brad has generously donated some more of his time at the June meeting. Come along and find out what he is going to do. Should be a lot of fun and you will learn something new.

That's the one thing I find interesting about the Juniors you always learn something new.

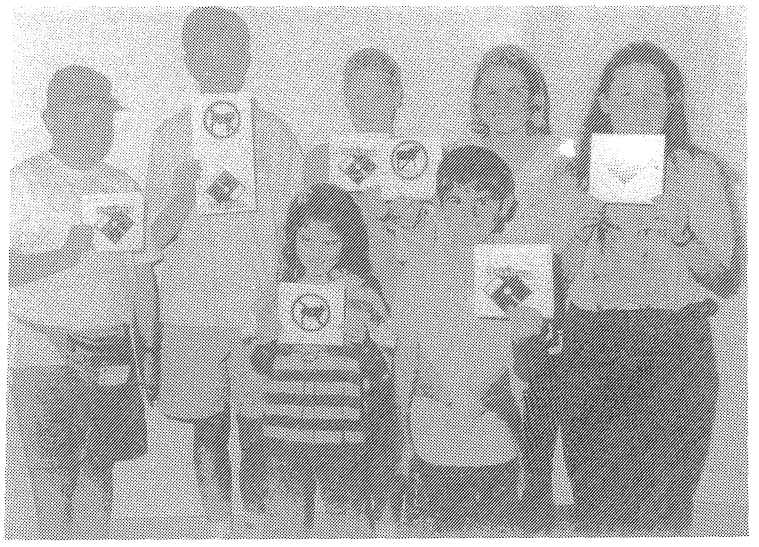
Brian Doyle has also donated some of his time to the Juniors. He is also going to show how the computers help him in his work. We are trying to show the Juniors what people use computers for in the work place. So come along and join us at the Juniors. Gordon and myself will be on holidays with our family.

**PLEASE NOTE——**

Regarding the competition about the name and logo for the Juniors. There was a slight error as the address was not printed in the articles. So we are extending the competition for one more month. So instead of it closing in July it will close in August. So send us your ideas and suggestions to

**MR.GORDON BULMER**
**25 SOMERSET STREET.**
**ROCHEDALE. 4132**

*Left: Enthralled Group of Juniors watch Brad Angie preparing vinyl signs.*
*Below: Some of the finished results.*



# Games Reviews

## SID AND AL'S INCREDIBLE TOONS

*Reviewed by Alex Kunzelmann*

If you remember Sierra's previous puzzle game: "The Incredible Machine" you would think of a game that had great graphics, hundreds of levels and a cool sound track. Similarly Sierra have designed another puzzler. It is called "Sid and Al's Incredible Toons".

Your job is to complete the level by following the instructions that come up before you begin. Sid is a mouse and Al is a cat and you must help or inflict pain on each animal from dropping an egg on them to annihilating them with a bomb.

On each level you are given a half complete invention in which you have to build extra bits like anvils, ropes, pulleys, bombs, bananas, cheese and chickens.

The levels start off easy and get progressively harder as you continue through the stages. If by any chance you finish the game, you can then go on to design your own levels.

This game is original, although it is just like its precursor. It supports SVGA, if you have it, it looks even better. I think that Sierra have something going in the puzzle game area and that their games will become very popular and successful.

There is a ten level demo version which will soon be in the library.

SID AND AL'S INCREDIBLE TOONS
Publisher.....Sierra
Developer.....Jeff Tunnell
Minimum System.....386, VGA
Recommended.....SoundBlaster, 486, SVGA
Release Date.....Out Now


**MEMBER'S PRIVATE SALE**

Registered Versions of

| | |
|---|---|
| Duke Nukem II | $ 35.00 |
| Jill of the Jungle (1,2,3) | $ 30.00 |
| Commander Keen (1,2,3) | $ 25.00 |
| Altered Destiny | $ 25.00 |
| Night Shift | $ 15.00 |
| Soundblaster brand speakers | $ 20.00 |
| Heaps of new/old computer mags. (ea.) | $ 2.00 |
| Joystick/Game card (2 player) | $ 15.00 |
| Nintendo double screen game "Oil Panic" | $ 10.00 |

**Offers accepted**

**Ring Alex on (07) 281 2759**


## SHADOWCASTER

*Reviewed by Corpsegrinder*

Requires:386, VGA, 4Meg Ram, hard disk, 100% Microsoft-compatible mouse driver (not just Microsoft-mode).

Shadowcaster is a recent release from Origin, following (distantly) in the tradition of the Ultima Underworld series. Basically it's a first-person-perspective dungeon adventure, featuring continuous movement and texture-mapped walls for realism. It looks and feels more like Wolfenstein (all walls at ninety degrees, all floors flat) than either of the Underworld games.

The people behind this game also did Black Crypt for the Amiga, and the similarities - unfortunately - show. For those who haven't had the pleasure, Black Crypt was a Beholder-style RPG with tremendous graphics, but no soul or substance, and left you feeling...empty.

Your character in Shadowcaster is a shapeshifter, a human able to change his form and abilities to achieve his ends. There are six forms available in the game (lion-man, halfing, gazer, fish-man, dragon-man and stone golem) and all have special abilities and spells. Some shapes can fly or swim underwater, which add to the game. Some, however, are mainly useful for carrying items. The aim of the game is to penetrate a hostile temple and confront the leader of the evil shapeshifters. Goes without saying, really.

What's life like on Planet Shadowcaster? No conversations. No trading. Practically no thinking. Few items. Even fewer decisions. Short, simple levels. Lots of frantic combat. Sort of like a cut-down Doom without the fun weapons.

Graphically, Shadowcaster excels. Despite the fact that all surfaces are at ninety degrees, the scenery is superb. The monsters are usually well done, and the morphing scenes are entertaining. Combat is very simple - just select the weapon or spell, aim at the opponent and click the mouse button as fast as you can. Disappointing. The gameplay is decidedly lacking - go everywhere, kill everything, and collect anything, pretty much like Wolfenstein, with the odd puzzle thrown in for credibility.

Combat is tough, and after a few fights, your character will need to recover health and magic points. This is easily done - just move your character to an empty section of the map and leave the computer for several minutes. Sigh!

There is also an automapping facility, but it's not nearly as aesthetically pleasing as the mapping generated in the Underworld series. You also have the option of a full-screen view window for faster computers, which adds a lot to the atmosphere.

Good points: excellent graphics, morphing is fun.

Bad points: too short, too simple, too shallow, too hollow; combat can be very tough.

In a word: Fair.

# CorelDRAW! 5 — First Looks

by Ash Nallawalla, Reviews Editor

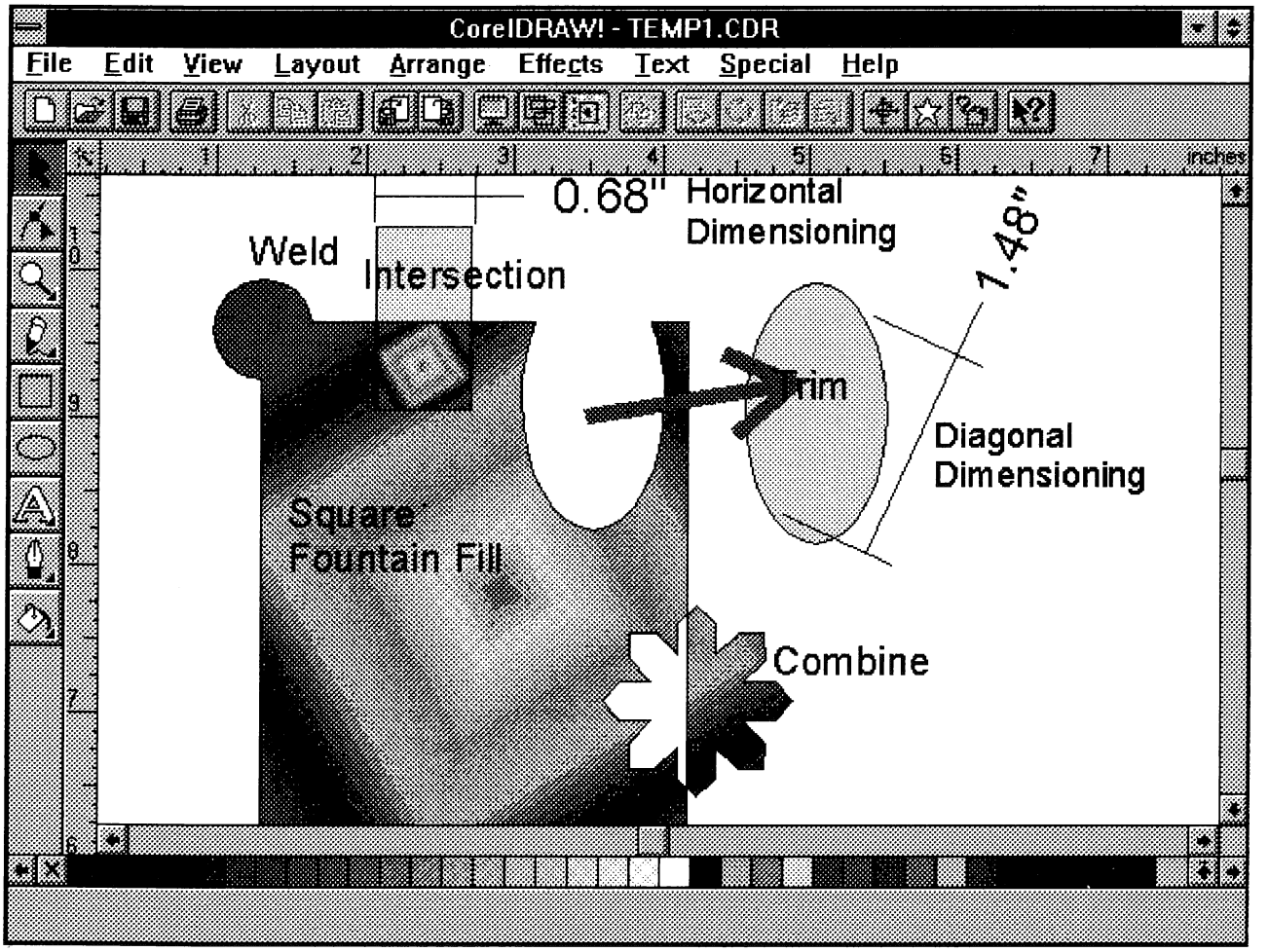



FIGURE 1. Some new features of CorelDRAW! 5

**CORELCorporation will launch CorelDRAW! 5 and CorelFLOW! in Sydney on 16 June, where Dr. Mike Cowpland, CEO and Arlen Bartsch, Director of Sales and Marketing are the guest speakers, but the official launch date is 26 May. This article had to be based on a late beta copy of CorelDRAW! 5 (CD5) to coincide with the release date.**

Ventura Publisher was a stand-alone desktop publishing package and CorelDRAW! was a drawing package, both having other graphical or publishing extensions too. Owing to the recent acquisition of Ventura Software Incorporated by Corel, the two products have been enhanced and combined into a complete publishing solution.

### System Requirements

To use CD5 you need

* 80386DX CPU (80486 preferred)
* 8 MB RAM (16 MB preferred)
* Mouse or pressure-sensitive pen
* VGA or better graphics system
* Windows 3.1
* CD-ROM drive recommended
* Math coprocessor recommended

### What's New?

The first thing you may notice is an improvement in the speed over earlier versions, but you do need that minimum of 8 MB RAM. You would do well to get 16 MB but it was quite usable on a 486/33 with 12 MB. A math coprocessor speeds up operations. There is a new ribbon bar, which gives access to commonly used functions. CD5 conforms to several of the Microsoft "Chicago" conventions, such as the tabbed dialog boxes that we are beginning to see in many applications.

OLE 2 has been implemented, so dragging and dropping across OLE 2 compliant applications is possible. Notably, images chosen with Mosaic can be dragged into any CD5 application. Colour handling is now easier, and you can calibrate your scanner, monitor or printer so that WYSIWYG can assume a truer meaning. The Color Manager now handles all aspects of colour prepress work across all of CD5; for example, you no longer have a separate Ventura Separator.

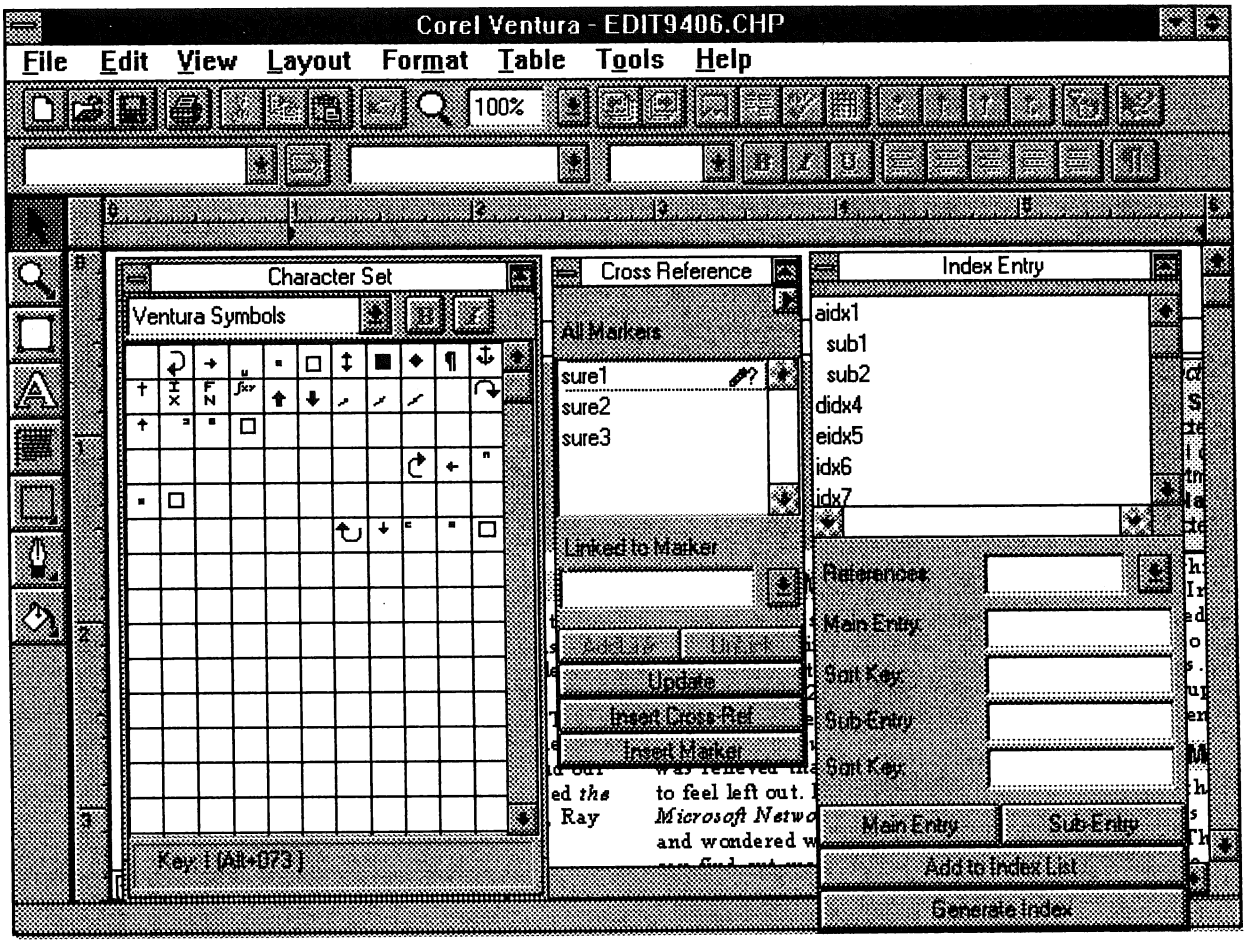



**FIGURE 2. Ventura's Corel-style settings**

## Corel Ventura 5

At long last Corel Ventura 5 (CV5) behaves like a true Windows application. Home, End, Page Up, or Page Down keys now conform to Windows convention. (To use the previous actions of those keys you use the Ctrl key with them.) Figure 2 is rather busy but shows that Ventura now has a similar interface to Draw and fewer buttons appear at the top.

Roll-Ups are now available in Ventura, so you can reach those functions without too many mouse clicks. In case you have not seen this term before, a roll-up is like a drop-down menu except that it can be placed anywhere on a screen and a tiny control at the top right enables you to "roll it up" when you need more screen space. It shrinks to the height of its title bar.

Figure 2 also shows the new look of some features that were called "Special Items". You now have a character selection box that is an improvement over the standard Windows Character Map applet. Cross-references and indexing have a roll-up interface.

Editing actions work as they do in other Windows applications. The right mouse button now acts as a context-sensitive tool, mainly to display drop-down menus (which are at the top of the screen) as popups (which appear where the cursor happens to be).

You can now have the buttons at the left of the screen anywhere you like and have all of them visible at once as shown in Figure 3.

Large-scale editing can be done from within CV5, making it competitive with other packages that claim this feature. This is known as a Story Editor,

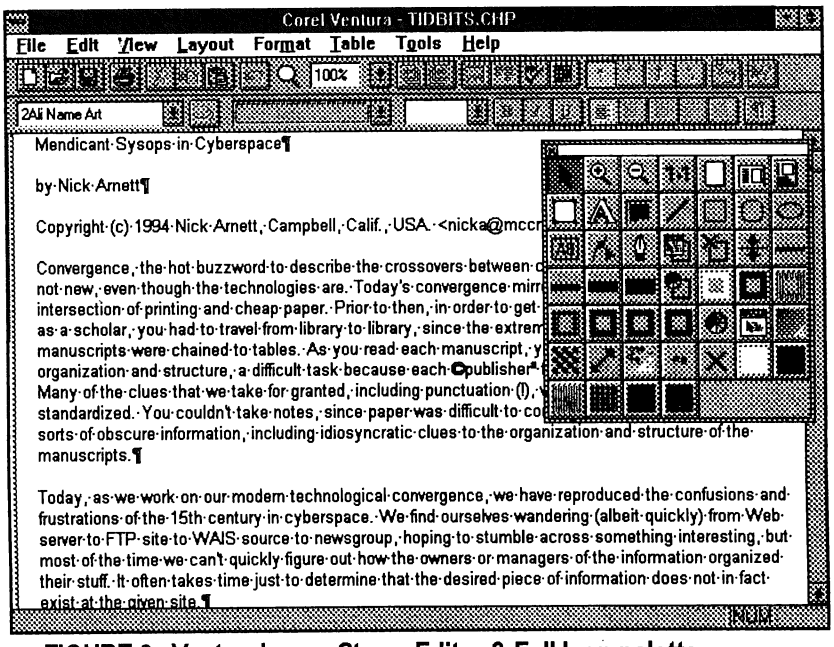



**FIGURE 3. Ventura's new Strory Editor & Full Icon palette**

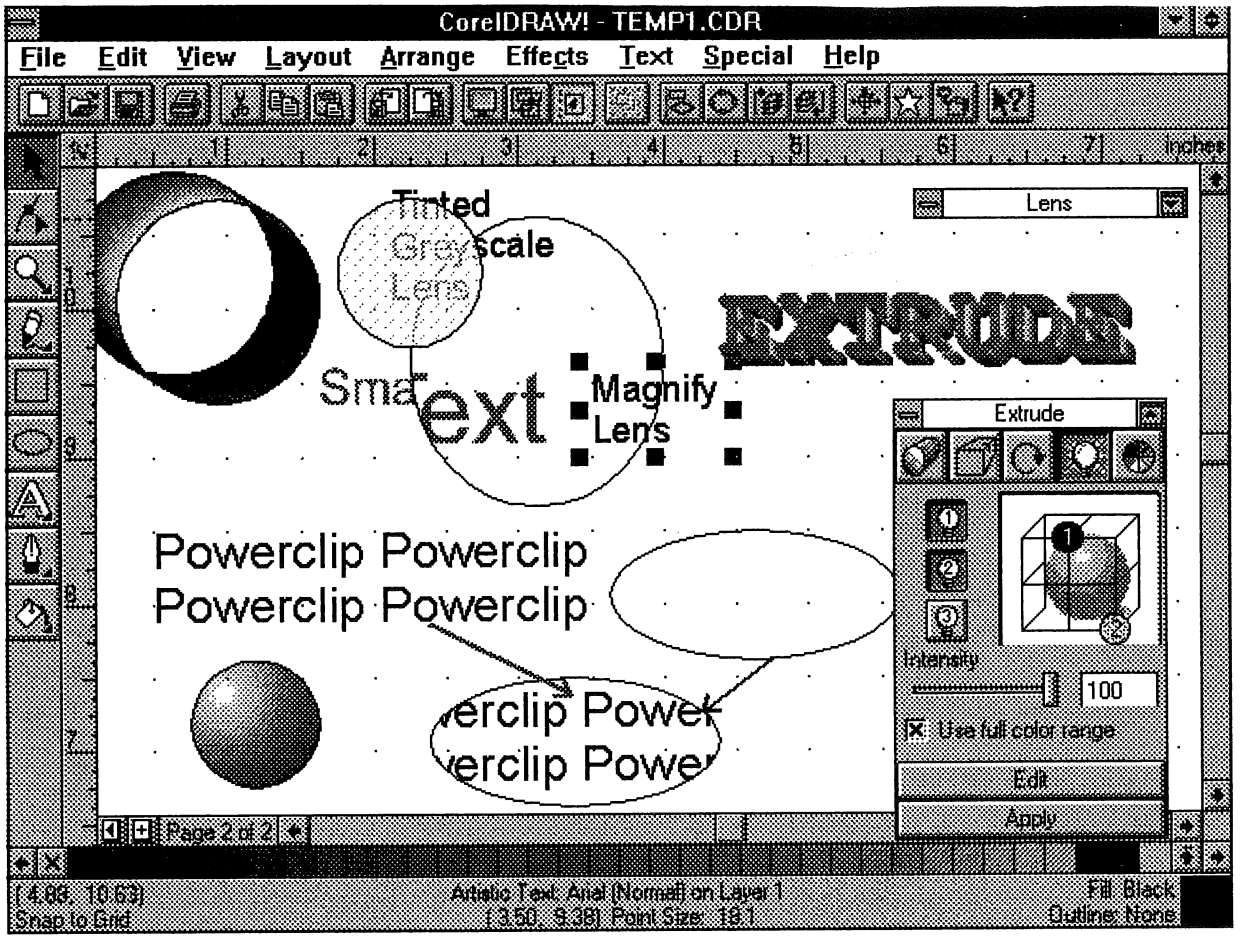



**FIGURE 4. More CorelDRAW! 5 Features**

as shown at Figure 6. It has expectedly caught up with the current crop of word processors such as version 6 of WordPerfect and Word. See Figure 7. More significant to the professional is the ability to handle Rich Text Format (RTF) and Standard Generalised Markup Language (SGML) files.

Now text can be wrapped around irregularly shaped objects. Text and graphics can be rotated in 0.1 degree increments. You can appreciate the integration with CD5 — fills and outlines from CD5 can be applied to CV5 objects.

The need to rename the width table or suffer a delay each time you started the system is a thing of the past. CV5 manages fonts differently now and you can happily add or delete fonts.

A small utility called CorelKERN now enables you to fine-tune the kerning pairs of your choice and to save their settings for future use.

## CorelDRAW 5

Improvements to artistic effects are impressive. You know about Weld and Combine: they have been joined (pun not intended) by Trim and Intersection. Trim enables effects such as a bite mark in an apple; if you want to slice away a curved part from a rectangle, for example, overlay a circle over it and choose Trim. I found this feature very handy for the design of the Readers Choice Awards logo.

Several of these innovations have been shown in Figures 1 & 4. You can now show the dimensions of any object in a horizontal, vertical or diagonal direction. This would be welcomed by designers.

The Lens effect has features such as Heat Map, Invert, Magnify, and Transparency. This is useful for illustrations such as a map where you may wish to enlarge some portion to show the detail. This is a first for vector illustration programs. This type of power and functionality is traditionally only found in bitmap programs.

PowerClip is a new masking effect where you can choose some clip art and use it as a fill for some object, such as text or some shape. This is also known as "paste inside." PowerClip is editable; the contents can be extracted and/or edited. 3D objects can be shaded realistically with an enhanced Extrusion effect, which comes with light sources. Objects can be placed with greater precision and they can be sized better with live dimensioning. These have been illustrated at Figure 4.

Other changes include faster paragraph text entry, live dimensioning, precise sizing and positioning of objects, PANOSE font substitution and standard font handling. Minor improvements make it easier for you to change system settings. CORELDRW.INI can be directly edited from CD5, although I can't say I ever felt the need to do this.

## CorelPHOTO-PAINT 5

You can handle large files because you can open just a portion of such a file. Improved memory management has facilitated this. Text entry is now directly on-screen and with greater control over placement. You can convert to and edit in CMYK and use some new artistic filters and brush effects. You now have access to a new Fill roll-up, which gives you the same selection as you would in CorelDRAW. This is manifested as a large palette of several rows of colours

that rises from the bottom of the screen (note the new arrow control).

Masking also gets a major facelift. You can move, invert, or subtract from another mask; load, save, resize, and node-edit masks. You can protect an area so that you don't modify it accidentally.

You may have appreciated the concept of layers in drawing packages: now you get it in this bitmap product! This enables you to tuck away certain elements for future amendment, duplication or merging.

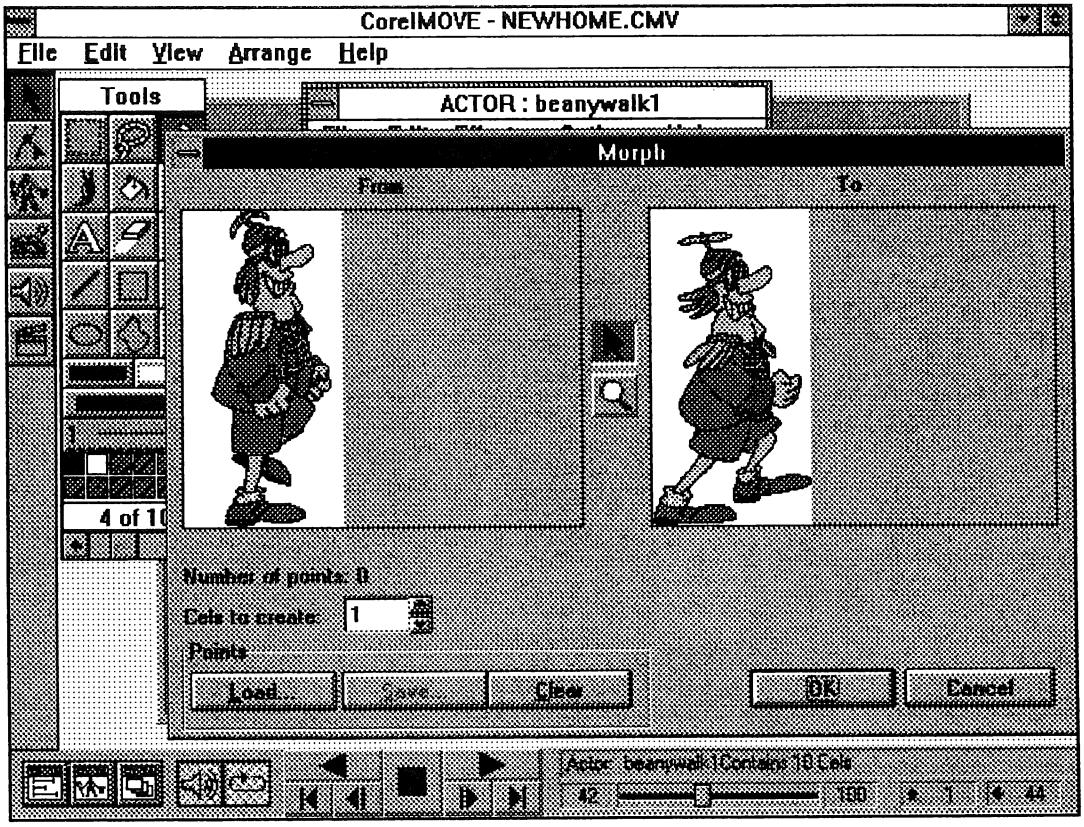



**FIGURE 5. CorelMOVE Animation module**

### CorelCHART 5

CorelCHART is a presentation tool that has its own functional spreadsheet with 16,384 rows and 240 columns. About 300 new functions have been added. That would meet the needs of many lightweight spreadsheet users. Ten new chart types have been added (totaling over 90) and you can use the fills, outlines and 3D text effects from DRAW.

### CorelMOVE 5

CorelMOVE is a basic animation package that also serves as a presentation tool. Now you can have multiple roll-ups on the screen and use drag-and-drop via Mosaic.

One of the tedious aspects of creating animated images or actors is drawing many similar images with slight changes. The new Morphing tool makes this easier. You can specify a starting cel, an ending cel, and the number of cels in between. The program draws the intermediate steps for you. MOVE also supports Video for Windows and QuickTime for Windows. There is a new frame mode in CorelDRAW, where you can create an actor and then move it into the MOVE environment. See Figure 5.

### CorelSHOW 5

CorelSHOW is a presentation tool that has also been updated. You can type text directly on the screen and enable bullets, which appear when you press the Enter key. Speaker's Notes are also available, as shown in Figure 13. You can choose from a large selection of bullet characters.

### CorelTRACE 5

TWAIN-compliant scanner support and text optical character recognition is possible with CorelTRACE, whose main function is tracing scanned images. The resultant vector images can be tidied up in DRAW.

### CorelQUERY

CorelQUERY is a tool for extracting database information for use in Ventura or DRAW. See Figure 11.

### TagWrite

TagWrite is a document tag conversion utility for use with Ventura. It supports SGML, RTF and others. It was not ready at the time of writing.

### Availability and Support

CorelDRAW 3, CorelDRAW 4, CorelVentura 4.2, and CorelDRAW 5 will be marketed by Corel Corporation simultaneously. This is an integral point of Corel's marketing strategy. CorelDRAW 5 will start shipping from Canada at the end of May. RRP will be $1295.

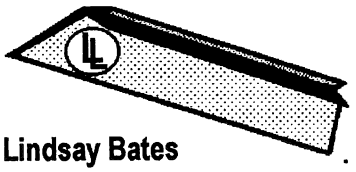
Corel Corporation has signed up Webster Publishing (formerly Webster & Associates) to offer free, first-level technical support and upgrade services to registered users of all Corel products.

### Summary

CorelDRAW 5 is a complete graphics and publishing package from Corel Corporation for the IBM-PC family of computers. It is a coordinated enhancement of graphics features found in its stand-alone drawing package, CorelDRAW and the publishing tools from the popular Ventura Publisher product, which is now owned by Corel Corporation.

Whether you need to publish a book or draw a simple logo, CorelDRAW 5 will do it. It includes six applications, seven utilities, over 825 fonts, and over 22,000 clip art images. There are over 1000 MOVE actors, props and sounds; 75 Ventura style sheets and 50 DRAW templates. RRP $1295.

# Lindsay's Letter



**Lindsay Bates**

***Practical Computing for Established and New Computer Users***

***FASTER than a speeding bullet, the computer world continues it's rush towards the 21st century!*** *In ten years time what will be left of the Pentiums and CD-ROMs and Notebook computers and Modems of today? Not much probably.*

*In their place will undoubtedly be faster, smaller and much smarter technology. Will I even own a PC then? Will TV, phone, computer, printer, fax machine and phone answering machine be all rolled into one. Who knows that far ahead? Meantime we can all get much pleasure from our computers, and the peripherals attached to them.*

*In this issue of LL I've endeavoured to give you some more goodies to help you do just that: ENJOY your computer, and get the most from it. Thankyou to those who take the trouble to ring and let me know what you like and what you don't like in my column. — Enjoy!*

✿ Interesting prediction from an official of hard disk manufacturers Seagate, that within 5 years nothing smaller than a 500Mb drive would be available. I'd be prepared to bet it'll occur considerably before that.

✿ Also from Seagate is word of a new 2 gigabyte drive spinning at twice the rate of current drives. It's reportedly designed for an average failure rate of once every 57 years! Wonder who actually measured that - and how?

✿ Can't help pondering what happens to DoubleSpace when Chicago/ Windows 4 arrives. I have DOS 6.2 running DoubleSpace. Windows 4 is going to be Windows + DOS all in one. But Microsoft seem to have lost DoubleSpace, so the new Windows cannot include it. Thus when Win 4 installs over my current DOS and Windows, I wonder what will happen to my DoubleSpace drives?

✿ Quietly introduced for the faster mainboards of the Pentium, the new 72-pin RAM memory is available in 1, 2, 4, 8 and 16Mb modules. Hopefully this will give us all much greater flexibility to upgrade our future mainboards from, say, 8 to 16Mb (most current boards require you to throw off the 8 and buy a whole new 16!)

✿ Ever so slowly we're seeing the market prepared to sell you a faster CPU to put into your PC as a replacement for your current chip. There's been great reluctance in this: understandably I guess, resellers still want to sell you a whole new computer. As it is, you have to carefully consider if it's advisable to do this to your current machine - effective plug-and-play has NOT arrived in the CPU world as yet.

✿ From a CPU wholesale price list I've seen, seems to me that Intel's 486DX4 chips are over-priced at time of writing. Or is it that the Pentium is *under*-priced? - there was only $240 separating the DX4-100 and the Pentium P60! On the other hand, there was a $540 jump from a DX2-66 and the DX4-100.

✿ It seems that PCMCIA will eventually come to a desktop near you (and me). Beauty! In one report I read, the writer asked: "... is there really any need for a PCMCIA socket when you can easily open the box and install an adaptor?" Is the Pope Catholic?

It will be marvellous getting to install cards, modems and other peripherals via this new miniaturised plug-and-play technology (when it comes of age via Chicago). Unlike now.

For many of us know the difficulties of getting to plug the old 8-bit cards into a slot on the motherboard. And the longer 16-bit cards could be just that much harder. I recently had to install a very difficult VESA monitor card on a 486 main-board: clearly the 32-bit VESA slots are worst of all. I huffed and puffed and pushed and shoved and wriggled. It did eventually go in. (I've heard stories of cheapies' mother-boards splitting right in two when you have to do this - then you have to prove the smash wasn't your fault!) So roll on PCMCIA, I say. Easy to put in and out. And no configuring required when plug-and-play is here. But, oh, what a mouthful - did it *have* to be called P-C-M-C-I-A?

✿ I commented adversely last time on the use of the expression "Intel Compatible" on the SBSs program *The Big Byte*. But maybe it's going to gain significance as we get more and more *non*-Intel CPUs in our PCs (like AMD and Cyrix). In their wisdom the courts have decreed that letters and figures like 486DX2-66 cannot be the sole preserve of just one company. So if you chose to purchase an AMD based 486DX2-66, well, maybe you DID get an Intel Compatible computer!

And all of this means that as a new buyer you need to do two things:

(a) decide whether you want an Intel or non-Intel CPU; then

(b) ensure that the computer you buy is, in fact, fitted with the CPU brand you asked - and paid - for.

Until the market gets to be more in the know, you can be sure that the cheapies will be out to catch all flies they can in the CPU honeypot.

# IN THE WORKSHOP

One of our customers was unfortunate enough to cop a lockup in the middle of writing to his hard-disk. It left him with over 200 disk errors and clobbered dozens of files!

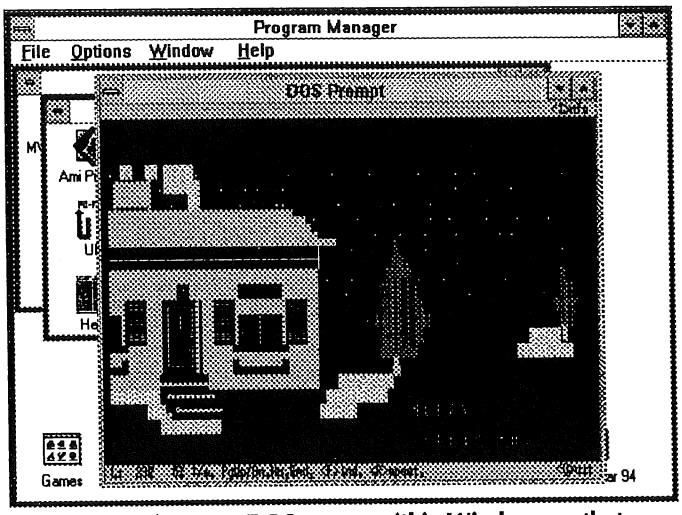
We used Nortons (v6, I think) to fix - he lost a lot of files that were irretrievably damaged, but at least he ended up with everything back in good nick on his disk. Or so we thought. As he had DOS 6.2 installed, I decided to run SCANDISK just as a final precautionary check. To our surprise, SCANDISK found (and fixed) not one, but two further errors that Nortons had apparently missed! It really does pay to do a number of checks. But the story doesn't stop there.

Only a couple of days later I had occasion to fix a disk error on one of our computers. Through a strange line of circumstances we had ended up with a claytons file (a file you have when you don't have a file) on Drive D. We couldn't access this file and we couldn't delete it to get rid of it either. After the above experience, naturally I tried SCANDISK first. To my amazement, it found no errors on Drive D and I was left muttering: "Much YOU know!" I ran it again in disbelief. Same result. I then tried Nortons on it, and - you guessed it - Nortons found and fixed the problem! Exactly the reverse of the earlier experience. Interesting world, this world of IBM (in)compatibility!

# THE $MARKET

## WHAT IT COSTS TO OWN A COMPUTER

I did a fascinating exercise recently. It turned out to be extremely illuminating. What I did was compare current advertised (Brisbane) computer prices with those of 2 1/2 years ago. The first thing I noticed was a bit of a shocker. It was the number of computer firms who've gone the way of all flesh. I counted only 6 original firms still advertising today! And 3 of these were lowest price/ lowest quality sellers (is there a lesson there?)




**You can size your DOS screen within Windows so that colour graphics (and text) show correct proportions.**

All the others -both big and small - had come and gone. No doubt those around today will also be largely gone if a check is done in another 2 1/2 years.

But what of prices? For my check, I chose one business that had continued with a similar ad structure. Their range in 1991 started with a 286-16 with 1Mb and 40Mb HD, for $1,450. Their top unit was a 486-33C with 4Mb and 40Mb, for $3,290.

In 1994 their bottom of the range was a 486SX-33 for $1,625 and the top was a Pentium-60 for $3,390 (both with 4Mb and 170Mb HD). Interesting, eh! We've sure come a long way in just 2 1/ 2 years.

But the bottom computer today still is around my $1,500 price barrier (below which computer resellers seldom go). And the top computer - for this particular firm anyway - was still just over 3 grand.

Doing a few quick sums to compare horses with horses - or, in this case, a 1991 486DX-33 with the same system today - the price differential was about $2,000 over the period. That's works out at about $800 per year - a surprisingly low figure in my estimation.

What's clear from this is that we're getting much more power and features for our dollar in the 90s than we got in the 80s. It all adds up to *great value*.

It's also clear that, despite our feeling just a little overwhelmed at times as to how FAST the PC world is travelling, these days we can afford to upgrade reasonably frequently - *without* it costing an arm and a leg.

# COMMENT

## WINDOWS 4 AND DOS BOXES

No, I don't know if Microsoft's Chicago project will end up being called Windows 4. Knowing Microsoft, they're likely to call it Windows 7, or something else unlikely (how about Chicago 1?) But who cares, anyway? What's in a name -what I want to know is how GOOD it will be? Current Windows users will be awaiting its release - supposedly later this year - with great interest. Windows 3.1 (or 3.11) basically does a pretty reasonable job. Sure, I could write - and have - PAGES of gripes and grizzles, for most of which Microsoft deserve a whole bin full of brickbats. Maybe I'm some sort of Windows freak (or is that phreak?)

If a Windows freak is someone who uses Windows, believes in Windows, and greatly enjoys many of the things Windows can do - then I have to plead guilty. But if being a Windows freak automatically means giving up DOS for ever - then I sure ain't one!

So one of the BIG issues to me is how will Chicago/Windows 4 let me run my DOS programs? The current Windows implementation of DOS boxes is nothing short of pathetic. Use Alt-Enter to go from full-screen DOS to a DOS

window and what happens? The window scrunches up vertically. So if you have a diagram or a graphic on screen all its proportions are rooned (as Hanrahan would have said). Are the Microsoft programmers so inept that they couldn't provide a properly proportioned DOS box WITHIN Windows (and still with room for scroll bars)? Is that too hard? - apparently.

But maybe you tried changing the Font size to resize the DOS window. It works too. Did you try 10 x 18 perhaps? That will get the proportion back for you fairly well; trouble is about 1/5th of your info has now disappeared off the RHS of screen. Pathetic. (Hint: to get fairly good proportion for graphics and diagrams, use font size 5 x 12. Gives a tiny window, but at least proportion isn't bad.) And what about mouse implementation? Basically non-existent.

And don't you love the fact that you can't close Windows without closing your DOS box (or boxes) - AND there's no easy way to do the latter. That's just sloppy programming. Many of us still use a lot of great DOS bits and pieces. But we'll all have to wait, won't we? Let's hope Chicago is going to do the job for us.

## A PHONE CALL TO NEC

I know many of you have not had good experiences phoning big computer firms for help. You may relate to this one.

What I was after couldn't have been more straight-forward: a current printer driver for an NEC printer. A call to NEC Brisbane resulted in being told to go to a local dealer for it. I told the operator I'd already tried three of the biggest without success (one said they'd never even seen one themselves!), but that didn't deter her.

She was determined to send me to one, and I had to say, "No!" very firmly to stop her. So many firms seem to have substituted bossiness for customer courtesy these days. She then told me that Sydney would have one (why not Brisbane, one has to ask?) So I asked to be connected to Sydney. After a 10 minute hold, the gentleman said I needed to download it from their Bulletin Board. I'd already tried this three times and didn't get the file, so I declined this with thanks. His alternative was to charge me $25 to send the driver on disk! I said: "You are joking, aren't you?" But he wasn't.

It's fair enough to levy a charge. But $25 for one 300K driver (that they let you download from their BBS for free) does seem just a bit over the top! "Please suggest an alternative?" I requested. He didn't have one. After some mumbling and backing and filling he suggested he give me a 008 number to ring. "Great!", I thought and duly dialled it.

I was more than surprised to be connected to the section that collect the $25 and send you the driver on disk. Good buck-pass, eh! I told the lady $25 per driver was ridiculous. Actually I said scandalous, I believe (and a few other choice words as well, as it was all beginning to wear a bit thin by then). She suggested I might like to talk to the boss of the section. I told her I couldn't see why that was necessary just to get a simple printer driver, but agreed.

I was given a mobile number to ring and wondered what THAT would cost me if I was paying my end (it turned out I was!) It rang and then was redirected. The lady who answered told me I was now onto a local call (phew! - this was all to Sydney, remember) but that the gentleman wasn't available. She suggested she page him urgently and ask for him to ring me back. I agreed.

In due course he did, and in marked contrast to everyone else I'd talked to, found no problems in sending me a driver. In fact he had great trouble understanding why I hadn't been sent one long since! So all's well that ends well.

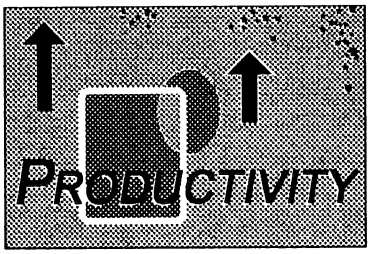
At least I hope it will be well when the disk arrives. Also that it won't have the Michaelangelo virus on it like the last disk NEC sent me . . .

## MICROSOFT'S DEFRAGMENT

Most folk know that it's a good idea to defragment the hard-drive occasionally to keep the whole shebang running smoothly and speedily. But there' seems to be a new deal if you have DoubleSpace on the HD - especially with multiple partitions. For example, almost every time I go to alter the size of my Drive E, DoubleSpace reports that it's too fragmented to alter.

So I have no choice but to defragment. And that's where the difficulties start. There are at least three ways/places that you can do defragmenting of a DoubleSpace drive, and I've seen at least 4 ways of doing it. To be fair, they always do seem to finally get the job done as to defragmenting, and there's no reason for readers to get concerned about it. Nonetheless, it's all unnecessarily complex and unreasonably confusing.

I wholeheartedly wish Microsoft would get its act together on this and *MAKE IT ALL MUCH SIMPLER*. Maybe it'll happen when the next Windows arrives.

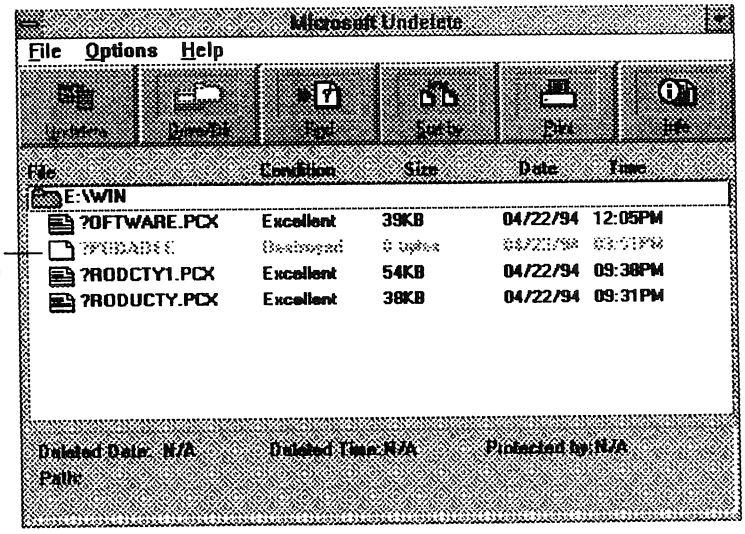



## UNDELETE

We all accidentally delete a file now and again. With the new DOS versions these days, retrieving it is no problem at all. And there's a simple rule to ensure it's retrieved safely: *DO IT NOW!*

Though it *may* still be okay later, you want to take NO risks. So stoke up DOSs Undelete and get your file back now. In DOS, just type UNDELETE. I consider the Windows version of Undelete easier to use, so you may choose to undelete from there. You need to be in the directory the file was deleted from. Undelete will show you the files - if any - that have been deleted from that directory. Notice that the first letter of deleted files has been stripped off. You'll need to choose the file you want undeleted, and supply the missing letter when requested.

Mostly you'll know the letter to give, but you can call it Z or whatever you want - then rename the file later when you've figured what the original name was. Okay. What's the best advice I can give




**Undelete in Windows is relatively easy to use. Make sure you undelete the files as soon as you have the accident.**

you about undelete? That's easy: have a go right now!

Delete an unimportant file, then undelete it. Do it again, to ensure you feel comfortable you'll never again lose an important file by accident. And don't forget the rule: DO IT NOW.

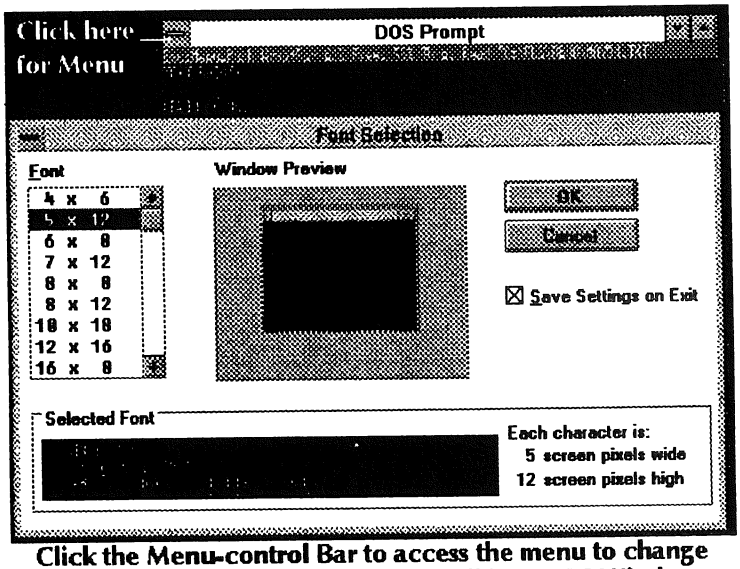
## COPY FROM ONE DOS PROGRAM TO ANOTHER DOS PROGRAM

With Windows this is really easy. Suppose you find a list of things, an address, some phone numbers, some instructions, whatever, in a .doc or .txt file. And you want them in a letter you're writing. Here's what to do.

If you're not already in a window within Windows, use Alt+Enter (hold Alt and tap Enter) to do this (386 and above computers only). Click the mouse on the Menu-control Bar at top left of the DOS window. Click on Edit, then Mark. Use the arrow keys to move the block cursor to the start of your data. Hold Shift while you use the arrows to highlight all the data. Tap Enter: the data is now safely copied to the Clipboard.

Now open the other program you want to copy the data to. If you'd like, it's fine to run a second copy of DOS at any time from the Windows Program Manager. Use Alt+Enter again, and put the cursor exactly where you want the data to copy. Click on the Menu-control Bar, Edit, then Paste, and the data will be magically pasted into your second program.

Using this method you can copy ANYWHERE in DOS to anywhere else in DOS, anytime. You can also copy from DOS to a Windows program and vice versa, e.g., from a Windows wordprocessor via the Clipboard into a DOS wordprocessor. If you haven't ever tried this, you'll probably find it quite amazing (and really very easy).




**Click the Menu-control Bar to access the menu to change fonts, and do Edit's Cut and Paste - all in a DOS Window.**

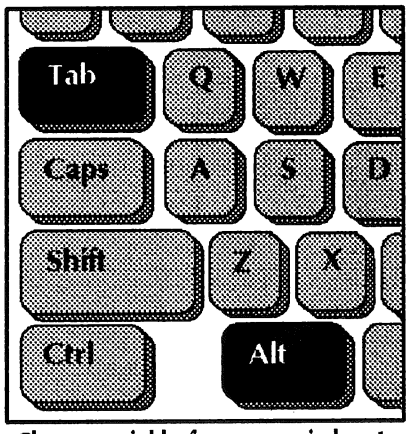
## HINTS AND TIPS

1. A lot of Microsoft's current software upgrades will check to see that you really DO have the previous version on your computer - before it will install the upgrade. You've been warned!
2. When you get your new computer, ensure you keep the floppy-diskettes that come with it. Amongst these should be (if you've bought a decent brand from a decent supplier) the diskette/s for your Monitor Card. These are required if ever you need to run Windows in a different resolution, for example; without the diskettes you may be stuck with just one res. for ever!
3. You should be aware that many Multi-Media and CD-ROM programs need 256 colours - rather than the standard 16 - in order to operate effectively. In fact some won't run at all in Windows if you don't have your Monitor Card set for 256 colours. Many of the better computer dealers will set this for you when installing Windows and setting up your computer.
4. Some of you may be like me and use DoubleSpace, but you don't DoubleSpace floppy-disks, and don't intend to. You can save an amazing 4.5K of precious base memory by typing DBLSPACE at the DOS prompt, then clicking on Tools, then Options. Click to remove the X beside Automount, then exit DoubleSpace. Next time you bootup you'll have the extra memory. If you decide to DoubleSpace floppies later, don't forget you'll need to reverse this process!

## USE ALT+TAB IN WINDOWS (AND DOS)

Pssst . . . wanta know a secret? Okay. It's this: the number of folk I find who STILL don't know how to use Alt+Tab! If you go out to a DOS box as in the hint above, one option is to use Alt+Tab to go BACK into Windows. Go out into a full screen DOS box and see.

Now hold Alt then tap Tab and you're back in Windows. That's all that *Alt+Tab* is. Easy!!




**Change quickly from one window to another using Alt+Tab.**

But how to get back to the DOS box? Well, one way is to double-click on the DOS icon at the bottom of the desktop (provided you can SEE it, which isn't always true). More convenient is to use Alt+Tab again (do it with one hand only). Hey, try it! If you've never used Alt+Tab, you're soon gonna kick yourself when you find how wonderfully convenient it is.

Now go to the next step. Hold Alt and keep holding it. Tap Tab. Tap it again. See the name in the middle of the screen? Keep tapping Tab until you see the name you want - then release Tab. Voila - you're there! This technique is great technique. I call it *Alt+Tab, Tab held*. Use the technique to go back into Windows to Program Manager. Open a program - Paintbrush would do fine. Now use Alt+Tab, Tab held again to switch between your DOS window, Paintbrush, and Program Manager.

NOW it won't worry you HOW MANY Windows programs you have open at once: use Alt+Tab, Tab held to instantly switch from one to the other whenever you wish.

# PC WORKSHOP

## MORE WINDOWS TECHNIQUES

Well I'm so glad that the "How's that Again?" Tarzan Graphic grabbed the attention of some readers last time! The Windows Applet, Paintbrush, may not be the world's greatest graphic program, but it's free, and it can be a pile of fun to play with. So I hope you had a try at making your own Windows Wallpaper.

This time we'll go a bit further with a couple more Paintbrush procedures: MOVE, CUT, COPY, CLIPBOARD. Playing with them may well help you considerably with your Windows techniques and usage.

Okay. Open Paintbrush and load in the graphic we made last time - but please do NOT save any of this. Suppose you typed in a name on some part of your NAME-PPR wallpaper - but later you wanted to move it. See the two Scissors icons up near the top left? Well, with these we can move - ANYTHING! You remember how to do the very important click-and-drag procedure with the mouse, don't you? Choose any of the names you put into your wallpaper, and click on the right-most Scissors (the one with a rectangle).

Put the mouse at the top left of the name to shift. Click and hold the left button, and drag the mouse to the bottom right of the name. A rectangle shows you what will be moved. If you get it wrong click anywhere outside of the rectangle to remove it. Then go again.

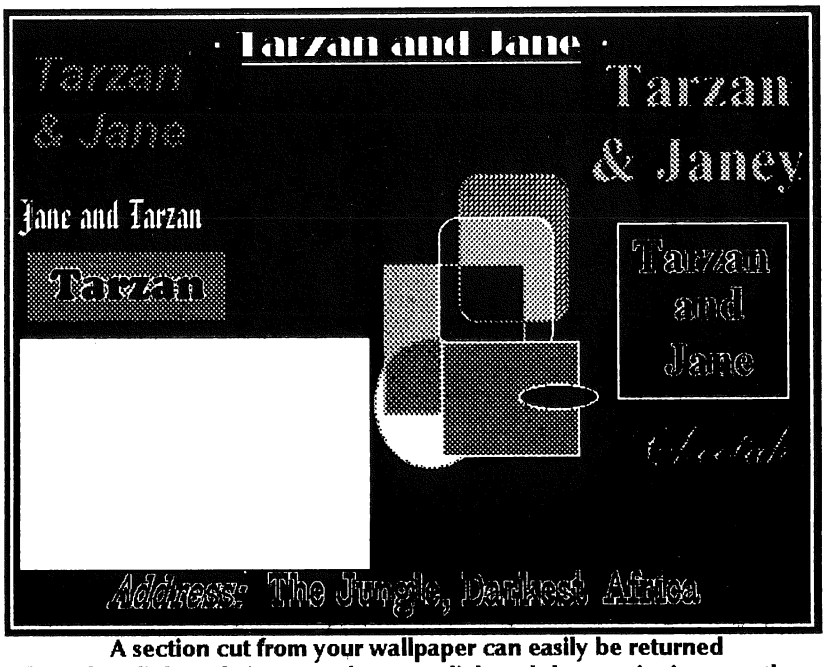
. MOVE Now to move. Put the mouse cursor anywhere inside the dotted rectangle. Now using click-and-drag again, grab the rectangle and move it somewhere else. Release the mouse button (and do not re-click it or the rectangle will disappear). Okay, great. Now how clever are you? Click inside the rectangle again, hold the button, and move the rectangle back into the hole. As long as you don't lose the dotted rectangle, you can keep moving it till you get it in exactly the right place. Now grab the name again, and this time really do move it to a new spot. Once it looks to be right, you can click outside the rectangle and it's now finalised where it is. But what about the hole we left?

No problem. Find the background colour down at the bottom and click on it. Click on the Roller Icon, then click inside the hole to fill it. It if goes wrong at any point, don't forget to immediately click Edit, Undo to fix.

. CUT Suppose you want to get rid of a part of your graphic for ever.

You could click on the Rubber Icon then rub it out, of course. But much easier is to cut it. Choose another of your names and mark (highlight) it using Scissors. Go up to the Menu-bar and click Edit, then Cut. Looks a bit terminal, eh! But getting it back is dead easy. Because what Cut actually did was store it for you in a part of Windows memory called The Clipboard. You can highlight text in your Windows wordprocessor and do exactly the same thing, i.e., Cut it to the Clipboard (via Edit, Cut) to get rid it it. But, until you put something else in the Clipboard, it will still be there if you decide you need to retrieve it. Using these techniques, you can cut any bit out of your graphic, fill the background, and then put anything you like back into this spot.

. PASTE Now click on Edit then Paste. The name you Cut appears back on the top left of screen - with the dotted




**A section cut from your wallpaper can easily be returned from the Clipboard via Paste; then use click-and-drag to site it correctly.**

rectangle round it. Know what you can do now? Sure 'nough - grab it and take it back to where you Cut if from! Do that now. So what's in the Clipboard now do you reckon? Nothing perhaps? Let's see, shall we.

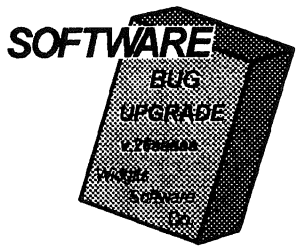
. COPY Click Edit, Paste . . . Well, that answered that pretty quick, didn't it! If you want to duplicate this name somewhere else in your graphic, you now can. Why don't you move it somewhere to see what happens.

Put it over one of the other names temporarily, or over some of your circles or squares. By copying over things you can do some interesting things with colours and shapes and effects. Definitely worth experimenting with.

I'll leave it to you to decide what to do with this name we've copied. Options are: you can move it somewhere permanently if you wish. Or you can click Edit, Cut to get rid of it.

Finally, what about the "Star" Scissors Graphic? Click on it and instead of a rectangle, you can "draw" round any part of your graphic. Very useful for bits that won't fit inside a rectangle.

Now how did you go? Did you mess up your NAME-PPR graphic perhaps? No problem. Your original is still safe and sound on disk. Exit Paintbrush, but don't save as you do (unless you want to, of course).

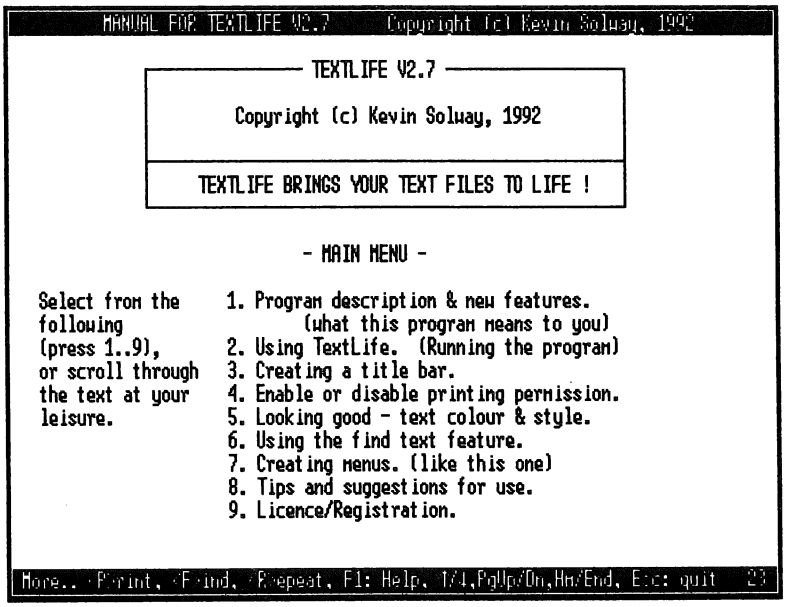



## DOC OR TXT TO EXE - A SIMPLER PROGRAM

In *LL* for April, I wrote about Bigtext, a program to turn your text files into stand-alone, executable .EXE files. It's a top program, and I recommend it highly. But you can do it easier, if you wish, with TEXTLIFE. This is another of the great programs by Brisbane's Kevin Solway (yup, he wrote Bigtext and TEXTLIFE!) And this one couldn't be easier: textlife docfile.txt is all you need to type, and it's done in about one second on my machine! The output file in this case is docfile.exe. You can choose a colour scheme for you resultant .EXE file if you wish. I like: textlife docfile.txt 12 (bright white text, blue background).

If you'd like a top-line heading, just bung a # at the start of the very first line. As you can see from the illustration TEXTLIFE has Find, Repeat Find, and Esc to end.

I've put it on an updated Brisbug Library Disk 8606 (or ring me). Really, it really couldn't be easier than this!




## THIS MONTH'S QUOTES

- To be or not to be. - Shakespeare
  To do is to be. - Kant
  To be is to do. - Sartre
  Do be do be do. - Sinatra
  Yabba dabba do! - Flintstone .
- Be alert - the world needs more lerts.
- Software independent - won't work with *any* software. .
- You can be NEGATIVE about any situation in life, or you can be POSITIVE . . . It's your choice - and you will live with the consequences.

*Bye for now! Have a terrific month!*
*- Lindsay K. Bates*
*Ph: (07) 808 9441 after 10am*

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PENTIUM + PC1
OCT PC1 P5-60
Intel 60Mhz Pentium CPU
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428Mb Hard Drive
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4MB RAM
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14" N-I SVGA Monitor
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Dbl Speed CD-Rom Drive
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Plus CD Titles
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4Mb RAM, 273Mb HDD, VESA LB Controller, 1Mb VESA LB Accelerator
14" ADI 3E N-1 Monitor, DOS, Windows & Mouse, Three Year Warranty
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# Learning Assembler Using DEBUG

Dan Bridges

## Part 3:
### A Program to Display the Master Partition Table.

In April we looked at the code in the Master Boot Record and the structure of the Master Partition Table contained with it. We also saw how to copy a block from one memory location to another; how to compare two values; various conditional jumps that could be performed based on a comparison; the stack's involvement in storing the return address and the contents of the Flags register while an interrupt was being called. You also learned how to effectively use DEBUG's Trace, Proceed and Go commands.

In May we concentrated on arithmetic operations in assembler. Loops and various types of unconditional jumps were also covered. We saw how to use a DOS interrupt (Int 21h Func 09h) to display a "$"-terminated string rather than using a BIOS interrupt (Int 10h Func 0Eh) to display one character at a time. You also learned how to terminate a running program using Int 21h Func 4Ch and return an error level. I remember a big discussion that went on in the BATPOWER Batch File echo, a few years ago, about where error levels came from. It was obvious that most of this echo's participants had no understanding of registers and interrupts. If you've been following along you should have no problem answering that question.

This month we apply most of the previous topics to the task of creating a partition table reading program. The program will be provided in pure assembly language so that anyone with DEBUG can create it. However the program will be documented in its MASM/TASM form because it is much easier to follow. It will be available off the BBS in the READPART.xxx archive.

The program features: hexadecimal-to-decimal conversion; how to remove leading zeros and add commas to displayed values to increase their readability; the use of subroutines to compartmentalise sections of code and allow their reuse. Other important points to watch out for are: the typical use of the SI and DI registers as pointers to positions in source and destination data; the heavy use of pushing to and popping from the stack to preserve various registers' original values; arithmetic fun and games in the Cyl-Hd-Sec conversion subroutine and in the Partition Size In Mb section.

```
DEBUG

-A100 ;Start assembling at 100h.
 0100 MOV DI,202   ;Dec chars end up at 200h-202h.
 0103 MOV CX,3     ;FFh=255. Max of 3 dec chars.
 0106 MOV BL,A     ;Ah=10. Divisor for decimals.
 0108 MOV AX,AC    ;ACh=172. Hex num to convert.
 010B DIV,BL       ;AX/BL.
        ;After the division: AL=Result AH=Remainder.
 010D ADD AH,30    ;Convert the remainder to an
                     ;ASCII char.
 0110 MOV [DI],AH  ;Copy ASCII char to destination.
 0112 DEC DI       ;Move destination for next ASCII
                     ;char to the left.
 0113 XOR AH,AH    ;Clear remainder.
 0115 LOOP 10B     ;Loop back to division process.
 0117              ;Blank line to end assembly mode.

-T 4  ;Perform 4 traces. Registers prior to division.
AX=00AC  BX=000A  CX=0003  DI=0202
 010B  DIV BL

-T    ;Division was performed. 172/10 = 17 = 11h in AL.
AX=0211 ;Remainder of 2 in AH.
 010D  ADD AH,30

-T    ;Remainder byte was converted to ASCII char.
AX=3211 ;AH = 32 = ASCII "2" char.
 0110  MOV [DI],AH

-T    ;"Lowest" digit was moved to destination (202h).
 0112  DEC DI

-T    ;Destination for next ASCII char (201h).
DI=0201
 0113  XOR AH,AH

-T    ;Remainder was cleared.
AX=0011
 0115  LOOP 010B

-T    ;Ready for next division.
AX=0011  BX=000A  CX=0002  DI=0201
 010B  DIV BL

-T    ;Division was performed. 17/10 = 1 = 01h in AL.
AX=0701 ;Remainder of 7 in AH.
 010D  ADD AH,30

-T    ;07h became 37h ("7" char).
AX=3701
 0110  MOV [DI],AH

-T    ;"Middle" digit was moved to mem offset 201h.
 0112  DEC DI

-T    ;Destination for "highest" digit was adjusted.
DI=0200
 0113  XOR AH,AH

-T      ;Remainder was cleared.
AX=0001
 0115  LOOP 010B

-T      ;Ready for last iteration.
AX=0001  BX=000A  CX=0001  DI=0200
 010B  DIV BL

-T      ;1/10 = 00h in AL and 1 in AH.
AX=0100
 010D  ADD AH,30

-T      ;01h became 31h ("1").
AX=3100
 0110  MOV [DI],AH

-T      ;"Highest" digit was placed at 200h.
 0112  DEC DI


-D200 L3  ;Display the digit buffer area.
 0200  31 37 32  ;"172".
```

*Figure 1. Byte conversion session. From ACh to 172.*

We'll also be expending some effort to come to grips with the contents of Extended DOS partitions. In my experience, these are never satisfactorily explained in articles I've read. You'll be in on the hunt as we track the contents of one of these completely to ground. Then you should be able to analyse your own setup.

## Hex-to-Dec Conversion

This algorithm was suggested to me by a workmate, Mark Guyatt. There probably are other ways of performing this conversion. This method isn't that hard to comprehend provided you're prepared to trace through it a few times to follow its workings closely.

The first example will convert one byte. The byte to be converted is placed in the word-sized register AX and an AX/BL division is performed. The number of times AX can be divided by BL ends up in AL, while the remainder is stowed in AH. The divisor in BL is 0Ah i.e. 10. After dividing a hexadecimal value (a higit rather than a digit?) by 10, the remainder is the actual decimal value.

Consider 0Ch (12). Dividing this by 10 leaves 01h in AL and the remainder, 02h, in AH. To convert 02h to a displayable value we need to add 30h to it (since "0" is 30h, "1" is 31h, ... "9" is 39h). So 02h becomes 32h which is then placed in the memory area where we are storing the converted characters. This is the "ones" digit. We decrement DI so that the next digit, the "tens" digit, will end up on the left of the "ones" digit. After the transfer we clear AH and perform another division. This time it's just 1/10, so AL ends up with 0 and AH gets 1 as the remainder. This becomes 31h which is transferred to end up as a "1" on the left of the "2". Because the maximum hexadecimal value of FFh is 255, in a byte conversion process we need to perform three divisions in all, since there can be three digits. So the third division process is 0/10 which produces a remainder of 00h and 30h ends up in the "hundreds" position. The decimal result is "012". See Figure 1 for a worked example using ACh as the value to be converted.

The first example in Figure 2 shows the routine to convert a word. As you can see, the routine is exactly the same as for the byte conversion except that up to 5 decimal characters can be produced, so 5 divisions need to be performed.

Say we were converting 0001h. Using the byte routine we get "001" whereas the word routine outputs "00001". We can use the same routine for both words and bytes as long as we have the space, between display columns, for 5 characters before we strip the leading zeros. (An alternative method would be to put the converted characters in another memory location, strip leading zeros and only then move it into position in the display column. For code-size reasons I've tried to do as much as possible with the values already in the final display column position.) Obviously, if we were using the word routine to convert a byte it would be vital to have 00h in AH beforehand.

You may be wondering why the division process in the word conversion involves DX:AX/BX rather than AX/BL since the divisor is only 0Ah (10) and the value to be converted (a word) can fit in just the AX register. The answer is: it's due to the size of the result. FFFFh/0Ah = 1999h. This result is word-sized. A word-sized result requires that the division be performed using DX:AX/BX because AX/BL will only allow

```
-A100   ;Converting a word.
 0100 MOV DI,204    ;Output is at 200h-204h.
 0103 MOV CX,5      ;FFFFh=53535. Max dec chars is 5.
 0106 MOV BX,A      ;Divisor is 10.
 0109 MOV AX,F183   ;Word to be converted is F183h.
 010C XOR DX,DX     ;Ensure that DX is zeroed.
 010E DIV BX        ;DX:AX/BX.
 0110 ADD DL,30     ;Convert remainder to ASCII char.
 0113 MOV [DI],DL   ;Copy char to output buffer area.
 0115 DEC DI        ;Output position for next char.
 0116 XOR DX,DX     ;Clear remainder.
 0118 LOOP 10E      ;Loop to next division process.
 011A

-G=100 11A   ;Execute complete routine.

-D200 L5   ;Dump ASCII char output area.
 0200  36 31 38 32 37  ;"61827".

-A100   ;Dword value to be converted is 1FFFFh.
 0100 MOV DI,219    ;Output area is 210h-219h
 0103 MOV CX,A      ;FFFFFFFFh = 4,294,967,295.
                     ;Max dec possible is 10 chars.
 0106 MOV BX,A     ;Divisor is 10.
 0109 XOR DX,DX    ;Clear DX.
 010B MOV AX,[202] ;Copy "high" word into AX.
 010E DIV BX       ;Divide it.
 0110 MOV [202],AX ;Copy the result back to 202h
 0113 MOV AX,[200] ;Copy "low" word into AX.
 0116 DIV BX       ;Divide it
 0118 MOV [200],AX ;Copy the result back to 200h.
 011B ADD DL,30    ;Convert the remainder to digit.
 011E MOV [DI],DL  ;Copy digit to output area.
 0120 DEC DI       ;Adjust for next output digit.
 0121 XOR DX,DX    ;Clear remainder.
 0123 LOOP 10B     ;Next digit.
 0125              ;Leave blank line to terminate.

-E200 FF FF 01 00   ;Dword to be converted is 0001FFFh
                    ; which is located at offset 200h.

-G=100 125   ;Execute complete routine.

D210 LA      ;Dump the 10 output chars.
 0210  30 30 30 30 31 33 31 30 37 31
           ;"0000131071"
```

*Figure 2. Converting a word and a double word.*

| PARTITION NUMBER | BI | TYPE | START CYL HD SEC | STOP CYL HD SEC | SECTORS BEFORE | SECTORS HERE | SIZE IN Mb |
|---|---|---|---|---|---|---|---|
| 0 | | ? | 0186 00 01 | 0210 15 31 | 0092256 | 0012400 | 0006 |
| 1 | | HP | 0000 01 01 | 0185 15 31 | 0000031 | 0092225 | 0045 |
| 2 | BT | BM | 0961 00 01 | 0965 15 31 | 0476656 | 0002480 | 0001 |
| 3 | | XD | 0211 00 01 | 0960 15 31 | 0104656 | 0372000 | 0181 |

| PARTITION NUMBER | BI | TYPE | START CYL HD SEC | STOP CYL HD SEC | SECTORS BEFORE | SECTORS HERE | SIZE IN Mb |
|---|---|---|---|---|---|---|---|
| 0 | | ? | 186 0 1 | 210 15 31 | 92,256 | 12,400 | 6 |
| 1 | | HP | 0 1 1 | 185 15 31 | 31 | 92,225 | 45 |
| 2 | BT | BM | 961 0 1 | 965 15 31 | 476,656 | 2,480 | 1 |
| 3 | | XD | 211 0 1 | 960 15 31 | 104,656 | 372,000 | 181 |

*Figure 3. A demonstration of the advantage of being "user-friendly". Before and after the striping of leading zeros and the adding of commas.*

```
OFFSET

07BE  Boot Indicator Byte.
        80h = Active partition
        00h = Not active
07BF  Starting Head Number byte.
07C0  Starting Sector Number byte.
07C1  Starting Cylinder Number byte.
07C2  System Indicator byte.
        00h = Unused
        01h = DOS (0 - 16Mb)
        04h = DOS (16 - 32Mb)
        05h = Extended DOS
        06h = DOS (greater than 32Mb)
        07h = OS/2 High-Performance File System
        0Ah = OS/2 Boot Manager
        1xh = Alternative, deactived, startup
              partition. Switched with Boot Manager.
07C3  Ending Head Number byte.
07C4  Ending Sector Number byte.
07C5  Ending Cylinder Number byte.
07C6  # of sectors before this partition dword (4 bytes).
07CA  # of sectors in this partition dword.
```

*Note: The above is not completely accurate. The ROM BIOS does not use 8 bits for a head and cylinder numbering. Instead it uses the lowest 6 bits from the sector number byte for the actual sector number (providing a span of 0-63). The 7th & 8th bits of the sector number are added to the front of the 8 bits of the cylinder number to become the 9th & 10th bits respectively. 10-bit cylinder numbering allows a span of 0-1023. This is the cause of the DOS 1,024 cylinder limit. DOS can be made to believe that a disk with more than 1,024 cylinders has less by the use of special drivers (e.g. Disk Manager) or by using drive controllers operating in "translating" mode.*

*Figure 4. Layout of the 16 bytes of the first partition table entry in the copied MBR. The other three partition table entries are similar.*

```
OFFSET

0100h Memory offset for loading a COM file.
0100h Jump around data section to 032Ch.

0103h Display data section starts here.
01F4h The "ET1" equate.
01F4/240/28C/2D8h Start of 2-byte Boot Indicator.
01F8/244/290/2DCh Start of 2-byte Partition Type.
01FD/249/295/2E1h Start of 4-byte START Cylinder.
0202/24E/29A/2E6h Start of 2-byte START Head.
0205/251/29D/2E9h Start of 2-byte START Sector.
020B/257/2A3/2EFh Start of 4-byte END Cylinder.
0210/25C/2A8/2F4h Start of 2-byte END Head.
0213/25F/2AB/2F7h Start of 2-byte END Sector.
0217/263/2AF/2FBh Start of 9-byte Sectors Before.
0221/26D/2B9/305h Start of 9-byte Sectors Here.
022C/278/2C4/310h Start of 4-byte Size in Mb.
032B "$" string-termination char. Display data ends.

032Ch-051Ah Program Code.

0600h Start of copied MBR sector.
0600h The "MBR" equate.
07BEh The "PT1" equate.
07BE/7CE/7DE/7EEh Boot Indicator byte.
07BF/7CF/7DF/7EFh START Head byte.
07C0/7D0/7E0/7F0h START Sector byte.
07C1/7D1/7E1/7F1h START Cylinder byte.
07C2/7D2/7E2/7F2h Partition Type byte.
07C3/7D3/7E3/7F3h END Head byte.
07C4/7D4/7E4/7F4h END Sector byte.
07C5/7D5/7E5/7F5h END Cylinder byte.
07C6/7D6/7E6/7F6h Start of Sectors Before dword.
07CA/7DA/7EA/7FAh Start of Sectors Here dword.
0799h End of MBR.

0800h Start of Buffer1

0810h Start of Buffer2
```

*Figure 5. Important memory offsets in PARTREAD.COM.*

a byte-sized result. ("MOV AX,FFFF" then "MOV BL,1" then "DIV BL" will produce an error because the result, FFFFh, is larger than byte-sized.) Remember that in AX/BL division only AL is available to store the result since AH is on remainder duty.

The second example in Figure 2 is a little different. We have to shuffle the values back and forth between the AX register and either the "high" or "low" word initial locations so that the division result remains word-sized. Dword conversion examines 4 bytes and spits out 10 characters so the byte 01h would need to be presented as 00000001h and would be outputted as "0000000001". This is getting a bit extravagant so, in this program, I've settled on Word and Dword subroutines as the best compromise for the type of data stored in the Master Partition Table.

## PARTREAD.COM

Figure 3 shows the output of the program we'll be creating. It defaults to displaying the Master Partition Table of the first hard disk. Later in this article we'll see how to go further. Examine the "raw" output of the first part of Figure 3 now and compare it with the second part which shows the output of the final program. I'm sure you'll agree it's an improvement.

## The Lay of the Land

Figure 4 documents the layout of the first partition-table entry. The other entries are similar but are each offset 10h from the previous entry. Note: in the April '94 version of Figure 4 (there known as Figure 12) I said that the "head" byte was split with the two highest bits being used to extend the space of the "cylinder" byte. Well, that's not correct. It's actually the "sector" byte that is split.

Figure 5 provides a road-map of READPART.COM's memory offsets. This is an important list. At any stage while tracing you can refer to this list to see what it is that SI and DI are pointing to.

## Descent into the Maelstrom

Refer now to Figure 6. It's fairly heavily commented so I'll only cover a few points. Compare this figure to Figure 7 (the DEBUG version) and you can see that the ASM version is easier to follow since subroutines and jump destinations have names. The extra lines at the beginning are assembler directives. Some of them allow you to perform shortcuts. For example, the IRP/ENDM structure is a block repeat macro that automatically substitutes one of the four parameters for the Partition_Num variable. Since there are four parameters specified there will be four blocks of near-identical data structure created. Notice also how full-fledged assemblers allow you to use a DUP (duplicate) to easily create lines etc. Equates also increase the readability of your programs. Notice in the PT1 equate how one equate can make use of another, previously defined equate.

*Figure 6. PARTREAD.ASM file. Suitable for both TASM & MASM.Memory offsets shown to aid cross-referencing with PRTREAD.SCR. Remove memory offset numbers before assembling.*

```
ASSUME CS:CodeAndData,DS:CodeAndData,ES:CodeAndData
       ;The assembler should assume that CS, DS & ES,
       ; unless specified, are in the "CodeAndData" Segment.

CodeAndData SEGMENT  ;A segment called "CodeAndData" begins
here.
ORG 100h             ;COM files start at offset 100h when loaded.

;Equates are user-supplied substitutions.
MBR      EQU 0600h        ;Start of copy of MBR.
PT1      EQU MBR + 01BEh ;Offset to 1st PT entry.
ET1      EQU 01F4h        ;Loc of 1st entry in the
           ;display table. This is the first "BI".
Buffer1 EQU 0800h         ;Used when adding commas.
Buffer2 EQU 0810h         ;General work area.
NL       EQU 0A0Dh        ;CR/LF newline combo.

Partition_Table_Reading_Program:    ;Start of program.
JMP Main                 ;Bypass data section.
Start_Of_Table:          ;Used when displaying.
DW NL,NL,NL
DB " PARTITION           START         STOP       SECTORS   SECTORS  SIZE"
DW NL
DB "  NUMBER   BI TYPE  CYL HD SEC    CYL HD SEC   BEFORE    HERE     IN Mb"
DW NL
DB " ",72 DUP (196)      ;ASCII horz line drawing char. TASM/MASM defaults
DW NL                       ;to using decimal notation.

;Repeated block of code with replaceable parameters.
;Since there are 4 parameters, this block is repeated
;4 times, each time with a different partition number.
IRP Partition_Num,<"0","1","2","3">
   DB 5 DUP(" "),Partition_Num,19 DUP(" "),0,0," "
   DB 0,0,9 DUP(" "),0,0," ",0,0,28 DUP(" ")
   DW NL,NL
ENDM

DW 9 dup (NL)
DB "$"   ;String terminator for Int 21h printing functions.

   Main PROC NEAR     ;Start of "MAIN" procedure.
       ;Get the boot-sector
032C   MOV AX,0201h  ;Func 02h. 1 sector to be read.
032F   MOV BX,MBR     ;ES:BX -> Where read data goes.
0332   MOV CX,0001h  ;Cyl 00h. Sector Num 01h.
0335   MOV DX,0080h  ;Head 00h. First HD.
0335   INT 13h        ;Int 13h Func 02h. Read sector(s).

        ;Section to decode partition table entries
033A   MOV CX,04h             ;4 PT entries to process.
033D   MOV SI,OFFSET [PT1]   ;Source is start of PT1.
0340   MOV DI,ET1             ;Dest is ET1.

      Decode_A_Partition:
        ;Section to handle Boot Indicator byte
0343   PUSH CX                ;Save current CX for later.
0344   MOV AL,BYTE PTR [SI] ;Load "BI" byte.
0346   CMP AL,80h             ;Is this a boot paritition?
0348    JNE SHORT Non_Boot
034A   MOV AX,"TB"            ;It is, so use "BT".
034D    JMP SHORT Continue1
     Non_Boot:
034F   MOV AX,"  "            ;It wasn't a boot, so use spaces.
     Continue1:
0352   MOV [DI],AX            ;Place either "BT" or "  " in disp.

        ;Section to handle Type byte
0354   MOV AL,BYTE PTR [SI+4] ;Offset to Type byte.
0357   CMP AL,00h             ;Is it unused?
0359    JE Unused
035B   CMP AL,01h             ;Is it FAT-12?
035D    JE DOS_Up_to_16Mb
035F   CMP AL,04h             ;Is it FAT-16?
0361    JE DOS_16_to_32Mb
0363   CMP AL,05h             ;Is is an Extend DOS partition?
0365    JE Extended_DOS
0367   CMP AL,06h             ;Is it a DOS partition > 32Mb?
0369    JE Big_DOS
036B   CMP AL,07h             ;Is is HPFS?
036D    JE OS2_HPFS
036F   CMP AL,0Ah             ;Is it a Boot Manager Partition?
0371    JE OS2_Boot_Manager
0373    JMP SHORT Not_Known   ;None of the above.
     Unused:
0375   MOV AX,"nu"            ;un = Unused
0378    JMP SHORT Continue2
     DOS_Up_To_16Mb:
037A   MOV AX,"61"            ;16 = FAT-12.
037D    JMP SHORT Continue2
     DOS_16_To_32Mb:
037F   MOV AX,"23"            ;32 = FAT-16.
0382    JMP SHORT Continue2
     Extended_DOS:
0384   MOV AX,"DX"            ;XD = Extended DOS.
0387    JMP SHORT Continue2
     Big_DOS:
0389   MOV AX,"DB"            ;BD = Big DOS
038C    JMP SHORT Continue2
     OS2_HPFS:
038E   MOV AX,"PH"            ;HP = HPFS
0391    JMP SHORT Continue2
     OS2_Boot_Manager:
0393   MOV AX,"MB"            ;BM = Boot Manager.
0396    JMP SHORT Continue2
     Not_Known:
0398   MOV AX,"? "            ;" ?" = Unknown
     Continue2:
039B   MOV [DI+4],AX          ;Copy Type to display.

        ;Section to handle Start HSC
039E   INC SI                  ;Offset in PT entry.
039F    CALL Three_Bytes_To_Cyl_HD_Sec ;Use subroutine.
03A2   ADD DI,05h              ;Offset in display.
03A5   CALL Fill_Cyl_Hd_Sec    ;Fill disp entries.

        ;Section to handle End HSC
03A8   ADD SI,04h
03AB    CALL Three_Bytes_To_Cyl_HD_Sec
03AE   ADD DI,0Eh
03B1    CALL Fill_Cyl_Hd_Sec

        ;Work out num of sec before this partition.
03B4   ADD DI,18h              ;Display offset.
03B7   ADD SI,03h              ;PT entry offset.
03BA    CALL ConvertDWord2Dec  ;Use subroutine.
03BD   PUSH SI                 ;Save SI.
03BE   MOV SI,DI               ;SI now equals DI
03C0   SUB SI,06h              ; Move back 6 bytes.
03C3    CALL Strip_Leading_Zero7 ;Clear leading zeros.
03C6   POP SI                  ;Restore SI.
03C7   CALL Add_Commas         ;Add commas, if applicable.

        ;Determine num of sec in this partition.
03CA   ADD DI,0Ah              ;Disp offset.
03CD   ADD SI,04h              ;PT entry offset.
03D0   PUSH SI                 ;Save SI
03D1   PUSH DI                 ;Save DI
03D2   MOV DI,Buffer2          ;Dest of MOVSW is Buffer2.
03D5   MOV CX,02h              ;Num of words to copy.
03D8   REP MOVSW               ;Copy 2 words from SI to DI.
03DA   POP DI                  ;These were altered after
03DB   POP SI                  ; MOVSW, so restore them.
03DC    CALL ConvertDWord2Dec
03DF   PUSH SI
03E0   MOV SI,DI
03E2   SUB SI,06h
03E5    CALL Strip_Leading_Zero7
03E8   POP SI
03E9    CALL Add_Commas
```

*Fig 6 Continued*

```
      ;Work out partition size in Mb
03EC  ADD DI,06h              ;Offset in display.
03EF  PUSH SI
03F0  MOV SI,Buffer2          ;Temp change SI to Buffer2.
       ;The previous repeated MOVSW copies copied the 4
       ;bytes of the partition size to Buffer2.
03F3  MOV DX,[SI+2]           ;DX gets "high" word.
03F6  MOV AX,[SI]             ;AX gets "low" word.
03F8  MOV BX,0800h            ;Divisor will be 2,048.
       ;This will convert sectors (512 bytes) to Mb.
03FB  DIV BX                  ;DX:AX/2048.
03FD  MOV [DI],AX             ;Copy result to display.
03FF  MOV CX,04h              ;Max num of decimals for Mb value.
0402   CALL ConvertWord2Dec
0405   MOV SI,DI
0407   DEC SI
0408   DEC SI
0409   CALL Strip_Leading_Zero4
040C   CALL Add_Commas
040F   POP SI
       ;Set up offsets for next partition.
0410   ADD SI,04h
0413   ADD DI,11h
0416   POP CX         ;Restore CX that was popped at start of the
       ;Decode_A_Partition section. This is the num of PT entry.
0417   DEC CX         ;Next partition, please.
0418   JCXZ No_More_Partitions   ;Have we run out of partitions?
041A   JMP Decode_A_Partition    ;No, so process next entry.
       No_More_Partitions:
       ;Display section
041D   MOV AH,09h
041F   MOV DX,OFFSET Start_Of_Table
0422   INT 21h        ;Int 21 Func 09h. Display string starting
       ;from DS:DX until string-terminator char ("$") is reached.
       ;Exit section
0424   MOV AH,4Ch
0426   INT 21h         ;Int 21 Func 4Ch. Terminate program.
  MAIN ENDP            ;End of "MAIN" Procedure.

  Three_Bytes_To_Cyl_HD_Sec PROC NEAR
       ;Order in PT is H-S-C. SI points to Hd byte so
       ;SI+1 points to Sec and SI+2 points to Cyl.
       ;Section to handle Sector
0428   MOV BH,BYTE PTR [SI+1]
042B   AND BH,3Fh    ;Mask to extract only lowest 6 bytes.
       ;Section to handle Head
042E   MOV BL,[SI]
       ;Section to handle Cylinder
0430   XOR DH,DH
0432   XOR AH,AH
0434   MOV DL,BYTE PTR [SI+2]   ;Cyl byte.
0437   MOV AL,BYTE PTR [SI+1]   ;Sec byte.
043A   AND AL,0C0h   ;Mask to extract 2 highest bytes from Sec.
043C   SHL AX,1      ;Shift result twice to the
043E   SHL AX,1      ; left to multiply by 4.
0440   ADD AX,DX     ;Add them together to get true Cyl num.
0442   RET
  Three_Bytes_To_Cyl_Hd_Sec ENDP
  Fill_Cyl_Hd_Sec PROC NEAR
0443   PUSH DI           ;Procedure mucks up DI & CX
0444   PUSH CX           ; so push them first.
0445   MOV [DI+06h],AX   ;Copy Cyl to display area.
0448   MOV [DI+09h],BL   ;Copy Hd to display area.
044B   MOV [DI+0Ch],BH   ;Copy Sec to display area.
       ;Cylinder section follows.
044E   ADD DI,06h
0451   MOV CX,04h        ;Num of decimals in Cyl value.
0454   CALL ConvertWord2Dec
0457   PUSH SI
0458   MOV SI,DI
045A   SUB SI,02h
045D   CALL Strip_Leading_Zero4
0460   POP SI
0461   Call Add_Commas
       ;Hd section follows.
0464   ADD DI,03h
0467   MOV CX,02h        ;Num of decimals in Hd value.
046A   CALL ConvertWord2Dec
046D   CALL Strip_Leading_Zero2   ;Clean up Hd value.
       ;Sec section follows.
0470   ADD DI,03h
0473   MOV CX,02h        ;Num of decimals in Sec value.
0476   CALL ConvertWord2Dec
0479   CALL Strip_Leading_Zero2   ;Clean up Sec value.
047C   POP CX            ;Restore mucked up CX & DI.
047D   POP DI
047E   RET               ;Near return to calling program.
  Fill_Cyl_Hd_Sec ENDP

  ConvertWord2Dec PROC NEAR
047F   PUSH DI           ;DI will be mucked up so push it first.
0480   XOR DX,DX         ;Clear DX.
0482   MOV BX,0Ah        ;Divisor is 10.
0485   MOV AX,[DI]       ;Loc of word to convert
    ConvertWord2Dec1:
0487   DIV BX            ;DX:AX/10.
0489   ADD DL,30h        ;Convert remainder to ASCII decimal.
048C   MOV [DI+1],DL     ;Copy this char to display.
048F   DEC DI            ;Adjust for next char.
0490   XOR DX,DX         ;Clear remainder.
0492   LOOP ConvertWord2Dec1   ;Next division process.
0494   POP DI            ;Restore mucked up DI.
0495   RET               ;Near Return to calling program.
  ConvertWord2Dec ENDP

  ConvertDWord2Dec PROC NEAR
0496   PUSH DI
0497   XOR DX,DX
0499   MOV CX,07h        ;Unlike ConvertWor2Dec, this
       ;procedure has the CX value for 7 output decimals
       ;"hardwired" into the procedure.
049C   MOV BX,0Ah
    ConvertDWord2Dec1:
049F   MOV AX,[SI+2]
04A2   DIV BX
04A4   MOV [SI+2],AX
04A7   MOV AX,[SI]
04A9   DIV BX
04AB   MOV [SI],AX
04AD   ADD DL,30h
04B0   MOV [DI],DL
04B2   DEC DI
04B3   XOR DL,DL
04B5   LOOP ConvertDWord2Dec1
04B7   POP DI
04B8   RET
  ConvertDWord2Dec ENDP

  Strip_Leading_Zero4 PROC NEAR
04B9   PUSH CX           ;CX will be mucked up.
04BA   MOV CX,03h        ;Ensures that one zero remains
                         ; if num was "0000".
    Strip_Loop_4:
04BD   LODSB             ;Load byte pointed to by SI into AL
                         ; and then increment SI.
04BE   CMP AL,030h       ;Was it a zero?
04C0   JNE Not_A_Zero_4 ;If it wasn't, then stop.
04C2   MOV BYTE PTR [SI-1],020h   ;It was a zero so make it
       ;a space instead. SI-1 is required because LODSB
       ;automatically increments SI.
04C6   LOOP Strip_Loop_4   ;Check next char.
    Not_A_Zero_4:
04C8   POP CX
04C9   RET
  Strip_Leading_Zero4 ENDP

  Strip_Leading_Zero2 PROC NEAR
       ;This procedure only checks the left char so that a
       ;zero remains if the num was "00".
04CA   MOV AL, Byte Ptr [DI]
04CC   CMP AL,030h
04CE   JNE Not_A_Zero_2
04D0   MOV Byte Ptr [DI],020h
    Not_A_Zero_2:
```

*Fig 6 continued*

```
04D3  RET
   Strip_Leading_Zero2 ENDP

   Strip_Leading_Zero7 PROC NEAR
04D4   PUSH CX
04D2   MOV CX,06h          ;Check up to 6 chars.
     Strip_Loop_7:
04D8   LODSB
04D9   CMP AL,030h
04DB   JNE Not_A_Zero_7
04DD   MOV BYTE PTR [SI-1],020h
04E1   LOOP Strip_Loop_7
     Not_A_Zero_7:
04E3   POP CX
04E4   RET
   Strip_Leading_Zero7 ENDP


   Add_Commas PROC NEAR
04E5   PUSH CX             ;This procedure mucks up
04E6   PUSH SI             ;CX, SI & DI.
04E7   PUSH DI
04E8   PUSH DI             ;Save an extra copy of DI.
04E9   SUB DI,06h          ;Start of string in display area.
04EC   MOV SI,DI           ;Use this as the source.
04EE   MOV DI,Buffer1      ;Buffer1 will be the destination.
04F1   MOVSW               ;Copy 2 dwords from disp to Buffer1.
04F2   MOVSW               ;In "1234567" this would be "1234".
                           ;Don't copy & check "567" because the 1st
                           ;comma would occur at the "4" position.
04F3   STD                 ;Set Direction flag Down for coming
LODSB.
04F4   POP DI              ;Restore DI after MOVSW & MOVSB.
04F5   SUB DI,3            ;Dest in disp with "1234567" will be "4".
04F8   MOV SI,Buffer1+3 ;Source is set to end of copied value.
04FB   MOV CX,4            ;4 digits were copied over.
     Comma_Search:
04FE   LODSB               ;Load a byte pointed to by SI into AL.
04FF   CMP AL,020h         ;Was it a space? After stripping
        ;leading zeros the first space found will be before the
        ;start of the value so we've gone too far.
0501   JE Highest_Digit_Has_Been_Passed
0503   CMP CX,4            ;We started at CX=4. If we get here the
                           ;4th char is not a space so add a comma.
0506   JE Add_A_Comma      ;Yes, so add a comma. "1234" -> "1234,".
0508   CMP CX,1            ;Have we reached the 1st char yet. Since
           ;the direction is Down, LODSB is decrementing CX down
           ;from the initial 4 value so 1 will be the highest dec.
050B   JE Add_A_Comma      ;If we get to CX=1, add another comma.
                           ; e.g. "1234," becomes "1,234,".
050D   JMP SHORT Add_Commas_1  ;Not ready of a comma yet.
     Add_A_Comma:
050F   MOV Byte Ptr [DI],2Ch  ;Send a comma (2Ch) to disp. area.
0512   DEC DI              ;Adjust for next output char.
     Add_Commas_1:
0513   STOSB ;Store byte from AL to loc pointed to by DI. Dec DI.
0514   LOOP Comma_Search
       Highest_Digit_Has_Been_Passed:
0516   CLD                 ;Clear Direction flag so direction is Up.
0517   POP DI
0518   POP SI
0519   POP CX
051A   RET
   Add_Commas ENDP

   CodeAndData ENDS        ;End of "CodeAndData" segment.
END Partition_Table_Reading_Program   ;End of program.
```

I suggest you trace/proceed through one Partition Table entry (say until you first reach offset 0418h). It's nice if you have Turbo Debugger or CodeView as you can have multiple windows open at once and track where DI & SI are pointing to, what's on the stack, the contents of the registers, the user's view, other memory regions. Moreover you can execute to the current cursor position, set multiple breakpoints and even backtrack (undo execution of the last few instructions). Having said that, much of this program was developed using DEBUG for the debugging (until I was driven almost completely looney).

This program's design became a balancing act between how much code can be reused in a subroutine and when it's better to create another subroutine. By passing more parameters to a subroutine it's possible to make it more flexible. But at some stage you find that you are passing too many parameters to a subroutine or have to clean up too much after it returns. At this stage you have to decide whether it's going to be more efficient for execution time and code size to create another, more specialised subroutine.

Generally, each routine should clean up after its execution so that its alterations to SI, DI and CX won't affect other sections. Notice how each subroutine ends with a near return (RET). It may appear in the ASM listing that the procedures are separate entities and that execution would automatically return to the calling program. But if you look at the DEBUG version (which was created by unassembling a TASM-created COM file) you can see that, without the RETs, execution would fall through to the next instruction in memory.

There are some operators used here that we have not covered before. Offset 0418h contains a JCXZ conditional jump operator. The jump occurs only if CX is zero.

STD (Set Direction flag Down) and CLD (Clear Direction Flag i.e. set Direction flag Up) are used to alter whether string operations increment or decrement SI and/or DI. LODSB/W loads a string byte/word from the memory location pointed to by DS:SI to the AL/AX register and then increments/decrements SI. STOSB/W stores a string byte/word from AL to the location pointed to by ES:DI and increments/decrements DI. These two operators are commonly used to load a byte from memory and test each byte before copying it elsewhere. If all that's required is to copy a block of bytes from one location to another then it's more efficient to not use the AL/AX register at all. Instead, use MOVSB/W which copies a byte/word from the address pointed to by DS:SI to the address pointed to by ES:DI and increments/decrements both SI and DI.

The REP string operator prefix can be used with these string operators to efficiently repeat them CX times. CX will be zero when it ends. Say you had to copy 400 bytes from one location to another. On a 386/486, with MASM or TASM, you can use MOVSD to copy 4 bytes at a time. 100 MOVSW instructions uses 100 bytes of code and take 700 clock cycles on both types of CPU. REP MOVSD with CX=64h (100) requires only 5 bytes of code and takes 407 clock cycles on the 386 and 313 clock cycles for the 486. (Sizes and timings quoted include the MOV CX,64h instruction. A clock cycle

on a 50MHz CPU is 20 nanoseconds in duration.) If there are only two or three operations then it's more efficient to duplicate the instructions. (There is some clock overhead that becomes less significant as more operations are repeated.) For instructional purposes I've used the REP method at offset 3D8h and the duplicated instruction method at 4F1h. (Since both sections copy two words, it would have been better to have issued two MOVSW instructions at 3D5h.)

The PARTREAD.COM program uses only Carriage Returns/Line Feeds to put the display on a empty screen. This is slow and doesn't account for displays with more the 25 lines per screen. Clearing the screen was considered too complex a task for this program and will be discussed in a later article.

## Following the Extended DOS Partition Trail

Prior to DOS v3.3 a standard HD could have only a single DOS partition up to 32Mb. From DOS v3.3 onwards, while DOS is now still limited to one DOS partition per physical HD. It also have an

*Figure 7. PARTREAD.SCR. Use "DEBUG < PARTREAD.SCR" to create and "DEBUG < PARTREAD.SCR > PRN" to print out a listing with memory offsets included. Omit memory offsets, comments and ruler lines when creating the scriptfile. Also make sure that you press Enter after the last "Q". The only blank line in the script should be before RCX. The ruler lines are to assist you inserting the correct number of spaces (if you make a mistake here you may lock up your system) and assume that you position "DB" in column 1 of your editor.*

```
    A100
0100  JMP  032C
0103  DW 0A0D,0A0D,0A0D
;                1         2         3         4         5
;Ruler123456789012345678901234567890123456789012345678901234567890
0109  DB " PARTITION                START          STOP"
0139  DB "       SECTORS    SECTORS    SIZE",0D,0A
0153  DB "  NUMBER    BI TYPE    CYL HD SEC     CYL HD SEC"
0180  DB "    BEFORE      HERE       IN Mb",0D,0A
;Each line has 36 ASCII 196 chars. Note space at 19E.
019E  DB " ------------------"
01CE  DB "------------------",0D,0A
;                1         2         3         4         5
;Ruler123456789012345678901234567890123456789012345678901234567890123456
01E9  DB "      0                    ",0,0," ",0,0,"          "
0210  DB 0,0," ",0,0,"                                        ",0D,0A,0D,0A
0235  DB "      1                    ",0,0," ",0,0,"          "
025C  DB 0,0," ",0,0,"                                        ",0D,0A,0D,0A
0281  DB "      2                    ",0,0," ",0,0,"          "
02A8  DB 0,0," ",0,0,"                                        ",0D,0A,0D,0A
02CD  DB "      3                    ",0,0," ",0,0,"          "
02F2  DB 0,0," ",0,0,"                                        ",0D,0A,0D,0A
0319   DW 0A0D,0A0D,0A0D,0A0D,0A0D,0A0D,0A0D,0A0D,0A0D
032B  DB "$"
;Display wrapped to 3 columns from here on to save magazine
space.
32C  MOV  AX,0201
32F  MOV  BX,0600
332  MOV  CX,0001
335  MOV  DX,0080
338  INT  13
33A  MOV  CX,0004
33D  MOV  SI,07BE
340  MOV  DI,01F4
343  PUSH CX
344  MOV  AL,[SI]
346  CMP  AL,80
348  JNZ  034F
34A  MOV  AX,5442
34D  JMP  0352
34F  MOV  AX,2020
352  MOV  [DI],AX
354  MOV  AL,[SI+04]
357  CMP  AL,00
359  JZ   0375
35B  CMP  AL,01
35D  JZ   037A
35F  CMP  AL,04
361  JZ   037F
363  CMP  AL,05
365  JZ   0384
367  CMP  AL,06
369  JZ   0389
01],20
36B  CMP  AL,07
36D  JZ   038E
36F  CMP  AL,0A
371  JZ   0393
373  JMP  0398
375  MOV  AX,6E75
378  JMP  039B
37A  MOV  AX,3631
37D  JMP  039B
37F  MOV  AX,3233
382  JMP  039B
384  MOV  AX,4458
387  JMP  039B
389  MOV  AX,4442
01],20
38C  JMP  039B
38E  MOV  AX,5048
391  JMP  039B
393  MOV  AX,4D42
396  JMP  039B
398  MOV  AX,3F20
39B  MOV  [DI+04],AX
39E  INC  SI
39F  CALL 0428
3A2  ADD  DI,05
3A5  CALL 0443
3A8  ADD  SI,04
3AB  CALL 0428
3AE  ADD  DI,0E
3B1  CALL 0443
3B4  ADD  DI,18
3B7  ADD  SI,03
3BA  CALL 0496
3BD  PUSH SI
3BE  MOV  SI,DI
3C0  SUB  SI,06
3C3  CALL 04D4
3C6  POP  SI
3C7  CALL 04E5
3CA  ADD  DI,0A
3CD  ADD  SI,04
3D0  PUSH SI
3D1  PUSH DI
3D2  MOV  DI,0810
3D5  MOV  CX,0002
3D8  REPZ
3D9  MOVSW
3DA  POP  DI
3DB  POP  SI
3DC  CALL 0496
3DF  PUSH SI
3E0  MOV  SI,DI
3E2  SUB  SI,06
3E5  CALL 04D4
3E8  POP  SI
 3E9  CALL 04E5
3EC  ADD  DI,06
3EF  PUSH SI
3F0  MOV  SI,0810
 3F3  MOV  DX,[SI+02]
3F6  MOV  AX,[SI]
 3F8  MOV  BX,0800
3FB  DIV  BX
3FD  MOV  [DI],AX
 3FF  MOV  CX,0004
402  CALL 047F
405  MOV  SI,DI
407  DEC  SI
 408  DEC  SI
 409  CALL 04B9
40C  CALL 04E5
40F  POP  SI
 410  ADD  SI,04
 413  ADD  DI,11
 416  POP  CX
 417  DEC  CX
 418  JCXZ 041D
 41A  JMP  0343
 41D  MOV  AH,09
 41F  MOV  DX,0103
422  INT  21
 424  MOV  AH,4C
426  INT  21
 428  MOV  BH,[SI+01]
 42B  AND  BH,3F
 42E  MOV  BL,[SI]
430  XOR  DH,DH
432  XOR  AH,AH
 434  MOV  DL,[SI+02]
437  MOV  AL,[SI+01]
 43A  AND  AL,C0
 43C  SHL  AX,1
 43E  SHL  AX,1
440  ADD  AX,DX
442  RET
443  PUSH DI
444  PUSH CX
 445  MOV  [DI+06],AX
448  MOV  [DI+09],BL
 44B  MOV  [DI+0C],BH
 44E  ADD  DI,06
451  MOV  CX,0004
454  CALL 047F
457  PUSH SI
458  MOV  SI,DI
 45A  SUB  SI,02
 45D  CALL 04B9
460  POP  SI
461  CALL 04E5
464  ADD  DI,03
 467  MOV  CX,0002
 46A  CALL 047F
 46D  CALL 04CA
470  ADD  DI,03
 473  MOV  CX,0002
476  CALL 047F
479  CALL 04CA
 47C  POP  CX
 47D  POP  DI
 47E  RET
 47F  PUSH DI
480  XOR  DX,DX
 482  MOV  BX,000A
485  MOV  AX,[DI]
487  DIV  BX
 489  ADD  DL,30
 48C  MOV  [DI+01],DL
 48F  DEC  DI
490  XOR  DX,DX
492  LOOP 0487
494  POP  DI
495  RET
496  PUSH DI
497  XOR  DX,DX
 499  MOV  CX,0007
 49C  MOV  BX,000A
 49F  MOV  AX,[SI+02]
4A2  DIV  BX
 4A4  MOV  [SI+02],AX
 4A7  MOV  AX,[SI]
4A9  DIV  BX
 4AB  MOV  [SI],AX
 4AD  ADD  DL,30
 4B0  MOV  [DI],DL
 4B2  DEC  DI
 4B3  XOR  DL,DL
 4B5  LOOP 049F
 4B7  POP  DI
 4B8  RET
 4B9  PUSH CX
 4BA  MOV  CX,0003
 4BD  LODSB
 4BE  CMP  AL,30
 4C0  JNZ  04C8
 4C2  MOV  BY [SI-
 4C6  LOOP 04BD
 4C8  POP  CX
 4C9  RET
 4CA  MOV  AL,[DI]
 4CC  CMP  AL,30
 4CE  JNZ  04D3
 4D0  MOV  BY [DI],20
 4D3  RET
 4D4  PUSH CX
 4D5  MOV  CX,0006
 4D8  LODSB
 4D9  CMP  AL,30
 4DB  JNZ  04E3
 4DD  MOV  BY [SI-
 4E1  LOOP 04D8
 4E3  POP  CX
 4E4  RET
 4E5  PUSH CX
 4E6  PUSH SI
 4E7  PUSH DI
 4E8  PUSH DI
 4E9  SUB  DI,06
 4EC  MOV  SI,DI
 4EE  MOV  DI,0800
 4F1  MOVSW
 4F2  MOVSW
 4F3  STD
 4F4  POP  DI
 4F5  SUB  DI,03
 4F8  MOV  SI,0803
 4FB  MOV  CX,0004
 4FE  LODSB
 4FF  CMP  AL,20
 501  JZ   0516
 503  CMP  CX,04
 506  JZ   050F
 508  CMP  CX,01
 50B  JZ   050F
 50D  JMP  0513
 50F  MOV  BY [DI],2C
 512  DEC  DI
 513  STOSB
 514  LOOP 04FE
 516  CLD
 517  POP  DI
 518  POP  SI
 519  POP  CX
 51A  RET
 51B
;Wrapping ends. Leave blank line at 51B to terminate assembling.

    RCX
    41B  ;Length of file is 51Bh - 100h.
    N PARTREAD.COM
    W
    Q
```

extended DOS partition which can be logically split up 23 times (D: - Z:). And from DOS v4 onward, we have Big DOS partitions which busted the 32Mb barrier and allowed individual partition sizes up to 2Gb.

Extended DOS partitions do not have a drive letter. Rather, they are a container file for one or more logical partitions. So far in this article we've only considered the Master Partition Table (MPT) from the MBR sector. However, each subsequent partition also has its own partition table located in the first sector of that partition. Like the MPT, each subsequent partition table can only have 4 entries. And there can only be one drive letter in any partition table. However it is possible to also have another extended DOS partition within an extended partition and this extended partition can then have another DOS-type partition with a drive letter. So by a process of "chaining" from one partition table to another embedded partition table, you can continue until you have up to 23 additional drive letters (besides C:)

Take a look at my MPT in Figure 3. This is for the first physical HD. To see the MPT of a second HD you would change the instruction at offset 0335h to "MOV DX,0081h".

Back to the MPT of the first HD. The first partition type is unknown. It has a type byte of 16h that matches none of the types in the list in Figure 4. It is actually an alternate C: that is type 06h (Big DOS) when it is activated by OS/2's Boot Manager. When this partition is active Boot Manager deactivates my standard C: partition (entry #1 here) which changes from 07h (HPFS) to 17h (unknown). So you can see that BM is adding or subtracting 10h to a partition type byte to activate/deactivate it as the start-up partition. (BM is the actual boot partition - it asks me which OS I want to start.) The easiest way to toggle between say 07h and 17h is to use XOR. Try tracing through "MOV AX,7h" then "XOR AX,10h" then "XOR AX,10h" again.

You can see that partition entry #3 is an extended DOS type. Figure 8 shows how I traced through the extended partitions until I reached the end. As mentioned earlier, the PT that an extended DOS partition contains is located in the first sector of that partition. So, in this example, I dumped from 07EFh for a length of 3 bytes. (Refer to Figure 5.) The H-S-C values, although "encoded", are already in a the format that the BIOS uses, so it's just a matter of altering the value placed in CX at offset 0332h and, if the Start head is not 00h, the DH part of the value placed in DX at offset 0335h. Notice that in this example CX gets "D301" not "01D3" because when you dump a word in memory the byte shown on the right is the "high" byte of a word (usually referred to as the MSB -Most Significant Byte).

The output from this run shows that the 181Mb XD partition contains a 130Mb HPFS partition (this has a drive letter) and another 51 XD partition. Upon dumping the Start H-S-C for this XD partition, adjusting CX and rerunning, I found that it contains a 51Mb Big DOS partition. It appears that each "lettered" partition is shown as the "boot" partition for that particular PT (except for the BM partition which is due to the way it works).

```
DEBUG PARTREAD.COM

-G=100 33A  ;Execute to just past the Int 13h sector read.

;Figure 3 shows that partition #3 is an XD type.
-D7EF L3     ;This is the Start H-S-C part of PT entry #3.
07EF  00 01 D3 ;Hd=00h, Sec=01h, Cyl=D3h.

-A332
 0332 MOV CX,D301  ;Alter the code for the new partition.
 0335   ;End assembling.

-G=100       ;Completely run altered PARTREAD.COM.

 PARTITION                START          STOP      SECTORS   SECTORS   SIZE
  NUMBER   BI TYPE   CYL HD SEC    CYL HD SEC   BEFORE     HERE     IN Mb
 ---------------------------------------------------------------------------
     0     BT  HP    211  1  1     747 15 31        31   266,321    130
     1         XD    748  0  1     960 15 31   266,352   105,648     51
     2         un      0  0  0       0  0  0         0         0      0
     3         un      0  0  0       0  0  0         0         0      0

Program completed processing.  ;Message from DEBUG

;The above table shows that partition #1 is an XD type

-D7CF L3     ;This is the Start H-S-C part of PT entry #1.
07CF  00 81 EC ;Hd=00h, Sec=81h, Cyl=ECh.

-A332
 0332 MOV CX,EC81  ;Alter the code for the new partition.
 0335

-G=100       ;Run again.

 PARTITION                START          STOP      SECTORS   SECTORS   SIZE
  NUMBER   BI TYPE   CYL HD SEC    CYL HD SEC   BEFORE     HERE     IN Mb
 ---------------------------------------------------------------------------
     0     BT  BD    748  1  1     960 15 31        31   105,617     51
     1         un      0  0  0       0  0  0         0         0      0
     2         un      0  0  0       0  0  0         0         0      0
     3         un      0  0  0       0  0  0         0         0      0
```

*Figure 8. Tracking through Extended DOS partition entries. (Figure 3 provided the intial XD starting position.)*

## Conclusion

PARTREAD.COM would have been more easily implemented in a high-level language (HLL). In a later article in this series you will see how to do this. And, by learning assembler, you develop a better understanding of how a HLL achieves its ends and the limitations inherit it its use.

Next month, continuing along with the boot process theme, we will be examining the code in the boot sector. You will learn: how to compare strings of bytes; how to pause the display; about the BIOS Parameter Block on HDs and FDs; how DOS finds and loads IO.SYS.

# New Additions to the Library

## BBUG 3286 BROCHURE Version 3.3

*CLASSIFICATION * Graphics * Windows * Hard Disk * Sound Card*

Advertising in the 90's!. A slide show program that talks with your own voice!.

BROCHURE is a commercial advertising tool for individuals or companies who want to communicate a promotional message to the Windows market. Assemble your talking brochure and distribute it freely (no royalties) through tradeshows, mass mailers, hand outs, bundle with hardware etc.. Up to 100 picture and sound files in one show!.

BROCHURE automatically accesses a Windows Write file from within the program for detailed, written information (ie: product catalogue, pricing, service bulletins, new product announcements etc.). The person to whom you hand your computerized brochure may print out your detailed information from within Windows Write.

Includes WINSTALL: Windows utility program for an easy end-user installation. You may customise WINSTALL for your particular BROCHURE and distribute freely or simply run the program from the floppy drive. Penetrate those tough accounts with a Talking Brochure!.

## BBUG 3287 CD AUDIO Version 1.30

*CLASSIFICATION * Music * Windows * Hard Disk * Sound Card * CD-ROM*

CD AUDIO is an audio CD player and database with the following features: Main Window - The main window allows you to play CD audio tracks, enter disc information, and eject discs. The main window contains the following items; Artist, Title, Tracks, Length, Track Buttons, Track Arrows, Track Titles, Track Lengths, Play/Stop, Eject, Shuffle/Un-Shuffle, and Current Track.

Creating a Program - A disc program is a rearrangement of a CD's audio tracks. You can use a program to play a disc's audio tracks in any order that you choose, or to play only some of a disc's audio tracks. The program you create is saved in the disc database and automatically re-loaded anytime you insert the disc.

You create and modify programs in the "Disc Program" window. It contains the following items; Available Tracks Tracks Remaining, Time Remaining, Current Program, Tracks Used, Time Used, Add, Add All, Fit to Tape, Remove, Remove All, Allow Repeats, OK, and Cancel.

Disc Database - The disc database contains information on all of your CD's. It holds the following items for each disc; Artist, Title of disc, Track titles, and Disc program. All of these items are optional. You can enter or modify the items any time a disc is in the CD-ROM drive. The values stored in the database will be automatically re-loaded each time you insert the disc.

Requires VBRUN100.DLL - BBUG # 9083.

## BBUG 3288 EDE Version 1.1

*CLASSIFICATION * Database/Menu/Utilities * Hard Disk*

EDE is a free-format information organizer and DOS menu program. It can be used instead of a database program for many everyday tasks, but can do many things a database can't because of its flexibility (e.g. arranging ideas decision trees, Hypertext). It contains a demo data-file which demonstrates how it can be used to do many everyday things.

EDE is simply a program which organizes small documents or notes in a hierarchy. There are menus and sub-menus which contain; text documents, other sub-menus, address documents or program items which run DOS applications.

Some of its features include; on-line context-sensitive help available a all times, an editor with word-wrap/cut/copy/paste etc., is mouse compatible, import/export information, tools for moving/copying/printing/linking across sub-menus etc., DOS menu program functionality, 'outliner' functionality for arranging ideas, close to 'HyperText' functionality, compact 'persistent object store' for storing information, no real limits on the amount of information stored and 'Attack of the Amoebas' screen saver.

This is essentially all there is to know about EDE. Its design goal was to make a program user-friendly through simplicity.

## BBUG 3289 GRADEBOOK FOR WINDOWS Version 2.11

*CLASSIFICATION * Education * Windows * Hard Disk * Printer*

GRADEBOOK allows you to keep student scores and calculate grades automatically. Because every instructor records and calculates grades differently, the program was designed to be flexible. GRADEBOOK can be used by elementary, junior high school, high school and college instructors. It sets no practical limit on the number of terms, classes, students or task.

GRADEBOOK keeps track of student scores on various tasks in up to ten different categories. All categories except extra credit are user-definable. GRADEBOOK will keep your student list in alphabetical order or you may place the students in any desired order to agree with a manually kept grade book. Reports may be in rank order if desired. Student names and optional ID numbers may be entered manually or optionally imported from an ASCII file. All program input is checked for validity as it is entered.

Using GRADEBOOK, you can calculate your grades by summing the raw scores or by assigning weighting factors to particular categories of tasks. You have the option of ignoring low scores in each category when you calculate the final grade. Several options are available for extra credit and scores may be entered and not counted. Scores may be incremented, scaled or adjusted to obtain the desired mean or standard deviation. Custom scores may be calculated as a function of other scores.

GRADEBOOK calculates and plots the distribution of scores for a single class or for several combined classes, for a single task or for all the tasks. Based on this distribution, you specify the interval of scores for each letter grade. GRADEBOOK the automatically calculates the final grade for each student. GRADEBOOK can assign either A, B, C, D, and E grades, or plus and minus grades. Custom letter grades may also be assigned. GRADEBOOK can also calculate and plot the distribution of grades for a single of for several combined classes. Grades and scores may be printed on an instructor summary sheet for your use or as individual student reports. Different report formats are available. You can issue progress reports any time during a grading period and GRADEBOOK will automatically calculate the appropriate interim weights. Progress reports may contain teacher notes. If you wish, reports can be printed for posting using student ID numbers. Students, tasks, scores and averages may be automatically transferred to new classes or summary classes.

GRADEBOOK will work with any printer (optional) that is supported by Microsoft Windows. Full font support is provided for Window's printer and screen fonts. GRADEBOOK may easily be interfaced with other programs. Student names and ID numbers may be imported from ASCII files. Student names and ID numbers, score lists and grade lists may be exported to ASCII files. In addition GRADEBOOK allows you to use the Windows clipboard to import and export GRADEBOOK data and charts to other Windows applications. You may copy term lists, class lists, student lists, score lists, score distributions, grade lists, grade distributions, interim weight reports and required final scores using the clipboard to

programs such as Excel and Word for Windows. The score distribution charts and grade distribution charts may also be copied into other applications. Scores may be copied to and from other programs using the clipboard.

GRADEBOOK includes commands for easily backing up and restoring your student data for extra security. GRADEBOOK will keep its data files on the hard disk, or if you prefer, it will keep your data files on floppy disks for added security. An optional password may be used. GRADEBOOK allows the data files to be kept in separate subdirectories if several instructors must share one computer.

Requires VBRUN200.DLL - BBUG # 9083.

## BBUG 3290 PERSONAL COMMUNICATION LIBRARY FOR PASCAL Version 3.5

*CLASSIFICATION * Communications/ Programming * Turbo Pascal*

PCL is an asynchronous communications library designed for experienced software developers programming in Turbo Pascal, version 4.0 and up.

The PCL features: 28 communications and support functions. Support for the high performance INS16550 UART. Supports hardware (RTS/CTS) flow control. Interrupt driven receiver. Supports 300 baud to 115,200 baud. Supports COM1, COM2, COM3 and COM4. Adjustable receive queues from 8 bytes to 32 KB. Control-break error exit. 17 communications error conditions trapped. Allows 2 ports to run concurrently. Complete modem control & status.

Written in assembly language for small size & high speed. Terminal program featuring XMODEM, YMODEM and YMODEM-G.

## BBUG 3291 DOS UTILITIES NO 26

*CLASSIFICATION * Utilities * Hard Disk * CGA/EGA/VGA*

PROCON CONTROL CENTRE Version 1.0 can turn your IBM-PC or compatible into a COMPUTER CONTROL CENTRE. Included are a number of programs which use any OUTPUT port on the computer to control 8 relays. In fact, any system with a parallel printer output can be used!

The program could be used to control a sprinkler system, switch a radio or tape recorder ON and OFF, or as a burglar deterrent by switching things ON and OFF at particular times of the night and day. The program could also be used for model control such as a robot or train control by using the repeatable timed sequence. The output relays may be connected to a remote control allowing the TV, HI-FI etc to be controlled from the computer. The applications are only limited by your imagination!

CLOCKWORK Version 4.9 is a program that automatically adjusts the system clock during startup or as required. It facilitates accurate measurement of the system clock speed error. From user inputs and stored data it calculates the appropriate adjustment amounts. Long term averaging leads to a very high accuracy in adjustment. It does not require a modem and it is not a TSR. The beneficial effect of this utility becomes noticeable very quickly.

EZVIEW Version 4.3 is a quick, handy file viewing utility. The wrinkle that's worthy of a note here is CURSOR CONTROL. Have you ever been programming or analyzing files and wished you could use the cursor to count bytes or characters ? Now you can___with EZVIEW.

TEXTSHOT Version 2.1 is a pop-up TSR program designed be a text screen counterpart to ZSoft's FRIEZE(tm), producing output files for use in word processors and desktop publishing applications.

Load TEXTSHOT into memory, press the hot key from within a character-based application, and a menu pops up permitting entry of a filespec and a choice of various file options. When the "Enter" key is pressed, the screen is restored and is saved to disk in the form of a monochrome (2-color) PC Paintbrush(tm)-format .PCX graphics file.

This version of Textshot also permits image "clipping" prior to writing an image to disk, as well as the optional preservation of all image settings "between pop-ups".

## BBUG 3292 TIME MASTER FOR WINDOWS Version 1.1A

*CLASSIFICATION * Utilities * Windows * Hard Disk*

TIME MASTER is a program which allows you to track the usage of your computer. You can track what programs you are using, what people are using the computer and the proportions of business/private usage of your computer. It uses the time logging concept to achieve this.

It can help you substantiate your computer related tax claims, track project development times, assist with client billing or even just let you determine how long it took for you to complete the latest and greatest computer game! In the business or government environment it will assist in producing management reports on computer usage by tracking programs being used and people using a particular computer (or network terminal).

TIME MASTER tracks both business and private usage, has a "Snooze" function and can produce a variety of reports.

Requires VBRUN100.DLL BBUG # 9169.

## BBUG 3293 SOFTSCENE PCX ARTWORK VOLUME 3

*CLASSIFICATION * Graphics * Hard/L/ Floppy Disk*

Anyone who does desktop publishing or wants to dress up correspondence and FAXes should have a look at what's here. As long as you have a word processor, desktop publishing or drawing programs that can handle .PCX format files, then you won't have any problems with SoftScene PCX Artwork.

There's a great variety of variety here. You not only get line drawings of the United States capitol building (one of the best we've ever seen) and city street scenes, you get several variations mountains, forests, beach scenes and other country settings.

Everything is done in black and white which is perfect for laser and dot matrix printers.

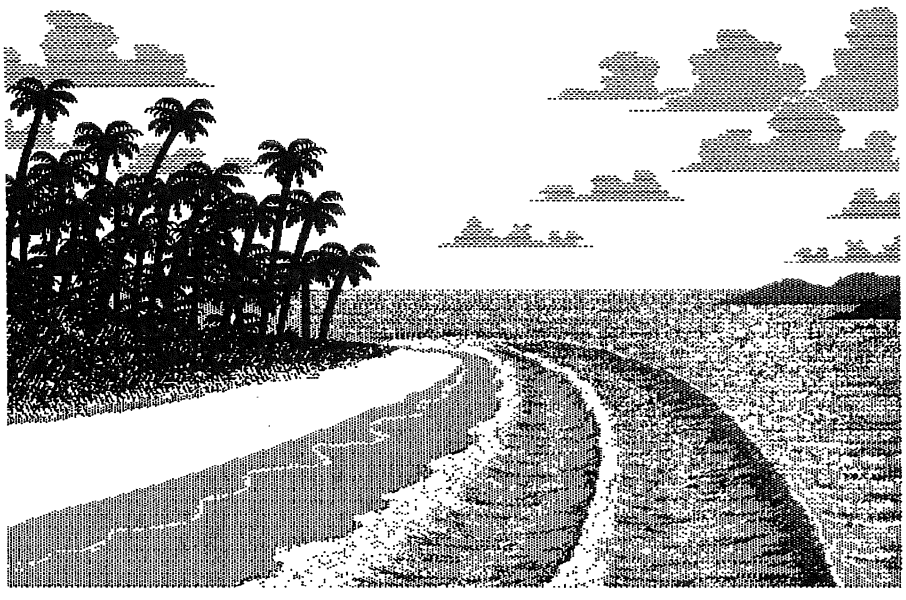
This is quality, graphic work. Crisp and clean, it's all ideal for many different printing needs. Check it out.

## BBUG 3294 WHIPLASH CLIP ART VOLUME ONE

*CLASSIFICATION * Graphics * First Publisher * Floppy Disk*

This package includes boxes, borders and art based fonts in First Publisher .MAC file formats. Combining these images with the gallery already available in First Publisher provides you with a wide variety of options.

This package can even be used on a floppy based system. This is an easy to use package, because if you've already been working with First Publisher then you already know to click on the file names to use clip art, graphics files.



*PALMS - Softcsene PCX Art Work BBUG #3293*

## BBUG 3295 SPORT Version 1.50 (Disk 1 of 4, also 3296, 3297, 3298)

*CLASSIFICATION * BBS * Hard Disk * Modem*

SPORT is short for SPORT, WIDE AREA INFORMATION TRANSFER SYSTEM (WAITS), Remote Resource Management. While the title, in and of itself, seems a bit overwhelming, the program itself is quite straight-forward to use.

SPORT is ideal for people who work on computers in more than one location and need to constantly move files and data back and forth as well as communicate. It can even be run in the background of Windows and other multi-tasking programs. SPORT includes both mail and terminal capabilities as well as enhanced capacity to remotely manage computer system resources. The amazing part about this program is that it takes the complex subject of remote communications and e-mail and wraps it all up in an easy to install package. You'll be able to start working with it right away and, then the more you use it, the more you'll learn about the advanced, more powerful features.

The e-mail feature lets you just send messages or even attach files to to messages. You can also include a line in a message to cause files to be received (which eliminates a lot of the headaches for moving files). You set up mass mailings and lists for people to whom you frequently send messages and/or files. Mail is automatically packed (compressed) and unpacked.

There is even an option for news to be displayed, along with event scheduling, conferencing and even remote programming. And, there is much, much more in this very complete and well documented program.

**BBUG 3296 SPORT Version 1.50 (Disk 2 of 4, also 3295, 3297, 3298)**

**BBUG 3297 SPORT Version 1.50 (Disk 3 of 4, also 3295, 3296, 3298)**

**BBUG 3298 SPORT Version 1.50 (Disk 4 of 4, also 3295, 3296, 3297)**

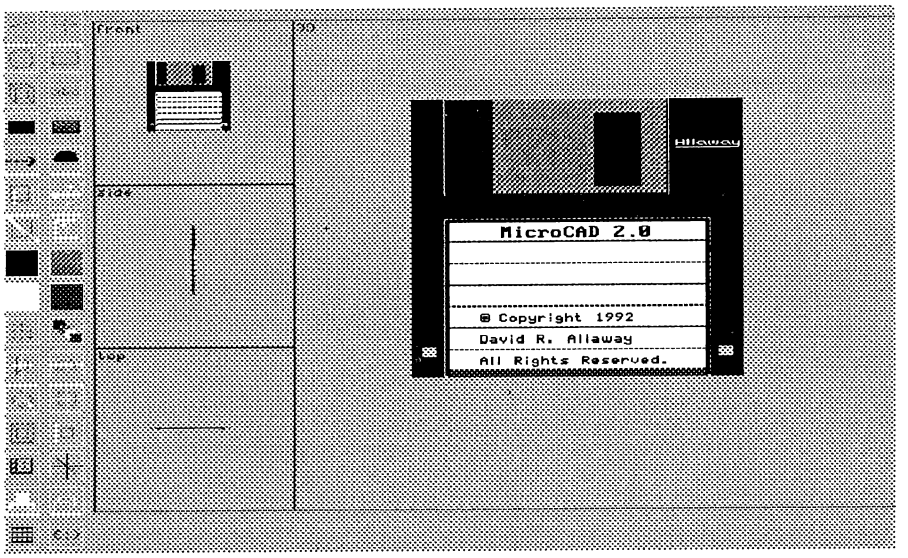
## BBUG 3299 TINYHOST Version 3.19

*CLASSIFICATION * Utilities * Hard Disk * Modem*

TINYHOST is a program you can use to transfer files between two computers without the requirements or overhead of other programs like full-fledged bulletin board programs. The bottom line here is that you can be "there" without ever leaving where you are to "pick up" or "deliver" some files.

TinyHost supports XModem, XModem/CRC, and 1K-XModem (also called YModem) transfer protocols. Operation can be via COM1, COM2, COM3, or COM4, using Hayes compatible modem at rates of 300 to 9600 baud. Up to 25 users can be supported, too. Ringback is also supported which permits easy use via the phone line for data communications.

We're not just talking file transfer either, because you can view the entire system. TinyHost requires approximately 120K of system RAM to use.




*Microcad - BBUG # 3302*

## BBUG 3300 LESSONPLANZ Version 2.0

*CLASSIFICATION * Educational * Hard Disk * Printer*

This program was designed to help teachers build structured lesson plans. That's really the first step, because LESSONPLANZ also allows teachers to evaluation how things are going as the plan evolves. The program can easily produce a printed version of a fully outlined lesson plan, or any portion the plan.

There are five basic areas of text entry: Methods, Goals, Objectives, Materials, and Evaluation Methods for each lesson plan. There also is supplemental information entries for Title, Class, Lesson Number, Dates Covered, and Number of Days. Much flexibility has been built into the program to allow for a teacher to change menu prompts for the text areas and the section headings for each of those areas. You can get printouts as well print to files (if you want to use the output in other programs).

You can even print folder labels in LESSONPLANZ which can accept entries 1 to 5000 lines. The program can also be personalize with the teacher's name and the name of the school.

## BBUG 3301 SHAREWARE MARKETING & MANAGEMENT SYSTEM Version 1.0

*CLASSIFICATION * Business * Hard Disk * Printer*

The SHAREWARE MARKETING AND MANAGEMENT SYSTEM (SMMS) is a major, full-featured marketing and management system for all Shareware programmers. SMMS does everything - maintain adequate records of those persons registering your program, distributors you sent the program to along with their response, and history of all changes to the program. Features include beside the databases, the ability to create form letters or press releases to accompany your disk to distributors or to announce a new upgrade to previous license holders. It prints mailing labels to distributors or license holders. It prints return address labels and labels for marking your program diskettes. SMMS records the response from distributors for future reference in submitting future releases.

SMMS prints five different reports. A report covering a designated period (month, year) and tabulates income received and sales tax collected, an annual program summary recording number sold, revenue received for each program marketed. Other reports include a market summary, list of distributors and a program history.

It is menu driven and very easy to use. It includes a on-line HELP and manual on the disk. Uses dBaseIII compatible files.

## BBUG 3302 MICROCAD Version 2.0

*CLASSIFICATION * CAD * Hard/Floppy Disk * VGA * Mouse * Printer*

Most computer aided design (CAD) programs are known for being hard to learn and difficult to use. That isn't the case with MICROCAD, which was created to provide a diagramming facility with the ease of use of paint programs combined with the object manipulation capabilities of CAD programs. MICROCAD provides an icon-based interface so you can create complete diagrams without the use of any commands, menus, or even keyboard entry.

Being so easy to use doesn't mean you'll face limitations in MICROCAD, you do everything from creating two-dimensional diagrams to creating and manipulating objects in 3-D perspective. You'll get more than you would think too, even without the use of graphics or a math co-processor. And, the program size is minimal so you won't be pinched for disk space.

MICROCAD also includes Full Drawing Interchange Format (DXF) export capability which means you can transfer MICROCAD diagrams to other 2-D or 3D CAD programs as well as numerous graphics and word processing programs. You get linear dimensioning, too. This feature automatically displays and updates all line lengths on the diagram, in whole numbers, tenths, feet and inches, or inches and 16ths. The number of objects per diagram is 1,500. Printer support includes IBM/Epson and compatibles, HP LaserJet and compatibles, and HP PaintJet. This program is good enough to compete with the better known, commercial CAD/CAM programs.

## BBUG 3303 SHAPE SHOOTER AND LUNAR LANDER Version 1.0

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

LUNAR LANDER is a challenging game program in which the player has to maneuver his falling ship to a safe landing site. Bonus points are awarded based on the softness of the landing. Fuel must be conserved from one round to the next. Extra fuel is awarded for choosing deeper landing sites. Each round produces a new lunar surface with more, but generally smaller landing sites.

SHAPE SHOOTER is a powerful graphics designed and animator that enables programmers to quickly produce high quality graphics that can then be used games and other applications requiring animation. Don't think you need thank a programmer for this package, because its main purpose is to be a tool to any creative person bring ideas to life.

## BBUG 3304 ALGEBRA TUTOR Version 1.0

*CLASSIFICATION * Education * Floppy Disk*

Need some help with your Algebra? Well, if you're willing to put up with standard program commands (instead of something like a pull-down menu structure), this is probably the program you're looking for.

There are various exercises to sharpen your algebraic skills with different levels of difficulty. Watch out though, because the shareware version comes with many of the more "needed" exercises only listed (you have to register to receive them all).

When a student solves three problems correctly in a row, he or she is automatically bumped up to the next level of difficulty. It is possible to manually branch upward and downward through the levels of difficulty. All problems are randomly generated so using the program more than once does not become predictable. This program is smart enough to evaluate alternative answers, too. When you don't get an answer right, the program explains what you should have done step by step to get the correct answer. The program also keeps track of your progress.

## BBUG 3305 MATH MASTER Version 1.0

*CLASSIFICATION * Education * Floppy/Hard Disk*

MATH MASTER allows entry of simple and sophisticated formulas and expressions in almost free form. This makes working with MATH MASTER as simple as pencil and paper.

Beyond performing basic arithmetic operations, MATH MASTER computes compound interest, square roots, powers, trigonometric and other functions. It also allows you to combine some or all of these operations into one expression. If that isn't enough, the program also is able to retain all previously entered expressions in memory plus view, browse, modify, print, and recalculating any of those expressions.

There's also a handy calendar for which you can display just about any day. The program has the ability to perform arithmetic operations with dates, working and calendar days, as well as display a scrollable monthly calendar.

## BBUG 3306 MUSIC IMAGINATION & TECHNIQUE Version 1.0 (Disk 1 of 4)

*CLASSIFICATION * Music * Hard Disk * CGA/EGA/VGA*

Here's a fully functional music instruction program currently in use as introductory music theory and composition course at Drew University. Developed by a music professor, it's obvious this software was designed specifically fits the needs of the instructor as well as the students. MUSIC IMAGINATION & TECHNIQUE (MIT) is a 100 percent based course of instruction in the fundamentals of music theory, covering these topics: acoustics, pitch basics, rhythm, scales & keys, intervals, analysis and harmony.

Each topic is a complete electronic chapter devoted to the designated subject and includes a table of contents, thorough discussion, notated examples, animated illustrations, and drill/practice screens. Utilities included with MIT are a Melody Writer, Keyboard, Pitch Memory, SoundForms, and Editor. Melody Writer can be used to write single-line melodies which can then be played back through the PC's internal speaker or through an external MIDI synthesizer. This is like a word processor for music. The Keyboard is accessible from both the main menu and the Melody Writer. What it does is turn the keyboard into a piano-style instrument.

Pitch Memory is a little game to help you learn the "ups and downs" of pitch SoundForms is like a musical Etch-A-Sketch for creating pitch "shapes". Editor is also accessible from both the main menu and the Melody Writer. basically a no-nonsense WordStar-like text editor which contains some extensions for writing Basic type music code to drive an external 4-voice synthesizer which plugs into the printer port.

MIT includes complete and thorough information pertaining to the fundamentals of music theory and is not just a "drill and practice" program. Anyone involved in teaching music will be impressed, to say the least.

**BBUG 3307 MUSIC IMAGINATION & TECHNIQUE Version 1.0 (Disk 2 of 4)**

**BBUG 3308 MUSIC IMAGINATION & TECHNIQUE Version 1.0 (Disk 3 of 4)**

**BBUG 3309 MUSIC IMAGINATION & TECHNIQUE Version 1.0 (Disk 4 of 4)**

## BBUG 3310 LOCKUP! Version 1.0

*CLASSIFICATION * Utilities * Windows * Hard Disk*

LOCKUP is designed to keep the standard passerby from accessing your programs and data. All it takes is a click on an icon and you have no secrets. Unless a program has built in protection, there is no way to prevent this except to stay chained to your desk.

LOCK-IT and LOCKUP are two programs whose purpose is to password protect any Windows Program. With LOCK-IT and LOCKUP installed, you click on the The Program icon, and LOCKUP will come up. Click in the Window and you will be asked for the user id and password. Enter them and click OK. If they are entered correctly and exactly (they are case sensitive so watch the caps) the program will start and LOCKUP will exit.

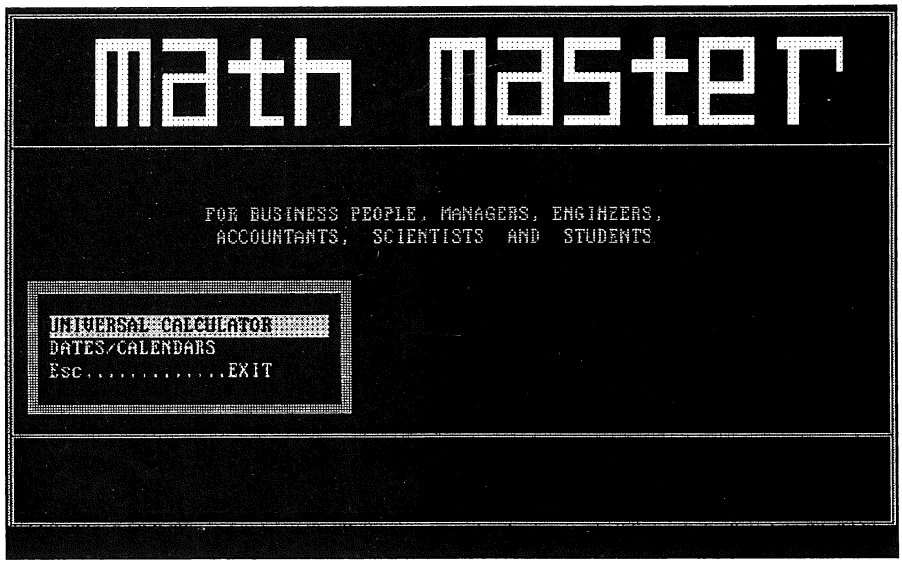
All of the programs will use the same password and ID. They are case sensitive so remember them exactly.

## BBUG 3311 SEASON FOOTBALL Version 6.3

*CLASSIFICATION * Games/Sport * Hard Disk * EGA/VGA * 80286 or better*

For anyone who can't get enough football, SEASON FOOTBALL is just what the doctor ordered.

SEASON FOOTBALL comes packed




*Need a Math Calculator? - Try MATH MASTER - BBUG # 3305*

with 28 teams ready to play. You can let the computer play the game (this isn't that much fun though), or you can play against the computer. If you have a friend handy, you two can play, leave the computer out of it (except for the statistical, play-by-play work). game takes about 40 minutes. Everything that can happen in real football happen in SEASON FOOTBALL and the graphics aren't too bad. Nothing has been left out, down to and including the blowing of the whistle between plays detail in this program is amazing, because the ball can even strike the uprights or crossbar during field goal attempts.

Though this game is loaded with facts, figures, and data for the major football teams, it is easy to play. Be forewarned that time has a way of disappearing into a void with this game (especially if you're a real football nut). Help is provided by means of a very unique batch file you run at the DOS prompt by typing (what else?) "help."

## BBUG 3312 SUPER BALL! & BANANOID Version 1.0

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

This is a breakout arcade game which has easy paddle control and features smooth VGA graphics like BANANOID. In each level there is a different pattern of bricks, and sometimes when a brick is hit an object will fall down the screen which you may try to catch with your paddle. Stop lights will slow down the ball, super balls will make the ball cut through all bricks like butter, angels will give you extra paddles, and umbrellas will advance you to the next level. Bombs will destroy your paddle unless you happen to have a shield.

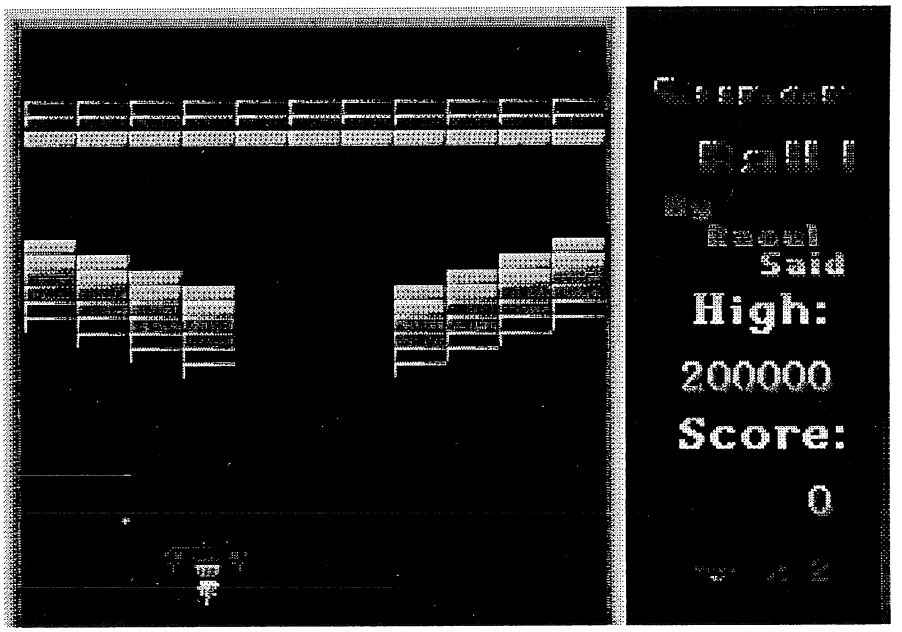
BANANOID is a smooth scrolling VGA breakout game that covers two full screens of your monitor. As you hit some of the bricks they wall tumble down, and if touched they will make your paddle wider, more narrow, or "sticky" so that the ball will stick to the paddle when touched. One brick will give you laser blasts to destroy the remaining bricks. The paddle is controlled with the mouse, which often may be too sensitive to have precise control over the paddle. There is a full screen mode so that you can view both screens at once, but on certain VGA monitors there will be a duplicate flashing screen below it which can be quite distracting.

## BBUG 3313 ENGLISH-FRENCH TRANSLATOR Version 1.1C (Disk 1 of 4)

*CLASSIFICATION * Educational * Hard Disk*

The ENGLISH-FRENCH Translator recognizes idiomatic words, slang, polite, international measurement units (miles, ounces, pounds, etc.), and technical terms for commercial and industrial applications. It conforms to French grammar and punctuation rules. There are over 40,000 root words, all of which can be expanded to more than a million possibilities

The program has a built-in 12,000+ French verb conjugator and a seven-language word processor (French language is included). The dictionary is programmable and has a huge storage capacity (32MB) for all of your additions.




*Have a ball with SUPER BALL - BBUG # 3312*

No manual is provided because everything is "in the program."

**BBUG 3314 ENGLISH-FRENCH TRANSLATOR Version 1.1C (Disk 2 of 4) BBUG 3315 ENGLISH-FRENCH TRANSLATOR Version 1.1C (Disk 3 of 4) BBUG 3316 ENGLISH-FRENCH TRANSLATOR Version 1.1C (Disk 4 of 4)**

## BBUG 3317 C MAGIC Version 1.50

*CLASSIFICATION * Programming * C/C++ * Hard Disk*

This package is an add-in for Borland C/C++ products. Using C Magic with Borland's programming language you'll be able to create professional looking, multi-color, shadowed pop-up help; warning, dialog, general text boxes; and lightbar menus quite quickly. This package will save you hours and hours work. As their documentation says, "Why waste your time reinventing the wheel."

You'll also be able to incorporate .BGI graphics drivers and .CHR fonts directly into your .EXE programs with only a few lines of code. Graphics programs will now be as easy to create as text based applications. Everything is included so you can write programs to run on 256-color VGA systems. Mouse support can be added into your programs without the need to write a mouse driver.

Many of Borland/Turbo C functions are greatly simplified and disk file handling is done automatically. You also now have the option to include enlarged cursor for laptop LCD displays. Sounds can easily be added into programs, too. You must use large memory models, because the C Magic library won't work with smaller memory models.

## BBUG 3318 ANIMATED STRING ART (ASA) Version 1.3

*CLASSIFICATION * Graphics * Hard/Floppy Disk * VGA*

ANIMATED STRING ART displays string art which you can then manipulate. There is flexibility built in so you can modify how the display looks in various situations. You'll get to work with just about every aspect of string arrangements. features like Triangle Rotate, One Line Segment Rotate, Tow Line Segment Last Design Re-Display, Rotate Colors Function, and Time Delays and more.

There's built-in help, too, which you can also print out. You can save a load data as well as delete those you no longer need. A demo option is included which can also be changed to reflect your needs.

## BBUG 3319 GRASP Version 1.10C

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

GRASP stands for GRAphical System for Presentation. GRASP is a simple graphics programming pseudo-language which can be used to create and run animated graphics demonstrations, tutorials, and a wide variety of presentations for IBM compatible computers. GRASP does require that you make use of some other tool for the actual graphics files (or captured screens). Since GRASP was developed by Microtex Industries, it is patterned to take advantage of their own PCPaint Plus pictures, clipping, and fonts.

GRASP was designed to be the base for many other products, which means GRASP files can be generated by programs written in virtually any other language This allows for great flexibility in preparing and making presentations. GRASP won't find too many limitations

GRASP is user-friendly and you can learn how to use it quickly. It supports CGA, EGA, Hercules, AST ColorGraphPlus, Plantronics, AST Preview, and their text modes. There are 16 picture buffers (which adds speed and rapid movement if you want to your presentations). You get 128 clipping buffers and 25 different fades with limitless combinations. The single command to control animation sequences is very nice.

## BBUG 3320 LHA MASTER! Version 1.1B

*CLASSIFICATION * Archive * Hard Disk*

LHA MASTER is a shell for the file archiver and compressor program called "LHA" developed by Yoshi). Lha is reputed to achieve higher compression than the well known PKZip.

Since LHA is a command-line driven program, with many different switches options, having a shell program like LHA MASTER comes in quite handy. It eliminates the need to memorize commands and makes the entire process of archiving files that much easier. LHA MASTER is menu driven and works in way similar to Microsoft Works or Quattro Pro. You're allowed plenty of keyboard shortcuts, too.

You must have LHA to run LHA MASTER and they must be in the same directory (as well as listed in your PATH statement).

## BBUG 9172 SIGBITS

*CLASSIFICATION * General * Database * PC-File/dBase * Hard Disk*

Have you ever thumbed through your Significant Bits Magazines trying to find an article, a feature or an event that you know is in there somewhere or that you know has happened but could not find it? Have you read an article or feature which at the time did not mean much to you and now you would like to read that item again but do not know its exact title nor where to find it? If you answer "yes" to either or both of these questions, then this PC-File Database "SIGBITS" is here to assist you.

The Database is an Index compiled of articles, features, etc. appearing in Brisbug's "Significant Bits" monthly Magazine and its predecessor "The Brisbug Newsletter" covering the period from April 1989 to February 1994 (both inclusive).

## NEW WINSIG DISKS ADDED TO LIBRARY

**Please note that all WINSIG disks are HIGH DENSITY DISKS ONLY (Library Charge $8.00 per copy)**

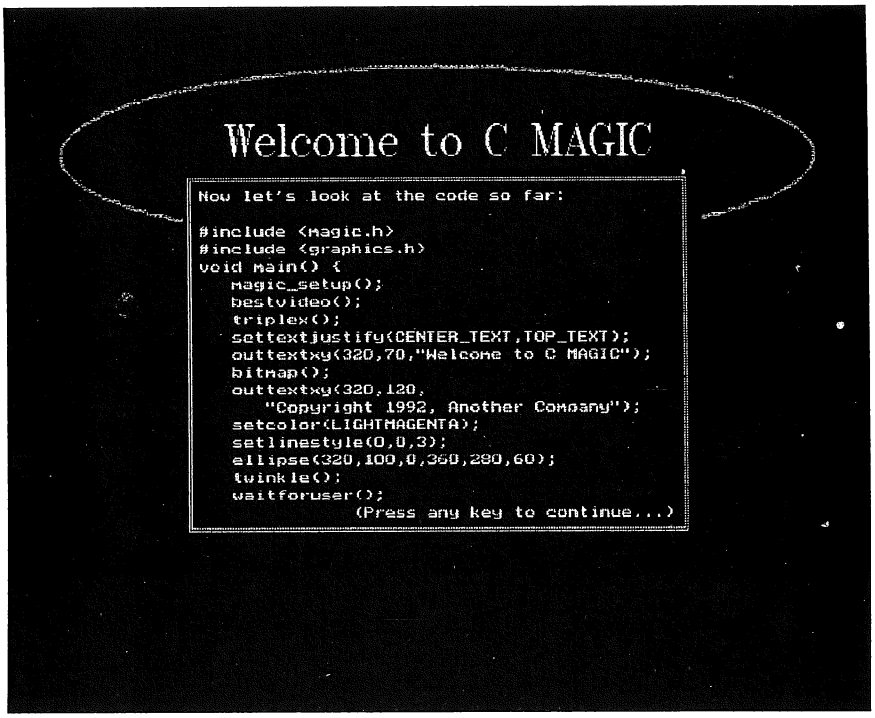
## BBUG 6812 WINSIG UTILITIES #4

*CLASSIFICATION * Utilities * Windows * Hard disk **(HIGH DENSITY DISK ONLY)***

ACCESSES Version 2.1, replaces Windows Task Manager with a program that does much more than switch between applications. Select 1, 2,..., up to ALL of your windows from the ACCESSES Task Manager and have them: Closed; Placed in their default positions; Minimized, Hidden; Split the screen, (Have one show on the Top half and the other on the Bottom half of your screen); Moved to overlapping Quadrants on your screen, top right, top left, bottom right, bottom left; Moved to top right, top left, bottom right, bottom left, right half, left half, maximized, minimized, tiled, cascaded, above icons, arrange icons, hide, swap apps and icons,...

With ACCESSES you can destroy some windows that won't close; although, this is a non-standard exiting procedure for most windows.

All of this is easily configurable. You decide what Top half means; what Default means. Move a window to the position that you are defining and tell Accesses that's what you want defined for Top Half, or that's where you want all of your Notepad's to start up.




Up to a 1024 window positions can be defined; ACCESSES will save up to 10 different folders and each folder can have up to 20 programs included in it. A folder is a list of programs that you currently have running and that you want to run later as a group. Up to ten alarms can be set for either today or as a daily alarm. Daily alarms are saved to Accesses.ini. ACCESSES uses your modem to dial a phone number from a directory that you can configure.

ACCOUNT MANAGER Version 1.2, is a tool designed for professionals and others who must keep track of how much time they spend on different projects or accounts.

Examples of such uses are... * A person who charges time to several different projects; * Someone who sends accounts to multiple clients; * An entrepreneur who must keep records of business vs. personal use of a computer for tax purposes.

To use ACCOUNT MANAGER, you "punch in" to each project or account as you begin working on it, and "punch out" when you are done. At the end of the week, or whenever you need a report of how your time was spent, ACCOUNT MANAGER will generate a report, showing your time in varying levels of detail.

ACCOUNT MANAGER has many more features and controls to provide a range of extracts of time spent on the various tasks. It is supported by comprehensive documentation. There is a problem however in that the dates are in the American mm/dd/yy format.

With ENVADDRESS you can maintain your address book, print a single address, a list of all or selected addresses, print envelopes and dial a phone number. Some of the highlights are: - Grouping of addresses - groups can be shown or hidden; - Free format for the address, no fixed length fields; - Up to 15,000 characters of remarks for each address - can be modified in a scrollable edit window; - Envelope printing with a single mouse click - 5 envelope sizes can be predefined; - Setup for printer, fonts, font sizes (screen, printer and envelopes); - Printout of single address and address lists; - Fast address locating even in large databases; - Find text string in any fields of the addresses (also remarks field); - Phone dialing with a single mouse click; - Installation program.

The addresses are presented as a stack of cards which is always sorted by the header (top line) of the cards. In the header you enter the last name first, then the first name. The length is limited to 30 characters. The address field contains the name and address in the way you would like to have it printed on an envelope. You can turn bold printing on with a dollar sign ($) and off with a pound sign (£). This feature is only active for envelope printing.

There are two phone number fields. You may also enter a descriptive text. When you want to dial a number, only the digits will be extracted and sent to the modem for dialing.

Requires VBRUN100.DLL BBUG # 9169

ALMANAC Version 3.0, is an attractive program that provides for the display of information related to a time base. Christian or Jewish calendars can be called up from toolbar icons and displayed on a year, month or day base. Facilities are offered for schedules, to-dos, alarms, notes etc. with the data being entered through an appropriate window.

The displays are clear with the fonts and colours set to the user's preferences. Comprehensive on line help is available. Also there is a location facility where over 100 world cities are listed to provide data on their latitude, longitude, world time zone, phases

of the moon and so on. But our problem is that not one Australian or New Zealand city made this list. Otherwise an interesting and usable program.

WINASCII Version 1.0, is another ASCII table and also a font viewer for Windows users. A short summary of the features. You can view:- The printable characters of any of the fonts in your system or you can select the special character sets; OEM i.e., the original IBM PC character set ANSI(the Windows character set).

As you maneuver through the characters, (mouse or arrow keys), a highlight is moved. The Hex and Decimal code for the highlighted character is shown on a status line. You can copy a single character to the clipboard (Edit/ Copy or double-click); no character format (font etc.) is copied with the character, but the OEM/ANSI distinction is kept.

This program is as good as most of the ASCII displays with the added option of viewing and the coding of font characters. Also it is offered as freeware.

AT,EXE Version 1.1, is an Application Timer that launches programs at a specified time, or at regular intervals. It can be used to automate backups, asynchronous communications, CPU intensive calculations, etc. It is an easy program to use. Just set the time, date and the program to be launched, and as long as the AT program is running, it will launch your program. It will launch DOS programs as well as Windows.

Put this program on the load= line of the WIN.INI file if it is to be used for Daily or Weekly program launching. This will load the program as an icon. The program does not have to be the foreground task to launch applications. If your backups are not very orgainised this program may be what you want.

## BBUG 6813 WINSIG DESKTOP PROGRAMS #4

*CLASSIFICATION * Windows * Desktop Applications * Hard disk * VGA (HIGH DENSITY DISK ONLY)*

COFFEE MUG Version 1.0. Until now there have been notepads, card files, clipboards, and calculators on your Windows desk top, but never has there been a place to put your coffee mug. COFFEE MUG does this by placing a cup of coffee icon on your screen. Now you can finally pick up your coffee mug from where ever you used to keep it and put it where it belongs: on your desk top. When you start the COFFEE MUG, your mug will be full and your coffee will be hot. Be careful, though. If you move a window on top of your coffee mug, you may spill it which is sure to ruin your day. If this happens, you can upright your mug by selecting Upright Mug from the mug menu. Understandably, your mug will now be a little bit messy and may leave coffee rings behind on your desktop when you move it.

FISH Version 1.0, provides a colourful screen display of swimming fish. The number of fish can be selected between 1-99 and a choice made from seven varieties of fish.

PALETTE TEST Version 0.10, only works with 256 color drivers. To exercise the palette, the problem can be set in an automatic cycling mode by selecting Cycle Slow, Medium, or Fast. This will start rotating through the colors and palette sizes currently selected. Corruptions can be trapped and test reports generated.

PLASMABMP presents a fractal generated .BMP file. The wallpaper showing is very colourful.

PAPERBOY enumerates all the *.bmp files in you Windows directory and then randomly picks an image from this list to replace the current wallpaper selection. The best way to use PAPERBOY is to copy the file into you Windows directory and modify your Win.ini "run=" keyword to automatically run paperboy every time Windows is started.

PROGRAM-GROUPS Version 1.1, gives you the possibility to have groups within the groups in the PROGRAM MANAGER of Windows. Arrange to have PRGGRP.EXE in the Startup Group and restart Windows. Now, for example, if you want to have group Tools with subgroups Graphic-Tools, System-Tools, Printer-Tools and File-Tools, you can create a group Tools and the four subgroups with the NEW-Command of PROGRAM MANAGER. There are several steps to this process but they are well documented in the program.

PRIVATER appears as a .BMP file for a wallpaper design with a space motif based on the PRIVATER game.

PUNDIT, Version 1.0, displays witty quotations at user defined intervals while you're using windows.

The SCAVENGER utility attempts to fix two problems with the File Manager. First, although the File Manager has drag&drop ways to copy and move files (although you have to remember some counterintuitive shift key combinations) there is no drag&drop way to delete files, i.e. no trashcan. Second, for some reason the File Manager tries to update its windows after deleting each single file, even if you are deleting a group of files that you have selected as such. This makes deleting incomparably slower than moving.SCAVENGER lets you designate a dedicated directory (a "spool" directory) that serves as your trashcan. Instead of directly deleting files, you move them to the trashcan and let SCAVENGER take care of them. (This is a Beta Version of the program.)

WINFIGHT, Version 0.8, is a novel way of staying alert while working in windows. At random times a gunfighter appears on the screen and says draw, you then have to aim your mouse pointer and shoot him before he can shoot you.

## BBUG 6814 WINSIG EDUCATION #1

*CLASSIFICATION * Education/Games * Windows * Hard Disk (HIGH DENSITY DISK ONLY)*

ASTRONOMY LAB is one of the most innovative, interesting, and useful shareware astronomy programs available. ASTRONOMY LAB generates animated movies that simulate a host of astronomical events (including solar and lunar eclipses, lunar occultations, planetary occultations, transits of Mercury and Venus, the orbits of Jupiter's bright moons, and the motions of the planets in the plane of the ecliptic). In addition, ASTRONOMY LAB produces several reports that contain predictions of the most important and exciting astronomical events of the present, future and past. Also, ASTRONOMY LAB generates several graphs that illustrate many fundamental astronomical concepts.

This program will provide hour after hour of fascination and education to anyone interested in astronomy. The novice can use ASTRONOMY LAB as an excellent learning tool. Seasoned astronomers can make the best use of their observing time by using the program to calculate when astronomical events will occur, and where in the sky they will be found.

ADVENT CALENDAR Version 1.0, will count down the days before Christmas, from December 1 to December 25, has been drawn as a Windows program to share with you.

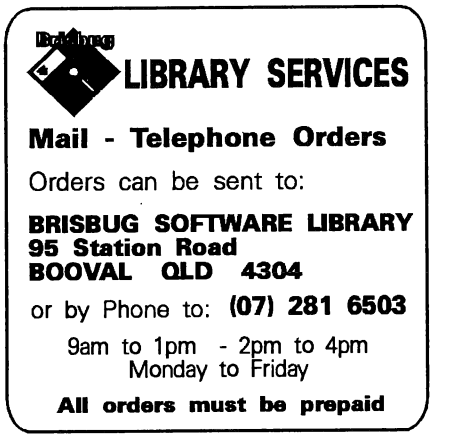
Basically you just click on the numbered squares to reveal a hidden picture. These squares are placed on three background screens. This program should be great for the younger children just coming into the computer world if introduced around the beginning of December and is quite colourful.

EARTH CENTERED UNIVERSE (ECU) Version 1.4A, is a Sky Visualization Program for Microsoft Windows 3.x called "The Earth Centered Universe". It is capable of simulating many of the features of the Earth's sky. You only need to enter your geographic location and the time and the local sky is simulated on the screen in a colourful display. This includes, but is not limited to the stars, planets, Sun, Moon, and "deep sky" objects. Constellation, coordinate grid, ecliptic, and local horizon lines are also displayed. ECU is designed as an observing tool for the observing amateur astronomer, but is equally useful to the "armchair" astronomer or other interested person interested in the night sky.

CHALKBOARD MATH FOR WINDOWS Version 1.5, is a fun, easy-to-use math tutor program that teaches and enhances elementary math skills in children between the ages of 5 and 12. The program can be used by a single child or by a child and an adult.

The program presents the player with a blank chalkboard area in which elementary math problems are drawn, answered, and assessed.

Progress through a given Chalkboard Math session is measured via a Scoring Mode option, in which correct answers are tracked and difficulty levels are automatically adjusted.

# SOFTWARE LIBRARY NEWS

Lloyd Smith

## Catalogs

Producing the catalogs on a bi-monthly basis really takes a load off the duties of the library helpers. This month sees an updated listing of all the disks placed in the library for the past two months. However, things are getting a little tight with the disks. In order to provide for users who have only two floppy disks, and no hard disk, the number of disks have been limited to 10 360K 5½" disks. By so doing, restrictions are imposed on the size of the text files so that each catalog takes up one disk. This accounts for the strange starting and finishing numbers in each catalog, especially in the first 5 disks.

The current program used to extract the catalogs was written by Peter Grimes. As one of the projects in which the "C" group will involve themselves, I have suggested that they produce a new improved installation program which will allow our catalogs to expand out beyond the 10 disk limit.

As I said earlier, things are getting a little tight with our catalogs. In order to give users a clear, but concise description of each program, sometimes I find that the text files are getting quite large. These descriptions are designed to inform you what the program is all about. Sure, I could condense the information to one or two lines, but then this would not tell you really what the program is all about. We can only hope the "C" group can come up with a better install program.

## Upgrades

Quite a lot of programs are being constantly upgraded each month. Because of constraints of space in the magazine, details of these upgrades are not published. It is important that you upgrade your catalogs regularly so that details of upgrades are available.

Last month, an upgrade to **ASEASYAS** was released for Mark's Spreadsheet group. This new version is now only available on a High Density disk (either 1.2 or 1.44M) for $8.00. The number still remains the same #0751, but the program has grown.

Upgrades for this month include **PC-FILE** Version 7 (Formerly BBUG #2082, 2083, 2084) now released as a high density disk on BBUG #2082, **TELIX** Version 3.22 available on BBUG # 2300 - high density disk. Also the latest shareware version of **DOOM** is now available on BBUG #9164 only as a High Density 3½" disk (also $8.00). Those users who have a 5¼" disk drive are out of luck as there is no way I can produce 1.2M versions of this game. (DOOM is rated at MA15+ under the new classification system).

## Library Helpers

Members prepared to help in the library at meetings are always welcome. Just call in to the library and talk to Terry Tuttle or Brian Sanborne if you would like to help. Some of the workers give up the whole day for the benefit of members and they would appreciate the chance to have an occasional break.

### Library Charges

Copies of disks supplied by the Software Library are as follows:

5¼" Disks - $4.00 each

3½" Disks - $5.50 each

High Density Disks (Special Programs only as advertised) $8.00 each

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 - 5¼" disks or 2 -3½" disks in our catalogs.

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# SIGBITS Database

**An index of Articles and Features appearing in Significant Bits**

by Ron Fisher (07) 3551969

Have you ever thumbed through your Significant Bits Magazines trying to find an article, a feature or an event that you know is in there somewhere or that you know has happened but could not find it?

Have you read an article or feature which at the time did not mean much to you and now you would like to read that item again but do not know its exact title nor where to find it?

If you answer "yes" to either or both of these questions, then the PC-File Database "SIGBITS" is here to assist you.

The Database is an Index compiled of articles, features, etc. appearing in Brisbug's "Significant Bits" monthly Magazine and its predecessor "The Brisbug Newsletter" covering the period from April 1989 to February 1994 (both inclusive).

Although "SIGBITS" Database was compiled using PC-File, it will also run on other Database Software such as PCTools Desktop Database, Microsoft Works for Windows Database (and I would imagine on MS Excel — since Works for Windows Database bears a strong resemblance to the Database function provided within Excel), File Express (versions 5.0 and 5.1), dBASE IV and Microsoft ACCESS. It can be used with PC-File versions 5.0 through to 7.

PC-File Registered version is available from Brisbug's Software Shop ($150.00). Also on the Bulletin Board is PC-File Version 7.

PC-File v 7 (or later version) is available from Manaccom Pty Ltd. **(STOP PRESS: PC-File Version 7.0 NOW available from the Software Library)**

FILE EXPRESS Registered version is available from Brisbug's Software Shop ($140.00). Unregistered Versions 5.0 and 5.1 are available from Bulletin Boards.

The files necessary to provide you with the database are available from the BBS - SIGBITS.LZH or on BBUG #9172.


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| Gold Coast SIG (of Brisbug) | GOLD COAST | 075-710113 | Joanne Ellis |
| Dalby PC Users Group | DALBY | 076-621381 | Peter Allan |
| Beaudesert Computer Club | BEAUDESERT | 075-411050 | Bernie Williams |
| Pine Rivers IBM Compatibles C C | STRATHPINE | 07-2678151 | Rob Cunningham |
| Sunshine Coast Computer Users Group | CALOUNDRA | 074-914680 | Ernie Camilleri |
| Landsborough Computer Club | LANDSBOROUGH | 074-923205 | |
| Noosa Hinterland PC User Group | COOROY | 074-852052 | Colin Sheehan |
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| Fraser Coast Computer Club | HERVEY BAY | 071-212394 | Steve Bottom |
| Bundaberg PC User Group | BUNDABERG | 071-531449 | Bob Wright |
| Gladstone QRI Computer Club | GLADSTONE | 079-723083 | Dave Franklin |
| Gladstone Computer Users Group | GLADSTONE | 079-783941 | Cec Wilmott |
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| Burdekin Computer Club | AYR | 077-834630 | Rod McRae |
| Townsville Computer Users Group | TOWNSVILLE | | |
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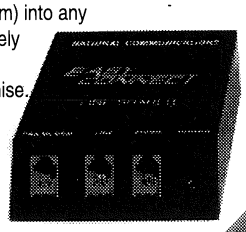

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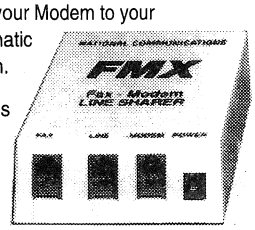


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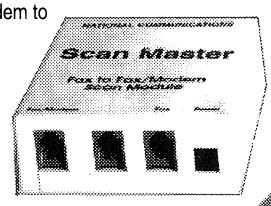


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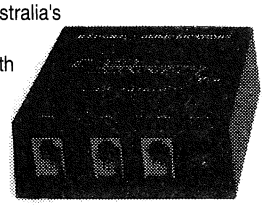

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The following members have generously offered to give telephone assistance on the topics listed. Please be sure to observe the restrictions on times specified by each person. This service is not intended to serve as on-going training or a substitute 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. If you would like your name listed for a particular topic, please ring Lloyd Smith on 281 6503 (9am-1pm, 2-4pm Mon-Fri.)

| | | | |
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| Accounting | Ian Haly | 870 4698 | After 5.30pm & W/E |
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| As-Easy-As | Dan Emerson | 288 6070 | Evenings |
| | DanBridges | 345 9298 | 7.30-10.30pm & W/E |
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| Brothers Keeper | Scott Brown | 807 0178 | 9-5 Mon-Fri |
| C | Geoff Baker | 290 0974 | 6-90pm Weekdays |
| | Ian Haly | 870 4698 | After 5.30pm & W/E |
| | Danny Thomas | 371 7938 | 5-9 pm Mon-Fri |
| C++ | Geoff Baker | 290 0974 | 6-9pm Weekdays |
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| Clipper | Don Anderson | 881 2432 | Evenings |
| | Dan Emerson | 288 6070 | Evenings |
| | Mike Theocharous | 824 1450 | Anytime |
| CodeBase | Ian Haly | 870 4698 | After 5.30pm & W/E |
| Communications | | | |
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| | Graeme Darroch | 209 1999 | 6-9pm & W/Ends |
| | Len Krawczyk | (075) 91 2524 | |
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| | Mike Theocharous | 824 1450 | Anytime |
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| | Sylvia Willie | 393 3388 | Evenings |
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| Paradox 4 Win | Geoff Dancer | 294 6976 | Evenings |
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| PostScript | Danny Thomas | 371 7938 | 5-9pm M-Fri & W/E |
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| Project Management & Planning | Brian Doyle | 355 1328 | 9am-9pm All days |
| Quick-Basic 4.5 | Harry Strybos | 288 5145 | 4-7pm Weekdays |
| Quicksilver | Ian Haly | 870 1463 | After 5.30pm & W/E |
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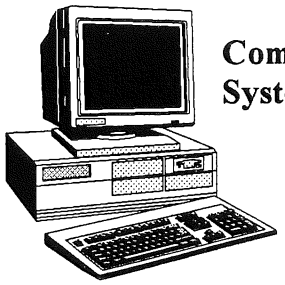

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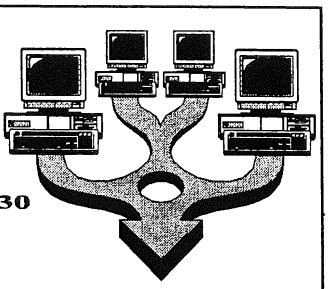

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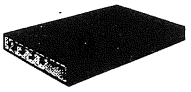

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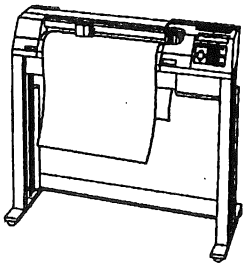

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—*PC Magazine*, May 11, 1993

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