Significant Bits

Journal of the Brisbug PC User Group Inc

Vol 9 No 4
March 1994
$4.00

Win COMPAQ colour notebook
BYTEPRO Multimedia 486

Details Page 2

Next meeting **Sunday 20th March**

Main Event **Arts & Letters demo**
Alkira

Lunchtime Special **Mass Storge Techniques**
Verbatim

Inside

The PowerPC
Lindsay's letter *returns*
News * Reviews * Regular columns

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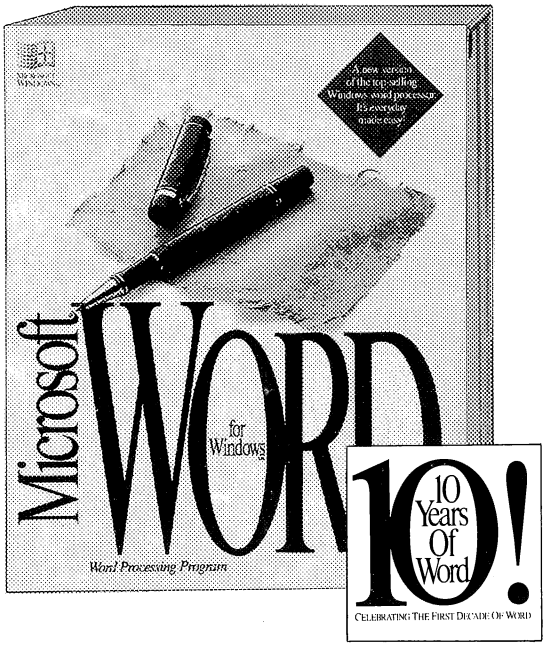

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Program for Sunday, 20th March

10 am	CLASSES
	Junior Club
12 noon	"Mass Storage Techniques" —Verbatim
12:15	New Members Orientation
1 pm	Brisbug Club Meeting
1:30	Arts & Letters Demo—Alkira
3 pm	New Members' Tech Chat
	SIGS

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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

It never rains, but it pours

So much for the drought-breaking rains we have experienced lately. To those on the land this rain was heaven sent, but the rains I am referring to are of a different nature.

Our proposed Membership Drive, which was to commence from our next meeting (20th March) got hit with a bolt of lightning the other day. Without going into full details, the launch of the Membership Drive was struck with a technical difficulty and the commencment date has, of necessity, had to be delayed until this difficulty has been overcome.

Vice President, Greaeme Darroch and members of the Management Committee have put together what will be a great incentive for members to encourage others to join Brisbug. The prizes offered are terrific, so we are anxious for the technical difficulties to be resolved as quickly as possible for the Membership Drive to get underway.

Secretary resigns

The second bolt of lightning was the sudden resignation of Secretary, Chris Raisin. Chris has been Secretary for 5 years and has efficiently carried out the duties of this very responsible position. The reasons stated, in his letter of resignation, are entirely of a personal nature and the loss of his presence on the Management Committee will be felt by all.

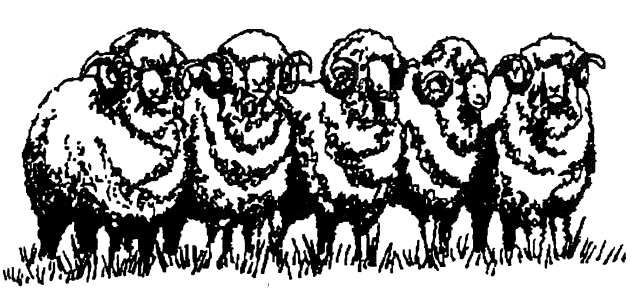
Finding a replacement Secretary is proving to be quite difficult. Not only does the Secretary have to record all minutes, both General and Management meetings, but also attend to all incoming mail to our post box and forward mail to respective Committee Members. The Secretary is also Brisbug's Public Officer and "Keeper of the Seal" (Brisbug's official seal). By the next General Meeting, I hope to be in a position to introduce to members present, our new Secretary.

"The Big Byte"

On Thursday 24th March, SBS Television premiers a new television show *THE BIG BYTE* dealing with all aspects of computers.

The program, a 26-part series is designed to guide the novice and update the enthusiasts on the uses and misuses of personal computers. I recommend to all readers that they take the time to have a look at the program every Thursday evening during its screening. (If you can't view it directly, maybe your video recorder could come in handy!)

Lloyd Smith



Which one of yous is the new secheterry?

From the Assistant Stoker

Graeme Darroch

The membership drive

Well the big news coming up is the membership drive "Learn More in 94 - Join Brisbug". This has been a huge project to put together, and as you will see from the prizes I think we have something worthwhile that everyone will be eager to win. The prizes have been kindly donated by the sponsoring companies and it is great to see the companies who we have had support from previously chipping in again. My thanks to them, and it also good to see new names on the sponsor list.

I will actively encourage everyone to join in this drive. If you have friends who are grapling with the complicated world of computers, ask them to join. They will go into a draw for software the month they join, and also into a draw to be held at the end of the drive for a 486 desktop machine. You, as the intoducing member, will go into a draw for prizes to be announced each month, and you will also go into a draw for a 486 clour laptop at the end of the drive. Watch this magazine for details of competition rules membership forms etc, then start looking.

Out of the gloom
A voice said unto me
"Smile and be happy
For things could be worse."
So I smiled and was happy
And behold
Things *did* get worse !!

More New User classes

The classes we will be running will start to get tailored for the new user, as well as the more experienced user, so there will be plenty of information waiting for the people who join in this drive. We will also be watching and listening for ideas for what the people want from Bribug. Please if you have any ideas on improvements in the classes or SIGs drop a line to the committee or leave a message on the MIS BBS (thats what it is for) telling us what your ideas are. We really need and want your feedback on what we are doing and where we are going.

Graeme goes West

This month will see me heading off out west for a trip to Warwick, St George, Goondawindi, Roma and Dalby. I will be accompanying Rob Neary of Ramware who regularly does this promotional trip, and our thanks to Rob for the offer of a place on this trip. The purpose will be to try and get people interested in joining Brisbug, or starting their own club affiliated to Brisbug. With help from Brisbug to get them over any problems they may encounter. This will be done by taking copies of our magazine, showing some powerpoints, and generally talking to people about their problems with computers.

I will not be around at the next meeting due to family commitments, so I hope everyone enjoys the presentations which are lined up for them. *See you at the April meeting.*

MAGAZINE

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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.

Editorial

Quo Vadis... to paraphrase

Ron Lewis

Inter-club contacts—Why?

Inter-club visits—What's in them for us (by "us" I mean both Brisbug, and the individuals involved in travelling considerable distances to spend a few hours, or maybe a day, talking to members of fellow clubs.

I must admit, I have long been an enthusiast for these exchanges. I think there are great benefits from looking at how other people run their clubs and what services they provide for members.

It never ceases to amaze me how well small clubs can stretch their limited resources. For instance, Gladstone QRI club have Corel's Michelle Paradis coming all the way from Canada, and Microsoft from Brisbane for their Open Day on 12th March. They also have obtained a swag of television ads on the local channel for minimal cost *(What did you do Dave, threaten to kiss the salesman?)*. Both GQRI and Caloola have all-day "hands-on" sessions once a month, which we understand are full to overflowing.

There are some obvious lessons to be observed. The success of these, and other clubs such as Bundaberg and Sunshine Coast, who we contact regularly, is based on the enthusiam and plain hard work of a (sometimes) small band of workers. Social contact is a very important part of the function of these clubs, with BBQ's and other non-nerd events regularly held.

There are also some differences between Brisbug and the country clubs. They tend to be much more family orientated, with both partners *and the kids* attending. (There is a classic piece in the current issue of *Interface*—Caloola's magazine— from one of the kids. I counted 6 occurences of the word "boring" in between enthusiastic reports of game playing.) This point has not been lost on Mark Mullins, who is planning "hands-on" for new users classes during the week (I may get chucked out for releasing this "scoop".)

Local computer business support for these clubs, including publicity and handing out membership application forms, is also strong. If you want to join a computer club in Gympie, the local computer shop can tell you exactly how to contact Caloola Group. Our new Development Director has a similar scheme in advanced planning for Brisbane.

But to be entirely honest, the best part about visiting our associated clubs is *(not as one kind soul suggested, the opportunity to lecture to a captive audience to massage the ego)* that they are good fun. We enjoy the country hospitality. Queensland country really is different (my opinion as an ex "cockroach" and ex "sand-groper").

Too many photos of the Executive.

You may notice the lack of photos in this issue. It is not due to the suggestion by one member that we only get photos of the President and Editor doing this and that, but rather, the lack of photos taken.

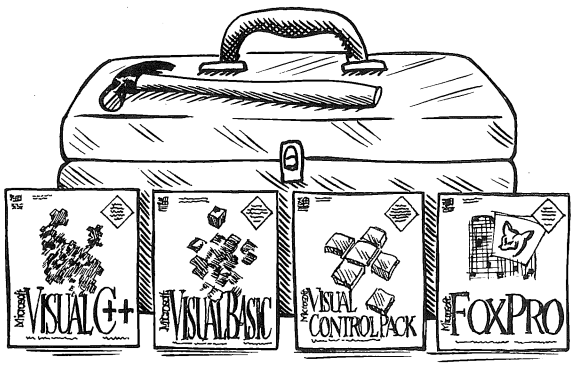
We are in great need of a volunteer photographer for the SigBits team—any takers? The salary is double that of the Editor (which calculates to four times that of the President-that's about the right proportions, eh?) and working conditions involve part time work punctuated by brief periods of extreme panic as deadlines approach. We need colour or mono positives, the direct costs (film and developing) of which are refundable. You'll get the opportunity to take part in the Galactic Computer Magazine Publishing contest held each year.

an early world traveller

Deadlines are an editor's worst nightmare

Where are all the advertisers

Members who read from the back to the front (the important library New Listings first) will have noted that *SigBits* continues to grow—72 pages this month, compared to 68 last month. We could be a lot bigger if that did not threaten to send the club insolvent. It is relatively easy to achieve 80 pages of "good guts" each month, but not to pay for it. We're a good vector for advertising to computer-interested and literate people. Why not give us a try. If you want to know if we're effective, just ask Computer Hand Holding!



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Max assured print area
280x190
Optional bleed extent
300x215

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Color covers	$600
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Colour page	$450
Colour 1/2 page	$250
Colour 1 column	$110
Colour 1/12 page	$50
Centrefold spread	$525
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1/4 page	$70
1/6 page	$50
1/12 page	$25

Special positions:

Full page RH side,
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The required quantity of printed inserts are to be delivered to Significant Bits.

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

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

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

EDUCACHEON

Mark Mullins

The class on Introductory Communications will not be held until April.

Prior to writing last month's article I had bought a new program called Crystal Ball. Obviously I'm caught on that hardware-software roundabout where every new program you buy also requires that you then buy more Random Accesss Memory (RAM...notice the absence of acronyms thus far!). I know this because my new program which supposedly can predict future trends was absolutely incorrect, no doubt due to insufficient RAM. As a general rule of thumb, if a software package says "Requires 386 or better and 4 Megabytes RAM" you should have a 486DX-33 and 8 Megabytes RAM !

In last month's issue of Significant Bits there appeared a large notice which stated that in March there would be an introductory class in communications to be run by Graeme Darroch. Unfortunately Graeme is unable to attend the meeting on Sunday 20 March due to unforeseen circumstances. *The class on Introductory Communications will therefore not be held until April.*

My Crystal ball for Windows also predicted that we would all be ready to go at 9.00 am precicesly. As Graeme is unable to lecture on that day and as there are no other classes commencing until 10.00 am *There will be nothing at all happening at 9.00 am* apart from the usual flurry of activity from those setting up for the great day. *Yes, this means you now have a perfectly reasonable excuse to sleep in !*

Also predicted was the much awaited return of Geoff Baker and his band of merry programmers in C++. You guessed it, (better than my program did!) Geoff will not be recommencing his classes in C++ until further notice. He telephoned as I was writing this to tell me that just as he was about to insert his first tape to backup his course notes on his Small Computer System Interface (SCSI) hard drive, the drive crashed causing him severe anxiety and latent depression.

As this is the education coloumn I will tell you why he is depressed. Firstly he told me that the notes when printed would be close to an inch thick (now all gone !...or just about). Secondly SCSI (pronounced Scuzzi...I always thought it was a sports car) hard drives in the 1,000 Megabyte (1 gigabyte or 1,073,741,824 bytes if you want to be pedantic) cost heaps ! I advised him to drink a glass of warm milk and go straight to bed. He indicated that he would be drinking something else and wished me a cheery fairwell. Please take note therefore that **there will be no C++ until further advised.**

The changes in commencement times, structure and types of courses to be run are still in the refinement process. There will be further updates on that in the April edition of Significant Bits.

The class for **New Users at 3.15 pm** as opposed to the **New Members Orientation at 12.15 pm** conducted by Rex Ramsey (please note the subtle difference) was well attended at the February meeting. Topics covered were many and varied and I trust that attendees gained some knowledge from it. We will continue where we left off which from memory was trying to establish what was a peripheral. I promise that I will not be drawing any more circles reminiscent of a one day cricket match inner circle complete with fielding positions, a la Tony Greig, in order to define the word peripheral!

If you have any relatives or aquaintances who want to learn the very basics of personal computing bring them along. Visitors are most welcome! I'll even have a computer there so that we can get a little bit of hands on or should I say "eyes on" experience.

Many thanks to Ian Smith of Caboolture and Peter Athie also from that part of the world who have answered my desperate plea for new lecturers. Peter is going to don the protective gear and join Les Cathcart and his most able group of assistants in the Junior Group at this months meeting. Ian will be joining us at the April meeting as a lecturer in an introductory subject.

My thanks also to those that have called with suggestions. They have been noted. If you have any enquiries regarding Brisbug educational issues please telephone me on 07 841 4623 or facsimile 07 841 3120. You can even practice your word processing skills and send me a letter to P.O. Box 100, Rochedale South Qld. 4123.

If you have basic questions regarding computing generally *don't ring me* please write and perhaps our kindly Editor will find some space for a question and answer type segment for new users. Don't write with questions such as what is the median raster

C++ CLASS
Sunday
27th March
at Glen Collins home
41 Watcombe St
Wavell Heights

details:
Geoff Baker
290 0974

refresh rate. All I know is that raster went out with Bob Marley.

I have now cast my Crystal Ball Version 1.0 for Windows out of the window and now things will get back to normal ??! See you at the meeting !

10.00 am	Introduction to DOS	John Tacey	R315
	BASIC Languages	Rex Ramsey	R309
	Hardware	Ron Lewis	Theatre
	OS/2	Paul Marwick	R312
	dBase	Dan Emerson\Leon Percy	R310
9.30 am	Junior Group	Les Cathcart	R301
12.15 pm	**NEW MEMBERS ORIENTATION**	Rex Ramsey	R309
3.00 pm	**NEW USERS COMPUTING BASICS CHAT**	Mark Mullins	R309

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Computer of the Month!

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1.44Mb floppy-drive
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Minitower Case
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2. Power System

486DX2-66 VL-Bus
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340Mb, 12ms hard-drive
1.44Mb floppy-drive
14" SVGA Monitor (Digital)
1Mb Monitor Card
2 Serial 1 Parallel Ports
Enhanced 101-key keyboard
Minitower Case
2 years full warranty

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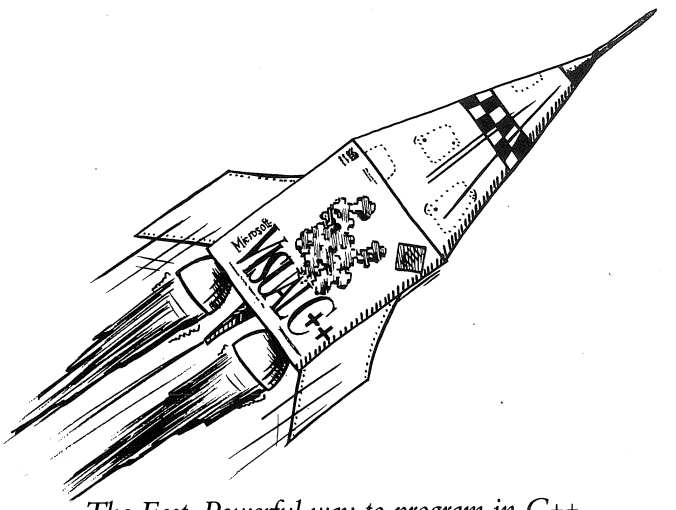

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SIG News

Dulcie Haydon - SIG Co-ordinator

Genealogy Sig Report

Wanted urgently: Ghost Buster to get rid of gremlins in my communication system.

NEWS FLASH !! Now shipping version 2.3 of PAF this is the latest update which those of us who sent in their registration papers would know as they would have received a form to be filled out and returned, the good news is you will be able to send the form to "Family Resource Centre, PO box 350 Carlingford N.S.W." with $6 Aust for the update. Wot's this I hear! you didn't send it away.

Well all is not lost... you can send your original registration with the $6 to the same address and it will have the same effect. If you have lost your card and you got it from me then I will check my records and find out what can be done.

There are a few innovations even to the AUG 91 version which makes it even easier to enter information I will not go into all of the points here.

New on the market is version the latest release of FRU (Family Resource Utility). Tthis suite of programs is produced by "Steven M Cannon, 1065 West 10210 South, South Jordan, Utah , U.S.A. and will set you back $29 US. I have tried it out and feel that I can recommend it as it has many features that are still not in PAF.

NEW

Visual Basic SIG

Are you interested in Visual Basic? If your answer is yes then you may well be interested in talking to people who are also interested in Visual Basic. I am certainly interested in forming a Visual Basic SIG. I apologize for the fact that I asked you to gather at the last meeting, but was unable to get there myself. If there is enough interest, say more than five people I think we should go ahead and get the SIG going and see if more people join after it is started.

With that in mind, I will not be at the next meeting, but Alan Bridges has agreed to be the SIG organizer for the Visual Basic SIG.

At the next meeting it will be announced again and interested people can meet with Alan outside the main auditorium, names can then be taken, and the thing kick off at the April meeting.

Anyway if you are interested be at the meeting, get in touch with Alan or myself and we will get something started.

For those of you who did not hear the January meeting at Toowong got submerged and after a drying out period will be held on the 23 March at 6:30 pm, the place will be the Toowong Library in Coronation Drive. The subject will be inscriptions in the Toowong cemetery and a demo of the computer program that is used in the State Library for genealogy, plus other surprises.

The February meeting is in fact at the Church of Jesus Christ of Latter-Day Saints in McKay St Nambour as one of our astute readers picked up in the magazine.

At this moment I am fairly busy and so is my computer ie. printing a long report while formatting disks to do a backup while I write this article, not much time being wasted this end.

For those who have a large bank and wish to own their own copy of the IGI on ROM along with the rest of the information found in the History centres it is now available from a private firm in South Aust. I must at this point also advise that in a year or so you will be able to purchase a CD set with ancestral file and selected IGI for about $80.

This is a Newsy bit isn't it. Some of the files managed to slip by me off the Bulletin Board before I got around to getting them but not many get by.

My old CPM system has been trying to tell me it wants to give up. Does anyone know of a graveyard for old, even ancient machines?

At the meeting on 20th Feb we started with Barry advising us about the Genealogical conference to be held at the Queensland Uni. The pamphlets for registration can be obtained from the State Library, the earlier you register the cheaper it is and people will be coming from all over the world or it so this is the place to be for 4 days from the 4th of July this year.

I then gave my update information as above and asked for any questions from the group, after this we had a very interesting talk from Rita re an upcoming family reunion and the things that have to be done to prepare for it.

Give me a call on 018-077-636 if you are having problems.

Rob Gurney

SouthSide SIG

Meetings will be held at various locations on the South side on the 4th Tuesday of each month. The next meeting:

Date: 22nd March

Time: 7:30 pm

Venue: 114 Forestdale Rd

Forestdale

Agenda: DOS 6.2, Workgroup for Win dows 4, Logitech Scanman II, General discussion

Contact: Rex Ramsey

Genealogy SIG - Part 2

Some updates of earlier items: The 7th Australian congress on Genealogy and Family History is from the 7th to 10th of July, and the address is "Congress Convenor PO box 40 South Brisbane 4101 for information.

We went to Nambour and none went to the Seventh Day Adventist for the meeting as I checked with them just in case. We had a good turnout from Brisbane go up, which outnumbered the locals. We all learned something and enjoyed ourselves and later dined at a restaurant with a panoramic view of the Nambour valley prior to returning home, although I did hear some proposal of some staying the night.

Do not forget the Toowong Library visit as it can be a real money saver if you are interested in the Toowong Cemetery.

OS/2 SIG

Meets on Brisbug Sundays at QUT, Kelvin Grove, 3pm for relative newcomers to OS/2.

Also meets the Wednesday after the meeting for more advanced users. Check with Paul Marwick for the new venue

Weekday SIG

Now in recession awaiting an increase in participants

Gold Coast SIG

Next Meeting is Tuesday 5th April, 7:00pm at Merrimac High School, Block B, Dunlop Crt, Mermaid Waters.

Topic: Swap Night

Contact: Jo-anne Ellis (075) 710113

Also meeting at QUT, on Brisbug Sundays:

Windows SIG

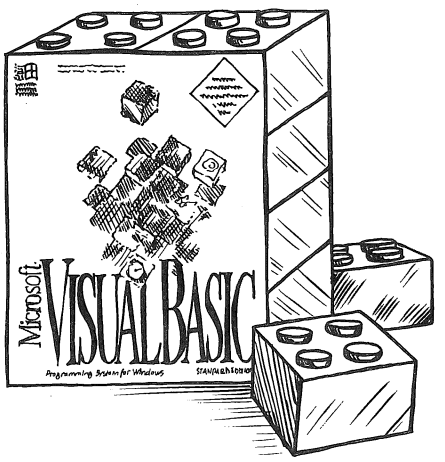
Contact: Brian Beere-Streeter

Accounting SIG

Contact: Graeme Gardener (07) 354 3237 a/h

Pascal SIG

Contact: Steve Cann (07) 245 4453



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SOFTWARE LIBRARY NEWS

New software range available

By arrangement with Ramware, the Software Library is now able to offer a range of great educational software.

THINKIN' THINGS prepares kids for a lifetime of learning!. Good thinkers learn quickly, adapt to change easily and can accomplish amazing things. Six thought-provoking activities build problem solving, creativity, critical thinking and memory skills that will give your child a solid foundation for a lifetime of successful learning. VGA and a Sound Card are essential and you need a 386SX or better to run the program. *Suits ages 4 to 8 years. RRP $108.95 - BRISBUG price $89.00.*

Create your own books about real life experiences with **MY OWN STORIES**. Kids have thousands of stories to tell. Now they can write, illustrate and publish them. The program comes with an easy to use menu system and stunning graphics as well as a range of styles of printing for incorporation into the stories. Enlarge or reduce the graphics, change colour and add sound effects and print the story, it's all part of MY OWN STORIES. VGA and a 386 or better computer required, and the program will support a sound card. *Suits ages 8 to 14. RRP $79.95 - BRISBUG price $75.00*

Just the pain program for kids! **KID PIX** is an amazing paint program created just for children. Whether painting a masterpiece or just playing connect the dots, kids will love how KID PIX turns the computer into a magical art studio. With KID PIX, you don't just paint a work of art. you hear it too! Every brush and tool has its own unique sound - from squeaks and splatters to kerplunks and kabooms! Requires EGA/VGA and a mouse. *Suits all ages. RRP $89.95 - BRISBUG price $85.00*

Step right into the world of poetry. **THE NEW KID ON THE BLOCK** is another of those wonderful Living Book series CD-ROMS. This CD-ROM contains a collection of poems suitable for 5 to 15 year olds - and even adults will get a laugh and enjoy them! THE NEW KID ON THE BLOCK has two languages - English and Spanish -and you can have poems in either the *READ TO ME* or *LET ME PLAY* mode. Requires 386SX or better, Windows, CD_ROM Drive, Sound Card and a mouse. *RRP $89.95 - BBUG price $85.00*

If you are looking for a great atlas for your children, you can go no further than **MAPS 'N' FACTS**. It's comprehensive - 219 countries, 482 maps, 4839 cities, and thousands of statistics - it's easy to use - a versatile resource that gives every member of the family access to detailed maps and vast amounts of information. Requires 386SX or better, VGA/SVGA, hard disk and a mouse.
RRP $69.95 - BRISBUG price $65.00

SPELLBOUND - The Animate Spelling Bee that builds 2nd through 4th grade spelling skills. Beat Morty Maxwell at his own game! Outspell the master of mischief and win 1st place at the national spelling bee! Using a sound card, the computer will even say a word from its lists! Parents can create word lists as well as use the many which are provided. A highly entertaining game will real educational value! Requires EGA/VGA, hard disk, sound card. *Suits ages 7-12. RRP $79.95 - BRISBUG price $75.00*

Bring learning to life in **MILLIE'S MATH HOUSE**. This absolute joy of a program is designed for ages 2 to 6 years. MILLIE'S MATH HOUSE looks at size distinction, patterns, counting, adding and has a parents section to help you maximise the program benefits with your youngsters. Exciting activities teach Numbers, Shapes, Patterns and more! Requires EGA/VGA, hard disk Sound Card and a mouse.
RRP $89.95 - BRISBUG price $84.00

For the more advanced members of the family - **CALCULUS**. This powerful program acts as a private tutor. It reviews, compliments and amplifies an introductory course in calculus using the interactive abilities of the computer. Using Windows, this excellent product is directed for year 11 & 12 math students, or those wishing to refresh their knowledge. Requires EGA/VGA, hard disk, Windows and a mouse.
RRP $149.95 - BRISBUG price $135.00

What's so Funny! - **FUNNY** is the CD-Rom! This is just a bit of fun and has a huge number of jokes told by some of the world's best story tellers, jokes about every subject possible. You will split you sides laughing. Just JOKES. Just for laughs! Requires 386SX or better, Windows, CD-ROM, Sound Card and mouse.
RRP $79.95 - BRISBUG price $75.00

Note:The programs listed above are not

Shareware. They are all commercial programs and as such must not be copied.

New registered shareware titles available

To compliment the large range of Registered Shareware now available from Brisbug, two additional programs are now avaailable from the Software Library.

DOOM puts you in the body armour af a space marine in the middle of an inter-dimensional war. (Shareware Disks - BBUG # 9164, 9165, 9166) Requires 386 25mhz or better, 4Mb ram, VGA/SVGA, Hard Disk, Sound Card, Joystick or mouse.
PG rating 13 - Contains Violence.
RRP $69.95 - BRISBUG Price $65.00

BLAKE STONE - the sucessor to Wolfenstein 3D (Shareware Disks BBUG # 9162, 9163)
PG rating 13 - Contains Violence.
RRP $69.95 - BRISBUG price $65.00

DUKE NUKEM II - If yo enjoyed DUKE NUKEM in his original encounter with Dr. Proton, you will love this new encounter with aliens. (Shareware version - not yet available) *RRP $49.95 - BRISBUG price $45.00*

Software Library Charges

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

5.25" Disks -	$4.00 each
3.5" 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 - 5.25" disks or 2 -3.5" disks in our catalogs. Don't forget to allow for these when calculating postage.

BLANK DISKS are also available from the library, costs as follows:

5.25" 360K MD2D	$ 8.00 per box
5.25" 1.2M MD2HD	$15.00 per box
3.5" 720K MF2DD	$15.00 per box
3.5" 1.4m MF2HD	$30.00 per box
Postage -	$5.00

Mail - Telephone Orders

Orders can be sent to:

BRISBUG SOFTWARE LIBRARY
95 Station Road
BOOVAL QLD 4304

or by phone to (07) 281 6503 - 9am to 1pm 2 pm to 4 pm Monday to Friday.

All orders must be prepaid (sorry, no credit facilities are available) by cheque, postal order or by credit card (BankCard, MasterCard or Visa).

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Minutes – BRISBUG Meeting - Sunday 20/2/94

Chris Raisin

Our illustrious President (Lloyd Smith) opened the February 94 meeting of our club at precisely 1-07 p.m., a little late because of the interest members had shown in the CAD session conducted during the "Lunchtime Special".

Apparently the new Barco worth some $70000 has blown up during the week and there was much work behind the scenes providing for a backup (just in case it blew again - which it didn't, thank goodness.)

A rewards presentation was the first thing on the agenda. Jack "ever friendly" Worrell (a hard worker from the software library) was presented with a package of "Approach" software. He stood beside his President for a snap to be taken by the (as Joh would call him) "chook" (our keen magazine editor/photographer, Ron Lewis). Some bright spark (I think someone of prominence in the Gold Coast SIG) commented that "it will be hard to fit them both in the same picture!"

The Membership Drive approaches

Graeme Darroch pushed them both aside (no mean feat of strength) and took the floor to give details of the approaching Membership Drive. Further details of prizes will be announced in the magazine, but the main one is a 486 Compaq color laptop! At this stage there will be awards made each month and a final award made in September (the big one!) It's worth about $5000 so keep your eyes peeled for further details in due course.

New television show on computers

Lloyd Smith returned and after thanking Graeme announced that SBS television will be showing a series of programs called "The Big Byte" starting on 24th March at 7.30 p.m. It will be a series of 26 shows of particular interest to computer buffs.

No PC94 stand

A bit of sad news - we will not be conducting a stall at PC94 now! The cost to BRISBUG would have been $3000, and since the show is predominantly of a business flavour, the Committee felt that the money could be better spent elsewhere. That does not mean that we won't be there! Some very keen (some would say mad!) Brisbuggians will be "spreading the word" within the show and we may get the support of some more business houses (issuing memberships with their "computer deals" etc.)

Management BBS available

Graeme Darroch again reminded us that the "Management Information System" (MIS) BBS is still alive and getting busier. Phone 209-4980 (via your modem!) and log on at speeds up to 14,400 baud. Have a read of the messages left there (or leave some yourself...nice one's preferably, but constructive criticism is also welcome). You have up to 60 minutes to "hit and run". Please remember that there are no files for downloading.

Treasurer's report

Max Kunzelmann gave his usual all-singing all-dancing Treasurer's report (cut down on the dancing, Max...only your best friends can tell you):

End of December	$8,196
Deposits in Jan.	$5,465
Expenses in Jan.	$3,198
End of Jan.	$10,462

Things had improved financially considerably during January (could that be because there was no issue of a January magazine? - Exactly.)

Lloyd Smith thanked Max and again made a plea to all members to think about advertisers.

[O.K. Put down this magazine right now and do it! Who do you know could advertise in our mag? Make it a task to see them this week (take a mag. along to show them) and see if you can do something to help your club!]

Back again? OK....

Member Number 4000

Terry Jordan....you did it! (It's all your fault!)...Who's Terry Jordan? Only member number 4000!! We couldn't find him to make a special presentation for our lucky 4000th (but we will hunt him down by next month!)

Magazine report

Ron Lewis (that man who continues to churn out a magazine of exceptional quality each month) apologized for the non-appearance of the annual report in the last issue. (Next month...promise!)

A Magazine SIG could be under-way by next month....anyone interested in becoming part of it (or helping in any way in production or distribution of *Significant Bits*) please contact Ron A.S.A.P. (Ph: 273-8946).

Hands-on group for New Users

Mark Mullins (the new Training Director) has now taken over the NUTS group (New Users Training Sessions)... learning how to operate your computer for very basic users.

Junior Group

Les Cathcart of Junior Group fame made a plea for parents to give more help to the group... the few who do are feeling the strain (operates 9-5!) Doug McGill (one of those keen - but tired - fathers) added his voice to the please (currently only 4-5 parents are willing to help control more than 50 children who are all computer nuts themselves!)

BBS report

Paul Marwick assured the Secretary that his macro which runs the phrase: "The BBS is still there and still running" can now be re-initialized. [Done]. Paul made an appeal for more helpers too... in BBS-related matters. If being involved in the BBS tickles your fancy, please leave Paul a message on the BBS, write to the club or see Paul at the meetings.

Lloyd Smith (remember him?) reappeared to speak of some matters of a genealogical bent, and to announce that Rex Ramsey was currently working on the formation of a "Visual Basic" SIG...see him if you are interested.

OS/2 SIG moves

Paul Marwick (not him again!) zipped back to advise that the OS/2 SIG's next meeting has been postponed because of the need to change venues...no longer at HH & BW (they know what that means, I hope!)

Library report

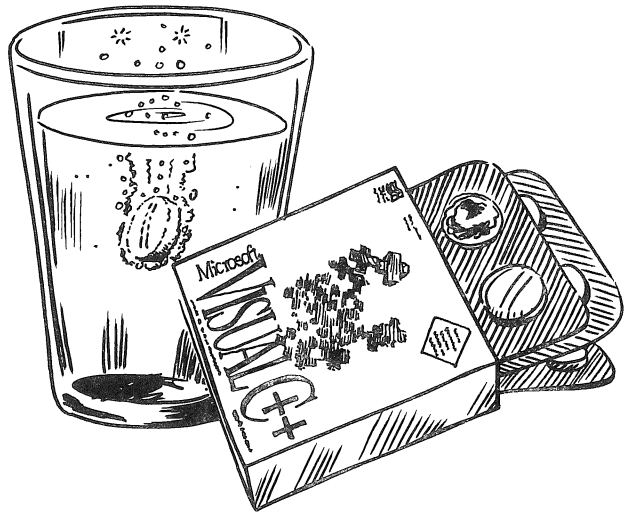
Lloyd gave some news about software available in the software shop, with special deals for education software purchased from RAMWARE.

Details of new CD software will be listed in the next mag. and don't forget those addictive games DOOM, BLAKESTONE and DUKE NUKEM !! [I can vouch for them...Secretary]

The software catalogues will now be produced on a *Bi*-monthly basis... the Software Librarian has only 30 hours in any one day and a monthly issue has been ageing him!

The club's committee reps continue going out to meet the converted (and the yet to be converted!). Lloyd, Ron and some others are going to Gladstone on 12th March, and Graeme Darroch is heading west with Rob Neary (RAMWARE) shortly for a tour which will "spread the word".

And it all suddenly finished! At 1-38 Lloyd announced there would be a five-minute break before Ron Smith from National Communications (Gold Coast) gives his (what turned out to be immensely interesting) demonstration on single-line data/voice/fax communication.



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Games... and the things we do for kids

Barry Schultz

Barry explores the challenge of installing BLAKE STONE - Aliens of Gold

The other day we got the Shareware version of Blake Stone -"Aliens of Gold". It came on one (1) 1.4 Mb disk.

When I first tried to install the game a message on the screen said I did not have enough hard disk space. I had around 3.5 Mb free but I removed a couple of programs to give around 5 Mb. Half way through the second install a message said I did not have enough hard disk space, and things came to a halt once again.

Making room for Blake on a DoubleSpaced drive... and in memory

I now removed more programs until 8 meg was free. Rerun the install program and all ran without problems. The complete game, text and order forms came to around 3.3 Mb in length. Well the time for a test play had arrived so I typed *"BSTONE"* and pressed *Enter*... On the screen was another message saying I did not have enough memory, and that 605K base memory was needed to run the game. So I ran *MEM/C/MORE* to see how much I had. *MEM* told me I had 573K free, that's 32K short of what I wanted. So I had to boot with less, or load high.

Note

I should explain at this point I have a 286 AT with a 40 meg Hard Drive and a 287 co-processor. The hard drive is split into C: drive 27 Mb and D: drive 13 Mb. Both "C" and "D" have been Doublespaced. *To add to the confusion drive C: is now actually drive M:, and is the host for C:. Drive D: is actually drive K:, host for D: As you should know it's not to easy to load high (except for DOS) on the 286 machines.*

The plan now was to get memory and lots of it. Looking at the memory layout *DOUBLESPACE* was taking quite a bit ... 40K to be exact. I could not remove *DOUBLESPACE* as I would lose C: and D: drives. The new plan was to boot without *DOUBLESPACE* (thus getting the extra 40K) but keep everything on the hard drive. Using *Xtree* I first looked at C: drive and found that I now had 5.2Mb free and on M: drive had 1.7Mb free. The total space used by *Blake Stone* was 3.3Mb.

Now I reasoned if I booted without *DOUBLESPACE* the computer would read C: drive as it really was , the uncompressed M: drive . So from the DOS prompt I loaded *DBLSPACE*, went into C: compressed hard drive, then into *SIZE* and adjusted the free space on drive M: until I got 5.3 Mb free. (This turned out not as straight forward as I thought). To get this end result I had to remove more files from C: drive to allow for the compression factor.

Next I made a boot disk (to boot from A: drive) using the SYS command. If you are using *DOUBLESPACE* on your hard drive *SYS* will automatically put *DBLSPACE.BIN* onto the boot disk for you so you can still read the hard drive.

Next step was to delete *DBLSPACE.BIN* from the boot disk (so it would not be activated, this file is read only, system and hidden) then I wrote a new CONFIG.SYS with just the following two (2) lines

```
DEVICE=A:\HIMEM.SYS
DOS=HIGH,UMB
```

Next I wrote a new AUTOEXEC.BAT file with the following three (3) line

```
C:
CD BSTONE
BSTONE
```

The above was necessary as I did not want to combine the ROOT DIRECTORY files with the game, so I put the game in its own sub-directory.

The boot disk contained the following files

COMMAND.COM
HIMEM.SYS
MEM.EXE (so I could check memory),
AUTOEXEC.BAT
CONFIG.SYS

as well as the two (2) hidden files *IO.SYS* and *MSDOS.SYS*. The boot disk was set up this way so the kids only had to place the disk in A: drive and reset the computer to play the game.

At last, enough memory

After booting up with the boot disk, I found that I now had 623K of memory free but still the game would not run. A message said I did not have enough free hard disk space. So I altered (yet again) the size of M: drive (thats C: drive) to just over 2.3Mb of free space (this is after the game was installed) and tried again.

I called my young son to test the game...it took him only about one (1) hour to finish. I had spent all afternoon setting it up.

Success at last .... the game fired up. Next I needed someone to test the game to see if it had any other problems, as I don't play games I called my young son. Now he really likes *Wolf 3D* and *Blake Stone* appears to be a simular game to me. I think that may be why it took him only about one (1) hour to finish the game. This was a real blow to me as I had spent all afternoon setting it up.

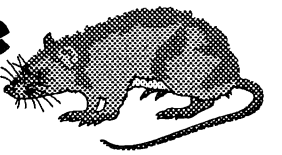
Yes he thinks it's really great, keeps trying for a higher score and now wants the full version.

Note

A week later I was to read in a magazine that 6 meg of free disk space was required on the Hard Drive and it's suppose to run with a 386SX or greater processor). There was a text file on the disk which may have given me a clue to all this .... but who reads them. (Well I finally did about two (2) weeks later.....)

Barry Schultz is IPP of Pine Rivers IBM Compatibles Computer Club

Cunningware



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Hardware - Software - Firmware Anywhere !!

Poor Ratty can't take a trick. Just as he was on the verge of completing project codename 'Willawong' his laboratory burned to the ground. Bravely, he entered the inferno to save his notes but only managed to recover some smoldering pieces of parchment. It is enough to start again but in the tradition of Microsoft products the release is delayed. Ratty suspects spontaneous combustion in the compost heap which covered his laboratory or one of the ferrets he had employed as assistants. The local rat police are investigating.

Meanwhile Ratty who suffered a scalded nose and burnt fur needs money now for medical bills. He is selling hardware and software at crazy prices !!

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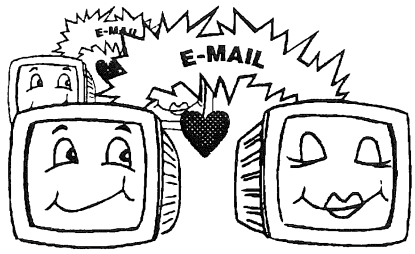


BBS News

Paul Marwick

Thanks to all the people who answered my call for volunteers to help with the BBS. There are still several that I have to get back to, but you can rest assured I've not forgotten you...

I was intending to put the latest beta Maximus on lines 1 and 2 but have delayed that conversion until the next beta comes through. Partially for my own convenience (the next beta should have the capability of generating some index files in the same format as Maximus 2.01 uses, which I need for compatibility with other programs) and partially because the next beta should fix a couple of problems which are evident in the current beta.

...it has become a lengthy process upgrading new users, So be careful filling in the questionaire

A glitch in Maximus *file locate*

These problems will not affect users to any great degree, but should probably be mentioned anyway. One which will affect users is a small glitch of some sort in the index generation for file areas. You may notice some files being reported as 'offline' in a locate search. In most instances, this will not be the case, but you will have to go to the area in which the file is shown and check. Scott is trying to track this problem at the moment.

Please register carefully

The second problem is that the structure of the user records has changed significantly in the current beta running on lines 3 and 4. The new structure does away with user numbers and automatically sorts the user records by first name. As a result, it has become a lengthy process upgrading new users. Where in the past I was able to sort the user records in access level and last called date (grouping all new users towards the bottom of the file and making it reasonably easy to find and validate new users), I now have to search for each individual user and check them against the questionnaire file. This is a much more lengthy process.

It also makes it imperative that users follow the prompts and answer ALL questions correctly. If a user record is flagged as being incorrect, it may take a long time for proper validation, since it will be very difficult for me to get back to a record that has been flagged in this way. So be careful, and READ the system prompts and follow them properly!

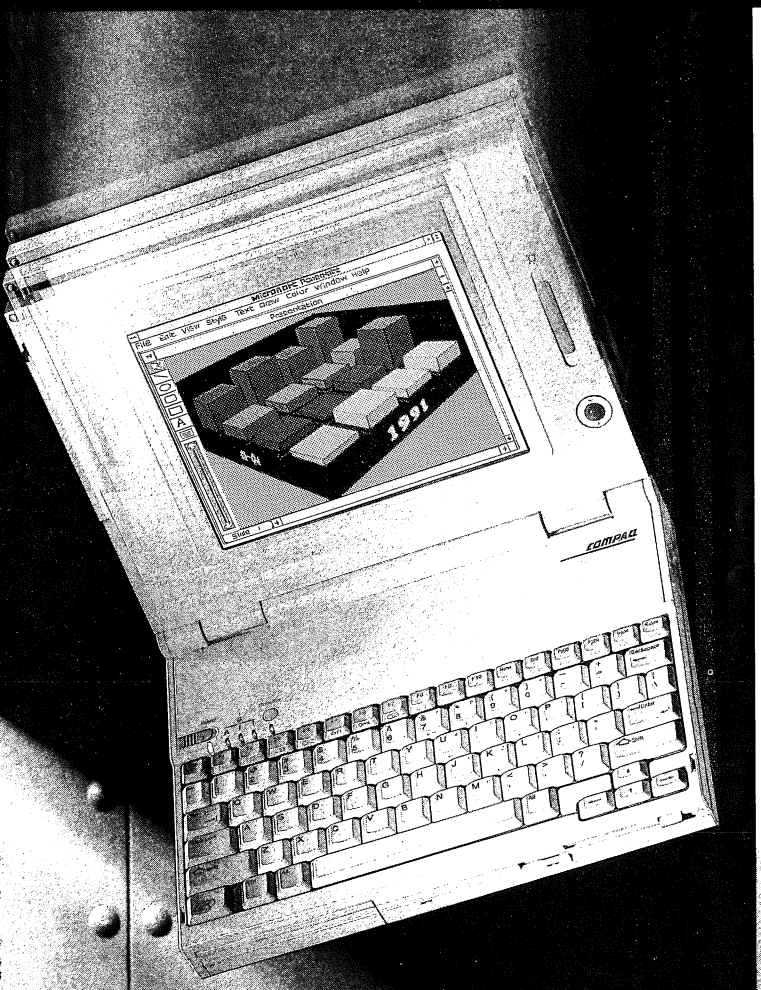
The machine which runs Lines 1 and 2 has a new video card. The original was an *Ahead* VGA card, which has always had some compatibility problems with the Buslogic SCSI controller. This has resulted in problems with automated maintenance, since that machine has to boot back to DOS for things like backing up and optimising the drives. With the original card, it could never be guaranteed to do this, and would often sit with nothing but the initial BIOS signature from the video card until I came along and rebooted it. Thanks to the Committee (and Mark Mullins, who supplied the new card), the machine is now fitted with a *Tseng* VGA card, which does not have the same compatibility problems. As a result, automated maintenance can now go back to normal. This will mean around an hour of downtime every few days, but will prevent the several hours that used to occur when the video card would not load correctly.

One day we may be able to get some OS/2 software to run the Wangtek tape drive fitted to that machine, at which time the necessity of taking the machine offline for backups will be a thing of the past.

The systems will be unattended over the Easter long weekend. Hopefully there will be no problems, but if there are, they will not be fixed until at least Easter Monday.

Bloody Attack Diallers are at it again!!

Only a computer this reliable, could offer a support programme this comprehensive.



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Or a self-maintenance programme which includes extensive technical training or any of the other services which make CompaqCare the most comprehensive support programme in the industry.

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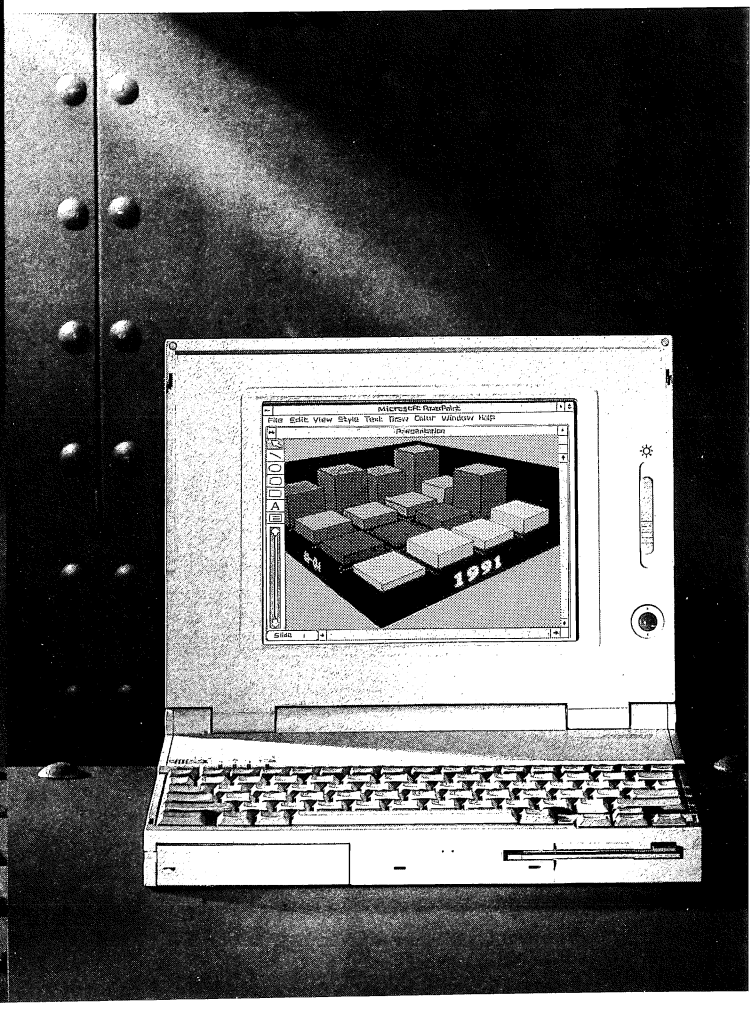


The Ball Partnership COM0194

The Michelangelo Virus - An analysis

Dan Bridges

I recently talked to a member that had reformatted their HD after infection with a Boot Sector Virus. This is usually not necessary and indicates that fear and ignorance of computer viruses can lead to drastic actions. ***Knowledge is Power.*** *This article seeks to empower the novice by examining, in detail, how the Michelangelo virus works.*

You may have read discussions of viruses that say that this virus "hooks interrupt 13", "inspects the BIOS Data Area" or some other technical point. The novice usually has to accept these comments without understanding their meaning. This article will present simple examples, using DOS' *DEBUG*, so that you can perform some of the operations of this virus and thus come to a better understanding of how your computer works. You will see that virus operations aren't that mysterious after all.

However, this article will not provide enough information for budding sociopaths to create their own viruses.

Overview

The Michelangelo virus' warhead triggers only on the 6th of March of any year. This date is the birthday of the great Florentine artist Michelangelo Bounnaroti (born 6/3/1475). In the last 2 years I've removed this particular virus seven times from real estate agency sites (besides other viruses like *Tequila, No Frills v3, Stoned and Slow).* I know that one of our clients with this virus lost the contents of their HD on 6/3/93.

If an infected machine is booted on the trigger date much of the HD will be overwritten with garbage. This virus is very easy to detect and easily removed. In fact, with MS-DOS 5 or 6 you don't even need to use any anti-virus programs to remove it from the HD.

How Infection Occurs

Michelangelo is a typical boot-sector virus (BSV). The computer can only be infected by booting or attempting to boot from an infected FD in A:. Even if you see a *"Non-system disk. Replace ...",* the attempt to boot from this FD will have loaded the virus into memory and into the first physical sector of the HD. This sector is known as the Master Boot Record (MBR). Its involvement in the boot process will be explained later. At this stage, it is sufficient to know that code in this sector is executed automatically when booting from the HD.

When a computer is booted from either an infected FD or an infected MBR the viral code is loaded into a memory region just below the top of low memory (typically 640Kb). The virus adjusts the top of memory (TOM) figure reported in the BIOS data area. 2Kb is subtracted from the original value so the new TOM value for a typical machine with this virus loaded into memory is 638K. By doing this the virus avoids being later overwritten by any program that uses all available low memory when it loads. Once the virus is memory resident it monitors disk activity. Any access to a FD in A: (even just performing a *"DIR A:")* will be accompanied by an attempt to infect the boot sector of the FD. Infection will occur if the FD is not write-protected.

Note that it is impossible to infect a computer with a typical BSV by doing a *DIR* on an infected disk, copying files from it, or executing programs on it. Recapping, a BSV is first loaded by booting or attempting to boot from an infected FD.

```
655360 total bytes memory
640272 bytes free


653312 total bytes memory
640272 bytes free
```

Figure 1. The last two lines from the CHKDSK display. The second group shows the same machine when the Michelangelo Virus is loaded in memory.

Detecting the Virus

I typically run *CHKDSK* on non-networked machines when I start working at a site. This is how I usually spot a BSV. Figure 1 compares the last two lines shown when *CHKDSK* is run. The TOM figure is reported in CHKDSK's second last line. 655,360 bytes = 640 Kb while 653,312 bytes = 638 Kb. (The Stoned BSV typically reduces TOM by 1Kb to 654,336 bytes.)

Note that a TOM of less than 640 Kb does not necessarily indicate the presence of a BSV. Some hardware configurations result in a TOM of 639 Kb. However it's usually a sign of a BSV and any reduction in a known TOM value is highly suspicious.

Removing Michelangelo

BSVs make up about 50% of viruses and most of these are very easily removed using just MS-DOS 5 or later.

1. Place a write-protected boot FD in A: and perform a "cold" boot i.e. press the reset button or turn the power off for a few seconds, then turn it on again. Note: a number of viruses will fake a restart if you just perform a "warm" boot (press *Ctrl-Alt-Del).* Obviously, it's crucial that the boot FD be uninfected. If you haven't created one yet do it now while you have the chance. Write-protect it and then you have a means of starting up your system without the possibility of an any virus being memory-resident (although your HD and non-write-protected FDs may be infected.
2. Now that you're in complete control again, you can switch to the HD, change to the DOS directory and issue *"FDISK /MBR".* Typical BSVs like *Stoned, Azusa, V-Sign (Cansu)* and *Michelangelo* don't infect files so this is safe. However, it's also a good idea to have clean copies of *FDISK, FORMAT, CHKDSK & DEBUG* on your write-protected FD.

The *"/MBR"* switch will quickly reinstall the portion of code in the HD's MBR that reads the partition table. This was overwritten by the virus. Most BSVs don't overwrite the partition table. *Azusa* unfortunately does. In this case, without a copy of your partition table stored on a FD, you're "Up the Creek". Later in this article you will see you can easily use *DEBUG* to store one. Also, if you've kept your DOS 5/6 uninstall disk you will have a copy of your HD's first sector (MBR/Partition Table) stored in a file called *MBOOT0.DAT*

3. The simple method I suggest of cleaning infected FD boot sectors is to replace them with clean boot sectors (assuming the boot sector comes from a FD of the same size).

```
c:\dos>DEBUG
-L100 0 0 1   ;Load into memory offset 110h, ex logical drive 0 (A:),
       ;starting from LSN 0, for a length of 1 sector.
-D     ;Four dumps will show you the complete boot sector.
-D     ;To save space I've omitted the resulting displays.
-D
-D
-RCX   ;Display the contents of the CX register. This value
       ;determine the size of any file we write.
CX 0000       ;It is currently 0.
:200   ;
-N 360BOOT.FIL ;The file to be written must be given a name first.
-W     ;Write the contents of mmeory, starting from 100h for a
       ;length specified in the CX register, to the named file.
Writing 00200 bytes
-Q     ;Quit DEBUG.
```

Figure 2. DEBUG session to copy a clean boot sector a FD in A: to a file.

The rescue boot FD would be a good source. Note that *Michelangelo* won't infect FDs in B:.

Reading & Writing FD Boot Sectors

DEBUG loads files that don't have an *EXE* extension into a memory position ("offset") of 100h (256 decimal) bytes from the start. The reason for this need not concern us here. Figure 2 documents a *DEBUG* session to get a boot-sector from A: and write it to a file on the current drive. You should easily be able to do this on your own machine.

I've added an optional view ("dump") stage. Each time you issue "D" you will see a dump of the next 80h (128) bytes. Four dumps will cover the complete boot-sector since sectors under DOS are always 512 bytes. This will give you an idea of what a normal boot-sector looks like.

Figure 3 shows how to use DEBUG to write the contents of a file to a FD's boot-sector.

```
c:\dos>DEBUG 360BOOT.FIL
-W100 0 0 1 ;Write the contents of memory, from offset 100h,
       ;to logical drive 0 (A:), writing to LSN 0,
       ;for a length of 1 sector.
-Q
```

Figure 3. DEBUG session to copy boot sector to a FD

I suggest you don't go writing to your HD's boot sector. BSVs usually infect only the first sector on either a HD or a FD. If they infect other sectors as well as the first sector, removing the virus activation code from the first sector will stop any other viral code from executing. The first sector on a HS is not the boot sector but rather the MBR that contains the drive's first partition table. (The structure is more complex with a HD because the HD can be partitioned into multiple volumes.) The partition table is read to find which partition is marked as "Active" Then boot execution passes to that particular partition's boot sector. Under DOS the active partition on the first HD is always called C:. There are hardly any viruses that infect a HD's boot-sector.

```
Read Disk      AH = 02h
Sectors        AL = number of sectors
       CH = track number
       CL = sector number
       DH = head number
       DL = drive number
       ES:BX = seg:offset address of
       where read data goes
```

Figure 5. INT 13h Service 02h - Read Disk Sectors.

How to Read and Store a Copy of the MBR.

It is not possible using *DEBUG*'s *Load ("L")* command to access the MBR since *DEBUG* uses DOS which deals in Logical Sector Numbers (LSNs). These are numbered from zero with LSN 0 being a partition's boot-sector. But we want to see the MBR, and this situated before LSN 0.

The solution is to use an interrupt from the ROM BIOS. The ROM BIOS is a chip on the motherboard that permanently stores a set of routines (programs) to start the computer, test it (called POST - Power-On Self-Test), load boot-sector code from a boot-sector in A: (if present) or load MBR code from the HD otherwise. It also contains routines that can be used by DOS to perform many useful tasks such as read a keystroke or output a character to the screen. The DOS code can also perform useful tasks and can be called upon by the user's programs to do so. Often DOS will then itself call on the BIOS, which is closer to the level of the machinery than it is, to help in the execution of the task at hand.

The routines in DOS and in the ROM BIOS are usually accessed by "calling an interrupt". At the very beginning of the DOS memory map there is a 1Kb region called the Interrupt Vector Table (IVT). In this table there are 256 four-byte memory addresses. These are the interrupts 00h-FFh. (The "h" signifies that the numbers are in hexadecimal notation.)

The interrupt we are interested in is the ROM BIOS interrupt 13h. This interrupt is concerned with disk access. In decimal notation it is interrupt 19 (counting from zero). Since each table entry occupies 4 bytes the start of the entry occurs at decimal byte 76. *DEBUG* uses hex numbers so this offset is 4Ch. Figure 4 shows how to use *DEBUG* to see this entry. The four bytes reported by *DEBUG* should be read from right to left and into segment:offset form. So *"06 1B 01 B0"* becomes *"B001:1B06"* which, in this case, is a UMB (Upper Memory Block) holding a high-loaded disk-cache program. If this caching program is removed the entry then points back to *IO.SYS*. (Use *"MEM /D"* to see this.) Ultimately however this interrupt should end in the F000:xxxx region where the ROM BIOS is addressed. We can see here how a number of programs have altered the immediate location that execution jumps to when this interrupt is invoked. The program may completely replace the routine stored in the BIOS ROM or it may just argument it to add some new functionality. This is quite a good feature of the PC in that enhancements to the PC don't normally require swapping BIOS ROM chips. Instead, new versions of DOS or special device drivers or TSRs can alter the IVT entry to point to themselves. Unfortunately, so too can viruses.

```
                                        c:\dos>DEBUG < READMBR.SCR
A100   ;Enter into assembler mode. The code you create starts at 0100h.
PUSH BX        ;Fix for DEBUG. Store contents of BX register on the stack.
MOV AX, 0201   ;AH=2 (Service 2h - read sectors) & AL=1 (# of sectors to
                                                              read).
MOV BX,0200    ;ES:BX will be where the read is dumped. Make this offset 200h.
MOV CX,0001    ;CH=0 (track #0) & CL=1 (sector #1).
MOV DX,0080    ;DH=0 (head #0) & DL=80 (this is the BIOS num for the 1st HD).
INT 13 ;Perform interrupt 13h.
POP BX ;Restore the original value of BX.
       ;Leave a blank line to terminate assembler mode.
G=100 110      ;Execute the code starting at 100H. Stop when you reach 110h
RCX    ;& show all registers. What's RCX currently set to?
200    ;Set CX to 200 so when we later write to a file it will be
N 050394.MBR  ;200h (512 bytes or 1 sector) long. Name of file to load/write.
W200   ;Write to named file contents of memory at offset 200h (where
Q      ;the int13 read was dumped) for a length of 200h bytes. Quit.
```

Figure 6. A DEBUG scriptfile called READBOOT.SCR. Create this in a text editor (include no comments) and use the method shown at the top to run.

Interrupt 13h provides 23 different "services" such as writing disk sectors, formatting a track, test for drive ready, etc. Figure 5 explains the one we'll be using here, Service 02H - Read Disk Sectors. *DEBUG* does not have a command to execute interrupts. Instead we use *DEBUG*'s assembler to write a program, starting at a known memory location and then execute it. The relevant *DEBUG* commands are *"A"(Assemble)* and *"G=start_pos stop_pos"* (Execute command in this section of memory. Note that the command at the stop position is not executed so it should be the location just past the lend of the last command).

Figure 6 shows a scriptfile to write out the MBR to a file on the current drive (you can add a drive and path to the filename mentioned in the script).
At the low hardware-level that the BIOS ROM works at, this sector is designated as Cylinder #0, Track #0, Head #0, Sector #1. (Strangely, sectors are counted from 1.)

The BIOS drive numbering deserves further comment. With DOS functions A=0h, B=1h, C=2h, while with BIOS functions it's A=0h, B=1h, 1st physical HD=80h; 2nd physical HD=81h.

I've provided a scriptfile but you could just as easily enter this manually while in *DEBUG*. The advantage of scripts are that they are easy to modify and rerun. While retyping commands is a bit of a drudge in *DEBUG* you get the chance to experiment more. For example, try "U100" after you've assembled these commands and before you execute them. This will disassemble them.

Note that leading zeros and space aren't necessary. *"MOVCX,1"* is OK but make sure you leave a space in *"G=100 110"* to indicate the end of one number and the start of the next.

I've had to push BX on the stack & later pop it off again to cure a problem (bug) in *DEBUG*. After executing the interrupt, when I went to write the read data to a file I saw "Insufficient disk space" which definitely wasn't the case. I'm not sure why my fix works, but it does.

Restoring your MBR copy to its rightful place could be done with *DEBUG* or Norton Utilities' *DISKEDIT*. I won't cover it here as there is an element of risk involved unless you've had a fair amount of experience. Still, it's vital to have a copy of your MBR/Partition Table stored on FD for emergencies.

Examining the Partition Table

Load the saved MBR into *DEBUG* e.g. *"DEBUG 050394.MBR"*. This time, since we are loading the file from scratch, it will start at 100h and extend to 2FFh (a length of 200h). Assuming a starting position of 100h, the partiton table starts at 2BEh, is 40h (64 decimal) bytes long and it is immediately followed by the two signature bytes AA55h (in *DEBUG* you'll see this as "55 AA"). It is significant that, after infection, Michelangelo copies these 66 bytes back from memory to their original position in the replacement MBR which is now mainly filled with viral code.

Each entry in the partition table is 16 bytes long and there is space for four entries.. The active partition is indicated by an 80h value in the start of that entry and, since the vast majority of PCs will have the first partition marked as active you usually find the 80h value at offset 2BEh (again assuming a loading offset position of 100h). In *DEBUG* try *"D 2BE L42"*.

The Boot Process

The way the PC boots leaves it completely open to BSV infection. Since the boot process is initiated from the ROM BIOS and it blindly loads and runs whatever is in the first sector of either the HD or a FD in A:, there is no way, short of replacing the ROM BIOS, to alter this. (Some modern BIOSes offer the option to alter the "search for boot code" sequence from the standard A:—then—C: to C:-—then—A:. Doing this would stymie BSVs.)

The first step in the boot process is to read the instruction at address space FFFF:0 (16 bytes below 1,024K). On both my machines (with Phoenix and Award BIOS ROMS) the first instruction here, when I disassemble with "U FFFF:0" is "JMP F000:E05B". From there (tracing with "U F000:E05B") they execute a further jump to the start of their respective startup-code sections where POSTing occurs.

The ROM BIOS then scans the upper memory area looking for ROMs on other hardware cards (such as some HD controllers, networks cards etc.). These are allowed to initialised, if found.

Time now for a check in A: to see if a FD is present. If it isn't then the HD is checked and booting is attempted from it.

Assuming a boot record is found, its code is temporarily read into memory location 0:7C00h (31Kb from the bottom of the memory map) and executed from there.

The boot record (assuming a FD was in A:) looks for *IO.SYS* (or its equivalent) in the first position in the disk's data area. If it's not found here you'll see a *"Non-system disk or disk error"*. (I just formatted a new disk under DOS 6 and then copied the hidden files *MSDOS.SYS* and *IO.SYS* in that order so that *IO.SYS* was the second directory entry - No Go.)

IO.SYS is the file that can substitute device driver routines appropriate for modern machines. It can also load other installable device drivers such as *MSCDEX.SYS*.

MSDOS.SYS is loaded next. This is the "kernel" of DOS. Amongst many other duties, it starts the nominated command processor (usually *COMMAND.COM* or *4DOS.COM*) and runs *AUTOEXEC.BAT* The boot coded loaded at 0:7C00h is no longer needed and will be overwritten by the first program that loads.

The main difference when booting from the HD is that, instead of the Boot-Sector—then—*IO.SYS* sequence, we have MBR Code—Partition Table—Active Paritition's Boot-Sector—*IO.SYS*.

Sticking the MBR Code under the Microscope

Let's examine the start of the MBR so you can develop a feel for how this assembler stuff functions. Load the copy of your MBR again in *DEBUG* and issue "U100". Figure 7 contains a disassembly of the start of a MBR from a MS-DOS 6 system. I read it as:

CLI - Clear Interrupt Flag. This also means that we won't allow any interrupts to execute until we later set the Interrupt Enabled flag.

```
c:\dos>DEBUG

-U100
xxxx:0100 FA  CLI
xxxx:0101 33C0        XOR AX,AX
xxxx:0103 8ED0        MOV SS,AX
xxxx:0105 BC007C      MOV SP,7C00
xxxx:0108 8BF4        MOV SI,SP
xxxx:010A 50  PUSH    AX
xxxx:010B 07  POP ES
xxxx:010C 50  PUSH    AX
xxxx:010D 1F  POP DS
xxxx:010E FB  STI
xxxx:010F FC  CLD
xxxx:0110 BF0006      MOV DI,0600
xxxx:0113 B90001      MOV CX,0100
xxxx:0116 F2  REPNZ
xxxx:0117 A5  MOVSW
xxxx:0118 EA1D060000 JMP 0000:061D
xxxx:011D BEBE07      MOV SI,07BE
-Q
```

Figure 7. DEBUG session to disassemble the start of the DOS 6 MBR code.

XOR AX,AX - Exclusive ORing a register with itself is a commonly used method of setting a register to zero. This only takes two bytes compared with 3 bytes if a value is moved into a register (as in MOV AX,0000 - see offset 105 for an example of this).

MOV SS,AX - Set the Stack Segment register to zero.

MOV SP,7C00 - Set the Stack Pointer register to 7C00h.

MOV SI,SP - Set the Source Index register to 7C00h.

PUSH AX & POP ES - Put a zero in the Extra Segment register by placing this value on to the stack ("pushing" it) and then immediately pop it off again into the ES register. Note: MOV ES,0 is not allowed.

PUSH AX & POP DS - Put a zero into Data Segment register. Explanation as above.

STI - Set the Interrupts Enabled Flag. Interrupts are allowed again. The state of bits in the Flag register is shown in the bottom right corner in *DEBUG*'s "R" display. "EI" means that interrupts are allowed. This changes to "DI" when they are not.

CLD - Clear Direction Flag. Ensures the direction bit in the Flags register is set to "UP" (alternate state is "DN"), regardless of it previous value. A string copy operation is being set up and CLD ensures that the SI and DI registers will be incremented during the copying.

MOV DI,0600 - Set the Destination Index register to 600h. MOV CX,0100 - Set the Count register to 100h (256 decimal).

REPNZ & MOVSW. The reason for all this setup code. While CX is not zero, keep performing String Word (2 bytes) copy operations. After each copy operation, decrement CX. This means that 512 bytes (256 * 2 bytes) will be copied. This is the MBR's contents. The source location is given in the DS:SI (here 0:7C00) while the destination is indicated in the ES:DI pair (here 0:600).

JMP 0000:061D - Jump to a point 1Dh (30 bytes) into the block of we just copied and continue execution from there. The point in the code where execution is occurring is stored in the Instruction Pointer (IP) register.

Well that's enough of MBR code. Let's return to the Michelangelo virus.

Michelangelo in Detail

The Bootup Process

The virus is 430 bytes in length. Add on 66 bytes for the partition table and the two signature bytes (AA55h) and you don't end up with much left free from the 512 bytes of space available in the MBR.

Refer to Figure 8 as you read though this . I've made up some label names in the following description. (Disassembled code has no labels.)

The virus is loaded at 0:7C00h. It starts with a jump to START_BOOT where it saves the original value of INT 13's (read from the IVT at 0:004C).

The virus determines the TOM for this computer by read from the BIOS data location 0:413. In *DEBUG* issue "D 0:413 L2". I get "80 02". This is 280h = 640 (2 * 256 + 8 * 16). This value is in Kb so it signifies 640Kb. The virus decrements this value twice (278h) to reduce it to 638Kb. It then converts 278h to a segment address since it is going to load code here.

Next the virus uses a repeated String Copy Byte operation (like the *MOVSW* operation we examined except it only copies a byte at a time) to copy 446 bytes from 0:7C00h to the 638-640Kb region and then jumps up to there.

The virus alters the IVT entry at 0:004Ch so that the INT 13h segment entry portion now points to the start of the 638-640Kb region. It sets the offset portion to point to just after the initial jump instruction (this is only executed at bootup time) so that, when future INT 13h requests are made, the virus' NEW_INT_13 section is executed first before passing the execution on to the original INT 13h location.

(Whenever I mention "INT 13h" in the following I mean the original INT 13h routine.) It uses INT 13h Service 00h to then reset the disk.

When the virus infects the first sector of the disk it moves the original sector to sector 3 (360Kb FD), sector 14 (other types of FD) or sector 7 (HD). This sector number is stored in the viral code. I'll call it DISK_SECTOR.

The next step is perform a INT 13h read of the original first sector into the 0:7C00h memory position, in preparation for a normal boot (by executing the original boot code).

If it's a HD the virus infects it at this stage.

It then jumps to LEAVE_BOOT where it gets the date and sees if it is the Sixth of March. If it is, it jumps to a section called START_NUKE. Otherwise it returns to 0:7C00h and executes the normal boot code.

The date is determined by an INT 1Ah Service 04h call (Read date from real-time clock). The year is returned in CX (not used in this virus) while the month/day is returned in DX. Figure 9 shows how you can invoke it in *DEBUG*. The virus does a date comparison with *"CMP DX,0306"*.

The Virus in Memory after Bootup

As mentioned earlier, the virus sits in front of any INT 13h call. It infects only A: by referring to the DL value in the INT 13h it has just intercepted. If DL is not equal to zero (e.g. 1, 80, etc.) execution passes on to the original Int 13h.

I won't go into details about how the virus infects FDs (that might tempt some readers to have a go). It tries up to 4 times to read the boot sector of the FD. The virus checks up to two words off the FD's boot sector to see if it's been infected yet. If the disk is write-protected the virus handles the setback quietly. (Some badly written viruses don't.)

After completely overwriting the 1st sector on the FD the virus then copies 66 bytes of error messages and signature bytes back to it. (When it reads the FD boot

```
Virus is loaded by the BIOS ROM at at 0:7C00h
Jump to START_BOOT
ORIG_INT_13:
        Location of original INT_13 is stored here
-------------------------------------------------------
This section can be considered as an addition to the original
                                                INT_13h handler
NEW_INT_13:
        Is disk request for A:?
                No. Clean up & exit on to ORIG_INT_13
                Yes. Continue
        Read boot sector for A: into buffer
        Is it infected yet?
                Yes. Clean up & exit on to ORIG_INT_13
                No. Continue
FD_INFECT:
        Determine disk type & size
        Move original first sector to DISK_SECTOR offset position
                                                on disk.
        Write replacement infected first sector
        Restore original last 66 bytes to the infected sector
        Clean up & exit on to ORIG_INT_13
-------------------------------------------------------
This section is only accessed to load the virus at startup
START_BOOT:
        Save original INT 13h entry in IVT
        Decrease TOM by 2KB
        Copy itself to the 638-640Kb region and jump there
        Alter IVT INT 13h entry to point here
        Read the original boot sector into 0:7C00h
        Is the HD infected?
                Yes. Continue on to LEAVE_BOOT
                No. Pay a visit to HARD_INFECT
LEAVE_BOOT:
        Is the date the sixth of March?
                No. Return execution to the 0:7C00h for a normal
                                                startup to occur
                Yes. Continue walking to the scaffold
START_NUKE:
        Stuff the HD or FD
HARD_INFECT
        Infect the HD
        Return to LEAVE_BOOT
```

Figure 8. Block diagram of Michelangelo virus' operation. There are two modes of operation: Startup & INT 13h replacement.

```
c:\dos>DEBUG
-a100
xxxx:0100 MOV AH,04
xxxx:0102 INT 1A
xxxx:0104
-G=100 104

   CX=1994  DX=0306
-Q
```

Figure 9. How to get the date. The date was 6/3/94. (Only the two relevent registers are shown here)

sector it stores this in a buffer in the 638-640Kb region.) Note that, while the virus is 430 bytes, it covers 446 bytes of the original MBR after the final 66 bytes is restored. The reason for the extra 16 bytes that are covered with zeros is that the virus is just a little too big to allow space for all of the FD's boot error message to remain. This message starts at offset 2A0h (assuming a 100h load position) with the message being *"Non-System disk or disk error. Replace and press any key when ready..."*. So what the virus does is intrude into the start of this message's area. It then adds extra zeros up to the 2BEh point to hide the evidence of its incursion up. What is left is *"Replace and press any key when ready"*. This is only for those performing a casual glace over the boot-sector as, if a "non-bootable" infected FD is left in A:, the virus will pass bootup execution on to the real boot-sector, stored at the offset value contained in DISK_SECTOR and the full error message will be shown.

A similar technique is used when the HD was infected except that the 66 bytes restored is the partition table and signature bytes.

The Nuke Process

The warhead of this virus is very destructive. If DISK_SECTOR indicates that this is a 360Kb then 9 sectors per track are written. Other FD sizes get 15 sectors per track and the HD gets 17 sectors per track. Note that only the first physical HD is attacked.

The information written to the disk comes from memory location 5000:5000h and is complete gibberish. Only side 0 is overwritten on FDs. (This appears to a programming oversight.) With the HD, the first 5 sides are attacked.

The virus warhead operates in a endless loop where it writes on the nominated number of sectors on the nominated number of sides and then increments the track number and starts again This means that the sooner the machine is switched off after warhead activation, the better. Critical HD information would be immediately obliterated but it might be possible to restore much of the HD if you were regularly running a FAT & Directory saver such as Norton Utilities *IMAGE* or PC Tools' *MIRROR*. These programs store their recovery information in the last few tracks of the HD so they would probably survive. I think you would need to have a copy of your MBR/Partition Table stored on FD to access the HD at all.

Conclusion

I'll end with a true story. This morning, Sunday 6/3/94, I got up at 3am to finish this article. I turned on my machine in a somnambulist's stupor. I noticed that the HD start-up activity didn't stop. I had left the Michelangelo disk in A: from the previous session. Fittingly, I had *Michelangelo*ed my own machine after spending hours and hours studying it and writing about how to avoid it!

However, I had altered one byte in that particular copy of the virus. I had changed the warhead's call of INT 13h from a write-type to a read-type. I did this for safety reasons and also because I thought the virus' detonation might then be safely demonstrated. The virus was now speedily reading most of my HD and dumping it into memory at 5000:5000h. This caused no harm.

So I rebooted the machine with a boot disk, *FDISK /MBR*ed the HD and then sat down to work.

Further Reading

Here are some articles by DB in Significant Bits that expand on some of the topics mentioned in this article:

Fast Forward - Segment & Offset Memory Addressing (Jul 90)

Doctor Mike Rowe - How to use DEBUG (Apr 91)

Viruses (July 91)

Doctor Mike Rowe - Discussion of a FD's Boot Record (Oct 91)

Boot Sector Viruses - Part 1 Detection, Correction & Protection; Part 2 Recovery (both in Mar 92).

Learning QBASIC - Part 7 Bits, Bytes, Words & Hex (Nov 93).

Learning QBASIC - Part 8 The BIOS Data Area (Dec/Jan 93 combined issue).

Learning QBASIC - Part 9 Dos & BIOSInterrupts, Interrupt Handlers, CPU REgisters (Feb 93).

The PowerPC Chip

A real challenge to the Pentium and new power for the Mac

Geoff Harrod

BRISBUG is by definition a "PC" users group; so, just what is a PC? Of course it stands for "Personal Computer", which has an obvious generic meaning, but is also what IBM called their first domestic machine. It soon became known as the IBM-PC, and the term "PC" came to signify the desktop computers that were 100% IBM-PC software compatible, and used the Intel 8088 or 80x86 processor chips. But there's nothing to stop "PC" being used to mean some other sort of Personal Computer, and the "PC" in "PowerPC" is nothing directly to do with the IBM-PC.

But current developments are blurring the lines of demarkation, and we may need to think about redefining BRISBUG's limits of interest.

The Macintosh

For quite some time now, the only real rival for the IBM-style PCs has been Apple's Macintosh series. In the beginning, as they say, those were as different from the IBMs as the proverbial chalk and cheese. Most notably of course, the Mac used a totally graphics-mode display with the ability to display any text font and point size as well as graphics, and used a point-&-pick operational method for everything, while the IBM with its DOS used the traditional text command line method with a fixed text font, and could only do graphics with special programming.

Microsoft's Bill Gates had been an admirer of the Mac from the outset, and consequently his company has always provided strong software support for the Mac. They were, I think, the first company other than Apple to produce Mac programs. Bill pushed ahead with the development of a Mac-like system for the IBM-PC, and despite its long drawn out lack of success, reliability problems and lawsuits with Apple, Windows eventually got it (almost) right with version 3.0 and became the greatest software success story ever. Windows 3.1 ironed out the remaining problems quite well and consolidated its success.

So today, with the overwhelming domination of Windows on PCs, the two rival systems are now not at all dissimilar. The Mac has been enormously successful all over the world, and in many countries outshines the PCs. Its recent entry to Japan has been a big success and offers a solution to the incompatible PC shambles there. It has enjoyed much more restricted success in Australia, no doubt due mainly to the very significant price disparity between the Apple products and comparable PCs, mostly of little known Asian origin. The Asian PC competition has not been so prevalent in most countries, with the result that the major PC makers such as IBM, Compaq, NEC, Hewlett-Packard, Epson, etc., have been able to enjoy pricing more on a par with Apple's.

As an indication of this from my own field, Autodesk were reported at one time to have been considering withdrawing the Mac version of AutoCAD (rel-10) in Australia as sales were so negligible, whereas in Britain they were selling about 50-50 Mac and PC versions.

For myself, I've always had a bit of a prejudice against the Mac, partly because of Apple's restrictive marketing methods and high prices, but also because I liked the direct control of the DOS command line for many things. I still often prefer to click the DOS icon in Windows and type some system commands rather than poke around the graphic equivalents in Windows. On the Mac there is no such fall-back.

One thing about the Mac has always been its assured quality of manufacture. In the wildly competitive arena of Asian PCs, there have been many lemons and it has often been hard to pick them. But you certainly had to pay for the Apple quality. Recently they have reduced their pricing markedly, and have become much more worthy of consideration. But their top performance models, the Quadra range, are still expensive, and barely match the 486s in performance.

The Macintosh hardware architecture is actually quite a bit more soundly designed than the IBM-PC. IBM had a very short-sighted vision of desktop computing when they designed it, and they designed-in several unnecessary limitations that became major annoyances when the PC developed into a powerful business system. Its memory system, input/output ports, device interfacing and interrupt systems are all inappropriate for its modern applications, and a continual source of problems when adding devices and networking. The Macintosh simplifies a lot of things by using the SCSI interface system for everything, not having a "base memory" bounded by fixed system addresses, and providing built-in networking.

The Apple-IBM Alliance

Now comes one of those radical developments that changes the whole

scene. After the highly noticeable IBM-Microsoft bust-up over Windows and OS/2, IBM formed an association with Apple. Many wondered what good could come of such an unlikely marriage, but now we see the progeny, and it really is a Big Thing.

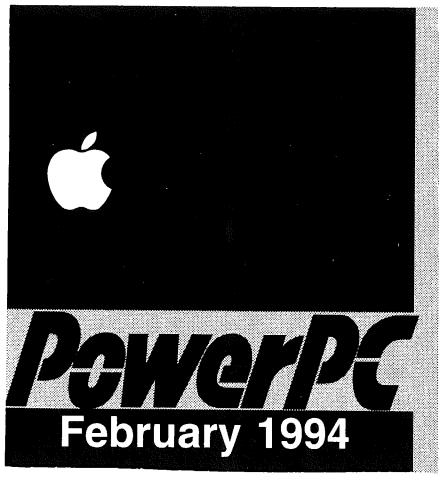
Apple have always used the Motorola 68000 series 32-bit processors for the Macintosh range. They are an excellent chip design that most technical types have always considered to be basically sounder than the Intel series that the PC uses. That is because of their very logically organised instruction set and register scheme, and their straightforward continuous addressing capability for a very large amount of memory. That was also why the Unix workstation makers generally preferred the 68000 series. The Intel chips inherited several now illogical concepts from their 8-bit predecessors, including their odd segmented memory addressing system, and their instruction set is not very logically organised or named. Also, until the 386, they were quite restricted in their memory range. The 286 was notorious for lacking certain facilities essential for the full utilisation of its potential, and earned the tag "brain damaged" by technical types.

Motorola realised that their 68000 series had reached a practical limit in its development, and they joined Apple and IBM to develop a replacement.

Both Intel and Motorola chips follow the established rationale of chip design, providing a very large instruction set and many storage registers. As they both developed in power they added more and more instructions to the repertoire and more registers. The 486 and Pentium are further complicated by having an integrated maths coprocessor and an elaborate pre-processor caching and instruction re-ordering system. They have now reached a stage of development where the difficulties of accommodating further clock speed increases escalate due to the chip's internal complexity.

RISC chips

Fairly recently a new rationale of chip design emerged called RISC - "Reduced Instruction Set Computing". The basic idea of this is to reverse the former idea of adding more and more data processing instructions to the chip's internal repertoire, and instead to reduce the instruction set to a few most frequently used facilities that can be optimised to execute extremely quickly, and have the more complex operations carried out by combinations of instructions. The chip is designed with an instruction cache and can organise the groups of instructions needed for other than the built-in basic operations so that they are handled with maximum efficiency. More advanced designs of RISC chips also use multiple parallel "pipelining" to organise the instruction queue so that the processor is not kept waiting for instructions.



The previous method (CISC or Complex Instruction Set Computing) sought to increase power by requiring less instructions from the software through providing more chip instructions. Software sequencing is always much slower than internal hardware operation. However, it has been found possible to achieve remarkable speed gains by the RISC method if the instruction set is very carefully selected, full use is made of instruction queue processing and the resulting chip simplicity realises very big internal speed gains.

RISC chips were developed at first by lesser known chip makers and usually for very specialised applications. The most noteworthy were those for the Silicon Graphics graphic workstations, where as many as fifteen different highly specialised RISC chips are employed in parallel to process different classes of task simultaneously. The most significant first use of RISC technology on a more general level was the highly successful SPARC chips for Sun Microsystems SPARCstations.

IBM developed their own RISC chip for their expensive and very high performance RS/6000 workstation computers. They called it POWER RISC, and that has formed the basis for the PowerPC chip development.

The PowerPC is a RISC chip that has been developed jointly by Motorola, Apple and IBM and will be used by both Apple and IBM. It is claimed to be the first application of RISC technology to general mass market systems, and to be a radical new vehicle for bringing "power to the people". Outside the circle of Apple enthusiasts there has always been a good deal of scepticism about any Apple claims, as they have often seemed to be more hype than fact. But I think any doubt about their claims for the PowerPC will now prove unfounded — it *does* deliver what they promised, in every way!

Apple had been suffering from a performance limitation on their Macintosh series that placed their system at a disadvantage compared to the Intel 486 PCs for high-end users such as in the CAD, rendering and graphic art fields. Their new machines being released in March, replace the Quadra Macintosh range initially.

The following extract from Apple's booklet "PowerPC Technology" explains their position very well.

> Until now, RISC microprocessors have been optimised for high-end workstations and server systems. IBM's willingness to redefine its POWER RISC architecture to create PowerPC processors has resulted in the first mainstream RISC microprocessor that can be used in low-cost computers. Several versions of PowerPC processors are already being developed to meet the needs of different types of personal computer users. This will give Apple a RISC-based growth path for all Macintosh product lines well into the future.
>
> The involvement of IBM and

Motorola brings state-of-the-art expertise in both microprocessor design and manufacturing to the PowerPC processor effort.

Apple, IBM and Motorola have combined their considerable resources to develop several versions of the PowerPC architecture simultaneously. This will allow the alliance to bring PowerPC technology rapidly to all segments of the personal computing market. Different PowerPC processors are being designed for the performance, cost, and power consumption requirements of everything from notebook computers to high-end workstations.

RISC processors today are principally used by lower volume workstation vendors. Motorola and IBM have proven their ability to manufacture the millions of microprocessors needed for the personal computer market.

Any new microprocessor architecture needs excellent compilers, debuggers, and other development tools to be successful. Because PowerPC processors are derived from the POWER architecture already used in IBM's RS/6000 workstations, many compatible development products already exist and are being optimised for PowerPC.

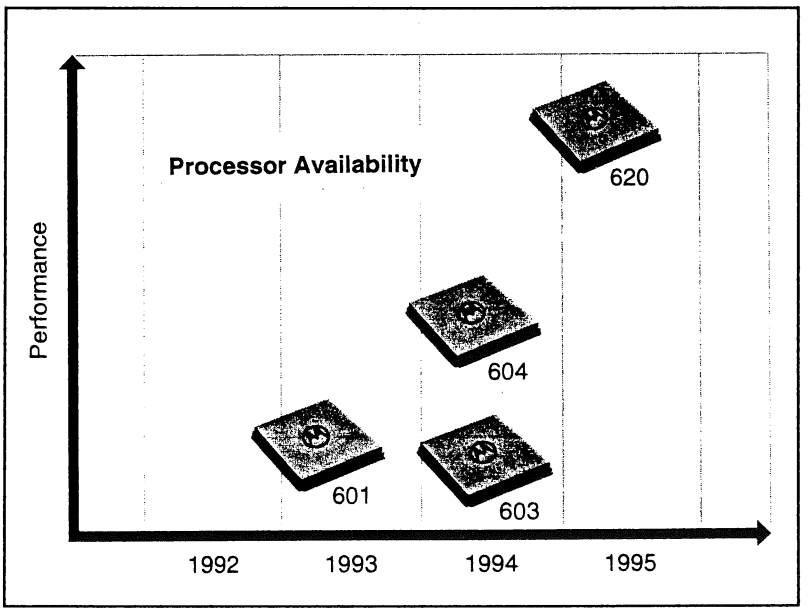
The PowerPC Chips

The initial PowerPC chip, the 32-bit MPC601, is now in production for the first PowerPC Apple computers replacing the Quadra range. It has a 32-bit address bus and 64-bit data bus, uses advanced parallel instruction pipelining, and runs at 66 or 80 MHz.

The MPC603 chip will offer similar performance to the 601 in a power economising package designed for portables. It will probably be used in machines to replace Apple's higher-volume Macintoshes as well as their PowerBook portables.

The MPC604 chip will be a higher performance version of the MPC601 and is expected to replace the 601 in the top-end Apple machines when available. The MPC603 and MPC604 are expected in mid-1994.

In late 1994 the MPC620 chip is expected, which has 64-bit data and address busses and multiple levels of parallelism for premium performance fin the highest level workstations and servers. The IBM RS/6000 series machines will use the 620 chip to replace their present POWER RISC chips.

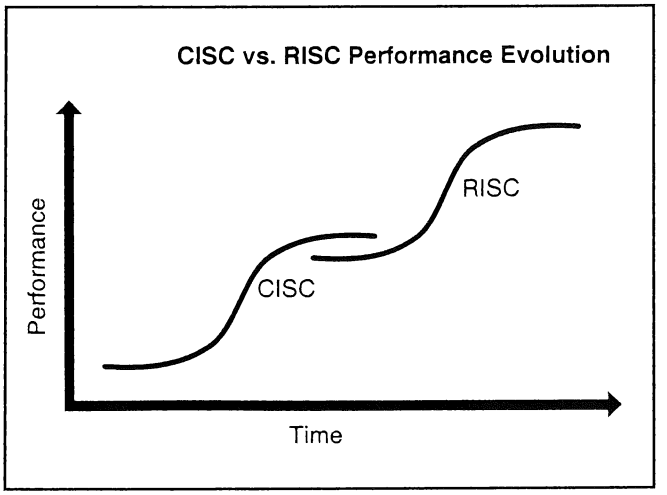


PowerPC -v- Pentium

The obvious and contentious comparison will be between the PowerPC RISC chip and Intel's Pentium. The Pentium is still a rare item, a fact caused partly by restricted availability, but also by cost. Most PC makers have released "Pentium-capable" models fitted with 80486DX2-66 chips in sockets designed for easy changeover to a Pentium chip when available or affordable. The Pentium is an exceedingly expensive chip, and still adds around $2000 to the cost of a 486DX2-66.

One might assume that its high cost is entirely attributable to its newness. However, it is a fact that the Pentium is very difficult to manufacture owing to the unusually large surface area of its silicon die and the extreme complexity of its etching. Integrated circuit manufacture is not as controllable a process as would be liked, and it always involves discarding a large proportion of each production run after testing. They call it the "yield ratio". The bigger the chip and the more active elements it carries the bigger the problem. A RISC chip is therefore less of a problem because of its inherently simpler internal structure. To date the yield ratio for the Pentium manufacture has been extremely low — a significant factor in keeping the price high.

Another factor favouring RISC chip design is that the heat generation of the complex Pentium is extremely high and demands very good cooling provision in computers. This restricts the compact-



Motorola's view of the range of potential performance development of CISC and RISC chip design.

ness of the case and the chip's potential for use in portables.

As far as performance comparison goes, it is a bit early to be completely objective about it. There are reports of tests by Apple indicating that the 66MHz PowerPC is about 15% faster than the Pentium, and the 80MHz version considerably more so. This was comparing the same graphics programs available in both PowerPC Mac and DOS/Windows versions. No doubt we will see more independently conducted comparative tests very soon.

Apple's new PowerPC machines will run existing System 7 Macintosh programs usually a bit faster than the comapable Macs. But almost all the Mac program makers are busily producing native PowerPC versions that run much faster. All the main makers are committed and several have their PowerPC versions already available, or in final pre-release stage.

The PowerPC OS on the Macintoshes will continue to rely on cooperative multitasking, as with the 68000 Macs, and Windows 3.1, but a pre-emptive multitasking micro-kernal is under development.

The initial MPC601 based Power Macintosh machines will also continue to use the Mac-II's *NuBus* plug-in slots, but Apple has stated that the Intel PCI bus will be adopted later on the top-end machines. The PCI bus has been developed for the Pentium but looks set to become an industry-standard bus for high-end machines generally, and is likely to quite quickly replace the VESA Local Bus on such systems, as the VLB was a rather hastily designed system produced to meet an urgent need, and has a number of basic limitations.

Windows on PowerPC

The thing that may arouse as much interest as the enhanced performance of Mac software, is the ability to run Microsoft DOS/Windows on the Apple PowerPC machines. This is done by a software emulation system, but because of the way this can be done with the RISC chip and its advanced pipelining, as well as the chip's inherent speed, it doesn't incur the severe performance penalty of previous emulation systems. Apple claim that it runs Windows programs at about the same speed as an 80486DX-33. This opens up the possibility of having the one machine for running all software. There will also be a Unix/X-Windows emulation.

Microsoft have already announced versions of Windows-NT for PowerPC machines. That will run NT programs in native PowerPC mode at full speed. Windows-NT has brought the potential for unifying the presently Unix based and mutually incompatible workstation systems and bringing the mass market Windows software to them. Maybe in conjunction with the PowerPC chip, it will unify Apple's hardware also, and bring unprecedented compatibility and interchangeability to high-end computing.

Another aspect of the PowerPC chip is its potential in the Unix workstation market. IBM already use their AIX Unix variant in their RS/6000, which was the original vehicle for the PowerPC's progenitor, the Power RISC chip. Part of the PowerPC plans are the *PowerOpen Environment*. This is an Application Binary Interface derived from AIX and can include the X-Window System and the Open Software Foundation's OSF/Motif, as well as the Macintosh Application Services environment. This is another scheme to overcome the problems of mutual incompatibility that has always plagued the Unix graphic workstations and hampered their wider adoption.

One thing is clear: the PowerPC chip is set to give the whole desktop computer arena a major shake-up. It also puts a bit of a cloud over the Pentium and Intel's future course. Intel have been quoted as saying they consider there is no need for RISC in desktop computing. They do have experience with RISC, as they make RISC chips that are popular in embedded systems, but are not designed for general computer use.

Of course a lot of this interoperabilility depands on emulation systems, and there is often difficulty fixing problems with the last, but significant, 10% of cases, as followers of OS/2 and NT well know.

It will be especially interesting to see how the Pentium fares compared to the PowerPC when both are running on Windows-NT based top-end graphics workstations.

Operating Systems promised for the PowerPC

AIX IBM's version of Unix, already used in their RS/6000 which was designed around the PowerPC's parent RISC chip. This will be the basis of the PowerOpen environment. An emulator will allow AIX to run native DOS and Windows code.

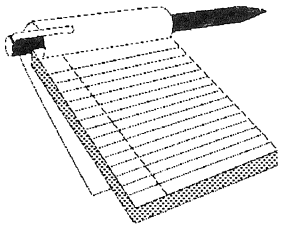
Pink Taligent's operating system, planned for PowerPC by 1995.

PowerOpen Based on AIX. Provides wide adaptability to Unix versions, and also run 68000 and PowerPC Macintosh programs.

OS/2 Expected on the MPC601 in 1994.

Solaris - the Sun Microsystems version of Unix from the SPARCstations, with its own GUI, expected on PowerPC chips in 1994. DOS/Windows emulation option to be provided.

System 7 The current Macintosh system.



Consultant's Notepad

Geoff Harrod

Death by Coincidence

You never know when you'll need backup copies, but one time that's a bigger risk than most is when you muck about with the innards of your computer. An associate of mine recently decided to install an additional hard drive. The decision had been looming for some time but suddenly became urgent, as the old 100Mb drive had got beyond the limit of archiving things to floppies to make room for new work, and work pressure had mounted, generating lots of data.

The 100 Mb, although it had seemed big when bought, had been laughably inadequate for some time, considering the type of work being done — rendering and animation. So the new one had to be a biggie, and a 1Gb SCSI-II-Fast disk was obtained.

Now installing SCSI drives is usually not difficult, as the system usually doesn't cause conflicts like a second IDE can, depending on the combination of makes and models. All went reasonably smoothly except that the existing IDE drive seemed to get ignored on boot-up, requiring booting from a floppy. The original DOS-5 disk was used, and before you could gulp it announced it was formatting drive C and had done 5% of it! By the time you see such an announcement, the data that may have been on the drive is as good as gone.

After some palpitations, it became apparent that it was in fact formatting the new SCSI drive as drive C rather than the expected D, though it seemed a bit rude, to say the least, that it charged ahead without the courtesy of seeking the almighty humans' consent! Afterwards we realised that the DOS-5 boot ddisk had an AUTOEXEC that runs its setup program, and also that the SCSI controller board's BIOS ROM had taken charge after finding an unformatted SCSI drive present.

That still didn't explain why the old IDE drive was being left in the cold. The SCSI drive could only be made bootable by setting the CMOS drive data to "No hard drives", as SCSI drives do not register in the CMOS setup system. Yet the CMOS still had the correct drive data for the IDE as a bootable drive C, we had a newly formatted 1 Gb SCSI drive as drive C, that could not be made bootable, and a boot-up message: "No boot device".

The answer was that the IDE drive had gone off in a huff during the installation of the new rival, and was refusing to even spin. In fact it turned out that it was a terminal condition. What a time to choose to die!

So the SCSI drive was duly made bootable, the IDE removed, and all non backed-up data on the IDE was lost, and although a lot had been backed up, some vital stuff had not been.

CAD — Hardware & Costs

We have witnessed huge changes in desktop computing power at the same time as huge cost decreases. Yet we still find people embarking on new CAD systems, that are to be the backbone of their business and livelihood, bauking at the cost of enough memory to support its proper operation.

I got to thinking about the first CAD system I purchased (with my employer's money). It was back in 1980 I think, which isn't all that long ago in most people's conceptualisation, but like the Dark Ages on the computer time scale. It used AutoCAD, the only worrthwhile CAD system then that would run on anything less than a Unix workstation. It was AutoCAD version 2.17 — an early increment on AutoCAD-2, which was the first version that provided anything like proper professional capability.

Because of the inadequacies of the colour graphics systems on the early IBM-PCs (CGA), the preferred machine at the time was the NEC APC-III, which had an excellent 640x400 8-colour screen. It was however, by no means an "IBM-PC-compatible" machine, and needed software specially written or adapted for it. Most things were similar to the American IBM but it used a different video memory address range, and several other minor variations that might just as well have been major. AutoCAD made a special version for it though, so it ran well. We also got WordStar 3.3 word processor and dBase-II, both of which were of the now obsolete breed of MS-DOS software that could adapt to variations among the non-IBM MS-DOS machines then current.

We used the APC-II for AutoCAD very happily for several years. Eventually, Autodesk ceased supporting it with upgrades. By then EGA and VGA had rescued the IBM-PC. But to get back to the point of all this — that machine had 512k memory (later we upgraded it to 640), and a 10 Mb hard drive. We got it, AutoCAD, dBase and WordStar, a digitiser and a single pen A1 plotter for about $20,000. Today, you still pay no more for a system with a 486DX2-66 and 16 Mb memory. We got the single pen plotter because we couldn't afford anything bigger or better. The Hewlett-Packard A0 8-pen plotters of the time, the superb 7585, cost about $25,000! Today you can get a good A0 pen plotter for under $10,000, and $25,000 will buy a pen-less raster plotter with umpteen megabytes of memory and a hard disk!

The situation now is that most of the latest CAD programs require a minimum of 16 Mb memory, or they either run slowly, fall over intermittently, or refuse to perform certain tasks. AutoCAD Rel-12 is the only top-level CAD system that will run in 8 Mb, but needs more if its rendering or solid modelling options are enabled. The next version will support true curved surface 3D modelling like its rivals, and as a consequence will almost certainly join the "16 Mb minimum" league.

The point is, you need to provide the maker's recommended specs rather than the claimed minimum specs. The minimum specifications are those that will allow it to run, however poorly, and are not suitable for serious use.

Microsoft Mail Manager

MS TechNet CD

Planning Your Installation

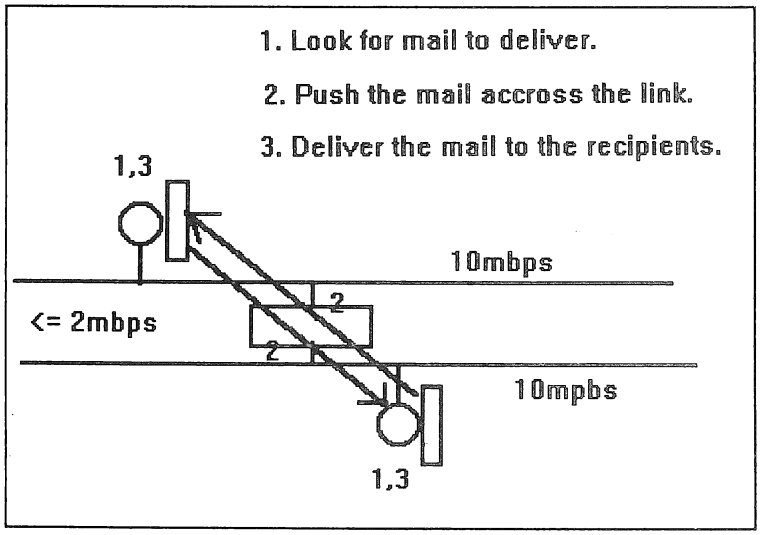
This scenario was prepared based on our experience with some of our largest accounts: it outlines several recommendations that will improve the performance of a large Microsoft Mail implementation by decreasing the delivery time and by making the standard deviation of delivery times predictable and reasonably close to the median.

Overview

The following is a summary of our recommendations, based on the best available data we have and includes some performance benchmarking that some of our customers have performed, as well as data we've generated in-house.

1. **Make use of the MTA's wide-area network (WAN) configuration option.** On all physical links slower than 10 mbps, MTAs should be located on both sides of the LAN link and should be configured to use the WAN (wide-area network) option.
2. **Increase the average utilization of the postoffices.** Where practical, accommodate growth in the Mail user population by higher utilization of postoffices, rather than by increasing the number of postoffices.
3. **Increase the reliability and capacity of the WAN.** Maintain your WAN's performance at a ubiquitous 2 mbps or better. The Mail system will be much more reliable and perform more consistently.
4. **Use high-performance hardware for the MTAs.** On links where the volume of mail to be moved is large, use faster machines for the MTAs (80386 and above).
5. **Optimize the routing topology to reduce hops.** The fewer the number of hops mail must travel, the more efficient and reliable the Mail system.
6. **Optimize the MTA locations with network device locations.** Strive to find a close mapping between the placement of the mail-routing hubs and the location of physical routing devices on the WAN. This relationship should aim to reduce traffic through routers and bridges.
7. **Correlate MTAs and routing with mail traffic generation.** Through the analysis of traffic statistics, you can more closely tune your mail network to usage patterns. Use the performance guidelines in this report to enhance throughput on high-traffic links.
8. **Optimize the implementation of directory synchronization.** The proper implementation of directory synchronization can substantially reduce directory-exchange and mail traffic.
9. **Consider implementing the Microsoft Mail Multitasking MTA.** The multitasking MTA contains a significant number of enhancements that can help you expand your mail system. These include the ability to run multiple instances of the MTA on the same machine, the elimination of dynamic-drive routing constraints, the elimination of connection limits due to MS-DOS memory constraints, FIFO processing of the mail queues, X.25 transport, and modem pooling.
10. **For more details, see the sections that follow.**

Figure 1.



Use the Wide-Area Network Option

The Microsoft Mail MTA includes a wide-area network (WAN) option that can significantly improve delivery performance over links slower than 10 mbps. Performance is improved because the MTAs do much of the mail processing at the full LAN speed, as the following diagram illustrates.

A configuration using WAN optionis shown in Fig 1.

When postoffices are connected with two MTAs across a WAN link, phases 1 and 3 are performed at LAN speeds by MTAs on the LAN sides of the link. In general, only phase 2, the transfer of the mail data, is affected by the link speed.

Using the WAN to Increase System Capacity

- Use WAN drives to increase the capacity of the system to move mail. Because the MTAs do more of their processing at LAN speeds, they move significantly more mail in the same time period.

- Use the WAN option to reduce the packet traffic across sensitive network devices such as routers. Because the MTA is doing a lot of its processing on the LAN, packet traffic across the network devices is significantly reduced.

- Slower links will typically benefit more by the use of the WAN option than faster links. Accounts should determine the link speeds across each connection in their domain and, where appropriate, use the WAN option on the slowest links first.

- Postoffices that have a lot of routing definitions benefit more from the use of the WAN option. One account's postoffices have routing definitions and mailbags for as many as 300 postoffices. Compared to smaller postoffice configurations, the MTA has to do more work when looking for mail. This work is done most efficiently at LAN speeds.

- Use the WAN option to limit the possibility of database corruption. File contention issues between the MTAs and other system components such as the client pumps, are minimized because the MTA spends less time with the files locked.

Consolidate Postoffices

Many accounts want to keep the number of people who are involved in managing the mail system comparatively small and centralized; yet they want to maintain a highly distributed model for delivering mail services.

A large number of postoffices, each serving a limited number of users, is a highly distributed model of delivering mail. Consider using fewer, more highly utilized postoffices.

For example, with one account, if they were able to increase their average server utilization from the current 50 users per server to 200 users per server they could accommodate as many as 20,000 users with a third of the servers they now have.

Where possible, accounts should accommodate growth in the total number of users by increasing the use of their postoffices.

Consolidate Postoffices to Improve System Performance

Consider the following advantages to consolidating postoffices:

- The Mail routing topology could be collapsed, thereby reducing the average number of hops per mail item. The number of routing postoffices required to interconnect, for example, 100 servers, is substantially less than that required to service 300 postoffices.

- Consolidating postoffices results in less mail to be delivered. Higher server use reduces the probability that a particular message must be delivered by an MTA. This results in faster average mail delivery times and less traffic on the WAN.

- Directory updating work will be reduced. The directory size and amount of work required to maintain a directory is a constant function of the total number of users. This constant workload must be applied to all postoffices. Fewer postoffices on which to update the directory means less work.

Where to Consolidate Postoffices

When consolidating postoffices, consider the following:

- Any file servers that contain more than one postoffice could have those postoffices combined. Unless a high-performance mail routing hub is being constructed, multiple postoffices should not reside on the same file server.

- Postoffices that share the same 10mbps LAN segment could be combined. Unless file server connection limits are reached, there is no technical reason to have multiple postoffices on the same LAN segment.

- Work groups with high communication needs should share postoffices. Where physical links make it practical, users who are most likely to communicate with each other should share the same postoffice.

- The WAN topology should take messaging needs into account. With fewer total postoffices, it is much easier to match message routing to the physical WAN topology and vice versa.

Organizational Benefits from Postoffice Consolidation

In addition to immediate performance benefits, consolidating servers has organizational benefits as well:

- Postoffice administration burdens are reduced. There are fewer postoffices to administer, backup, and maintain.

- The MIS could better manage delivery of mail services. MIS could control both the hardware and software platforms upon which mail is delivered. This allows MIS to better manage delivery of expanded messaging services.

- MIS-managed mail servers make it easier to develop and manage a billing model for mail. With consolidated messaging servers, MIS could develop a simple billing model based on user connections.

- Consolidating postoffices results in overall cost savings. Fewer, high performance mail servers are likely to be more cost effective to maintain than a large number of smaller servers.

- Facilitation of expanded services such as dial-up support are made easier. MTAs supporting modem pools and X.25 connectivity can be more easily coupled to individual mail servers.

Use High-Performance Hardware for the MTAs

Many of our accounts use 286 and 386 class machines as their MTAs. Depending on other factors such as link speeds and faster hardware (such as 486/33++ class machines) could significantly increase the throughput of mail (see Scenario 8). The cost effectiveness of using faster MTAs to improve mail performance should not be underestimated.

Another advantage of using high performance MTAs is that they can be applied to the system in a highly tactical manner. Bottlenecks on only a small subset of the total number of links can have a big effect on the overall system performance. Increasing throughput on key links can have a substantial impact on overall system performance.

Where to Apply High-Performance MTAs

- Apply faster hardware selectively on links where traffic volume is greatest. By selectively applying faster machines on links that have move a lot of mail accounts should be able to better balance the loads across the system.

- Faster hardware, when applied to faster links, should have a greater impact.1 On 10 mbps links the MTAs are not link constrained. At 2mbps they are marginally link constrained. Therefore, the faster the link, the larger will be the marginal benefit of using fast hardware.

- If used in conjunction with the WAN option, faster hardware has a greater impact. This is because the MTAs perform more of its work on unconstrained links.2

- The use of fewer high-performance MTAs is more efficient than the use of multiple low performance MTAs. Whether configured with a single MTA polling remote postoffices, or with the WAN option, the marginal increase in throughput is much greater if a single fast machine is used as compared to multiple slower machines.

4. Modify the Routing Topology

One of our largest accounts uses a four layer hierarchical routing topology. The bottom-most layer contains user postoffices. The upper three layers contain routing postoffices. This topology is implemented in a highly orthogonal manner. It has the advantage that the routing tables for all non-routing postoffices are identical (with one exception). This allows the routing tables to be easily inspected programmatically for any discordancies. Another advantage is that mail takes a predictable path through the system. If one postoffice is unable to complete delivery of mail to another, it's simple to figure out why. The downside of this routing topology is that much of the account's mail has to take several hops (copied and delivered several times) on its way to its destination.

At some administrative cost this account should reduce the number of hops messages must take.

The Benefits of Reducing Average Number of Hops

Increasing or decreasing the average number of hops that a mail item takes during its delivery should reduce average delivery times more or less linearly with the proportion of total hops that are being eliminated. For example, a reduction of six hops to four could cut average delivery times by one third.

Reducing the number of hops also reduces the traffic on the WAN. If 5,000 items of inter-postoffice mail items are generated each hour and the average number of hops for each mail item is 4, the system will have to deliver 20,000 items of mail. Depending on how the mail topology is configured relative to the physical link topology of the WAN, reducing the number of hops could substantially reduce packet traffic on key links.

5. Match the Network and Mail Configurations

To ensure efficient WAN use, there must be a close correlation between the location of routing postoffices (the mail backbone), the MTAs, and physical network devices. When adjusting the mail system configuration, carefully consider the characteristics and locations of the various physical links.

It is often difficult to determine the optimal location for a particular postoffice or device. The following are a few guidelines.

- Locate MTAs as closely as possible to the routing hubs. Plan appropriately so that the MTAs servicing the routing hubs are not unnecessarily located on the far side of network devices such as bridges and routers.
- The mail routing topology should inherently control traffic levels through slow or routed links. Analyze this closely; you could substantially reduce packet traffic across some links and devices.

Figure 2 depicts two high-speed LANs connected by a 48 kbps link. Since the throughput on this link is likely to degrade if too much simultaneous packet traffic is moving over it the mail system routing topology can be configured such that mail is routed to hub postoffices before being moved over the link.3

Link usage controlled by configuration of mail routing.

- The number of MTAs that are configured to deliver mail over a particular physical link should be correlated closely with the bandwidth of the link. This is important. Once a link is taxed to saturation, its overall performance is likely to degrade substantially. An account should be careful that its mail topology doesn't result in some specific links being overused.
- The MTAs use more of the bandwidth of the slower links. Some of our performance analysis data indicates that the MTAs are able to use a larger percentage of the total bandwidth of slower links. The implication is that while it may be possible to have many MTA simultaneously operating across 2mbps links, it would not be wise to configure many MTAs to simultaneously move mail across 48 kbps links because link overload will occur. Accounts should test to determine what their link saturation levels are relative to the total number of simultaneously operating MTAs ❍

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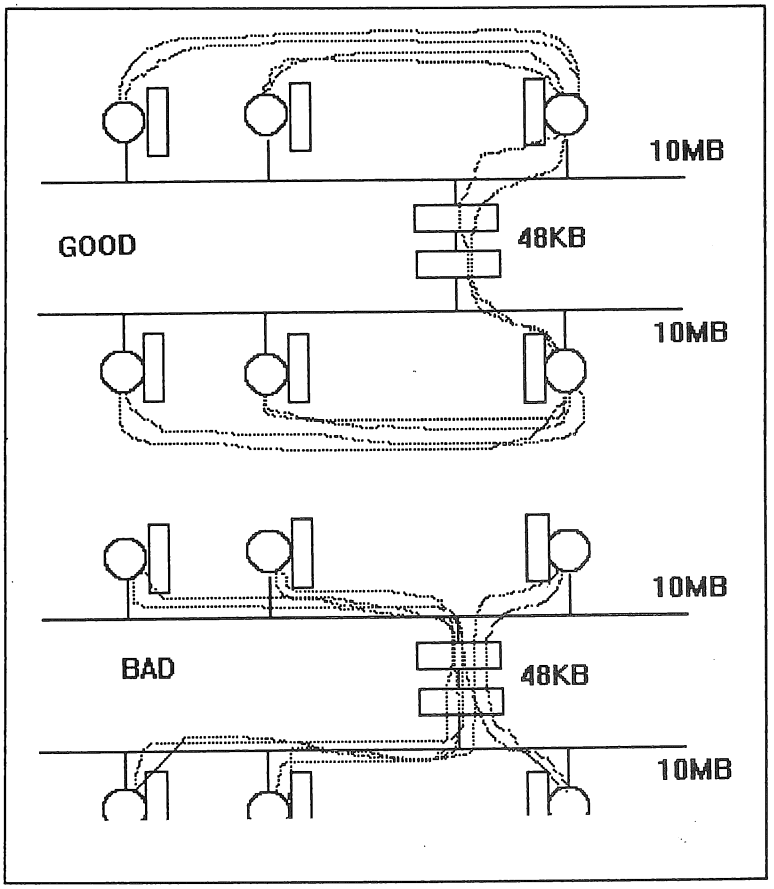


Figure 2.

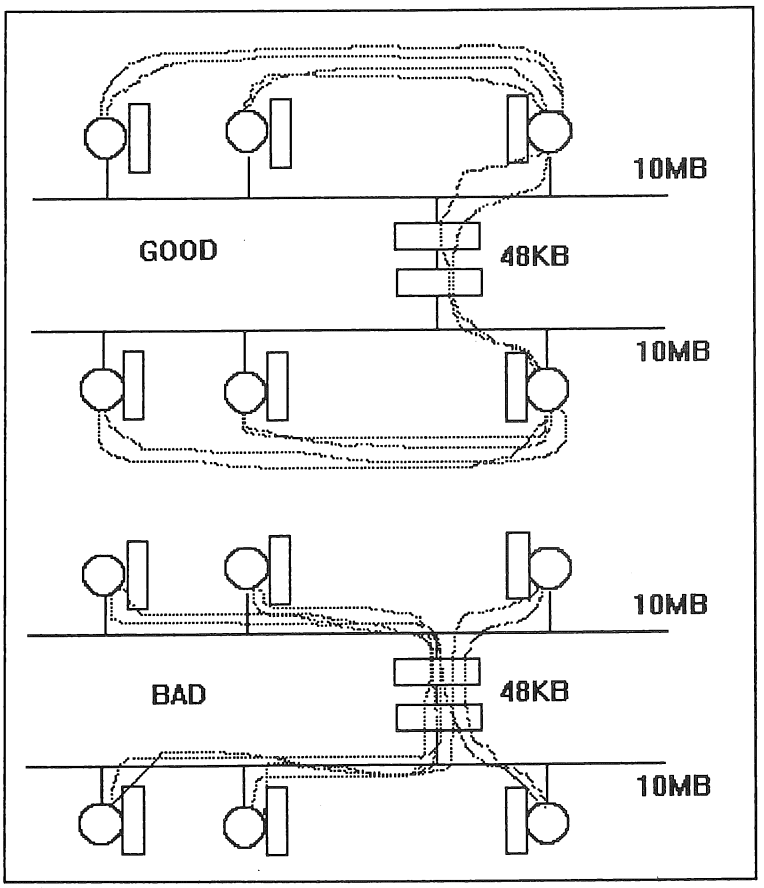


Figure 3.

Beginner's Bytes - Part 5

Ron Wilby

This month we're going to learn something more about DOS and its many commands.

Filespecs

Back in December we were talking about "Error Messages," one of the ways your computer talks to you. One of the error messages I encountered rather frequently in my early days was "File not found". As a result I soon learned to use directions so that I was able to tell DOS exactly how to find the required file. This requires positive identification of the file to which the command is to apply. How do you do that?

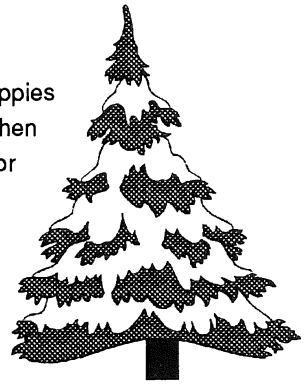
Directories

First I had to learn about directories even though at that stage I didn't have any. What's a directory? Even a small hard disk can hold large amounts of data (information). One page of text for *Significant Bits* is roughly equivalent to 6 kB, so even your little 40 MB disk can hold several thousand pages. A lot, isn't it? After a few weeks of computing, your hard disk may contain a thousand or more files. DOS will run rather slowly if it has to look through all those files. You will probably find life easier and DOS running faster if you divide your hard disk into directories, which are simply sections of the disk's storage space. There are no rules about this, but I find it useful to have a number of directories, each of which contains one program or group of programs. For example, I put my word processing program files (WordStar version 6) into a directory called "vVS6", and the actual files I produce, such as this column, I put into separate directories. These have names which describe their purpose, such as *MAGFILES, WORK, TAX* and so on. This sort of split-up makes it easier to find your files and simplifies backups. You can arrange your programs so that the data you create is automatically put in the appropriate directory.

Figure 1. The Directory tree

```
C:\> TREE      (your command)
Directory PATH listing for Volume PUPPIES
Volume Serial Number is 143A-4D38
C:.
├── DOS
├── BEAGLES
│   ├── MALES
│   └── FEMALES
└── TERRIERS
    ├── BLACK
    └── WHITE
```

The Directory Tree



Every disk, including floppies has at least one directory. When you format the disk, floppy or hard, DOS creates a directory where all other files and directories will be stored. This directory is called the Root Directory. The reason you haven't noticed this directory on your floppies is that there is usually only one directory on a floppy disk. However, you can have more than one, which may make sense if you have 1.2 MB or bigger floppies.

To see your directory structure, type

TREE

at the prompt. For a hard disk which has three directories, *DOS, BEAGLES and TERRIERS*, you will get something like Figure 1.

Directory Commands

To use directories you need to learn some new commands. All directories must have a name, except the root directory which is called C:\ (if your hard disk is C:, the usual name).

To create a directory, use the *MD* (*mkdir*) command. Type

MD REPORTS

at the *C:\>* prompt to make a directory called *REPORTS*. Note that the capital letters are not necessary, DOS does not distinguish between upper and lower case in commands.

When you want to move to a different directory, use

the *CD (chdir)* command. Thus to move to your new *REPORTS* directory you must type

CD REPORTS

To delete a directory, first you must empty the directory. This is most easily done if you make the directory to be emptied your Current Directory (see below for the meaning of Current directory). Then, type

*DEL *.**

which will **delete all the files in that directory**. You will get a warning message first and must answer *"y"* when asked if you know what you are doing. The meaning of **.** is explained below under "Wild-card Characters."To delete the now empty directory, type

CD ..

and then

RD {Directory Name} and it's all gone.

Make sure you know exactly where you are before you answer "yes" - Ed

Paths

The Path defines the location of a file within the directory structure (tree). It is the path along which DOS must look, starting with the Root Directory, to reach your file. Supposing you have the tree shown above, and you want to work on a file named *HOUND* in the BEAGLES directory, subdirectory *MALES*. You need this name

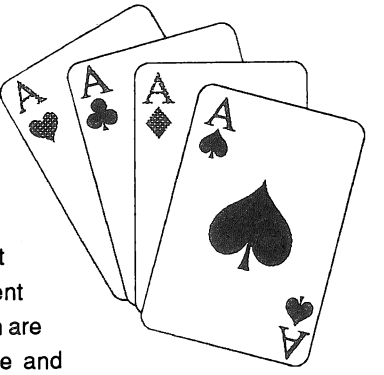
C: \ BEAGLES \MALES \ HOUND

where *C:* denotes your hard disk. The first \ (backslash) denotes the root directory of the hard disk. DOS then goes to the next part of the command, which says "go to the *BEAGLES* directory." The next backslash separates the *MALES* subdirectory from its parent *BEAGLES* and tells DOS to go to the *MALES* subdirectory. The 3rd backslash separates the file *HOUND* from the subdirectory *MALES* in which it is stered. The Path is *C:\BEAGLES\MALES*; the full name of the file is *C:\BEAGLES\MALES\HOUND* and is known as the Filespec. If you tell DOS the full Filespec, it will find the file wherever it may be. The file you are looking for may have an extension to its name. This is a 3-letter addition separated from the name by a period, so that the file might be called *HOUND.DOG*. Then you must tell DOS to look for *C:\BEAGLES\MALES\HOUND.DOG*. This, then, is the positive identification mentioned earlier.

If the file you want is on a floppy in your A: drive, then your Path will start with A: instead of C: and this will cause DOS to look at the A: drive.

The Current Drive

Unless you tell DOS otherwise, it will assume your commands apply to the drive you are using, called the Current Drive. The name of this drive is usually part of the prompt, for example *C:\>*. The Current Drive is also known as the *default* drive. The directory you are working in is the *Current Directory* for that drive.



Wild Cards

If the file DOS is looking for is in the same directory (current directory) or on the same disk (current drive), then only Name and Extension are required to find the file. The Name and Extension form the Filename. The Name can be any combination of up to eight letters, figures and special characters. See your DOS manual for the permissible special characters and a list of "reserved" names. The Extension may consist of up to three of the characters permitted for the Name. You use the Extension to label groups of files, to show dates or significant numbers. For example, I use the extension in correspondence files to give a year and number. When writing to our Editor, I might use SMITH. 193, SMITH.293 etc., where the year is 1993 and the first figure is the number of the particular letter. Note that DOS treats certain extensions in a special way, so you should not use these for your own naming. Examples are *.BAT, .COM, .EYE, .SYS*. Note also that DOS names and commands are not case-sensitive, i.e. can be in capital letters or lower case.

Wild-card Characters

After (slowly) absorbing the above I became aware of "Wild-card characters," which are *?* and ***, and these can also be used in filenames.

The question mark (?) equals any single character and the star (*) equals any group of characters. Thus, if I want to select all the files associated with this series, which are named *BEGTALE1, BEGTALE2* etc., I ask DOS to operate on *BEGTALE?*. But some of these *BEGTALE* files have different extensions, such as *.ASC, .G4B* and *.BAK*. If I want all the *BEGTALE3* files, I call for *BEGTALE3.**. To get all the *BEGTALE* files, I must use *BEGTALE?.**. The description **.** therefore means all files and *DEL *.** means delete all files *(this is when people usually phone me)*. Beware, although DOS 5 and some Utilities have *"Undelete"* commands which can get you out of trouble. If you make a mistake and delete something you wanted to keep, step, don't panic. Read your Manuals. If you continue working after the mistake, it becomes very difficult for UNDELETE to successfully restore your work.

Some Additional Commands

In no particular order, here are more of the commands it's almost essential to know about. Relax, you don't have to remember all the commands, you just need to know they are there. You can then look them

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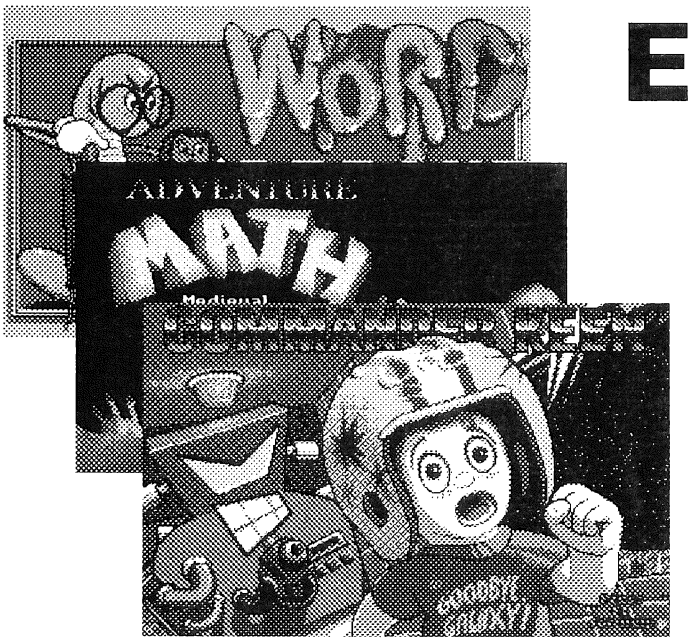

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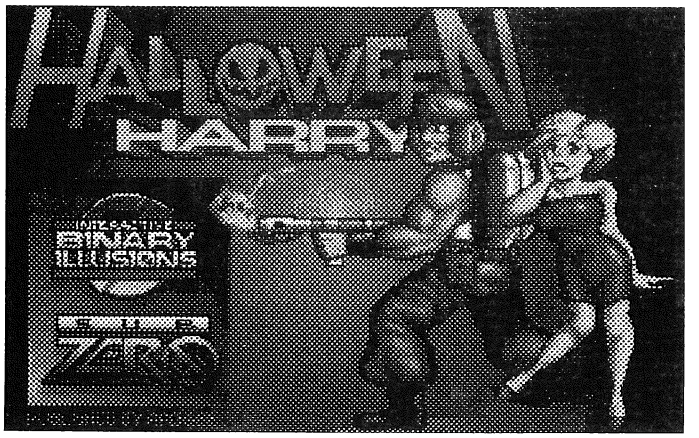

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up in your Manual or paperback from the book store, called *"DOS X.X Made Easy."*

CLS. Stands for clear screen. Leaves the cursor in the top-left corner.

CHKDSK. Checkdisk. Obsolete for users of DOS 6.2, who would use *SCANDISK*. Examines the default drive or directory files and reports on total and unused disk space, total and unused memory and bad sectors, if any. *CHKDSK *. **reports on fragmented files. There is a switch,*/F,* supposed to fix errors. Don't use it! If in trouble and a beginner, you need help from someone with experience.

ATTRIB. Short for attribute, which is a "Flag" or marker set on files. There are four types of attribute settings, each of which can be used with a + or - sign. You type

ATTRIB +r {filename}

to make files "read-only" and

ATTRIB -r{ filename}

to turn off the "read-only" attribute. Making a file "read-only" is protection against accidents or viruses. Very useful if you have children using your computer (a better idea is to buy them an old XT). I have all my really important files set to "read-only".

The *"a"* flag is used by DOS to decide which files are new or altered, and is used by some backup programs. The *"r"* flag is used to make a file "read only," i.e. it cannot be altered or deleted. There is an *"s"* flag for system files and an *"h"* flag for hidden files. More about those later. You can use *ATTRIB *. ** to make a whole directory read only. Type *ATTRIB* {filename} to see all the file attributes.

DEL and **ERASE**. Have the same meaning.

DEL {filename} deletes the file. *DEL *. **deletes all files. If you make a mistake and delete something you needed to keep, be aware that only DOS versions 5 and 6 have an *Undelete* command. Refer to "Wild-card Characters" earlier in this piece.

DIR. Lists all the files in a directory or on a floppy disk, giving size and date and time the file was last worked on. This is the first command you use on an unknown disk. There are switches,/p and/w, try them and see what happens. DOS 5 and 6 users however, have a much-improved *DIR* command, with which you can sort the displayed directory in a variety of ways. Have a look at your manual, in particular the *SET DIRCMD* environment variable if you are a bit more advanced than a "Beginner".

LABEL. Gives a disk a "volume Label" (name tag) of up to eleven characters. Type

LABEL A:

REN. Rename. Changes the name of a file. Type

REN {Filespec} Filename. O

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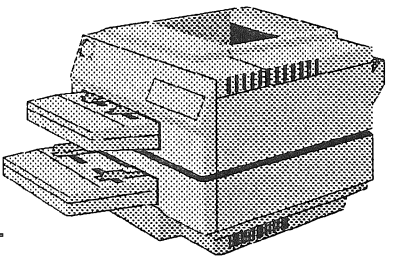
Colour Printers



Barry Cornford

Barry goes out to buy a colour printer for home use - and finds a lot of options available.

So you think you would like a color (or *colour*) Printer ? (depending on which school you went to)

Well so did I. Out shopping I went and ended up totally confused (not that that is difficult for me) I was asked what I wanted to use the colour Printer for my answer was to print in colour why else would I want a colour printer. After listening to several salesmen from different stores I came to the conclusion that this was not the way to go because if I was speaking to an EPSON® salesman his product was far superior to CITIZEN®, or if I was speaking to STAR® salesman he said with *out reservation* that his brand was the best. So after listening to all the sales "hype" I went home and decided on a different approach. I started reading any article I could find in computer magazines relating to printers with particular attention to colour printers.

What quality?

It appears that all manufacturers use the term Dots per Inch as a scale, for instance in general the more Dots per Inch the better the quality. Basically there are three main types of printers.

1: Dot Matrix
2: Ink Jet
3: Laser

In the Dot Matrix there is a 9 pin and a 24 pin style of printer. They use a ribbon like a typewriter and pins hit ribbon against the paper to form a letter. The 24 pin gives more Dots per Inch, hence is the better quality in these type of printers. Next the Ink Jet also called "DeskJet" or "Bubble Jet". The quality of these is much better than the dot matrix. And the third is the Laser. Top of the range but priced out the range of the average user leaving it to the larger business.

How much should I pay?

Without going into exact prices, because they vary from shop to shop and sometimes there are promotion deals going on, Dot matrix start at about $500.00 Ink Jet at $900.00 and Laser $5000.00 for Color Printers. For my budget a laser printer was out of the question and having a old black dot matrix and knowing its lack of quality as far as grainy looking text I spent a little more and went for a better quality Ink Jet, Some of the letters I have written have even been mistaken for laser-printed letters. As for color, I am quite happy.

Bleeding colour

So when I got my new toy home and set it up and did a sample print test from the printer. Black was very good quality but the colours ran and bled into one another. It looked OK from six foot away but not up close. So I opened up the manual supplied turned to the Trouble Shooting section and found in this particular printer there was a setting to control the amount of colour. Having adjusted this I did another test print, No bleeding the smile came back on my face.

Bleeding word processor

Next I went into my Word Processor and started typing a letter intending to put all the colours of the rainbow in it. After many attempts I could not get any colours to print so out came the Word Processor manual. After much reading I sort help elsewhere only to be told that my version of software did not support colour another boo boo on my behalf. So after returning from the shop with the latest version of software that does support colour I booted the box up and installed the Word Processor and again proceeded to draft a letter with Color after a couple of attempts success at last.

The moral of this tale is *don't be a naive Richard Cranium like myself... do your homework BEFORE you shop.*

Tips

Use Quality paper for best results Colour is more expensive to print because ribbons, cartridges and toners cost a lot more to buy. Color, particular in graphics, is a lot slower to print. In our printed library there is some good articles on printers. To put a little colour in your life Dot Matrix is fine but for *quality* letters, documents, signs, birthday cards etc, InkJet® or DeskJet® is the way to go. But remember to make sure your programs that you use will support colour.

Barry Cornford, as well as being a member of Brisbug, is a member of Pine Rivers IBM Compatibles Computer Club

First Look: Word for Windows 6.0

Ash Nallawalla

Microsoft recently released Word for Windows 6.0 *(W4W, not to be confused with WFW: Windows for Workgroups)*, which replaces version 2.0c. W4W is a professional grade word processor and is used in many large corporations and smaller businesses and homes.

Why the jump in numbers? Microsoft has embarked upon "code sharing", so that the Macintosh version of Word can share the same file format, commands, and "look and feel". What a boon for people who have to exchange files between PCs and Macs! About 90 percent of the code base is common, with the rest being platform-specific. This policy will extend to other Microsoft products too.

Requirements

You will get by with an 80286-based PC, although a faster CPU will help. The default W4W medium is 3.5-inch, HD floppy disk but you can ask for a 5.25-inch HD or 3.5-inch, 720 kB version. You need 4 MB RAM and about 18 MB hard disk space for a typical installation (bare minimum is 5 MB; full installation is 25 MB). It is a Windows 3.1 compatible program, although you can use WFW or Windows for Pen computing instead.

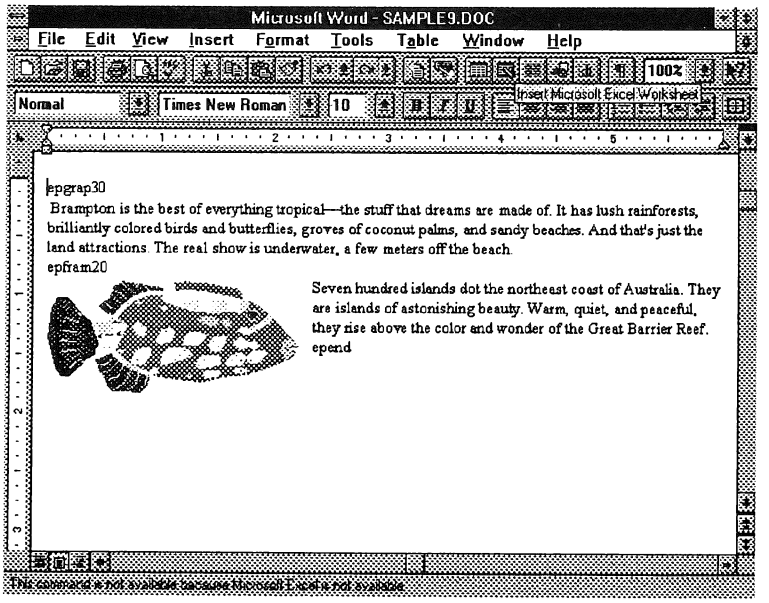


Figure 1. Showing the main user interface. For "instant" help on the button bar icons, hold the cursor over the button in question, and a description appears

Intellisense

Get used to a new Microsoft buzzword: Intellisense, which "eliminates the steps of everyday word processing tasks by delegating work to the computer." I thought that computers already did that but Microsoft's example of this claim is the AutoCorrect feature, which spell checks a document on the fly. After you type a word and press the spacebar, this feature gets to work. This is appreciated by writers (and their editors) who fail to do a spelling check after completing a document.

Why Consider Word for Windows?

All good word processors share basic features such as formatting, text manipulation, and it is difficult for a new user to choose between, say, WordPerfect, Ami Pro and W4W. My first professional word processor was Wordstar, later followed by Wordstar 2000, which I still use as an ASCII text editor. At work I had to use XyWrite 3, which was renowned as the most customisable word processor. I still use it occasionally when I need to do a variable length search-and-replace, something that I have not seen in other products.

Wordstar was a fine product that withered from neglect by its makers, while WordPerfect came along and took away most of the market. Samna came along and took some of the Wang word processor market but did not become a market leader. Microsoft introduced Word for DOS in 1983 but its early versions seemed to make little impact upon users of other products; indeed, its Macintosh version fared much better.

Why did I not switch to WordPerfect? Wordstar introduced the "Wordstar Diamond," a set of Control key combinations for cursor movement that is still used in many other products that I use. It had some other weird key sequences too but you learned to like them because many other programs used them too. When WordPerfect came along, its key combinations were totally alien to me and I felt no need to switch. It is also true that my employers in those years did not use WordPerfect so there was no other pressure from that direction. Often, corporations have chosen a certain product because of an attractive package deal, perhaps in conjunction with a large hardware tender.

I won a copy of Word 3.0 for DOS in a contest but I sold it immediately, choosing to stick with Wordstar 2000. XyWrite was nice but it never became my personal word processor, again owing to unfamiliar key assignments. XyWrite too went into suspended animation when IBM purchased it from XyQuest. IBM sold it to a new company and a Windows version has finally emerged, but too late for many. Many of those early word processors could not incorporate graphics, unless one resorted to third-party tools, with their own quirks and limitations. Samna became Ami Pro, which is becoming quite a popular alternative. WordPerfect continues to be the DOS market leader, although its Windows version has had a buggy path and may do well with fans of the DOS version.

My employers could not wait and opted for Winword (as W4W is also known). While XyWrite 3 was used as a text editor for an expensive publishing system, W4W served to replace typeset output with lower-quality but cheaper, acceptable laser output. We also produce Help files for Windows applications, and W4W happens to be the most suitable product for this. Although many Windows-based word processors produce the Rich Text Format (RTF) file necessary for this process, W4W has been the most compatible. I chose W4W as my personal word processor because it was easy to use and was less buggy than the rest. I don't have Excel, Access or other Microsoft Office products, so compatibility with them is not of personal concern but might be for others.

New Features

AutoCorrect is the previously mentioned feature that corrects commonly mistyped words such as "teh" (the) or the second character in a sentence, which has been mistyped in uppercase. You can add your own list of mistyped words. It also capitalises the first word in a sentence and any day of the week.

AutoFormat refers to the application of a predetermined document style, not unlike that found in a desktop publishing program (DTP). Many people still use typographically displeasing features such as underlined headings or use asterisks when they need to use bullets. AutoFormat will replace such formatting with the chosen style. Although the previous versions of W4W supported "smart quotes" (replacing inch marks with typographical quotes), they had to be enabled and tied to the template. AutoFormat makes it easy to tidy up these quote marks.

AutoSelect means that when you begin to select a word or a block of text, the software assumes that you want all of a word and not a part of it.

Visual Editing is another way of referring to OLE 2.0. You could, for example work on an Excel spreadsheet in Word without appearing to "leave" the

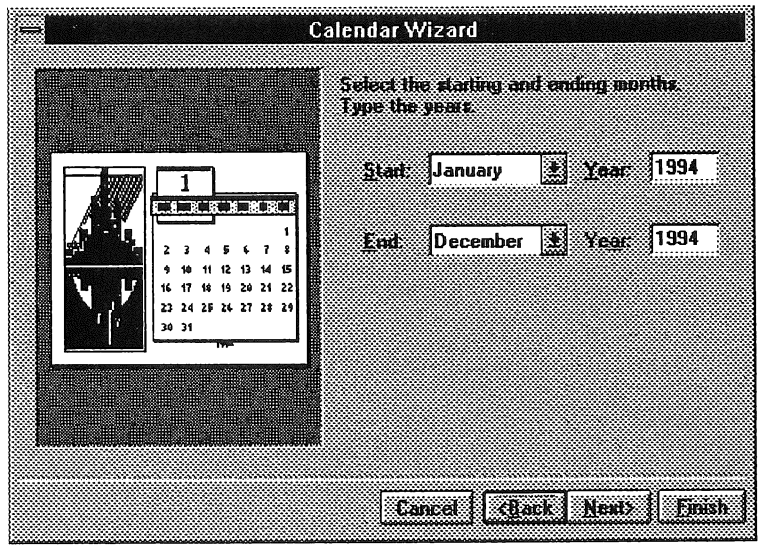


Figure 2. "Wizards", already highly regarded by "Works" users for automating complex tasks, are now available in Word

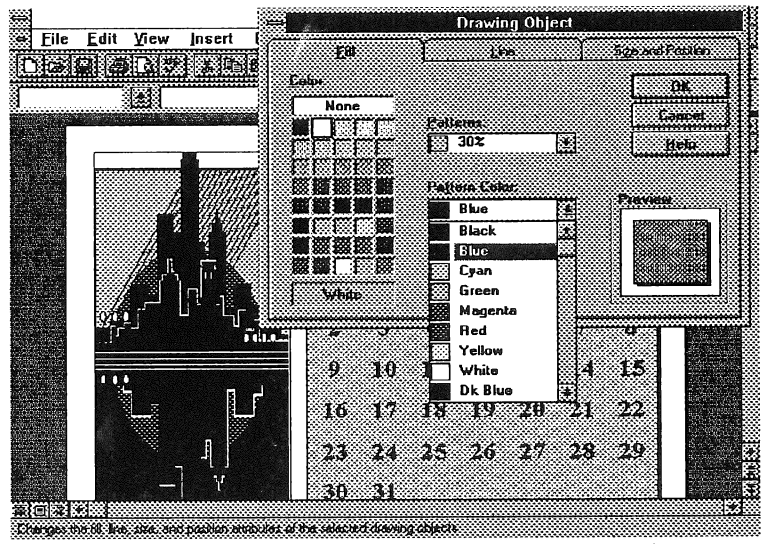


Figure 3. After the calendar Wizard has done its job, the inbuilt drawing tools can be used to pretty it up and individualise the calendar

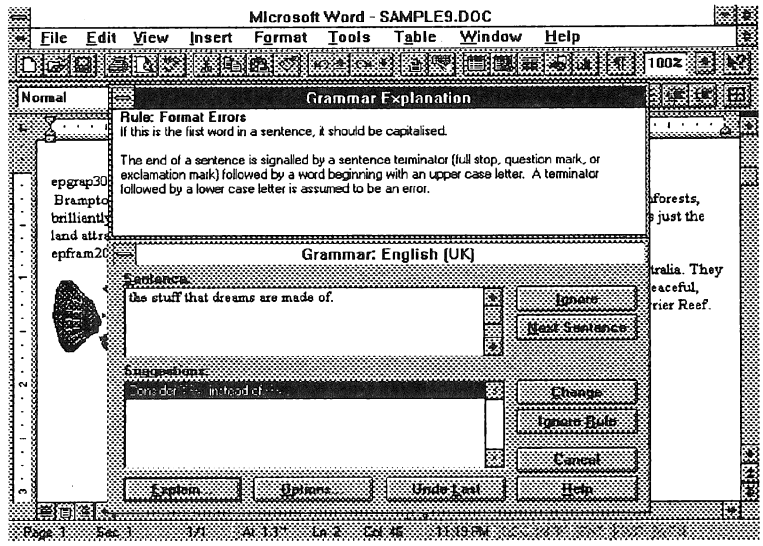


Figure 4. Grammatik in action. The "EXPLAIN" button has been pressed - imagine, a computer that argues its case!

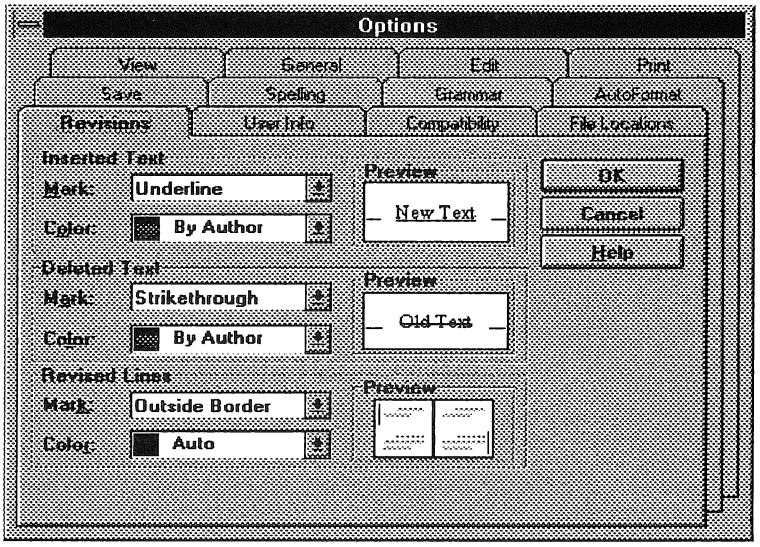


Figure 5. The OPTIONS menu is an example of the 3-D menus.

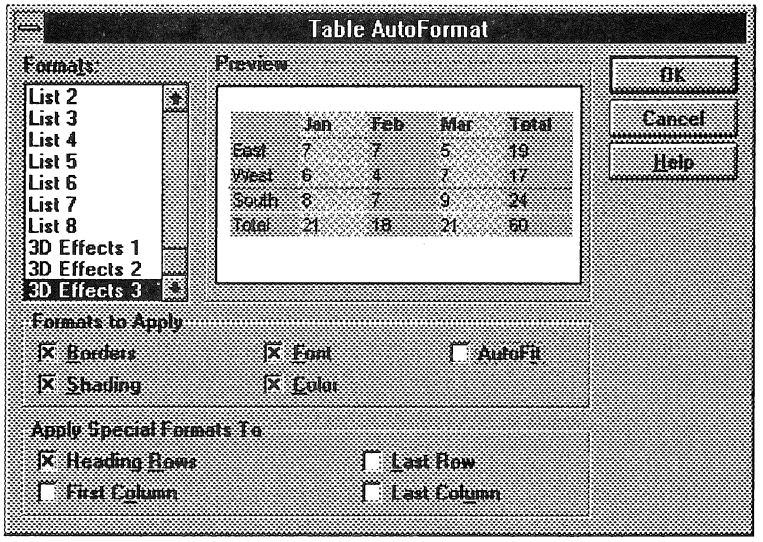


Figure 7. Autoformatting a Table is a matter of choosing from the many examples supplied.

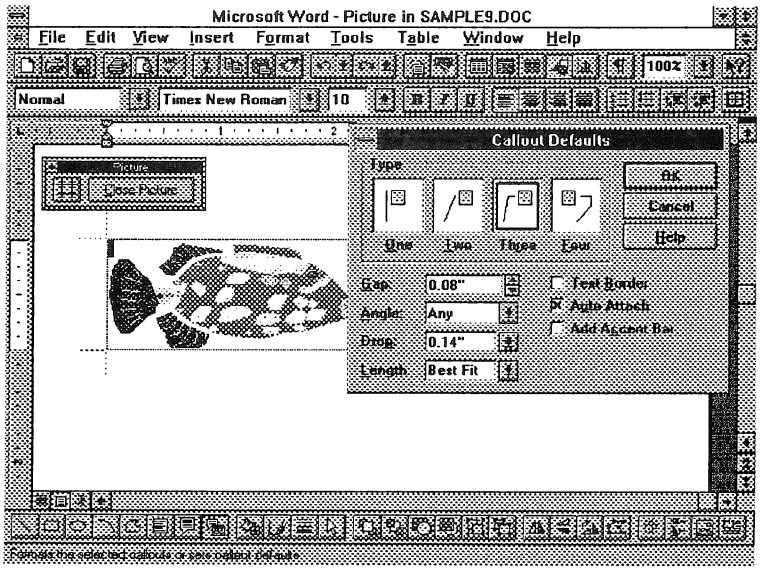


Figure 8. When you click on a graphic, OLE 2.0 is invoked and a set of graphic tools appears at the of the window

latter (assuming that you have Excel 5.0). That results in a compound document.

Tip of the Day. When you start the program, you are greeted by a random "Tip of the Day" much like getting a quotation or fortune cookie on a BBS. Although this can be disabled, I have left it there because there is always some feature that I would not have discovered or forget after a period of disuse.

Richer Interface. There are multiple (floating?) toolbars, and the rulers and borders convey more information. Not only can you look at up to 40 pages in thumbnail view, you can edit in that mode (if your eyes are good!) This is often necessary when you are editing two facing pages and you want to touch up something.

Formatting has been simplified by the use of "wizards" and auto-formatting. Wizards are a menu-driven way to construct a document to your liking, based on predesigned layouts. Style sheets are now a reality; in version 2.0, the styles were akin to tags (such as in Ventura) that defined the attributes of a single text element, such as a paragraph heading or body text. In version 6.0, the new concept of a style sheet enables you to define an entire document. Autoformatting is a quick way to transform a plain ASCII document to one with formatting information: you choose a style sheet and the software makes certain assumptions about what is a paragraph heading and what is body text.

Forms are easy to create, thanks to the samples provided and the availability of form fields. These are not just printed forms but online versions, such as one to be used by a telemarketer. You can write help messages to go with such online forms and can protect a form from alteration. The data is saved to a quote-delimited file.

Callouts (arrows and text in the margin that point to something in the text) are now available. This will appeal to technical communicators.

Undo. *Oops?* Made a mistake ten minutes ago? W4W has a 100-level Undo command that enables you to reverse any recent action. Revisions are marked invisibly with your initials and time stamp, until you choose to review them.

In Use

The software came on nine 3.5-inch, 1.44 MB floppies. The *User's Guide* weighs in at 829 pages and is well-written. The 187-page *Quick Results* booklet is not just an installation guide but it actually takes you through the steps for creating documents, including usage of the Wizards.

After installation, the first impression I recall was the "clean" placement of various files. Previous ver-

sions placed a few dozen files in the \WINWORD directory, particularly the templates. Now there were few files visible there, because many now live in their own subdirectory.

I appreciated the inclusion of typographical controls such as letter spacing, kerning and leading.

I found W4W to be fast enough for my work, which tends to be short documents these days. I noted the comments on CompuServe about the alleged loss of system resources. I could not replicate the problem on my machine as I have a recent version of the PostScript printer driver (3.58) which is the fix for this problem.

I liked the automatic bullets and numbering, for these were done manually in the past. OLE 2.0 was pleasant to use: when I clicked on a drawing, a new set of buttons appeared at the bottom of the screen instead of taking me to a new program. I did not like AutoSelect and I chose to turn off this default setting.

As I do a small amount of Help file work, I had to obtain the latest version of the Help Compiler, namely 3.10.505, for the older ones are incompatible. One more hurdle I have to cross is to upgrade to RoboHelp 2.6, which should be available when this article reaches you.

The Wizard feature is quite useful for some complicated tasks. For instance, I generated the entire 1994 calendar within minutes, using a supplied Wizard.

Conclusion

As I thumbed through the User's Guide, it became obvious that the program's features would take a small book to describe adequately. It is an excellent product that I would recommend to a computer novice or expert alike, with little hesitation. If you need a word processor for professional work, including the creation of Help files, you would do well to buy Word for Windows 6.0.

Availability

W4W carries a RRP of $695 or can be purchased as part of Microsoft Office Standard version 4 for $1095. Most of our software advertisers carry a large range of Microsoft products. ○

Floppy Disk Business Cards Debut 01/24/94

TUCSON,ARIZONA, U.S.A., 1994 JAN 24 (NB) — DigiVideo has announced the DigiBusiness Card, a floppy disk that presents a business card, a short video with sound (10 to 15 sec.), and accompanying text for a product list, pricing information, or greater details about services and products.

Speaking with Newsbytes, Langdon Hill, president of DigiVideo, said: "We consider ourselves the first digital print shop for businesses and for personal use. Our greatest strength is our pricing that is affordable to almost any budget. The possibilities are unlimited in style and content."

For a $US99 set-up fee and $.99 per floppy disk ($.79 for 500+), DigiVideo's questionnaire and the customer's photographs, music, text, business card, and company logo provide enough data for their computer technicians to create the DigiBusiness Card.

The size of the disk (1.44 MB) determines the amount of information presented and the video may be replaced with a series of photographs or drawings to provide more space for text.

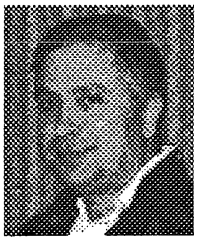
DigiVideo has a large library of images and sounds for the creation of the video.

DigiBusiness Card is currently available for any Apple Mac capable of QuickTime movies and a DOS/Windows version for 386 or higher computers will be available by March, 1994. A sound card is necessary for IBM/clone computers to produce any voice or music from the presentation.

DigiVideo also produces the DigiBrochure, DigiNewsletter, and DigiResume on computer disk and on video tape. As an introduction to their services, they are making a special promotion called the Video Valentine, a videotape to record a personalized message with romantic images, sounds and music.

For further information, call 602-299-1203 or 800-636-3444 or write to 5620 North Kolb Rd., Suite 162; Tucson, AZ, 85715.

(Patrick McKenna/19940124)



A Snippet from Fall Comdex 93

Ash Nallawalla

Fall Comdex is North America's biggest computer exhibition and is surpassed only by one in Brazil, which draws more crowds. In 1993, Fall Comdex had over 170,000 registrations but many people commented that actual turnout didn't seem as high as in previous years. It is aimed at resellers, not end users, although anyone can pay US$75 to get in or find a free pass. Comdex was held during November 15 - 19, 1993. Space does not permit the lengthy reports of yesteryear so I will focus on the highlights.

Symantec, Aldus, and some others were *not* on the main floor this year (second year for Aldus). Yet, there were many new exhibitors; two large tents were erected outside. Fall Comdex is so big that one person cannot hope to cover it properly. In previous years there were three people from Melb PC and even they felt that they had not seen it all!

User Group Activities

Although it is nice to see the latest and the greatest computer technology, that is not our reason to be at Comdex. We are members of the Association of PC User Groups (APCUG), an international body of some 300 user groups. Many APCUG member group officers tend to go to Comdex anyway, so APCUG holds parallel events before and during Comdex week. APCUG helps to bring together user group leaders with their peers and vendors.

During the weekend preceding Comdex, APCUG organised roundtables covering the following topics:

* Volunteers
* Vendor Relations
* Newsletters in Print
* Professionalism
* Publicity
* Power Presentations
* SIGs
* How to Save $ on Mailings
* Managing Growth
* User Groups and Consumer Advocacy
* Vendor Expectations

There were some other topics covering APCUG subjects. These two days were largely free of distractions from vendors, so we managed to exchange many good ideas. I strongly recommend that Brisbug should send one or more official representatives to future Comdexes. My trip was entirely sponsored by Melbourne PC User Group and we have sent up to three people in previous years.

Overview

The main impression of Comdex was that Personal Digital Assistants (PDAs) are slowly becoming usable. I saw people actually using them "in anger". The availability of suitable cellular modems is making PDAs more useful. In general, 1994 will be the year of fast, affordable modems. There were no major software releases, and the main hardware attractions were the Pentium-based machines. The main promise was from the Motorola Power PC chip, which will enable computers to be compatible with both the Macintosh and the IBM families at a lower cost than at present. On the user group front, our magazine was appreciated by other user group leaders and vendor CEOs alike. Dennis Hayes (of Hayes modem fame) asked for advertising information and has expressed a desire to speak to us (I hope that will be at our March meeting *- that's MelbPC not Brisbug - Ed).*

AT&T Surity Data Fax

I saw a remarkable piece of software called *Fax-O-File* from an Israeli company called Fontech Ltd, except that the product has been licensed to AT&T and renamed *Surity*. It is easier to describe what it does by referring you to Figures 1 and 2. Figure 1 is a photograph of my children (Keith and Kate, for the record); it was scanned with the aid of a colour scanner and saved as a *PCX* file. That file was processed by the *Surity* software and out came Figure 2. This black-and-white grid was faxed through a fax modem to a conventional (paper) fax machine. That fax was scanned with the help of a scanner and the image was fed into another copy of *Surity*. By selecting the appropriate commands, out came the colour image!

Surity/Fax-O-File can be used to send any kind of data, such as an executable program, a spreadsheet file, a graphics file, and so on. I saw a

demonstration of the Windows Clock applet being sent in a similar manner. You only need a scanner if the original document is not in your computer. Foreign alphabets are also handled easily.

You might wonder about the noise on phone lines that tends to corrupt faxes. I saw a grid that was defaced by drawing some random lines across it and the contents still made it to the other end because there is some redundancy built into the algorithm. I don't know how bad a line has to be before the image becomes worthless.

The technology is used also on passports, ID cards, cheques, and other documents where immediate authentication is necessary. *Surity* is useful for sending long documents quickly. A 50-page text document compresses to two grid pages. Think about how long it takes to transmit the same document via modem. Fontech can be reached at +972 57 278690; AT&T at +1 919 279 7000.

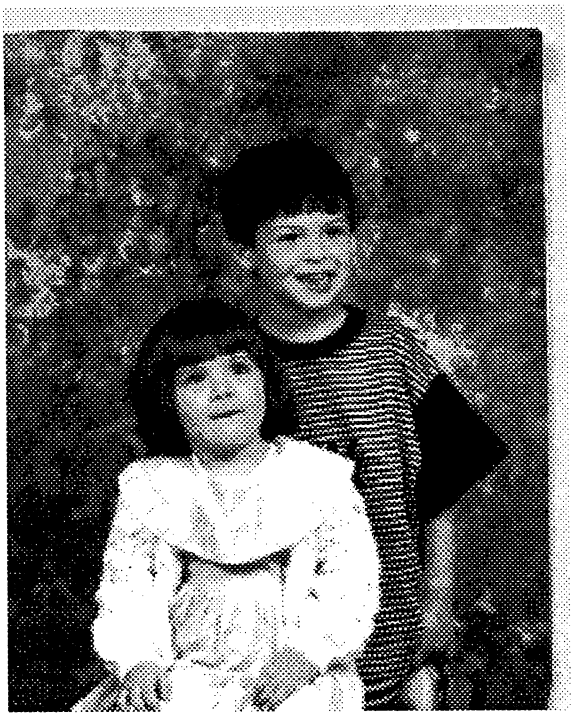
Exhibitors came from all aver the world to COMDEX93. Here the author chats to ATI, the Canadian graphics manufacturers

Discounts for Members

I believe Offline Express (OLX) is a great QWK reader. It comes with its own editor and spelling checker and has a couple of nice features that I like: I can define messages to skip based on key words or names of people. This saves my time by not displaying messages from boring or obnoxious people. I can also place an outgoing message on "hold," which is very handy for holding onto flames for a couple of days before sending or deleting them! It also handles MCI Mail and CompuServe from one package.

I put it to Jim Harrer, CEO of Mustang, that he should consider offering OLX at a similar price instead of US$40. He is offering it for A$25 (pickup from the Brisbug "office" only) if we can raise 50 orders.

Colour Photos - Sent by conventional fax



The colour photo (reproduced here in mono) sent by the SURITY program - see the article opposite

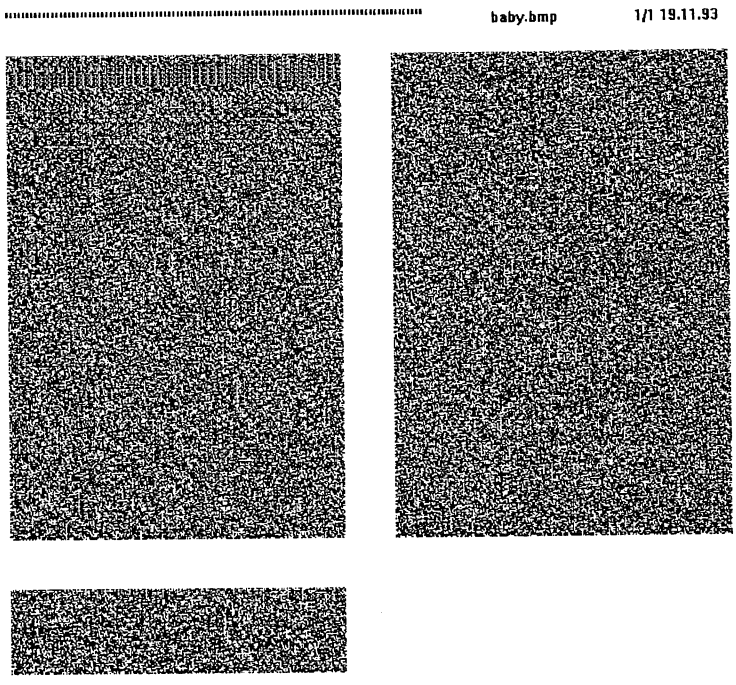
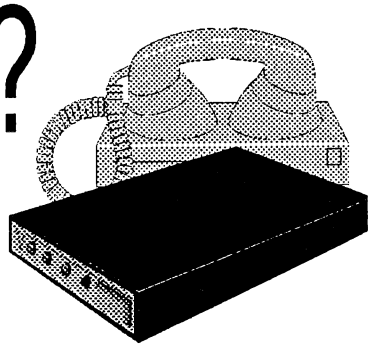


Figure 2. The coded faxed document before reconstitution

Noisy Phone Lines ?



by H. Peter Harle - Sydney PC Users Group

This article came about from reading a message to the Sysop (John Clarke) of the IBM PCUG BBS. Chris Halliday spotted it and asked me to write about it as it may be of interest to other BBS users.

I found that the data transfer rate for downloading files from the IBM PCUG BBS around midnight would drop well below the 1600 cps rate that I usually get while logged at other times, and occasionally the system would drop the carrier for no obvious reason. Now BBS Sysops don't like that sort of thing and may ban users from their board, particularly if crash recovery is not 100%.

To ensure that my status as a preferred user remains intact, I had to find the cause of these annoying problems. I initially suspected my modem, it's an Interlink base 6, capable of 14.4Kb, V32 bis, and all the usual bells and whistles. It was initially purchased for use as an answering modem for a BBS at a TAFE college, however it refuses to answer incoming calls via a computerised PABX (something about non-standard dial tones). I also had available two Netcomm 2400SA modems which I tried in place of the Interlink unit, however the results were similar.

It was suggested that the cause may be due to the Telecom Touchtone 200 series, so I disconnected all phones leaving only the modem across the line, unfortunately this didn't help either. During a downloading session and just after losing the carrier, I quickly picked up the phone and heard a series of 3-second "whistle tone" bursts (for want of a non-technical description) present on the phone lines. I conducted further tests and eventually proved to myself that it was these "whistle tones" that were causing the carrier loss.

I contacted Telecom and explained the phone problems, they were very sympathetic and promised to send out a technician. The Technician arrived early the next morning (7.30 am) but unfortunately after checking the line for 20 minutes or so nothing unusual could be found.

Determined that I would not pay for more unnecessary phone calls and prevent being barred from various BBSs prompted me to contact a Technical Officer friend at Prospect County Council. I explained that I suspected their

I found that the data transfer rate for downloading files around midnight would drop well below the 1600 cps rate that I usually get , and occasionally the system would drop the carrier for no obvious reason

"ripple injection frequency control system" was somehow finding its way into my telephone lines, and to prove this I needed a copy of their schedule for when that system is activated in my area, he assured me that I would have the information as soon as it could be obtained from the relevant department. Several days later I received a copy of several schedules, for the frequency injection control system used in my area.

The control system basically consists of superimposing a series of 3- second bursts of a 6 volts peak to peak, 1140Hz sinewave voltage, onto the power lines. The system is activated at various times during a 24 hour period to ensure efficient use of power generating equipment. Basically, during periods of low industrial power usage, such as tea and lunch breaks, the electricity supply authorities can turn on domestic hot water systems which "soak up" excess electricity generated during these periods, eliminating the need to shut down power generating equipment for brief periods. I checked that this was in fact happening at the scheduled time(s) by lifting the phone and tapping the phone-cradle switch once or twice, (this removes the dial tone leaving only a slight background noise for around 10 to 15 seconds) the "control tones" were clearly present within 3 minutes of the scheduled time. To verify that this was the cause I modified the initialisation string of the modem so that its internal speaker was on continuously and then logged onto the Mt. Druitt TAFE BBS.

Their Sysop was aware that the carrier could be lost unexpectedly and hence could take any necessary corrective action. The results of these tests proved that the "control tone" would cause the carrier to be lost within two or three seconds of their presence. On the PCUG (IBM BBS) the effect was not as dramatic, it would not cause a carrier loss every time, but the data transfer rate would decrease from 1650 to 750 cps or less. On several occasions the modem would attempt to retrain before eventually loosing the carrier.

The question now was who is to blame?

After talking to one of the Engineers at Prospect County Council, there were at least two possibilities for the

--Telecom to the Rescue!

"control tone" on the phone lines.

1. Since the signal originates on the power supply lines, it could be entering the phone lines by an incorrectly designed power supply unit, (i.e. one that does not filter out the "control tone" adequately) for the modem or phone answering machine. I suspect that most "Austel" approved devices meet this requirement although I'm not sure of this.

2. If phone lines and power lines are run very close to each other for a relatively long distance, it's possible that the "control tone" could be coupled to the phone lines, although this seemed remote, and in any case, the electrical wiring rules state that data cables and power cables must be at least 50mm distance from each other.

After disconnecting the phone answering machine I checked that the modems' power supply was not the culprit by connecting it to the 240 Volt supply via an "in line filter". This prevents the "control tone" from appearing at the input of the modems' power supply. The test proved that the modem was not injecting the "control tones" onto the phone lines. Tests carried out on the phone answering machine had similar results.

Being an ex "sparky" I crawled under the house and checked to see if the phone wires were near power wiring, and to my surprise they were, in fact phone cables were parallel to power cabling for at least 15 metres in several "cable runs". Normally, if the phone wires are at least 50mm from power cables, any resultant coupling is minimal; this is due to the phone lines using a "balanced transmission system" which means that any noise coupled onto either of the two phone lines should be cancelled out. To be sure of this I contacted Telecom and after discussions with the Technician I was assured that the "ripple injection frequency" could not get onto normal telephone wires just by being in close proximity to power cabling, however, as this information did not solve the problem they assured me that a Linesman would check out the wiring between the house and the street junction box as soon as possible. (A common problem has been that moisture sometimes works its way into connectors causing a "crackling" noise to be heard on the phone.)

The Telecom Linesman arrived and initially found nothing faulty provided only one phone was connected. However, when two phones and the modem were connected, there appeared to be major problems. This seemed to indicate that one of my phones or the modem was faulty and to make matters worse, it would cost around $60 per hour to trace the fault to a particular device. (Telecom are only responsible for their service up to the first phone point)

I'm grateful for the Linesman who went to the trouble of checking several pillar box junctions before finally finding the faulty connection

To trace the faulty device involves connecting each device in turn across the phone lines and performing a computerised test from the local exchange, time consuming but easily carried out. I elected to test the modem with all phones disconnected, the results indicated that the modem proved to be satisfactory and therefore the fault had to be one of the (Telecom) phones. After some additional testing it appeared that there was nothing wrong with any of the phones or the modem. It turned out to be a faulty connection at one of the "pillar box junctions" located between the local exchange and our house. It seems that one the wires had not been soldered properly, eventually resulting in corrosion and a high resistance joint, this in turn led to problems only if several phones and a modem were "loading" the line causing an "unbalanced line condition". The "unbalanced line" condition meant that the "whistle tone" would be coupled onto the phone lines. Normally this cannot happen provided the line resistance for both wires is the same between the user phone lines and the exchange. I'm grateful for the Linesman who went to the trouble of checking several pillar box junctions before finally finding the faulty connection. Someone else may have elected to take the easy way out and use a spare pair of wires between the exchange and our house connection. This of course would eventfully cause problems to another user if and when that set of "faulty" lines was used. Incidentally, it didn't cost anything to have all this checked out, all on a Saturday morning, good on you Telecom... Now I wonder if I could get some of those unnecessary re-dialled calls taken off my account?, ... I'm sure they would, since it possibly involved some 50 to 70 calls over the last 12 months or so, and I have a record of it in my QMODEM loggon file, but I'm just glad it's fixed. ○

Note 1.

The Prospect County Council is an Electricity Supply Authority, like SEQEB in South-East Queensland - Ed

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Multimediaising (!) your PC

Christopher Webber, Sydney PCUG

or, when compatible isn't comparable

Before you rush out and buy that $600-1200 multimedia upgrade kit, hearken ye to this cautionary tale ....

The Sound Blaster CD16 kit. *Wow*, what a terrific offer, including 5 CD's, a microphone, two speakers, a doublespin caddyless CD-ROM drive, Sound Blaster 16, and five disks of software (including Voice Assist, which allows you to give spoken commands to Windows). Here's what happened when I installed it...

The CD ROM manual is fine, but the Sound Blaster manual and readme file hasn't a listing of the possible switches for its configuration program. I read the manuals, and installed the cards as instructed. Everything worked, except for a floppy disk drive where I had put a cable in the wrong way round. I had some problem plugging in the power supply plug for the CD-ROM, but only because I was being too gentle with it. If you have a PC with two floppy disk drives and one hard disk drive, you should have an free slot for your CD-ROM drive. If you already have four disk drives, you will have to remove one or buy a bigger system case (for about $145) to fit the new CDROM drive. You must also ensure that the setup strings inserted by the setup program in your *autoexec.bat* file are in the correct order - mine weren't because I decided not to let the program alter my *Autoexec.bat* file.

Installing the software went OK. Much of the supplied software is only of interest to musicians. I found that installing software from CD's was much faster than from floppy disks. However, every non-music CD wanted to claim some hard disk space! Buying a CD-ROM drive won't solve your hard disk cram problems. Typically, each CD wanted 1-2 megabytes of hard disk space. CD's containing software that had previously been released on floppy disks were mostly in exactly the same format. The files were compressed, and couldn't be run from the CD.

Now it was time to try some demo programs and some games. Playing music CD's from Windows in the background, while word processing in the foreground was marvellous! The VoiceAssist spoken command program really works, and isn't a gimmick. In many cases it's faster to give spoken commands than trying to remember some arcane key combination or pointing and clicking at menus. All the Windows programs worked well and showed excellent integration. The supplied speakers are subject to a lot of distortion at medium to high volume levels if powered by batteries.

DOS turned out to be much more troublesome, and still isn't fixed entirely. I tried to run Patton Strikes Back, Ultima Underworld I, X Wing, Wing Commander Academy, Warlords II, Spirit of Excalibur, Conan the Cimmerian, the Unreal Demo, Great Naval Battles North Atlantic, Darklands, and others. All had the same result - no digitised sound effects, no speech, and possibly some music. Many programs also crashed.

I used to have an original Soundblaster, and this worked well on old software. It tended to cause newer games, especially those using

RESULTS OF TESTS OF DOS GAMES ON SB 16

Test	Warlords	UW	GNBA	WCA	X Wing	Patton	Unreal	Conan	Excalibur
EMS	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
IRQ	5, 7	7	5,7	7	7	7	7	7	7
Emulation	SB16	SBP	SB16	SBP	SBP	SB	SBP	Adlib	Adlib
Music	4,4	5	5,5	5	5	5	4	5	5
SFX	5,5	5	1,5	4	4	3	4	5	5
Speech	1,4	4	5	4	2	2	N/A	N/A	N/A
System crash	No,Yes	Yes	No,Yes	Yes	Yes	Yes	Yes	Yes	Yes

Key: Best sound card supported by game: SB16=Sound Blaster 16; SBP=Sound Blaster Pro, SB=Sound Blaster, SFX=sound effects. N.B. "Speech" includes all recorded sounds. "System crash" means that a crash occurred during testing, not every time. 1=none/doesn't work; 2=works sometimes but badly, 3=works sometimes, 4=works most of the time or works every time but badly, 5=works every time perfectly. For example, with Xwing, the music gets a 5 for working perfectly, the sound effects get a 4 because some work and some don't, and the recorded voices get a 2 becuse they work in some scenes (out of synchronisation with the animation) but fail in others, sometimes causing the program to crash.

digitised speech, to crash. When playing Wing Commander, this would happen just as you were about to complete a rather hazardous mission, and was somewhat frustrating! One peculiar effect was that if I switched my (386 DX) machine speed from 25 Mhz to 33 Mhz, the digitised speech and sound effects would vanish, and the music would keep playing. In games like Xwing, the computer would also crash. This usually happened when I was using *EMM386* expanded memory or *QEMM*. I thought it must be time for an upgrade...

You can imagine my disappointment when I found that the SB 16 in some cases is worse than the original SB, and isn't fully compatible with its predecessors, the Sound Blaster, and Sound Blaster Pro, when emulating those cards. This is because the SB 16 uses interrupt 5 (LPT2), while the other two cards used interrupt 7 (LPTI). The only way to switch interrupts is to move jumpers on the sound card, and run the configuration software. So to switch from one emulation to another requires you to switch off and pull the card out of your machine!! It's a step in the right direction for the future, though - there will be fewer interrupt conflicts using IRQ5 (except for those people using networks..). The SB 16 caused fewer system crashes whatever interrupt I tried, which is no small improvement. The speed problem remains- I still lose speech at 33 Mhz. The diagnostic software that came with the card didn't detect these problems, and told me that everything was working properly. The only suggested problem was that some motherboards can't handle 16-bit audio very well, and the 16-bit DMA channel should be switched to an 8-bit DMA channel. Doing this caused the system to crash. *Isn't DOS wonderful?* Just to play a game, you have to know what DMA, IRQ, and "address 220h" mean! A recent review of the SB 16 in the American magazine "Computer Gaming World" also found that this card isn't always SB compatible and that cards made by Creative Labs' (the SB manufacturer) competitors were more compatible!

Games software generally only uses the factory default settings for your sound card. When it asks you to select a sound card, and you choose "Sound Blaster", or whatever, you are choosing a Sound Blaster running on IRQ 7 (IRQ 7 means Interrupt ReQuest 7, i.e. interrupt 7) at address 220H, DMA channel 1. You can't change this except for newer programs like Great Naval Battles, Ultima Underworld and Warlords II, which include alternative settings in their installation programs. Newer games also obtain their settings from the *BLASTER* environment variable settings. Here are the results of some tests on a random sample of emulations, memory usage, simulators, computer wargames, and adventure games.

All the Windows programs worked well and showed excellent integration.
DOS turned out to be much more troublesome, and still isn't fixed entirely...

I rang Computamart, the Australian SB distributors, and although they tried to help me, none of their suggestions worked. Leaving the SB 16 on interrupt 7 works most of the time, with some very irritating exceptions. I wonder what it's like if you buy a non-SB card? Increasing the size of my *EMM386* DMA buffers only helped with one program. If you are having sound card problems, you might like to try this. For example, include this line in your *CONFIG.SYS* file:

DEVICE=C:XDOSXEMM386.EXE RAM D=256.

This changes the DMA buffer size to 256 bytes. The default setting is 32 bytes, the maximum is 256 bytes. If you get *EMM386* Exception Error 12, you should also increase your *STACKS* line in *CONFIG.SYS*, e.g. *STACKS=16,256* (the default is *STACKS=9,128).*

I tried using utilities from Jeff Prosise's book "DOS 6 Memory Management with Utilities" to spot memory conflicts. These showed that the *EMM386 HIGHSCAN* switch was mapping UMB's to areas occupied by ROM. Using *X=* and *I=* switches stopped this, but didn't solve the problem, as I'd stopped using the *HIGHSCAN* switch anyway.

Far more useful was a talk with a SB programmer who I met in Dick Smith store. He suggested I remove all cards and TSR's, including *Smartdrv*. I removed my scanner and fax/modem cards. This made a small improvement. Then I removed *Smartdrv*, and *bingo!* Everything started to work. It seems pretty stupid that a modern sound card conflicts with such an essential program, but this is definitely the case. I still don't get 100% sound performance from all the DOS games, but to get all the sound effects you have to run your program slower and not use *Smartdrv*. I'm going to try a new motherboard next, to see if the DMA controller is at fault ....

I bought the 16 bit card because I thought it would be able to beat my speed problem, and it will probably become the next sound standard. At the moment, you are better buying the cheaper Sound Blaster Pro. This has stereo sound like the SB 16, and you can't hear the difference between it and a 16-bit sound card, which is only really necessary if you are a musician. It's also 100% Sound Blaster and Sound Blaster Pro compatible! SB Pro multimedia packages give you a better choice of CD's, too. It should be noted that nowhere on the CD 16 packaging or in the documentation does it say that the SB 16 is "SoundBlaster Compatible". Instead, it says it's "Compatible with all major software".

Then I removed Smartdrv, *and* bingo! *Everything started to work*

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The OS/2 Column

Paul Marwick

First, a useful item if you often have to work in both DOS and OS/2. There have been a number of useful utilities from the same source, and this one is every bit as useful as the earlier ones have been.

A "neat" editor

This is *AEDIT*. From Douglas Boling and PC Magazine, it is a text mode ASCII editor. Its quite a simple editor, and certainly isn't a replacement for something like *QEDIT*. However, it has something that *Qedit* doesn't have. Its a Family mode application, which means that the same executable file will run in native mode under DOS or OS/2 (and even under Windows NT).

While *AEDIT* is nothing like as powerful as *QEDIT*, its at least as good as *EDIT* (as provided with DOS 5+), and has the advantage of being a single file, instead of requiring the *QuickBASIC* interpreter in order to run. It has normal editing functions such as cut and paste, a simple help system built in, and, under OS/2 at least, the ability to handle very large files. Its not very big, so it can be put onto a boot floppy disk and carried around for emergency work. And it has the big advantage of working in pretty much exactly the same manner whether you're working in an OS/2 command line session, a DOS session under OS/2, or native DOS (don't ask me about Windows NT - I wasn't going to install NT just to check *AEDIT* out....).

AEDIT is available, complete with source code, in the VOL12N20 collection from PC Magazine, or as recently republished in Australian Personal Computer. VOL12N20.ZIP is available from lines 3 or 4 of the BBS.

GTAR

Some time ago, I talked about GTAR, the OS/2 port of GNU Tar. At the time, I was working on a REXX shell to make use of GTAR easier. It seems that others have had the same idea. There is now a program called TARSHELL available, which provides a text mode shell to make use of GTAR easier. It allows GTAR to be operated either from a menu, or from batch files generated in response to user choices made through TARSHELL. It should help simplify the use of GTAR quite considerably. It includes both backup and restore options, and also allows the user to selectively verify the contents of Tar archives. TARSHELL.ZIP from lines 3 or 4 of the BBS.

... And a Program Launcher

Another interesting software release is FILEBAR. This is a bar-style program launcher for OS/2. It offers the ability to build menus of related programs, plus a time and date display and quickly accessible task list. The launcher bar can be configured to appear at the top or bottom of the screen. The most recent version is version 1.4, but releases of this software have been coming through fairly rapidly, so that may not be the most recent version by the time your read this...

The OS/2 Service Pak

By the time you read this, the Service Pack for OS/2 2.1 should be available. It has been released, and I'm expecting copies shortly. The Service Pack contains all bug fixes since the original release of 2.1 and will probably add a few minor enhancements.

The Service Pack for OS/2 2.0 was somewhat difficult to apply, since it was not a complete update, and depended on what was contained in the original 2.0 installation. Which meant that if you wanted to make changes to an installation, you had to use the 2.0 installation first, then apply the Service Pack. A complicated arrangement if you decided that you wanted to add something not originally restored after applying the Service Pack.

While I haven't yet seen the release version of the Service Pack for 2.1, it seems that IBM have taken steps to reduce the complications involved in applying it. The beta version that I tried a month or so ago was a complete OS/2 installation set. The only thing that distinguished it from a normal installable OS/2 system was that it checks for a release level of OS/2 and will not run unless it finds a valid 2.1 installation already in place.

This makes it rather larger than the last Service Pack was, but does mean that it is a lot simpler to use and does not present the complications that the older Service Pack presented.

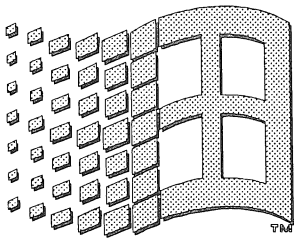
There are 21 disks involved, so it is most likely going to be impractical to download. IBM will generally supply a copy for the costs of the media involved. I will also be able to supply a copy, for the costs of the media and a small copying charge.

There is also a separate Service Pack available for OS/2 for Windows. I don't yet know how many disks are involved in this one. Both should be available from Lines 3 or 4 of the BBS, or direct from me.

Next Month

Next month I hope to start a series of articles on using REXX. REXX is a very powerful feature provided with OS/2. At its simplest, it provides extensions to normal batch file processing, but it can be used for a wide number of functions under OS/2, including communication between different tasks, creating Work Place Shell objects, and even reloading a complete WPS setup. Since I'm still only a learner when it comes to REXX, the series should be simple enough for anyone to follow. ○

Windows Watch



An Occasional Column, compiled by Ralph De Vries

Simplification

What I like about computers and computing is that there's always something new to discover or experiment with, be it harware or software. Let's face it, it's great fun to experiment with a new routine or gadget that makes things go faster and/or better. But how often don't you find, after some time of use, that the particular gadget/device/software isn't really all that it was cracked up to be?

The Windows environment is particularly full of these so-called system 'improvements'.As an example, when I used the operating shell of Norton's Desktop for Windows (2.2), it happened on several occasions that certain new programs would not install properly - hence back to good old fashioned Program Manager for a trouble free installation. Yes, I know that the combination of Program Manager and File manager is neither the most efficient, nor the most elegant, but at least it works! For me no more Nortons, PC Tools, etc. etc. - give me the simple life!

Reading through the Fido Windows messages on our bulletin board, I am also struck by the immense amount of problems being experienced with accelerated video cards and their associated drivers. Time and time again one reads about certain programs which won't display text or graphics properly with certain card and driver combinations. Again, I am quite happy with a 'standard' video card and Microsoft's own SVGA video driver. Perhaps not the fastest combination, but at least it works.

It was only last month, when I looked in this column at Microsoft's *Works for Windows 3.0*. Simple software? Perhaps, but if it suits your requirements, go on using it, without worrying about other people's opinions. An aquaintance of mine does his stock control and invoicing, using the database and spreadsheet portions of this program. (The product must be really simple, as Microsoft hasn't even bothered to write an article about it in their Communiqué magazine.)

The aquaintance ,mentioned in the previous paragraph, used to lecture on Word Processing at a B'ne TAFE some years ago. He did a survey of some 90 companies who were then using a well known brand of a DOS based word processor. His survey revealed that, on an average, less than 20% of all the program's features were being used! Does that tell you something? Some time ago I saw a well known and expensive Windows based spread sheet being mainly used as a drawing program. Who was the user trying to impress?

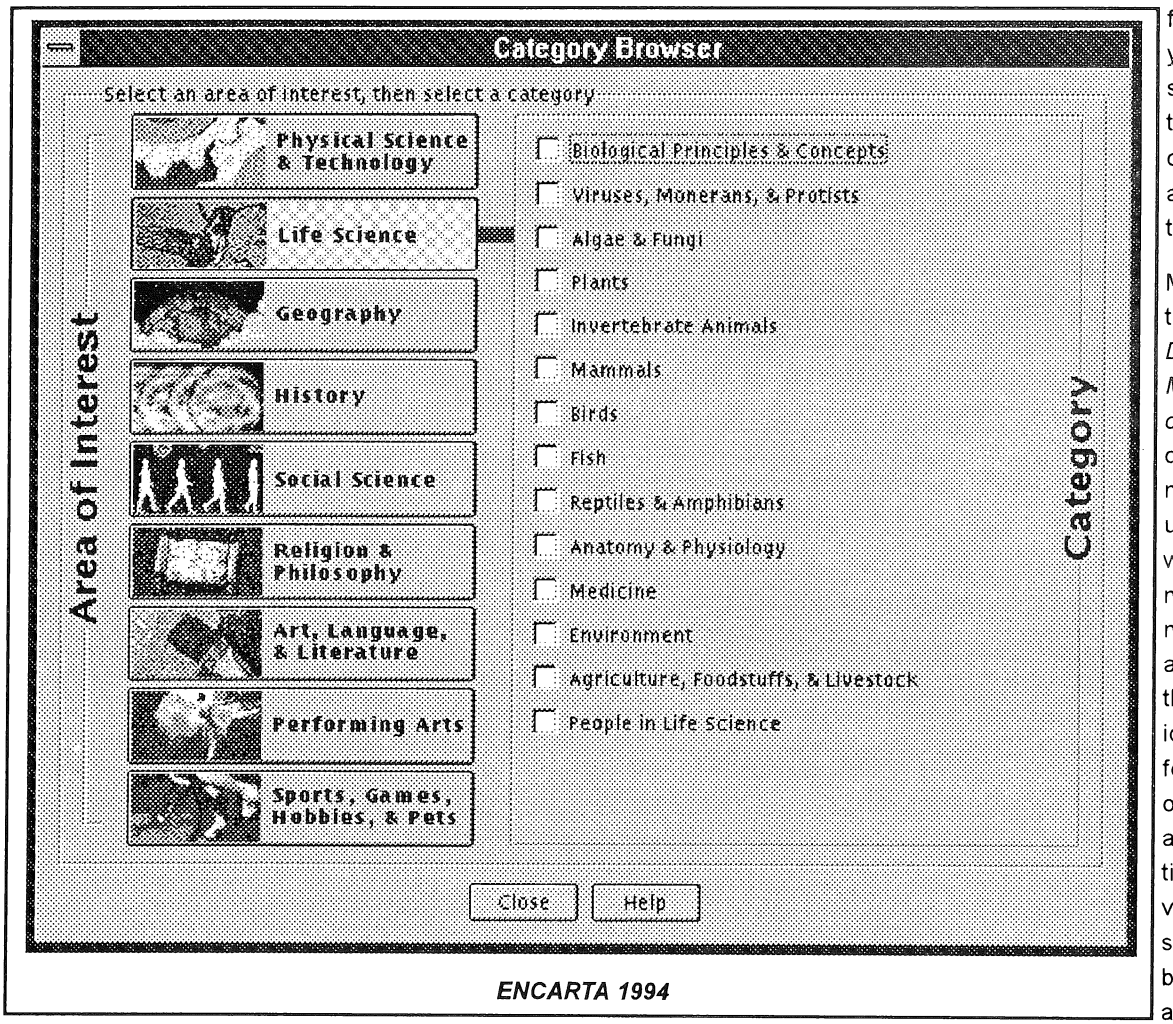
I own a copy of *Access 1.1*, Microsoft's powerful new database program, but when my wife recently asked me to set up some form of data base of her clients and contacts, I ended up using the database module in *Works*. She is quite happy with the result, and I have a copy of Access for sale!

Another example? You may be surprised to know that this particular column is set up and printed, using *Publisher 2.0*, whereas Ron Lewis, our editor is using *PageMaker 5.0.*, which costs roughly four times as much as my program. Nobody would argue that Pagemaker isn't a more powerful program than Publisher and, for colour reproduction, programs such as Pagemaker, Ventura and Quark Express are a must, but, as I am not involved in colour reproduction, these products would be overkill. Ron needs colour control, hence the need for the more powerful program. My own particular needs are adequately met by the simpler program, and in the process I have saved myself quite a bit of cash as well.

More Simplification: in the Feb '94 issue of *PC User*, Philip Moore writes about the necessity of owning a 16 bit sound card. I would like to quote the following sentence from this article: *"The only people who really need a 16-bit soundcard are those who are after CD quality sound for professional purposes, such as audio engineers and computer musicians."* I thoroughly agree with this statement. I have a basic 8-bit Soundblaster card, which cost me $95, which is used in conjunction with two miniature speakers. By no stretch of the imagination could you call these hi-fi speakers! To

have a 16-bit soundcard with this setup would have been overkill. If I want hi-fi I go into the lounge and turn on my amplifier and associated equipment.

It pays every Windows user to look at their computer setup impassionately every three months or so, and ask him/herself: "do I really need this, and what does it do for me?' After a while you will find that you get rid of a lot of unused and/or overinflated junk, and end up with a leaner and faster system which is less likely to let you down when you need it most. Time and time you hear computer owners say that "they may have a use for this program one day". Perhaps, but in the meantime archive it on floppies, for that day may never come. Besides, you may be able to put off buying that larger hard drive for another year or so!



ENCARTA 1994

ENCARTA '94

It does not seem all that long ago when Ash Nallawalla reviewed Encarta '93 - it was in our July '93 issue in fact. After giving a detailed review of Encarta he ended up by saying that "*at around a street price of $350 (RRP $599), you cannot afford to miss this one*". No doubt Ash will be pleased that the new version can now be picked up for roughly half that price!

I never saw the '93 version, but the new edition appears to be well worth the new asking price, particularly when you compare it against the 'paper' version of an encyclopaedia. However the contents appear to be primarily targeted at a high school audience, so there's still scope for a CD equivalent of the Encyclopaedia Brittanica for a more adult audience.

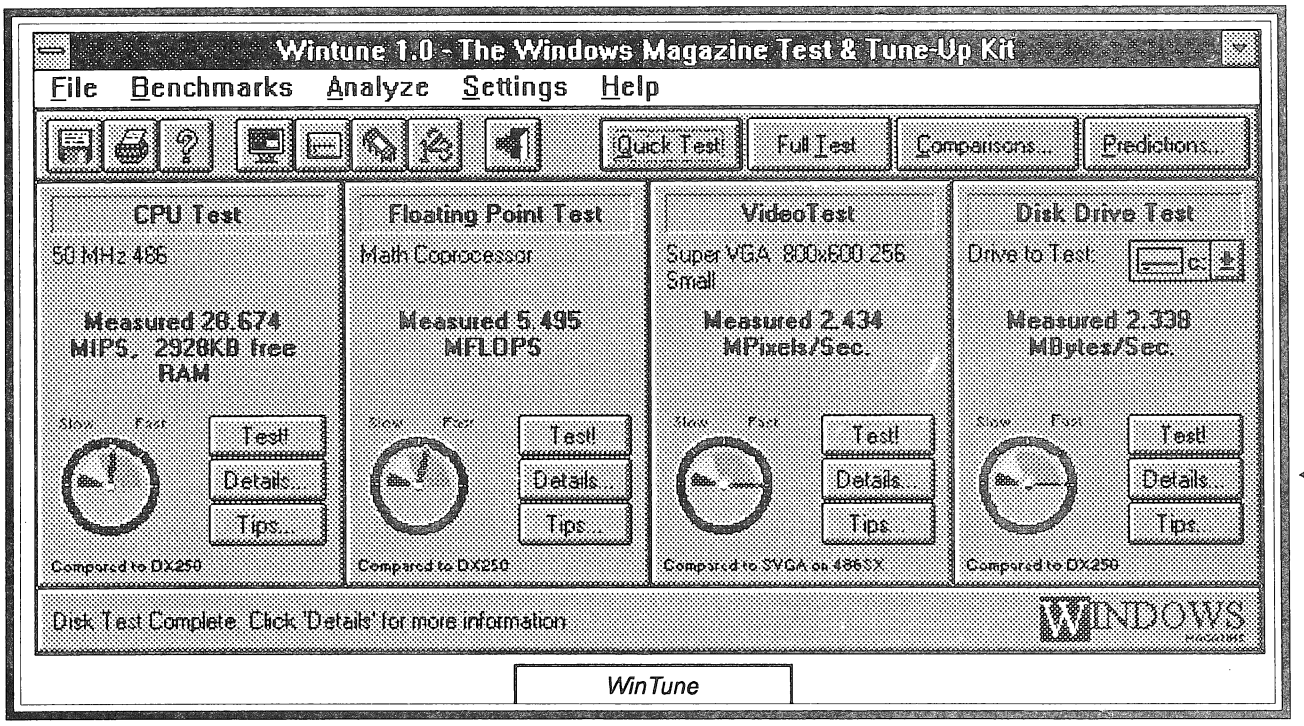
They may not look as impressive on the bookshelf as their paper and leather bound equivalents, but in several aspects CD based reference books score quite substantially. First and foremost there are the searching and indexing capabilities - these are infinitely faster than browsing through the paper version. Next there are the animations and video clips, as well as the sound samples. Conventional reference books just cannot match the CD Roms in these respects. The major disadvantage is reading the information on your computer's screen, rather than sit in a comfortable armchair with the book.

My wife owns the *New Grove Dictionary of Music and Musicians*, which consists of a massive 20 volumes (and which costs a massive amount of cash as well!). Now, this would be an ideal candidate for publication on CD-Roms if all the illustrations could be viewed on screen (and can be printed out), and all the musical examples could be *heard*. Even if this particular specialist dictionary had to fit on two CDRoms and sold for, say, $500 (or less of course!), it would still be a bargain compared with the conventional paper format. At this point in time, it's a bit unlikely that this type of specialist publication will be issued on CD-Roms, but give it time.

In fact, if the CD-Rom market keeps on growing at the current rate, then we can expect to see both lower prices and a larger variety of useful material appearing on CD Rom. As manufacturing- and duplicating costs of CDs have steadily dropped during the last few years, and more and more computer users are installing CD-Rom players in their computers, it's becoming very obvious that this will soon become the preferred form for distributing **large** quantities of information.

Pro produces an image of 288 mm wide! However, when I pasted the clipboard image into Corel's PhotoPaint, I ended up with a printout which was a mere 52 mm wide! In all cases the clipped image was pasted 'straight' (i.e. withoout any scaling) and prints were made with my LaserJet IIIP printer without alterations to my standard settings.

This business became even more complicated when I saved the clipboard file as a .BMP file and



Testing

Last October I wrote in enthusiastic terms about *WindSock* an Australian Windows system testing program. This is now joined by *WinTune* from the American Windows Magazine, which I downloaded from our own Bulletin Board. Written in Visual Basic, it tests processor speed, video speed and hard disk speed. As it makes my system look pretty good, I might stick with this one, until somebody comes along to tell me that these test results aren't true anyway! (See illustration).

Clipped anything lately?

The Wintune illustration was clipped to the clipboard with the *alt/printscreen* key combination, and then pasted into Publisher. I subsequently pasted the same image into CorelDraw, PaintShop Pro (a shareware program), and Corel PhotoPaint, which is a re-badged version of Z-Soft's PhotoFinish.

When doing a 'straight' printout of this clipped illustration, using Publisher, it is 162 mm wide (see above), but when I print this image from CorelDraw, the image is 260 mm wide, and Paintshop

a .PCX file. When saved as a .BMP file and then imported it into Publisher, it printed out as a black and white image without any grey tones. By saving the same file in .PCX format and then importing it in the same program (Publisher), I managed to retain my half tones. Aren't graphics fun?

Windows for Workgroups 3.11

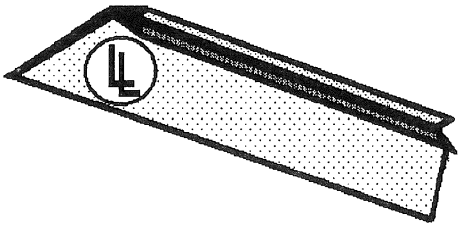
At an upgrade price of $89.00 (Communiqué), this is probably a bit of overkill on a stand-alone PC. However, this will probably the last of the Windows 3.* series, and even on a single PC I find it a worhwhile investment for its 32-bit file access.

Note that it's *32-bit file access*, and not *32-bit disk access*, which is available in Windows 3.1. On my computer it makes a very substantial difference to my hard disk performance. The WinTune *disk test* (see illustration) has gone up to 7.41 Mbytes/Sec.!

Yes, there are some other new features, such as an improved file-manager, clipbook viewer, fax module, etc., but these are purely peripheral. Overall first impressions of WfW 3.11 are favourable.

Ralph

Lindsay's Letter



Lindsay Bates

YOUR NEXT COMPUTER WILL BE A PENTIUM!

THE P5-60 PENTIUM

It's sure happening in the computer world, isn't it! New software, new hardware just about every time you turn round. How does one keep up? By getting smarter, that's the answer (see *Upgrading Your Current PC*, below).

Meantime, provided the Christmas Bankcard balance is finally settling down, you can set about ordering your new, affordable Pentium speedster!

The P5-60 sure has hit the market with a bang. At time of writing you can pick up an extremely well spec'd system for about 5 grand. Considering the raw power it produces, that's cheap!

But let's not get too carried away by this new, more powerful engine from the Intel stable. We'd been led to believe it was going to go faster than a speeding bullet, and leap right across our fair city to Amberley where it would chase - and catch - an F111.

But it doesn't - well not quite, anyway. The P5 Pentium certainly is faster than the 486DX2-66, but not two or three times as fast.

Yes, the P5 is currently top of the heap, but we should consider it as the next - measurably faster -computer up the line from the DX2-66.

Maybe the yet-to-come P6 will manage to leap tall buildings at a single bound ... Or even the sooner-to-come dual Pentium 66 (the mind boggles!)

IS THE 386 DEAD?

The Pentium has given us more speed and more power than we've ever had, but it's biggest contribution will almost certainly be to hasten the demise of the 386.

To many of us this is Kleenex stuff, as the 386 CPU family ushered in a new era of previously unheard-of speed and convenience on our PCs.

But all good things must come to an end. The 486 (in essence, only a faster 386 anyway) has now about taken over in the marketplace. And from there it's onwards and upwards to the Pentium and who knows what else.

Neither the 286 nor the 386 chip will die, however. Expect to see them turning up in all sorts of things - to make them easier for us to drive - from Microwaves to VCRs and beyond.

But if balancing the budget is important to you, it is now time to seriously consider upgrading your 386 to a 486.

UPGRADING YOUR CURRENT PC

You have two ways to go if you happen to hold on to any computer just 6 months too long.

The first is to keep it till it drops (or till you can give it to the grandkids - you'd be amazed how many XTs ended up this way!) Trouble is, bits of it may die meantime, and that is NOT good economics.

The second is to upgrade the motherboard. Before someone jumps in to say that you could more cheaply upgrade just the CPU - no, not quite yet.

Most of our PCs were designed round a particular chip, so you can't upgrade that chip. Besides which, even if you could change the CPU, this is mostly not good economics (this may change with time).

I've never been a strong advocate of putting new bits in with old. If the motherboard's 3 years old, probably the HD and Power Supply and everything else is too. So it's NOT time to drop a P5-60 into it - and it's often poor economics to do this, in any case.

On the other hand, if your 386 isn't too old, you could consider putting a 486 board into it. But which 486 - low-end or high-end? Depends on your budget. If, like ours, it's usually tight, then a 486SX-33 is great value for $400 or so.

No need to spend $300 to $400 more for a 486DX-33 which will run no faster in any case.

The DX simply adds a Maths Coprocessor which the average person never uses anyway (in this event, I'd do a 486DX-40 rather than a DX-33 - it's faster, but no dearer).

A BRAND NEW SYSTEM

If you're considering putting a fast 486 into your current 386, I believe you should consider a new system rather

than a motherboard change.

New has the advantage that it's ALL new; you get the chance to put in a HD the size you want and need, the right monitor card, right amount of RAM and so on. Plus a fast CPU. It's a good package.

Sell your current system right, and the change-over won't cost you an arm and a leg. It is possible to do this if you work it correctly.

WHEN TO UPGRADE

Many people lose money unnecessarily by not upgrading at the correct time. It pays to watch the market, watch price trends, and do your upgrade - either mainboard or totally new - when the time's right. If you're having trouble with this, give me a ring.

One rule of thumb is the $1,200 rule. When your current computer would cost $1,200 to buy new, then it's time to upgrade. Another rule is, when your system is at the bottom of the pile (cheapest available) it's about time for a change.

Note that all this is for those who need to do best for themselves money-wise - if you're fortunate to have plenty of the ready then you'll more be able to buy what you want/need at the time you're ready for it.

THE NEW PCI BUS - BETTER THAN VESA?

Well, it's a much newer standard, so, yes, it is better. You'll pay a bit more for a system - including the peripheral cards in it - based on the PCI bus than for VESA, but you should remember that it is new.

It can pay to hasten slowly with new technology. Maybe let it kick around for awhile till the bugs get ironed out and the market settles down to what is working, and thus selling, best.

If you're lashing out and getting a Pentium it's unlikely you'll be offered other than PCI Local Bus, and that's the way to go anyway, for the new CPU.

So is PCI going to supersede the VESA Local Bus standard? VESA are bringing out an upgrade to their system, so it looks like we may have two standards for some time.

The market will finally judge which will do best. For my money I'm surprised VESA have taken so long to answer the PCI challenge - which has certainly come out with guns blazing.

But maybe you've not looked at either of these yet - does this mean you've missed the boat if you have neither VESA nor PCI?

No. Your non-local bus system will do fine until you need to upgrade your whole computer. That's the time to move.

NEW SOFTWARE

WINDOWS FOR WORKGROUPS 3.11

Is this the new Windows? Seems so.

Microsoft does more backflips than an Olympic gymnast and Windows for Workgroups is no exception. When it was WFW 3.1 it was in addition to Windows 3.1. Now, all of a sudden, the new WFW 3.11 is instead of Windows 3.1.

Well, maybe not quite instead, but MS sure are promoting it hard as THE Windows. Means more -much more - *moulah* in Bill's coffers, of course.

Windows 3.x already made him another fortune. So now if the big software company can get even half of us to swap Windows for WFW - presto! Another-another fortune!! Makes you wonder what their next trick will be ...

So do you really need to outlay the money for WFW 3.11? Probably not, but most of us are going to change, if not sooner then certainly later.

Well, anyway, here's another plus for upgrading via a new system rather than motherboard.

When buying new, you should be able to talk your friendly retailer into supplying Windows for Workgroups 3.11 and DOS 6.2, and maybe the new Word for Windows 6.0 or WordPerfect 6.0 - all for a pretty low price. Try it!

WINDOWS 4.0?

Oh, and what about *Chicago* (already starting to be called Windows 4.0)? By its release date -supposedly late this year - who knows where it will fit into the scheme of things. Maybe we'll all be into Windows NT 3.1234 by then!

What we do know is that Chicago is DOS plus Windows, all in together this fine weather. Imagine that! And it will use *L-O-N-G* filenames, not the 8+3 nonsense we've put up with all these years (until then, see *Long File Names Now,* below).

Ah, but you hate Windows and refuse to use it under any circumstances. No problem, they're working on a version of Chicago with Windies chucked out, and calling it DOS 7.0. See, DOS is NOT dead (it was only me thought it was - or was it? ...)

ALL FOR ONE AND ONE FOR ALL

Notice how we're getting more and more software either in together (such as MS Works 3.0 for Windows) or working together (such as Microsoft Office).

New Windows packages like those above are increasingly using a process that allows them to be in and out of each others pockets, as it were - so you can do clever things like doing a graphics drawing in the middle of your spreadsheet!

The means to do this is called OLE. The first OLE was pretty pathetic, and you'd certainly shout *OLAY!* (the way to pronounce OLE) if it chanced to work decently.

But OLE 2 is a bit closer to the mark. When all this does finally come together, we're going to start forgetting about Databases, Spreadsheets, Wordprocessors, and the like. Instead we'll just use our software package TO DO THE JOB WE WANT TO.

Because, using OLE, from within itself the software program will simply call the program you want and do the job in situ - right there and then!

Now, I'm not silly enough to believe it will soon all work just as easily and

simply as that, but personally I can't wait for them to get close to it - for ease of use and productivity's sake.

Could save us a packet in software costs, too!

PRODUCTIVITY

"LONG FILENAMES" - NOW!

The excitement of it all!!

I've found a couple of shareware package I've been looking for years and years.

The first is a way of having long filenames instead of the filename.ext garbage we have to put up with (can you figure out what *INSLMST4.SAM* is? - me neither, 'n' it was me who created it!)

The program is called *FILEINFO.COM* from the ExtraDOS Toolbox, a suite of utilities with some utterly marvellous programs!

I've put it on Brisbug 8604 (high density disk) and on the Brisbug BBS as *XDOS993A.LZH* (and B and C).

I'll review more ExtraDOS goodies soon. Meantime, what would you make of a file called BTLK-TST.BAT? And SUP.BAT. Well, it takes just a few seconds to mark FILEINFO so you can always know what it is. And you can do this in any and every directory on your whole HD!

Here's a real example from my HD:

```
BOOTLOCK EXE   4951   9-27-93   9:05a
BTLK-TST BAT    125   1-27-94   8:51p  testing bootlock
EVAL     EXE  24212   9-07-93  11:51a
EVAL-TST BAT    109   1-27-94   8:45p  testing eval
FILEINFO        486   1-27-94   8:56p* fileinfo file
FILEINFO COM   2026   9-07-93  11:50a
NAMEDIR  EXE   8730   9-07-93  11:52a* rename directories
SUP      BAT     58   1-27-94   8:51p  used with btlk-tst
```

... ah, now I know what SUP.BAT is!

If you want more readable colours for *FILEINFO*, here's my batchfile to do this, called FI.BAT:

```
@echo off
echo [0;30;46m;[2J
fileinfo
```

I created the batchfile using *EDIT.COM* from DOS 5.x or 6.x. The second line has an arrow thingy in it - well, two actually (represents Esc). To make it, just press Ctrl+P followed by Esc - then continue with the rest of the file.

In case you're wondering, the 30 on 46 will normally give Black text on Cyan background. By doing this before entering *FILEINFO*, it forces *FILEINFO* into more readable colours (on my system, anyway).

USE THE KEYBOARD, NOT THE MOUSE!

In Windows main screen (Program Manager) you can ignore the mouse entirely if you wish. I find the keyboard much faster and easier here (whereas Nettie sticks with the mouse).

Here's a quick tutorial on how to use the keyboard (helpful if you have a non-functional mouse, too!):

Suppose my Utilities window is on top and there's File Manager that I want to run. All I do is tap F to highlight it, then Enter to run it. Easy!

To exit File Manager I hold *Alt* and tap *F4* (make yourself use both hands there - one hand holds *Alt*, the other taps *F4*).

Back in Program Manager, I notice that I have two icons that start with F - File Manager and File Finder. So how do I run File Finder? That's easy too: tap *F* once to go to File Manager and a second time to go to File Finder.

Another way to move round an application window in Program Manager is to use the arrow keys. Try it and see - you can highlight any icon this way, then tap *Enter* to run it.

Now suppose I want to change from the *Utilities* window to the *Main* window, or to the *Games* window. Just hold *Ctrl* and tap *Tab* until Main comes to the top, then take your fingers off (experiment to see if using one hand or two is easiest for you here).

But hang about - suppose *Games* is iconised, i.e., down at the bottom of Program Manager. No problem. Just use *Ctrl+Tab* as above and stop when *Main* is highlighted. Take your fingers off, then tap *Enter.*

Now use the arrows to highlight Solitaire and tap *Enter.* When finished Solitaire, *Alt+F4* will exit.

If you're very very clever, you can even put the *Games* window back as an icon - tap *Alt* once, the right arrow a few times till the very top left (control bar) of *Games* is highlighted, down arrow to *Minimise*, then *Enter.* Not easy, but satisfying if you succeed.

Finally, you can exit Windows via keyboard too. *Alt+F4* will exit, same as for any program, then tap *Enter.* If you change your mind, tap *Esc* (or *Right Arrow, Enter).*

A STABLE DESKTOP

I like my Desktop in Windows to be the same each time I come into it. Here are some steps to use to achieve this.

1. Under *Options* on the Menubar, tick *Auto Arrange.* This ensures your icons are tidy all the time.

2. Ensure *Save Settings on Exit* is *NOT* ticked.

3. Instead, set your Desktop up exactly as you want it - right down to highlighting the program in each window that you use most often (so you only have to hit *Enter* to run it).

Also ensure that the topmost Window is the one you use most often.

Now hold down *Shift* while you close Windows. No, it won't close. Instead it simply saves all your settings!

Anytime you want a further change, make the change, then use the *Shift + closing Windows* trick again.

A TIDY DESKTOP

Maybe it's time to tidy your Windows Desktop so you're more productive.

First, you might like to get rid of all the Icons you never use. Simply click on the Icon then tap *Delete*.

This will make things tidier, and boot into Windows more quickly, too, as it has less to do.

Second, iconise Application Windows you don't use often. Just click once on the downward-facing arrow at top left of the Window: the Window turns into an icon at bottom of Program Manager.

Third, shift icons you seldom use - put them into one of your iconised "don't use often" Windows at the bottom of Progman.

To do this, click on the icon and hold the button. Now drag until you're over the "don't use often" Window. Release the button. Easy, eh! (this is called *Click and Drag*, and it's essential you're able to do it).

Fourth, put your icons in each Window into an order that makes sense to you, but with the most used ones first.

To do this, ensure *Auto Arrange* is on (see above), then use *Click and Drag* to move the icon to the new spot.

The logic here is that you'll be more productive if you always keep your icons in the same place. By putting least used at the end, you can change them any time, but this won't change the order of your regular icons up above.

Fifthly, change the names of the icons so they make sense to you and shorten any that are too long.

To do this, highlight the relevant icon then press *Alt+Enter* (hold *Alt* and tap *Enter*).

The name is already highlighted. *Backspace* as the very first thing you do, then simply use the arrow keys with backspace to edit the name. When done, click OK or tap *Enter*.

But before you do this, maybe you'd like to change the icon. Click on *Change Icon*. You may be presented with a choice. If so, highlight the one required and click *OK*.

If no choice, click on *Browse...*, find *PROGMAN.EXE* and click on it, then on *OK*. Now click *Change Icon* again and make your choice.

While in *Browse...* you could look in other *.EXE* files for icons to use. It can be fun to change icons to ones that please you!

When you've finished all this, don't forget to SAVE all your changes, by using the Shift technique detailed above.

SECURITY

DELETING FILES

Most people know that if you delete a file, it's still t here on disk and can be retrieved with DOS 6's *UNDELETE*.

So if you delete a sensitive file, it's still there for anyone to access.

To prevent this, follow these steps:

1. Copy a longer non-sensitive file over the file to be deleted (for example, *QBASIC.EXE* in your DOS directory would do fine). Most times this procedure will overwrite all of the sensitive file.
2. Rename the file to a single letter, for example:

```
ren sensit.doc r
```

3. Delete r with the instruction:

```
del r
```

For those into batchfiles, here's a simple one, *WIPE.BAT*, to do the job above (make sure you save wipe.bat in a directory in PATH):

```
@echo off
 if %1.==. goto MSG
 copy c:\dos\qbasic.exe %1
 ren %1 r
 del r
 goto END

:MSG
 echo Supply also a filename
 echo e.g. wipe sensit.doc

:END
```

To run this file, go to the directory containing sensit.doc and type *WIPE SENSIT.DOC*.

Realise that some parts of your deleted file *may* still exist on disk, but for most circumstances, the above will give great protection.

PASSWORD YOUR FILES

At one time or other most of us are going to have files on our computers that we need to keep secure.

This really isn't hard to do. Here are the steps to follow:

1. Get yourself a copy of the archive files *PKZIP* and *PKUNZIP* (shareware, available from the library and the BBS).

Copy them to a directory in PATH (your DOS directory would do in a pinch).

2. For all of the instructions below, you must first change to the directory with your file in it.

Now zip the file you need to protect, using your own personal password. The instruction to do this is:

```
pkzip protect -s sensit.doc
```

where `protect` is the new file that will contain your passworded material, and `sensit.doc` is the file you want to protect.

When you run this line, you'll be prompted for the password, and as you type it, it won't show on screen. Try it!

Or you can get it over in one step with the line:

```
pkzip protect -sfoo sensit.doc
```

where *foo* is your password (no space between *-s* and *foo*)

The file PROTECT then cannot be read by anyone under any circumstances whatever.

3. Of course, it's essential to delete your original file. Use the procedure above to do this.

Here's *PWD.BAT* to do all these tasks in one hit:

```
@echo off
 if %1.==. goto MSG
 pkzip protect -s %1
 copy c:\dos\qbasic.exe %1
 ren %1 r
 del r
 goto END
```

```
:MSG
 echo Supply also a filename
 echo e.g. wipe sensit.doc

:END
```

To run the file type:

```
pwd sensit.doc
```

where *sensit.doc* is the file to be passworded. Once again you'll be prompted for the password.

If you'd like to get the password over in one step, here's an alternative batchfile (no space between *-s* and *%1*):

```
@echo off
 if %2.==. goto MSG
 pkzip protect -s%1 %2
 copy c:\dos\qbasic.exe %2
 ren %2 r
 del r
 goto END

:MSG
 echo Supply also a password
 echo  and a filename
 echo e.g. wipe foo bb.txt

:END
```

To run this file type:

```
pwd foo sensit.doc
```

where *foo* is your password, and *sensit.doc* is as above.

4. Okay. To return *protect* (which is stored on disk as protect.zip) to its original state, you just reverse the procedure thus:

```
pkunzip -s protect
```

Once again you'll be prompted for the password, or do it in one step:

```
pkunzip -sfoo protect
```

Some notes about this security procedure:

1. If you forget the password, you can NEVER retrieve your file - so choose it well, and DON'T forget it!
2. There's no space between *-s* and the password.
3. You can use figures and letters in the password and letters are case sensitive, so *Foo* is different from *foo*.
4. You can protect numbers of files at once if desired. For example, simply replace *sensit.doc* with **.doc* to protect all the *.doc* files in the directory.

Try thes procedures if you have a security need. You need never worry again!

THIS MONTH'S QUOTES

- Double your disk space - delete Windows! .
- Press <Ctrl+Alt+Del> to continue... .
- Our lives are shaped by those who love us and by those who do not.

'Bye for this month! Have a good one!

Lindsay K. Bates *Ph: (07) 808 9441 after 10am*

ASSOCIATED CLUBS DIRECTORY

Club Name	Centred in	Telephone	Contact
Coffs Harbour Computer User Group	COFFS HARBOUR	066-538283	Janell Rose
Gold Coast SIG (of Brisbug)	MERRIMAC HS	075-710113	Joanne Ellis
Dalby PC Users Group	DALBY	076-621381	Peter Allen
Beaudesert Computer Club	BEAUDESERT	075-411050	Bernie Williams
Pine Rivers IBM Compatibles C C	STRATHPINE		R 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
Kenilworth Computer Users Group	KENILWORTH	074-460328	Peter Webb
Cooloola District Computer Club	GYMPIE	074-833881	Dorothy Ross
Fraser Coast Computer Club	HERVEY BAY	071-212394	Steve Bottom
Bundaberg PC User Goup	BUNDABERG	071-531449	Bob Wright
Gladstone QRI Computer Club	GLADSTONE	079- 723083	Dave Franklin
Gladstone Computer Users Group	GLADSTONE	079-783941	Cec Wilmott
Rockhampton Group	ROCKHAMPTON	079-282554	Nick Quigley
Mackay Computer Users Group	MACKAY	079-573998	Gabriel Barbare
Burdekin Computer Club	AYR	077-834630	Rod McRae
Townsville Computer Users Group	TOWNSVILLE		
Johnstone PC User Group	INNISFAIL	070 -671301	Lyndelle Coianiz
Cairns PC User Group	CAIRNS	070-577997	John Hampson

1994 Development Plans

Carl J Planting

1994 has been Identified as the year of expansion for our club.

We have decided to confine ourselves to a manageable number of projects (in time, resources & money) and have restricted our time scale to 1994—later we can look further into the future.

Below is a summary of Carl's submission to the management committee

What Brisbug offers

Magazine - 2,250 copies pm

Bulletin Board - 1,900 users (1,200 are members)

Monthly Meeting - attended by approx 300 pm

Software Library & classes & SIGS

Fellowship

What development Is all about

Numbers - Members - gives strength. viability, variety. credibility

Money - analyse money In & money out - we need lots to offer services

Service - for members - that is why we exist - do we meet their needs ?

Membership drive

New membership recruitment prizes.

Computer suppliers, if they assist in recruitment could also qualify for prizes. Possibly we could offer them prepaid discount membership as a package to recruit new membes.

Evaluate members needs - 350 did not renew last year - why ?

We need to research the profile of our members -

who are they
what do they use computers for,
do theyuse the bulletin board,read magazine, attend meetings etc ?)

Research & Database

We are a computer club and are not properly computerlsed

We lack basic information about our members

We don't know why they join, why they leave, what they want. etc

We have no meaningful statistical information

We must do some research!

Externalise

We need to build a profile among suppliers, retailers and the public and secure positive publicity. In the media we should become an authoritative voice.

Potential Growth Areas

Junior Club & for parents also because it is hands on

Basics for new members - hands on - evening workshops - 2nd week after meeting

Federation of Clubs in SE QLD - meeting + (potential for Community TV etc)

Our literature

Look at it

How do we present ourselves ?.

Does It need to be changed ?

Compare with other clubs

Revenue sources

Examine all possible sources of revenue and see how creative and imaginative we can be to improve our revenue.

Summarv of development projects, 1994

Membership drive -Incentive scheme - March - Sept 94 (Detailed elsewhere in the magazine).

Computer Expo - Brisbane Showgrounds - October 1994

Undertake research about members & establish a database

Examine all sources of revenue

Expand Juniors (other similar areas/ clone this concept)

Offer basics for new members - hands on - evening workshops - 2nd week after meeting Federation of Clubs In QLD - meeting + (potential for Community TV etc)

Get higher profile among - Suppliers & Retailers/Publicity/Media - Authoritative voice

Review literature

Identify the appropriate people to do the jobs

What you as members can do to held your club,

There is a wealth of expertise, experience end energy out there among our members waiting to be harnessed.

Could anyone who has any any ideas to add to our plans for 1994, and anyone who has expertise in any of the areas identified for development in 1994, please contact Carl Planting on 899 0770 and fax 899 1553. I would be delighted to receive any assistance you can offer.

NEW LIBRARY LISTINGS

BBUG 3144 CONTROL CHARTS MADE EASY!

*CLASSIFICATION * Charting * Hard/Floppy Disk*

CONTROL CHARTS MADE EASY! is an interactive program designed to let your computer take the place of a hand calculator when making common calculations from control charts. Control charts are used for statistical process control throughout the manufacturing industry. Many companies handle SPC data electronically from measurement to computer generated charts. Others use partially computerized systems, or they perform SPC manually.

Unless a system is 100% computerized and no calculations are made by the operator or inspector, CONTROL CHARTS MADE EASY! will simplify the use of the control chart. The chance for operator error is eliminated when the computer calculates a complex formula typical to statistics.

BBUG 3145 EGRAPH

*CLASSIFICATION * Engineering/Graphics * Hard Disk * Printer*

EGRAPH - Engineering Graphics - is a technical graphics program for the PC. LINEAR, LOG, PROBABILITY, and TIME SERIES axis scaling may be mixed. Over 32,000 x,y data pairs may be graphed. Descriptive Statistics, Histogram, Cumulative, Frequency, Mass, Moving Avg Distributions, Polar, Pie, Bar, HiLoClose, Triangular Percent, Regression, Pearson III, Splines, and Contours can be added. Text lines, curves, and points can be interactively placed on graph.

Data can be read directly from Lotus worksheet files, PRN, columnar ASCII files or keyboard. Graphs may be printed directly or saved as a Lotus PIC file. High resolution graphs can be printed or plotted using all the printers and plotters supported by Lotus 123 or Symphony. The PIC file can also be imported into other programs such as Freelance, Word Perfect, Word and desktop publishers for editing and printing.

Accessory programs provides are: PICPRN, a utility for printing PIC files at high resolution, and CONTOUR, to create Contour & 3D-Surface plot file for EGraph from randomly spaced X,Y values and associated Z values.

BBUG 3177

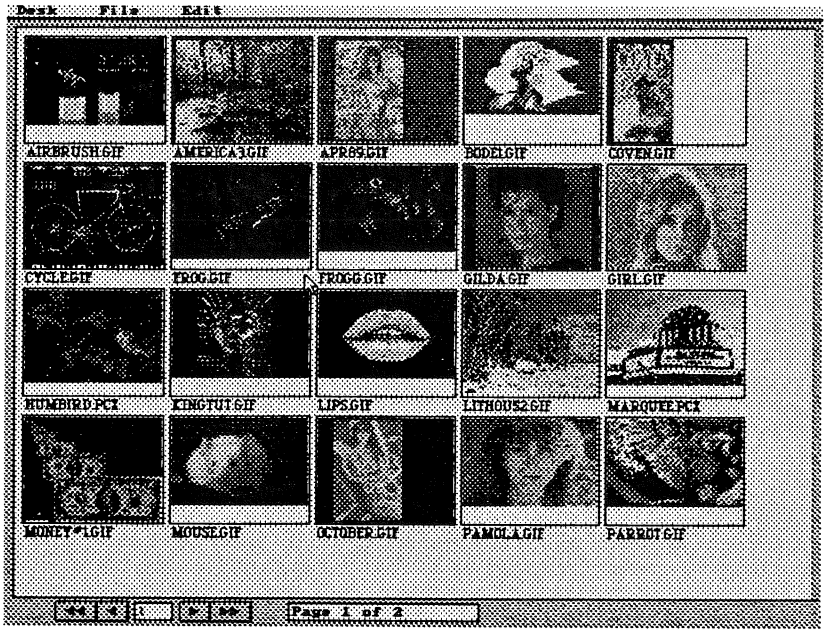


Image Gallery is a great boon to those large graphics libraries, being the electronic eqivalent of a photo album

BBUG 3146 HOME-PHONE-BOOK Ver 2.00

*CLASSIFICATION * General * Database * 2/Floppy/ Hard Disk*

The HOME-PHONE-BOOK (HPB) program was developed specifically for the home computer market. It incorporates many features found in the more sophisticated commercial products while maintaining an ease of use for the casual user. The HPB's unique combining of names, and its ability to store the names of up to six children, makes it the right choice for the home user. It combines the first names, if provided, of both heads of the house. This combine feature is useful for making documents that require both names, such as Christmas mailing labels. Because of the combine feature, information such as birthdays and work phone numbers can be separately stored with each head of the house. Birthdays can also be stored for each child.

BBUG 3147 WINDOWS GAMES III

*CLASSIFICATION * Games * Windows * Hard Disk*

WINDOWS GAMES III is a collection of 4 games for Windows. The first game AUTOCONCENTRATION is designed to test your concentration and relies on the player locating a matching pairs of symbols. You can compete against the timer or the number of tries.

WINPOKER, Version 1.0, is a Video Poker Game modeled after the video poker machines that are found in most casinos. It is your basic five card draw video poker game, with odds paid

based on the hand you draw.

WINSOLIT is a conversion of a program EGA-Solitaire. WINSPIDER is another version of solitaire using 2 decks of cards. The object of play being to assemble 13 cards of a suit in sequence and to subsequently send the pile home. The game is over when all 104 cards have been properly sent home.

BBUG 3148 ARJSHELL Version 1.50

*CLASSIFICATION * Archive Utility * Hard/Floppy Disk*

ARJ, the program by Robert Jung, is an excellent program for compressing files to store when not in use on a regular basis. The problem with ARJ is that it has more switches than anybody would usually want. The complexity of all these switches generally confuses most inexperienced users. ARJSHELL takes care of this complexity.

All YOU have to remember is the path/filenames of the files you want to work with. You can even easily try different compression methods to see what advantages or disadvantages they have using your own files! You can compress to self-extracting EXE's, garble with a password, move files to and from archives, and much more! If you use ARJ or simply want more valuable disk space available, try the ARJ and ARJShell team today!!

Also contained on this disk is a second program from the author of ARJSHELL. PLEXUS is a challenging word game for the PC. It works with color or monochrome display and one floppy drive.

BBUG 3149 ALPHA MAN Version 1.0

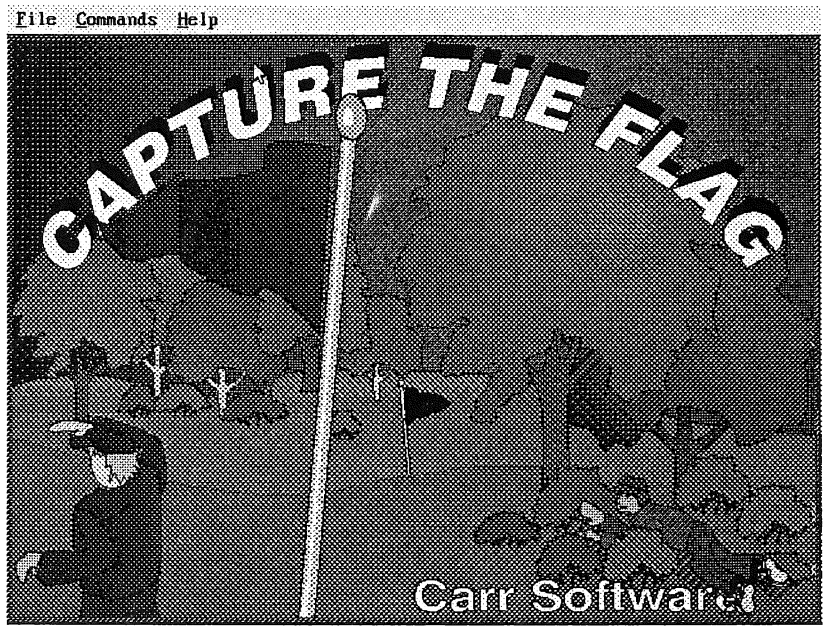
*CLASSIFICATION * Games * Floppy Disk * EGA/VGA * Brain Power*

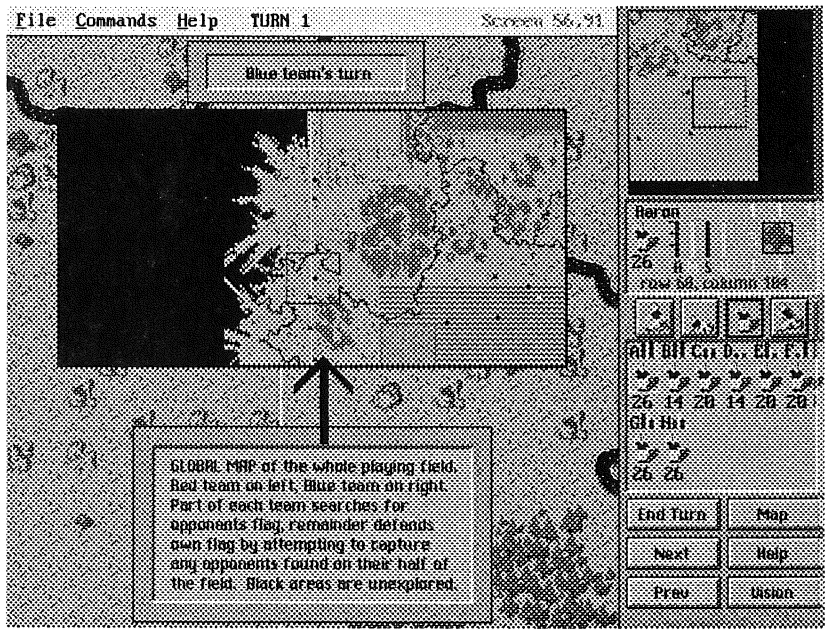
Welcome to ALPHA MAN. This game will test your problem solving abilities, as you try to solve 25 word puzzles. The object of the game is quite simple. Each puzzle has the letters for the word located somewhere on the 7 x 11 grid board. Each letter is contained in a block which when pushed by your man, (ALPHA MAN), it will slide in that direction until it either hits the side of the grid board or another block. The object is to push all these letter blocks onto the corresponding letters that are located somewhere else on the game board.

BBUG 3150 4FILES Version 2U.0

*CLASSIFICATION * 4Dos Utilities * Hard Disk*

4FILES is a multi-purpose file management tool which smoothly integrates 4DOS & NDOS "file notes" and up to seven of your favorite utilities into the work at hand. File management operations may be done on single files or marked groups of files. File notes provide ready information to aid in the use or management of files. 4FILES displays them along with the file name and full file statistics in a sortable directory





More great **GAMES**... *Xargon, Capture the Flag and Civil War Strategy (BBUG 9167, BBUG3169, and BBUG 3159) have been added to our immense catalog of games*

listing. Special attention has been given to providing the most efficient rapid-fire, point-and- shoot browsing of files possible, as an aid to composing notes about one or a succession of files. The built-in note editor is well adapted to its task.

Also included is a simple file viewer TV (Tiny Viewer) which will be useful with 4FILES because the display uses all rows on a 25-row screen, and it shows text in whatever text colors are setup in 4FILES.

WORD PUSH

BBUG 3151 WORDPUSH

*CLASSIFICATION * Education/Games * Floppy Disk*

The objective of WORDPUSH is to form as many, HIGH SCORING, words as possible. Words are formed by pushing the lettered blocks so that they slide into the position you want, forming words. You must also keep from being caught by the birds. Your only defense a gainst the birds on the ground is to push blocks into them. How ever, it shoud be noted, hitting birds with blocks is not the ob ject of the game and, therefore, a relatively small amount of points will given for knocking birds silly. Later in the game you will encounter flying birds. There is no defense against flying birds; you must simply get out of their way.

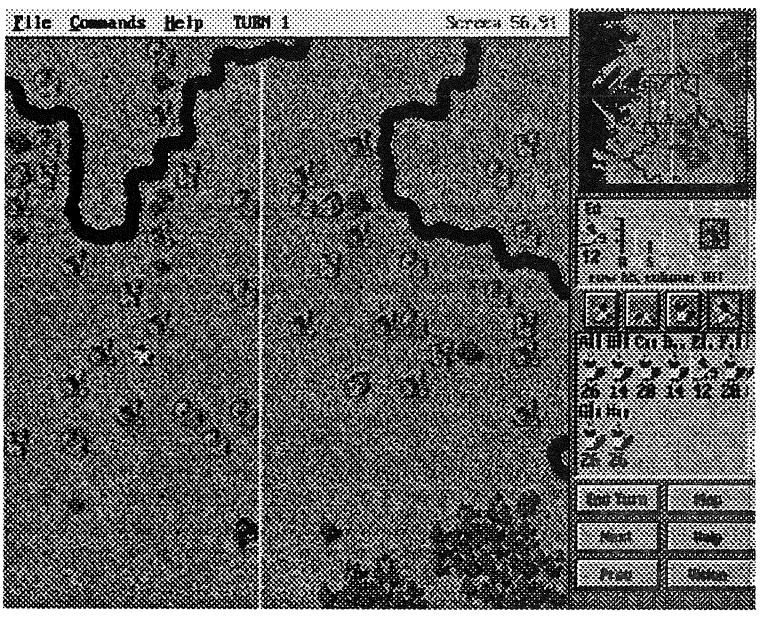
You get a new field of letters when the words you form contain a certain number of letters. The number of letters that are needed is chosen randomly depending on the level. Points for words are calculated by adding the values of each letter in the word.

BBUG 3152 TOP Version 1.10

*CLASSIFICATION * Utilities * Hard Disk * Mouse* supported

TOP is not just another DOS shell! TOP combines many popular DOS utility functions into one fast, small package, but adds several unique and productive new functions to enhance anyone's PC usage. Featuring movable, sizable pop-up windows for most of its commands, TOP allows aliasing, command line history and enhanced editing, file viewing (both ascii and hex), screen color and mode control, and enhanced functionality for many DOS commands. Any or all TOP windows can be constantly displayed concur-rently with typing at the command line, including the 4000+ line context sensitive hypertext HELP tool.

One unique feature is the CRON program scheduler. Any number of programs can be scheduled to run at any minute, hour, day, or month. If your machine is busy running an application, or even off when a CRON event is scheduled to run, it runs immediately after.



BBUG 3153 CHILDREN'S GRAPHICS and COLORBOOK

*CLASSIFICATION * Gamers/Drawing * Floppy Disk * EGA/VGA * Mouse*

CHILDRENS GRAPHICS, Version 4.0, and COLORBOOK, Version 2.0 are simple enough for children to use. Your child can use it to draw lines, circles, boxes, text and macros. These drawings can be painted, edited, saved, animated and printed to your printer with your screen dump utility. For ages 6 and up.

BBUG 3154 TREE BASED

*CLASSIFICATION * Finance/Business * Hard Disk * Printer*

TREE BASED - The most innovative money management program on the market! TREE BASED allows you to manage your finances with ease.

TREE BASED divides your work sheet into two windows - the upper window tracks your expenses and income in real time... that means your totals update with each and every transaction entered. You also get a real-time Net Profit total. The lower window tracks your assets and liabilities... This gives you a Net Worth total in real time.

TREE BASED's unique tree structuring feature which gives you maximum flexibility and vision. You can 'explode' accounts into their subaccounts.. and subtotals. The tree structured approach allows you to zoom in for detail or zoom out for the big picture. You can work out hundreds of accounts on one screen!

TREE BASED is a double entry system for handling your personal or business finances. The built-in tutorial will guide you through the complexities of managing your finances with ease.

BBUG 3155 WALL $TREET RAIDER

*CLASSIFICATION * Games * Hard Disk*

Enlist in the Corporate Wars! WALL $TREET RAIDER allows 1 to 4 players (including the computer) to engage in amazingly realistic corporate wheeling and dealing, Wall Street style.

Mount hostile takeovers, restructure sick companies,

trade on inside information, do LBO's, mergers, file harassing lawsuits against competitors, engage in greenmail payoffs, seek "White Knights" to help you "shark-proof" your company from other marauding junk bond takeover artists, while you struggle to keep companies you control profitable, against ruthless industry competitors and arbitrary government actions.

Non-stop action with a live (simulated) stock ticker and an unending flow of earnings reports, financial and political news pouring off the "broad tape" as you use sophisticated research tools to try to keep your investments in any of 150 companies (IBM, Exxon, GM, etc.) afloat. Effortless to play, the incredibly realistic, ever-changing Wall $treet Raider simulation compares to other stock market games like chess does to checkers.

THERE'S NOTHING ELSE REMOTELY LIKE IT AT ANY PRICE!

BBUG 3156 MARKET EDGE (Disk 1 of 3, also 3157, 3158)

*CLASSIFICATION * Finance/Stock Market * Hard Disk * EGA/VGA * Printer*

MARKET EDGE is a trend analysis market timing software program. It can be used for individual stocks and Indexes, but the primary function of MARKET EDGE is to analyze the overall market and determine major trend changes.

MARKET EDGE uses technical data from the stock exchange to generate the Technical Index which is a Master Market Breadth Index. The technical data required is Advances, Declines, Unchanged issues, Up Volume, Down Volume, Total Volume, New Highs, New Lows, Date, and DJIA (Dow Jones Industrial Avg.). Daily data is recommended but weekly can be used.

The software generates and plots the following indicators: Advance-Decline Line, Bollinger Bands, Dow, McClellan Oscillator, RSI, SASITOP, SASI Oscillator, Sigma Limits, Stochastics, and Technical Index.

The graphs are updated and viewed to determine the market trend status. In the HELP menu, a table summarizes the signals under the ENTRY AND EXIT SIGNALS section. Analysis sensitivity can be varied from short term trading to long term investing. Use the HELP menu and the manual on disk to get started.

BBUG 3157 MARKET EDGE (Disk 2 of 3, also 3156, 3158)

BBUG 3158 MARKET EDGE (Disk 3 of 3, also 3156, 3157)

BBUG 3159 VGA CIVIL WAR STRATEGY GAME

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

The VGA CIVIL WAR STRATEGY GAME is a 1 or 2-player graphic strategic level wargame of the American Civil War.

The object of the game is to accumulate the most victory points. The game is played in turns of 2 months during which both sides perform their actions.

You get victory points for capturing cities, capturing armies, winning battles, and special events. Each city you control gives you a certain number of victory points and income. This varies depending on the city. For instance, a large city such as Philadelphia is worth much more than a smaller city such as Fort Donelson.

If your army defeats an enemy that has no route for retreat or causes enough casualties to crush the enemy, you capture the army and receive a bonus points. Eliminating the enemy fleet also results in bonus victory points.

BBUG 3160 MYTHMASTER Version 1.4 (Disk 1 of 3, also 3161, 3162)

*CLASSIFICATION * Games * Hard Disk * EGA/VGA * Joystick*

MYTHMASTER: A Vagabond's Adventure is a 3-D, EGA, interactive, adventure game you'll enjoy playing for many hours. Become Anton, a likeable young hero trying to change his image as a bumbler. You'll explore a kingdom with many characters to meet and deeds to perform. As Anton, you will encounter some danger on your quest.

Rise to the challenge of discovery in 70 different locations in beautiful color. Become a hero, savior, magician, and all around good guy.

BBUG 3161 MYTHMASTER Version 1.4 (Disk 2 of 3, also 3160, 3162)

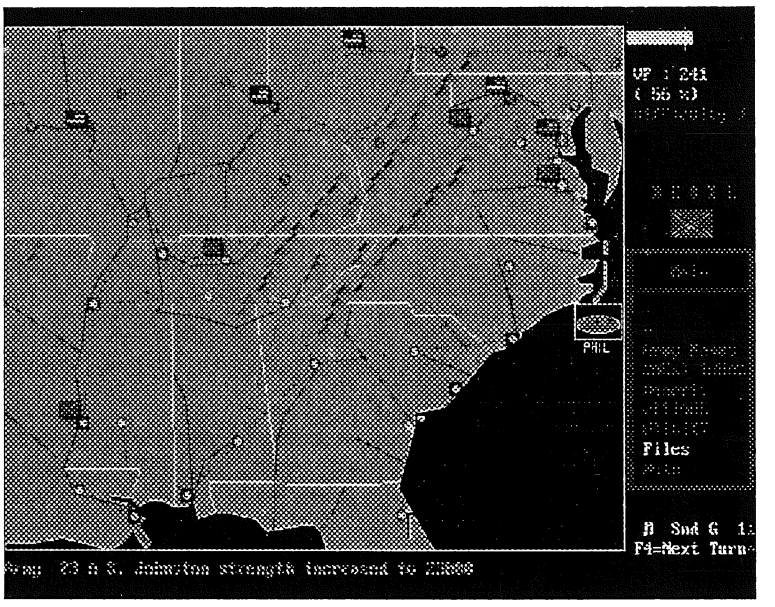
BBUG 3162 MYTHMASTER Version 1.4 (Disk 3 of 3, also 3160, 3161)

BBUG 3163 ULTIMATE MAILLIST MANAGER Version 1.1

*CLASSIFICATION * Business * Hard Disk * MGA/CGA/EGA/VGA * Printer*

ULTIMATE MAILLIST MANAGER is an exceptionally easy to use software program which allows you to store detailed maillist information by category. Maintain a separate category for customers, prospects, friends, members of your organization, and much more. The ability to maintain unlimited detailed notes by date,

Civil War Strategy



time, and subject for each entry makes this an excellent sales prospect system. There are even a number of user-definable fields.

Organize a special mailing that spans categories, (i.e. some of your associates, a few of your prospects associates, and many of your customers. ULTIMATE MAILLIST MANAGER does this and much more.

With ULTIMATE MAILLIST MANAGER, you may also import and export data in three different formats, print mailing labels in one across or two across formats, use the optional Report Writer to define your own formats, or export data into one of several graphical label programs. With all these features, ULTIMATE MAILLIST MANAGER is truly ULTIMATE!

Learn Japanese

BBUG 3164 GAKUSEI Version 1.0 (Disk 1 of 2, also 3165)

*CLASSIFICATION * Education/Languages * Hard Disk * EGA/VGA*

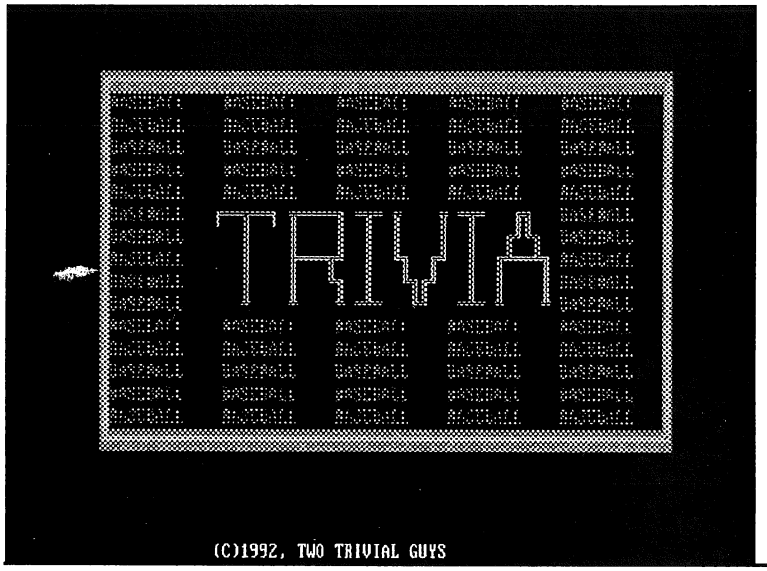
GAKUSEI is a Japanese language tutorial for the PC. It is designed to help serious Japanese language students master the grammar and usage typically taught in a first-year college-level language course. In contrast to other Japanese computer-based learning systems which present lessons as "situations", GAKUSEI presents grammatical patterns and makes them easy to find through extensive cross referencing.

A student who uses this product will become familiar with reading Hiragana and Katakana display and using the Hiragana and Katakana keyboards.

Rather than select a numbered choice to a question in the exercises, the student can respond to a question by typing Japanese characters. GAKUSEI is supposed to save you time. If you can't remember the potential form of "kuru" and can't find it in your textbook, don't waste time searching for that elusive example. Use the GAKUSEI dictionary to expand "kuru" for you. Do you need help with a difficult sentence pattern? Browse the lessons or search the lesson glossary to find the references to GAKUSEI lessons that can show you examples.

GAKUSEI is designed to be expandable, so more lessons can be added. GAKUSEI is intended to be affordable! The ability to type, view, and print Japanese characters need not cost hundreds of dollars. You do NOT need a keyboard specially labeled with Japanese characters, or a CD-ROM drive, or an adapter board, or a color VGA monitor, or even a laser printer. GAKUSEI is designed to run on relatively inexpensive PC hardware.

Baseball Trivia



BBUG 3165 GAKUSEI Version 1.0 (Disk 2 of 2, also 3164)

BBUG 3166 BASEBALL TRIVIA

*CLASSIFICATION * Sports/Games * Hard/Floppy Disk*

BASEBALL TRIVIA will test your knowledge of American Baseball. A game for 1 - 4 people, the object is to be the player that scores the most points. Points are earned by answering trivia questions that appear on the screen. Each correct answer is worth from 1 to 100 points, determined by the amount of time that it took to answer the question.

Each player will be instructed in the message box when it is his or her turn. The game ends when any player answers a question correctly in each of the categories, and thus receives all six stars.

BBUG 3167 HOSTILE TAKEOVER

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

HOSTILE TAKEOVER - the game of discovery and conquest. It is easy to learn, easy to play, and a lot of fun.

The object of the game is divided into two parts. The first objective is to explore the map and take over neutral castles. The second objective is to find your opponent and take over all of his castles. When one player has taken over all of his opponent's castles then he has won the game.

BBUG 3168 MICROTEXT Version 4.5

*CLASSIFICATION * Printer Utilities * Hard/Floppy Disk * Printer*

MICROTEXT - The Premium Document Cruncher - lets you print up to 4 pages worth of text on a single sheet of paper. It does this by tricking your printer into using a tiny (3 to 4 point) font. Before printing, the program reformats the text into a temporary file. Your original remains unchanged.

When re-formatting, MICROTEXT automatically wraps lines which are too long, but never breaks words. Your printouts include MICROTEXT's own page numbering, with the filename included in a header on each of the four pages on the sheet. You have complete control over the process. You can add a left margin, decide whether you want to print graphics characters, or select one or two columns. You can also set custom line widths and page lengths to match your particular needs.

There's even more you can do with MICROTEXT.

BBUG 3169 CAPTURE THE FLAG

*CLASSIFICATION * Games * Hard/Floppy Disk * 286/386/486 * VGA*

Dash through verdant woodlands, jump over gushing streams, climb rail fences and race through farm fields as you search for the opposing team's flag in a desperate race to capture their flag before they capture yours. Analyze your defensive team's skills, develop their tactics, then deploy them in natural cover to intercept and capture the opposition raiders.

Choose between running, walking, crawling, or just a standing search as lookout. Enjoy the suspense and sounds (supports Adlib and Sound Blaster) of battle. All of this action takes place on a huge, beautifully detailed playing field in gorgeous HIGH resolution VGA, with synchronized sound and great animation.

CAPTURE THE FLAG is a commercial quality, landmark game. Extensive play testing has resulted in comprehensive help popups that make this new kind of strategy game remarkably quick to learn. You can play against the computer (strong artificial intelligence) or a friend.

BBUG 3170 COLORADO UTILITIES DISK MANAGER Version 3.41

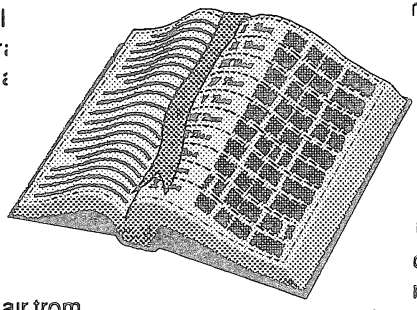
*CLASSIFICATION * Utilities * Hard Disk*

COLORADO UTILITIES DISK MANAGER reads any size diskette or hard drive, builds a catalog of all files (up to 7000 entries), compression libraries and volumes, and then permits retrievals from the catalog to find and report information about those files. Prints listing of catalog entries. Selects catalog entries using Imbedded strings, DOS style wild cards, or by user assigned categories.

BBUG 3171 DAILY GOLD

*CLASSIFICATION * Religion * Windows * Hard Disk*

Keep a refreshing spiritual uplift just a mouse click away with DAILY GOLD, a Tool application for Windows. The progr displays a calendar, a Bible verse, and Bible trivia question each time it is run. The calendar can display any month from 1700 to 2199. DAILY GOLD can be kept in the Windows desktop as an icon and brought back to life with a double click of the mouse.



DAILY GOLD provides a breath of fresh air from the sometimes smothering press of daily activity. Keep it handy in your desktop.

BBUG 3172 COMX and OTHER UTILITIES

*CLASSIFICATION * Utilities * Hard Disk*

COMx connects any two PCs, including the IBM PS/2 series, so that files can be easily transfered between them. COMx transfers files through a null modem cable connected to the serial port of your PCs. It enables a user to read drives on both computers as if they were attached to a single computer. Drives not on the user's PC (remote drives) are assigned drive letters beginning with the first unused letter. Files are copied from remote drives to drives on the user's PC (local drives) using DOS commands.

DISKPACK, Version 2.0, and dRESTORE are general purpose file backup utility programs designed to replace the DOS Backup and Restore commands. You can use DISKPACK to back up files from a hard disk or a diskette to diskettes or any other DOS storage device (including tape). Files are compressed as they are copied so that they occupy less disk space on the backup disks than on the source disk.

dRESTORE uncompresses and copies files from the backup disks. You can also use dRESTORE to perform a file by file comparison of the backup disks with the source disk.

Our Memory Manager is here to help!

HRAM, Version 1.2, is a powerful memory management program for 8088, 8086, 80286, 80386 and 80486 PCs that enhances the utilization of high memory (memory between 640K and 1024K). It works in conjunction with DOS 5 to create up to 96K of extra low DOS memory and up to 224K of high DOS memory for use by device drivers (such as network drivers) and memory resident programs (TSRs). In addition, it provides many of the necessary memory management features DOS 5 left out.

HRAM creates high memory on 8088, 80286, and 80386 PCs (DOS 5 creates high memory on 386 PCs only.)

MINI-MEM, Version 2.11, frees up memory for large programs by swapping memory resident programs (TSRs) to your disk—giving you instant access to up to 24 popup programs such as SideKick, PC Tools, and Lotus Metro while using only 15K of memory.

VRAM, Version 4.21, creates up to 32 megabytes of memory by using disk space or extended memory to simulate expanded memory.

UNBLINK, Version 2.1, allows ou to reset the blink rate of the rsor, and even turn the cursor into a non-blinking block.

BBUG 3173 WINDOWS PROGRAMS NO 1

*CLASSIFICATION * Utilities/Games/Educational * Windows * Hard Disk*

EXDEC Version 1.1, - The Executive Decision-Maker is the modern equivalent of flipping a coin. When a question is input in the top box, and the Answer button clicked with a mouse, it will generate a YES/NO type answer in the bottom box. New Question should then be clicked to proceed with the next question. There may also be interesting responses if clicked elsewhere.

ICONWAR Version 1.1, is game where you and your computer opponent stake out territories on a 9 X 9 grid. Then taking turns, you each try to "hit" your opponent's locations. When you do hit one, you get

another turn, until one of you has taken over all of the opponent's locations.

QRUN Version 1.0, - Quick-Run is a program for running other programs (Windows or non-Windows) quickly and easily through the Windows environment. A bit similar to the File Manager, but much faster, it will automatically list all the .EXE (executable) files when started. If you want to run a .BAT or .COM program file, click the appropriate button and those will be listed in the current drive\directory instead of the .EXE files.

WMATH Version 1.0, - Wind-O-Math is a math-tutor designed for Windows. This program will generate either Addition, Subtraction, Multiplication or whole Division problems at random. It will keep track of your correct and incorrect answers and you may see them or reset them at any time. If you give an incorrect answer, the icon will frown, and the correct answer will be given. A correct answer will get a big smile from the icon.

All programs require VBRUN100.DLL to operate.

BBUG 3174 486TEST and HWARE

*CLASSIFICATION * Computer Tools * Floppy/Hard Disk*

486TEST is a diagnostic program designed to test motherboards and system components. Computational loads on the processor, and numeric processor (if present) exceed by several orders of magnitude the use a computer would receive in a commercial environment in a 24 hour period.

This program tests all of the system's resources including the BIOS, CPU, NDP, CACHE, RAM, EXTENDED MEMORY and DISPLAY MEMORY. Once started 486TEST will run for days. A status line at the bottom of the screen keeps you updated as to the progress of the test.

HWARE Version 3.0a, is a Hardware & System Configuration Examination & Reporting Utility. HWare ia a very complete, very complex system examination utility useful for systems integrators, technicians, consultants, corporate PC managers and network administrators.

HWARE is a text based application, however it will run under Windows 3.0 and accurately report its findings. The same holds true for GEOWorks and DesqView.

BBUG 3175 MATHS RESCUE (Disk 1 of 2, also 3176)

*CLASSIFICATION * Educational/Games * Hard Disk * EGA/VGA*

A bone chilling crisis has struck the world! Reports are poring in from all corners of the globe: Missing Numbers! Numbers were missing from speed signs and the frantic highway patrolmen couldn't stop speeders. Your own mother has closed herself in the bathroom and won't come out because her paycheque is inexplicably blank. You start to call your best freiend, but the buttons on the phone are blank, and you can't remember your friend's number! Where will it end?

Glancing out the window, you suddenly freeze with horror. A creature that looks like a giant nose with arms is standing in your driveway! It's stealing the numbers off you street address and loading them into a robot controlled garbage truck! Speechless with shock and rage, you point a quivering finger...

Before you can say, "Mystic Intervention", a huge butterfly appears in the air and dumps a bucket of slime on the nose. In a flash the nose disappears! You have discovered the secret to stopping the number stealers!

Grabbing a nearby garbage can lid for protection, and hoping the butterfly will continue to help you, you embark on your mission to recover the stolen numbers and outwit the mysterious aliens.

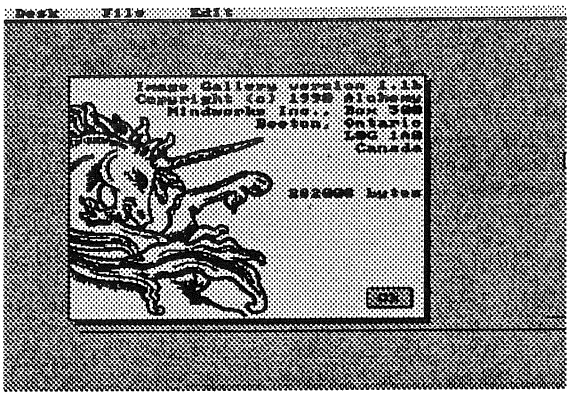
Yes, the fate of the world as we know it, is in your hands!

BBUG 3176 WORD RESCUE (Disk 2 of 2, also 3175)

BBUG 3177 IMAGE GALLERY Version 1.1B

*CLASSIFICATION * Desktop Utilities * Hard Disk * VGA * Mouse * Printer*

IMAGE GALLERY is a tool to help you keep track of a large collection of bitmapped image files. It's a visual database which will catalog files, allowing you to add



comments and key words to each entry. Having created an IMAGE GALLERY database... a gallery... you will be able to search it either visually... looking through the images by eye... or by key words. Here are examples of search keys that you might use to search a large gallery.

In essence, IMAGE GALLERY is an electronic photograph album. It allows you to attach notes to all your pictures, and to find any picture or group of pictures you want quickly... something you can rarely do with a real photograph album. Invariably, everyone will want to look at the embarrassing ones, slowing your progress.

In addition to searching through a gallery, you can print entries which correspond to a keyword search or which you have explicitly selected. You can also extract entries by keyword or selection to another gallery and merge galleries together. A gallery can contain up to 65280 entries... although at about five kilobytes per entry, such a gallery would be fairly enormous.

Finally, you can view files which are represented by gallery entries so long as the files remain where they were when you created the entries.

IMAGE GALLERY uses a conventional graphical user interface with menu and dialogs.

BBUG 3178 JETCOL and 2COL

CLASSIFICATION * Printing Utilities * Hard/ Floppy Disk * Printer

JETCOL, Version 1.5 and 2COL, Version 3.4 are compressed print utilities. JETCOL prints two columns, each up to ninety characters wide, on laser printers in portrait mode. It is intended to greatly reduce the huge volume of paper that results from printing reference material, word processing drafts and text files. Regular use of this program should cut your paper bill by 60 or 70 percent. It can also save you money when faxing or mailing documents.

It provides better readability than other compressed print programs because it normally ignores page breaks and eliminates consecutive blank lines. JETCOL will print anywhere from two to ten pages of source material on one side of a sheet of paper.

2COL prints an ASCII text file in two columns,each up to 80 characters wide, on standard width paper, and will work on most Epson-compatible dot-matrix printers which provide 17 characters/inch compressed printing but is especially intended for newer printers which have a compressed/elite mode (20 char/in) allowing two complete 80 character lines to be printed across the page.

BBUG 3179 MAINLINE Version 1.4

*CLASSIFICATION * Project Management * Hard Disk * Printer*

MAINLINE is a project management tool. MAINLINE's interactive WYSIWYG is a graphical development of project Gantt/Pert chart. The program features very easy data entry, and will handle up to 150 tasks and milestones, over a 5 year duration. A large amount of project activity is displayed in a relatively small area. A pop-up editing window allows easy changes. The printed output of MainLine is exactly what is seen on the screen.

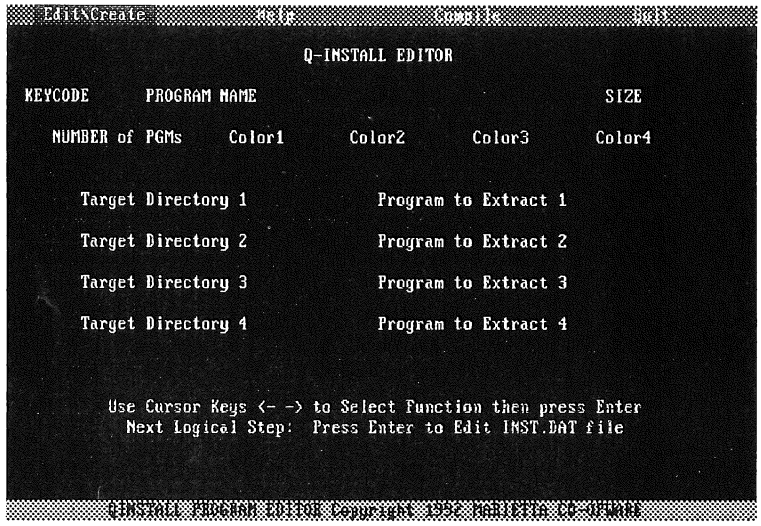
MAINLINE has many features to ease working on larger projects. It's unique, compact text output is directly suitable for presentations (via "Viewgraphs" or transparencies). Output is also compatible with electronic mail and examination via standard word processors.

BBUG 3180 Q-INSTALL Version 1.01

*CLASSIFICATION * Utilities * Hard Disk*

Q-INSTALL is a fast and easy to use installation utility. It allows you to create Professional-Looking customized installs for your program distribution. Non-programmers can use it with ease. It takes just minutes to create a complete custom made installation.

Like most programs, you need to install them on a customers hard disk drive. Batch files are too clumsy



Qinstall

to write and do not provide all of the needed functions for user interaction. User input and screen handling are very limited.

Features include: * A High Quality Professional Look. * Fast Colorful Text (colors are easy to change). * Very small program size (below 24K). This leaves more room for your program files. * Easy to define options and parameters via a menu. (No cryptic programming language to learn!) * Automatic checking of disk space. * Automatic detection of source drive. * Automatic checking of directories and creation. * User override for target drive and directory destinations. * Ability to display a text README file from menu screen. * Ability to use self-extracting PKZIP or LHA files. * Allows multiple install-to directories per diskette (up to 4). Most programs require only one directory per diskette. * Multiple diskette installations are made simple.

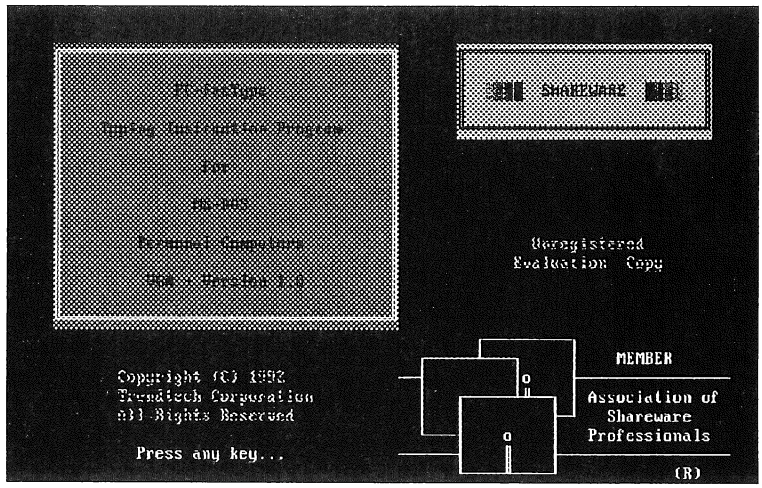
BBUG 3181 PC-FASTYPE/VGA Version 1.0

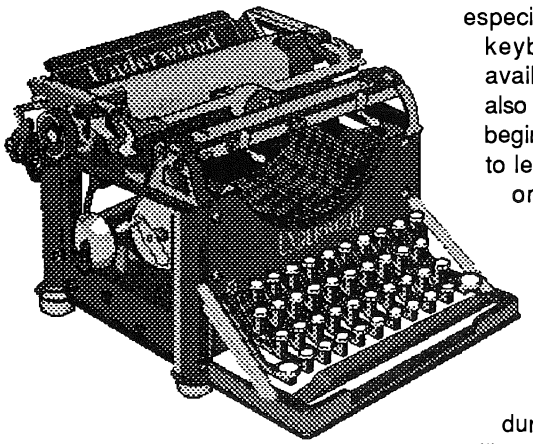
*CLASSIFICATION * Typing Tutorial * Floppy/Hard Disk * VGA*

PC-FASTYPE/VGA is an easy-to-use menu-driven interactive typing instruction program that is designed for use by computer enthusiasts who wish to improve their typing skills on personal computers running the MS-DOS Operating System.

The program is ideal for use by intermediate and advanced typists who want to increase their typing accuracy and speed working with microcomputers,

PC-FasType





especially on the variety of keyboards that are available. PC-FasType is also an excellent vehicle for beginning typists who want to learn how to touch-type on various MS-DOS based microcomputers.

PC-FASTYPE is ideal for use in a private at-home environment or during spare time at the office, and it can be used in a classroom environment too.

BBUG 3182 SBS UTILITY PACK

*CLASSIFICATION * Utilities * Hard/Floppy Disk * Modem * Printer*

The SBS UTILITY PACK consists of 7 utility programs for use on your computer. BREAKZIP is designed to break-down ZIP files and re-compress them into their original size. SBSBOOT not only allows you to reboot your computer from a batch file or from the DOS prompt. It also allows you to choose a different AUTOEXEC.BAT and CONFIG.SYS file at the time of booting. SBSCOM, a small and convenient communications program. SBSPHONE provides a useful dialling program which can easily be set up to dial your own special phone numbers. SBSPRINT, a useful printing utility. VOC2W4S - convert VOC to SND. HYPSER is a Hyper-Text search program.

BBUG 3183 SOFTWARE JUKEBOX Ver 1.0 (Disk 1 of 2, also 3184)

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

The SOFTWARE JUKEBOX is the latest innovation in Software marketing. It turns the PC into a Shareware vending machine that holds up to 200 of the most popular shareware disks. The PC becomes a very colorful, attention getting, advertising tool while just sitting on the dealer's counter. Dispensing of the is easy and convenient.

The total involvement by the dealer is collecting the copying charges after the customer is finished copying all the disks that they require. The copying total is automatically tabulated on a totalizer built into the machine.

BBUG 3184 SOFTWARE JUKEBOX Version 1.0 (Disk 2 of 2, also 3183)

BBUG 3185 STABLE Version 1.10 (Disk 1 of 2, also 3186)

*CLASSIFICATION * Business * Windows * Hard Disk * Printer*

STABLE - TECHNICAL GRAPHS provides powerful - yet easy to use - stock market technical analysis capabilities ideal for the technical trader with existing (or access to) historical financial data for stocks, bonds, commodities, mutual funds, indexes, and options.

Combining popular technical indicators with features such as DDE (Dynamic Data Exchange), chart printing, selectable graph styles, new data import formats, popup graph menus, enhanced desktop management features, and more - STABLE is likely to become your technical analysis tool for the Windows environment.

STABLE reads CSI, Technical Tools, MetaStock, and ASCII formatted data files, and is Windows compatible. The program is written for experienced and novice users alike.

BBUG 3186 STABLE Version 1.10 (Disk 2 of 2, also 3185)

BBUG 3187 STAMPBASE Version 1.0

*CLASSIFICATION * Database/Hobbies * Windows * Hard Disk*

STAMPBASE is stamp collection inventory system for Windows. STAMPBASE takes advantage of the Windows' Graphical User Interface (GUI) and its memory management capabilities.

Your stamp collection data can be stored in one or more files. STAMPBASE provides intuitive data entry and edit features. STAMPBASE uses the stamp catalog numbering system used by most popular catalogs and publications. The program sorts records by country and catalog number. STAMPBASE tracks each stamp's category (type), issue year, description, grade, purchase date, cost and market value. Personal comments about a stamp can also be stored with each record.

BBUG 3188 SUPER FONTS I

*CLASSIFICATION * Printing Utilities * Hard Disk * Laser/InkJet Printer*

Once you own a Laser or InkJet printer a whole new world of printing opens up to you. Not only can you produce documents which look like they have been produced by a professional printer, but also you have access to an incredible array of fonts.

SUPERFONT I is a collection of 17 display fonts suitable for use by a Laser or compatible printer. This collection includes Black Chance, Cooper Black, Cursive Elegant, Dom Casual, Hobo, Old English, Revue, Stensil and Zap Chance. Also drivers for WordPerfect and Word are provided, together with a tutorial on soft fonts.

BBUG 3189 THELMA THISTLEBLOSSOM Version 5.08 (Disk 1 of 2, also 3190)

*CLASSIFICATION * Education * Hard Disk * Printer*

THELMA THISTLEBLOSSOM is a writing aid, grammar and style checker to help you create strong, readable, and concise documents. When THELMA finds a potential problem, THELMA highlights the problem in context, defines the problem, suggests how to fix the problem, and lets you interactively make changes.

THELMA examines your document for such problems as: passive voice, long sentences, subject-verb agreement, possessive pronouns, cliches, punctuation

and spelling (based on an 85,000 word dictionary). THELMA helps you write at the appropriate tone for your audience.

Use THELMA THISTLEBLOSSOM to check and to correct Wordperfect files. Among other things, check for long sentences, passive voice, cliches, punctuation problems, padding, and consecutive prepositional phrases.

BBUG 3190 THELMA THISTLEBLOSSOM Version 5.08 (Disk 2 of 2, also 3189)

BBUG 3191 VBTOOLBOX PRO

*CLASSIFICATION * Programming * Windows * Visual Basic * Hard Disk*

VBTOOLBOX automates the process of saving and runing your projects during programming sessions in the Visual Basic environment to prevent lost work and frustration if the system crashes!

Included in the toolbox are functions for automating the save text/load text process, full code printing capability, calling text files, Icon editors, add-on helpfiles, or any program from within the Visual Basic editing environment.

If you use Visual Basic this utility is a MUST!!

BBUG 3192 WHATIS Version 1.01

*CLASSIFICATION * Utilities * Floppy/Hard Disk*

WHATIS - The FileIdentifier - is a simple utility which will help you to identify what a file (or group of files) is (or are). It will usually be able to say what the file is and it will give any details that it can extract from the file such as its name or version number.

WHATIS is not infallible however, but WHATIS can identify many different types of file. The simplest way to use WHATIS is to type "whatis" followed by the name of the file you want to identify. The name can contain wild card characters.

BBUG 3193 STOCK TRADER Version 7.00

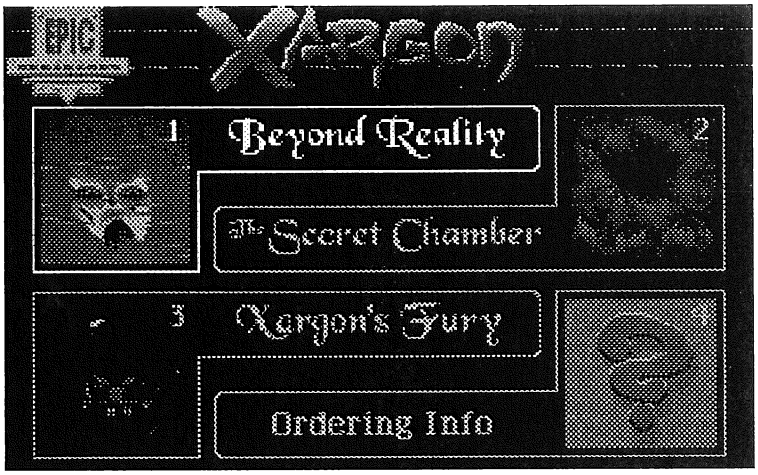
*CLASSIFICATION * Business/Investment * Hard Disk * EGA/VGA*

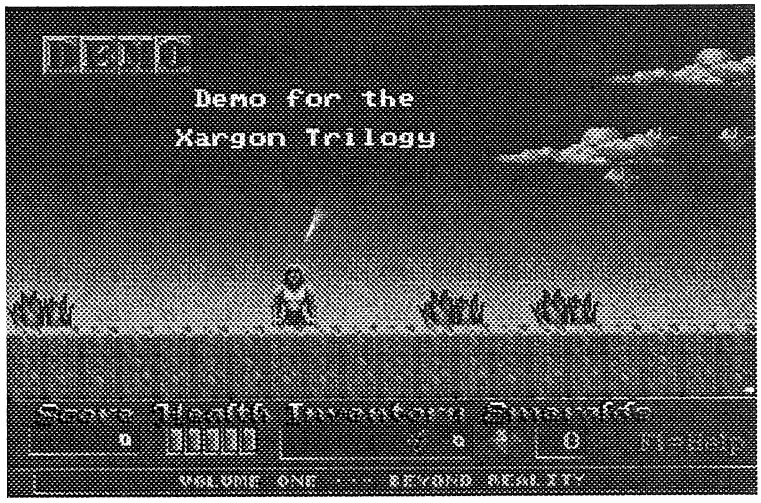
The STOCK TRADER is a menu driven program tracking stock performance and generating buy and sell signals according to the technical market indicators, placed in the program by the user, for each stock.

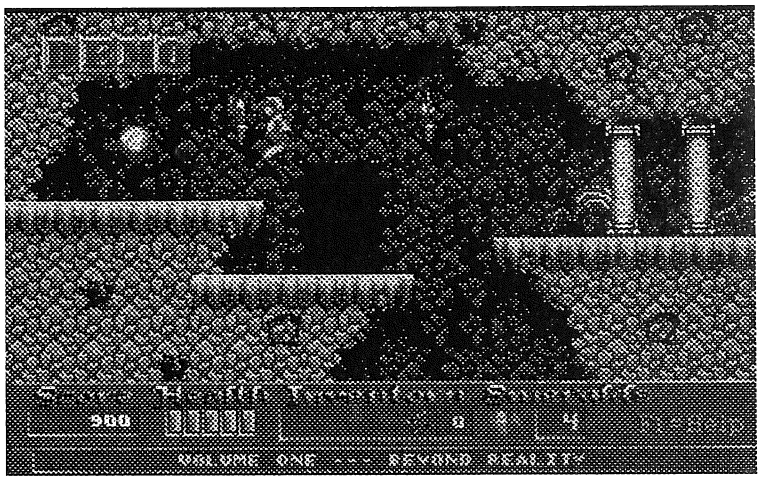
The program generates a high quality 100 day graph with recommendations for trading the stock, futures, or mutual fund equity. There are 3 stocks at the start for demo purposes. Stocks may be added, deleted, updated and graphed.

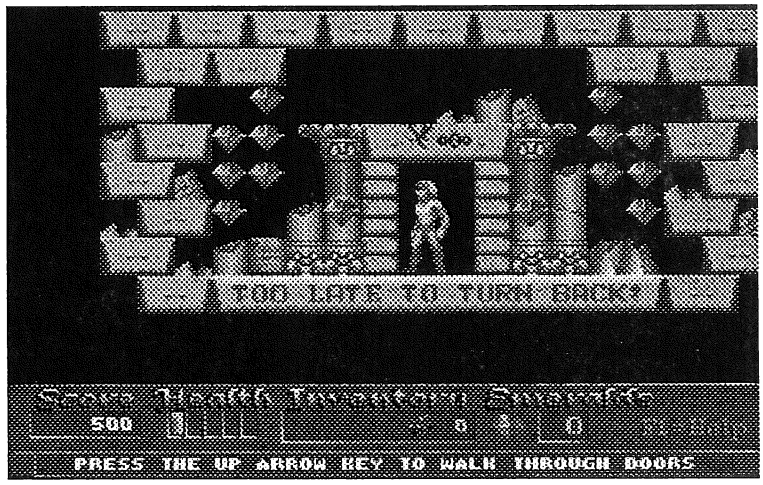
This version adds an entirely new feature - a stock importing module. This can import stock quotes from Compuserve, Prodigy, and any quotes service that supplies the user with and ASCII file.

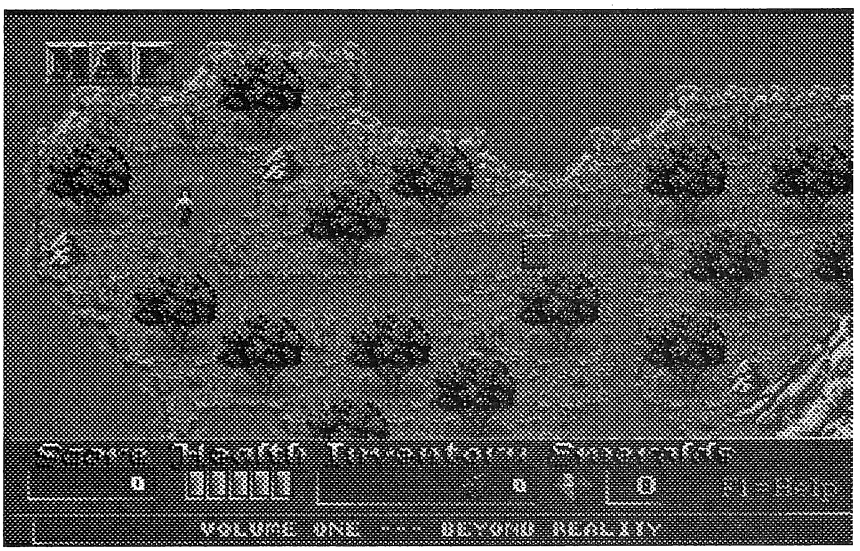
If you are really serious about your investing, you

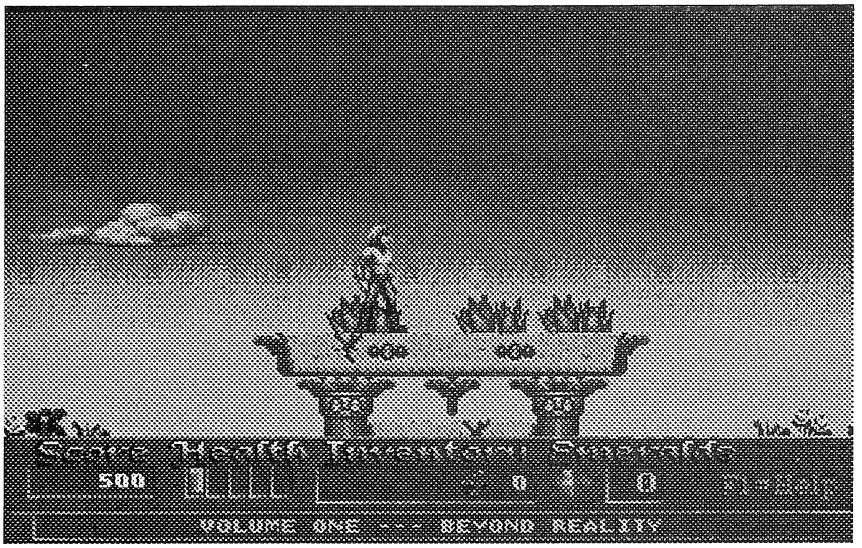












XARGON 1

suitable to work as *.MLB library macros.

Most of the macros are far more powerful and flexible than those found in books, magazines and commercially available packages. All these macros are just a few key strokes away using our revolutionary MACRO LIBRARY MANAGERS (macros, themselves). Only the MACRO LIBRARY MANAGER needs to be combined to the worksheet, the other macros can be directly activated from the disk. The MACRO LIBRARY MANAGER features a QUICK RUN mode that uses the disk directory list display to POINT and SHOOT, and a SEARCH by KEYWORD query to POINT to the matched macro description and SHOOT. Added to the MACRO LIBRARY MANAGERS, the package features the following unique macros:

Full featured SEARCH & REPLACE allows you to search and replace any set of characters through any defined range.

LINK allows you to establish a link between any cells/ranges of the worksheet to cells/ ranges of OTHER worksheets in the disk.

RUN KEY allows you to activate any routine in the worksheet using POINT and SHOOT to the range/routine names mnemonics display list.

MACRO WRITER allows you to CONTINUOUSLY write macros, text and formulas using pre-written syntax picked from the screen display for EVERY LOTUS macro keyword or function.

WORD PROCESSOR with an adjustable line width and SEARCH and REPLACE.

MENU RANGE allows you to define any range as MENU RANGE and thereby overcome the eight menu title limitation in Lotus 1-2-3 menu bar.

MACRO RECORDER allows you to work normally, but simultaneously records every keyboard entry in versions 2/2.01.

ERROR PROOF automatically turns any formula to an ERR proof, i.e. to display ZEROs instead of ERRs.

RANGE COMBINE allows you to combine two ranges in the same worksheet.

GRAPH GROUP simulates the / Graph Group new options in Lotus 1-2-3 versions 2.2/2.3/ 2.4.

INSERT RANGE allows you to open an empty range in the middle of the worksheet and keeps all the formulas intact, permitting partial column or row insert.

DELETE RANGE allows you to delete a range in the middle of the worksheet and keeps all formulas intact, permitting partial column or row delete.

KEEP RANGE allows you to erase the whole worksheet EXCEPT a selected range in one operation.

TRANSPOSE allows you to transpose a range and handle all the formula references correctly.

Users of 1-2-3 release 2 can now enjoy most of the new features and power of versions 2.2/2.3/2.4.

Also contained in this package is SCIENCE-A BONUS packed file which contains the complete menu-driven solver and calculator, "The SCIENTIFIC This solver was chosen by PC Computing to be included with the best 250 shareware software packages in the market today.

BBUG 3195 SUPER MACRO LIBRARY For LOTUS 1-2-3 (Disk 2 of 3, also 3194, 3196)

BBUG 3196 SUPER MACRO LIBRARY For LOTUS 1-2-3 (Disk 3 of 3, also 3194, 3195)

BBUG 3197 BIBLE MEMORY Version 3.0 (Disk 1 of 3, also 3198, 3199)

*CLASSIFICATION * Religion * Windows * Hard Disk*

BIBLE MEMORY for Microsoft Windows will do two main things for you: 1. Teach you powerful memory systems, and 2. Test your memory in a fun way.

Using Toolbook, which is provided as a run-time version, BIBLE MEMORY displays randomly selected quotes and verses. It's up to you to select the answer as to where the quote is from. In what the program refers to as a memory system, it helps you memorize the location of verses, key thoughts in a verse or chapter, and verses in a word-for-word form.

Set up is easy with BIBLE MEMORY, and you can even import text files of verses created using the program itself or any ASCII text file.This program is very well-thought out and complete. If you've ever wanted to sharpen your knowledge of the Bible, this is the program for you.

BBUG 3198 BIBLE MEMORY Version 3.0 (Disk 2 of 3, also 3197, 3199)

BBUG 3199 BIBLE MEMORY Version 3.0 (Disk 3 of 3, also 3197, 3198)

BBUG 8604 HOTDISK NO #3

*CLASSIFICATION * Utilities * Hard Disk HIGH DENSITY DISK*

A great collection of over 50 DOS and Unix-like Utilities to use on your PC. Recommended in PC Magazine, DOS Power Tools and many other magazines.

Major utilities in the Toolbox include TURBOTXT (turn your text files into a standalone .EXE file) and TURBOBAT (easily and automatically compile your batchfiles into fast .EXE files, plus extra batchfile enhancements such as GOSUB, IF-DO-ELSE, nesting of IF statements, BEEPS and SIMPLE TUNES, POSITION on screen with COLOUR, put TEXT into batchfile, and many, many more).

Other utilities include:ADDCOMM - Serial Port Management Program, ALLSUB - Perform Task In All Subdirectories, BANNER - DOS Banner Display, BOOTLOCK - Lock Out Reboot Keys and Break Keys, BOOTCTL - Setup Boot Sector of a Floppy Diskette, BRKBOX - COM Port Break Out Box Display, CALENDAR - DOS Calendar Display, CLEANUP - Cleanup Your Drives from Duplicate Files, COUNT - Count Characters, Words and Lines, CURLOCK - Lock Cursor Shape Permanently, CURSOR - Change Cursor Shapes, CUTPASTE - DOS Cut & Paste Text Utility, DELAY - Batch File Delay Utility, DETAB - File Detabulation Utility, EVAL - full-featured DOS Calculator, FILEATTR -Change File Attributes, FINDFILE - Find File on Disk, FIXCR - Fix CR/LF problems with Text files, HUSH - Speaker Silencing Utility, KILLDIR -Remove Directory and All Contents. MONITOR - Monitor Convergence/ Alignment/Focus Test, NAMEDIR - Name Directory Utility, NO -File Exclusion Utility, PATHFIND - Path Find File Utility, SCNATTR - Set Screen Attributes, TEXTSRCH - Text Searching Utility, TIDY - Tidy up Hard Drive by Removing Old Files, TOUCH - Touch File Date Utility, USEMEM -Programmers Memory Usage Utility, VIDMODE - Setup Video display mode.

BBUG 9167 XARGON 1 - BEYOND REALITY Version 3.0

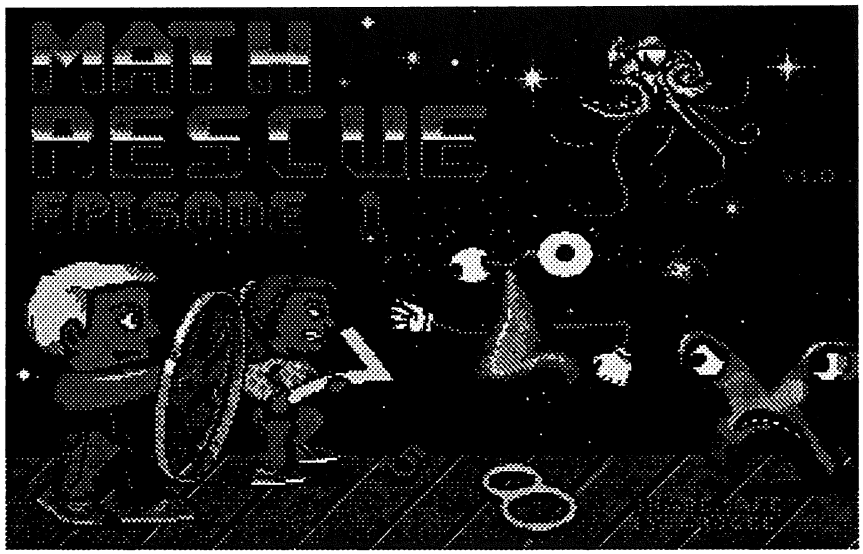
*CLASSIFICATION * Games * Hard Disk * VGA * 386/ 486 * Sound Card HIGH DENSITY DISK*

You have discovered an ancient civilization deep in the jungles of Madagascar. Transported through time, you must explore the magical, mystical world of Xargon.

XARGON 1 - BEYOND REALITY is the first volume in a trilogy. It's a game of intense arcade action and bold exploration. You control the hero Malvineous on his expedition through a strange land populated by bizarre creatures. Along the way, you'll meet up with the eagle Silvertongue, who will reveal your ultimate goal in Xargon.

Features include: * Professional 256-color graphics * Jam-packed with animated enemies * 10 large, vividly-illustrated levels of action and exploration * The story of Xargon unfolds as you progress through the game * Music and digital sound effects for Sound Blaster-compatible cards

BBUG3175 Maths Fun for Kids



NewsFLASH

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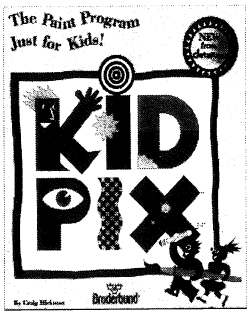
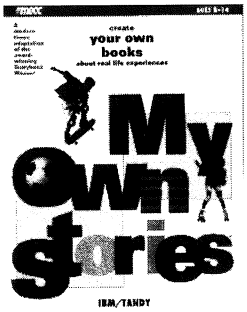


KIDPIX is the ultimate graphics or drawing package for your children. it has magic erasers, music and sound as well as a great range of tools and effects. Requires a mouse and EGA or VGA monitor.
Normal RRP $89.95
BRISBUG Members $ 85.00



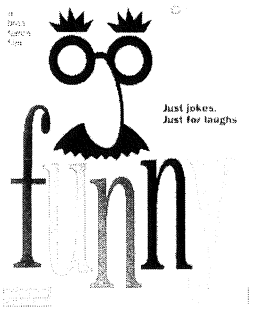
MY OWN STORIES is an excellent program for children interested in writing their own stories and printing them out. The program comes with an easy to use menu system and stunning graphics as well as a range of styles of printing for incorporation into the stories. Children can enlarge and reduce the graphics, change their colour, flip them horizontally, and add sound effects (sound card required) and then print the story in living colour to one of the many colour printers available in the printer setup menu. Black and white is good too! RRP $79.95 BRISBUG $75.00

SPELLBOUND! is a the Super Solver series from has a number of games to spelling skills. With a sound say a word from its lists! as well as use the many which highly entertaining game with

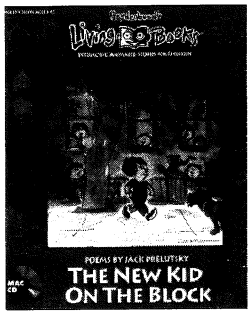
RRP $79.95

wonderful continuation of the Learning Company and enhance and develop card, the computer will even Parents can create word lists are provided. This is a real educational value.

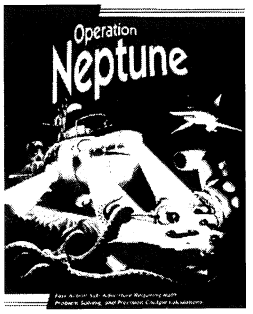
BRISBUG $75.00



FUNNY is THE CD-ROM! this is just a bit of fun and has a huge number of jokes told by some of the world's best terllers about every conceivable (Ooops!) subject possible. You will split your sides laughing and it's great value at RRP $79.95 but even better at $75.00 for BRISBUG

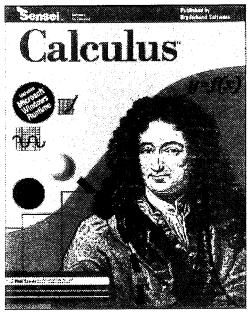


NEW KID ON THE BLOCK is another of those wonderful Living Book series CD-ROMs from Broderbund. This CD-ROM contains a collection of poems suitable for 5 to 15 year olds - and even you will get a laugh and enjoy them! Following in the same tradition as Grandma & Me, New Kid on the Block has two languages - English and Spanish - and you can have the poems in either the READ TO ME or LET ME PLAY mode. Young child will adore the Forty Dancing Banans while older children will love the poem about My Baby Brother. Wonderful value at RRP $89.95 BRISBUG Value at $85.00



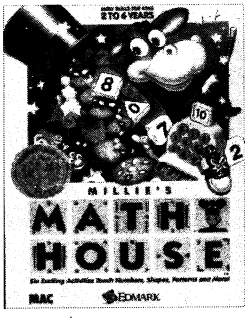
OPERATION NEPTUNE is THE Maths program for Year 5 to 7. It is an exciting sub hunt for pieces of a downed saterllite with math as the means to solve the puzzles for pieces. EGA or VGA, sound card is really a must for the fabulous sound effects. RRP $79.95 BRISBUG $75.00

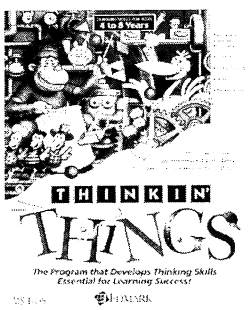
CALCULS is as its name suggests - a course in Calculus. It comes with a runtime version of Windows 2.0! but can be run under Windows 3.x. An excellent product for Year 11 & 12 math students or those wanting to refresh their knowledge. RRP $149.95 BRISBUG $135.00



MILLIE'S MATH HOUSE is an absolute joy of a program for the pre-school group and early Year 1s. The program looks at size distinction, patterns, counting, adding and has a parents section to help you maximise the programs benefits with your young children. Children can be set tasks by the computer to test their understanding. You'll need a sound card to get the most from the product as well as a mouse - and you really need VGA

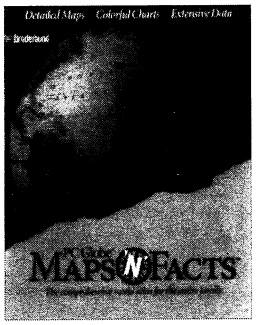
RRP $89.95 BRISBUG Value at $84.00





"THINKING THINGS is THE BEST PRODUCT for the early childhood market". That's how Rob Neary of RAMWARE described it and once you've seen it you'll agree. Real thinking challenges for the young user. You'll HAVE TO HAVE A SOUND CARD! because the program uses extensive speech, music and sound clues as part of the challenges and approach to problem solving. VGA is essential too and you need a 386SX or better to run.

RRP $108.95 BRISBUG Value at just $89!



MAPS'N'FACTS is the latest version of that old favourite PC Globe. The maps have been enhanced and are now excellent as well as the usual array of comparitive geographic data. RRP now only $69.95. BRISBUG Members only $65.00!!

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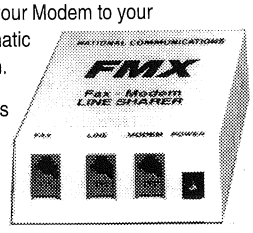

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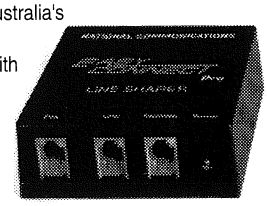

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