

# Significant Bits

Journal of Brisbug PC User Group inc

Vol 9 No 8

July 1994

\$ 4.00

*Next meeting* **SUNDAY, 17th July**

*Main event - 1:30 pm* **Preview of "CHICAGO" - Microsoft**

*Lunchtime special - 12 noon*

**Borland Consulting Group**

**BCF Bookshop** - *all day*

*Inside*

More on Internet

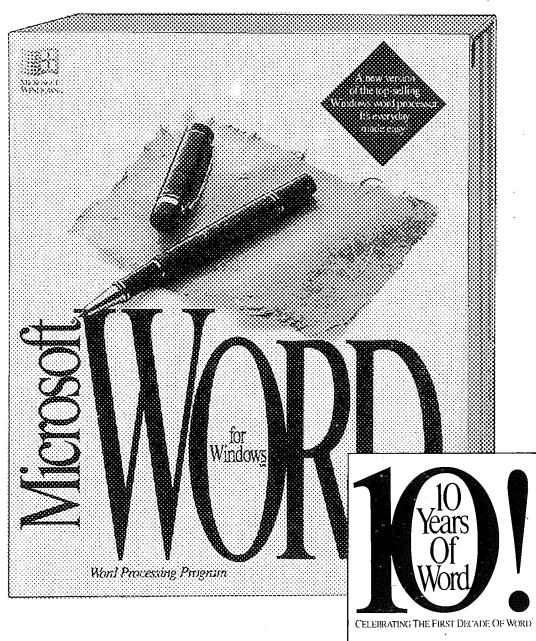
Assembler cont'd

Adventures of Dr DEBUG

Games Reviews

**WINDOWS 4** RL

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9 am	CLASSES
9:30 am	Junior Club
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12.00 noon	Borland
12:15	New Members Orientation
1 pm	Brisbug Club Meeting
1:30 pm	Microsoft
3.15 pm	New Members' Tech Chat
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DEADLINE DATE  
FOR AUGUST MAGAZINE  
JULY 31

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*Brisbug recognises the generosity of our regular supporters:*

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Computer HH	Cunningware
Ron Lewis Computers	Data Cabling
Avcom Services	Accord Computer Eng

*and the sterling job done by Marlin Printers of Caloundra.*

## BRISBUG PC USER GROUP INC

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

PO Box 985 Toowong, Qld 4066  
Info line **841 5511**

*Membership only:*

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phone (074) 643 800 (7-9pm)

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### Vice President

Graeme Darroch 2091999

### Treasurer

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227 8874 (W)

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7-9pm only

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871-0298, 870-2972, 870-0653

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Post Prepaid requests to:  
Brisbug Software Library,  
95 South Station Road,  
Booval 4304

or phone: (07)281-6503  
MONDAY-FRIDAY, 9am to 1  
and 2 to 4pm ONLY!!

## HELP LINES

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

# From the Engine Room

Lloyd Smith

## June Meeting

It was really pleasing to see the large attendance up of members and visitors at the June meeting. The Membership Secretary reports quite a healthy increase in attendees compared with the previous meeting in May. This month should be even more popular with Microsoft presenting **CHICAGO** or Windows 4. Quite a lot of members have already expressed their intention to attend, even if the final release date of the program is still quite a while off.

If you intend coming, I strongly suggest you come early - REGISTER FIRST - and enjoy both the Microsoft presentation, and the Borland presentation which will precede it at 12.00pm.

## Membership Drive

An increasing number of new memberships are coming in so you must be selling our club to your friends and acquaintances. Looking at the current status report (up to the end of June) it is hard to tell how the drive is progressing, but there have been almost 200 new members who have joined Brisbug since the commencement of the Drive. Keep up the good work - remember there are only four more months until the drive ends and with every new member you introduce, you get you one more chance to with the Compaq 486 Laptop Computer.

## Magazine

Following the main presentation at last months meeting, quite an enthusiastic band of members met to further discuss our magazine. There were a number of very constructive suggestions made which I will follow up as soon as time permits. This month sees the inclusion of a new Assistant Editor, Brenda Baber to the team. The one category lacking is in the area of advertising. We urgently need volunteers to get out and sell more advertising for the magazine. If you can help in this field, please contact me either by phone or at the next meeting.

## Closing Date for next edition

Closing date for articles, reports, reviews and features for next month's (August edition) magazine will be 31st July. Please submit your articles in electronic form either on disk to me, or to the Management Information Service BBS by that date. Hand or type written articles require extra work to re-type them and may not be included.

## Bundaberg Visit

At the end of this month, we will be heading north to Bundaberg for another visit to their beautiful city. These visits were implemented by Ron Lewis to give us a chance to talk to country members personally and give them the benefit of some of our feature presentations. If there are any members of Brisbug who would like to 'swell our ranks' please give me a call, as I am sure the members up there would be pleased to see you.



# From the Assistant Stoker

Graeme Darroch

Last month's meeting was a BIG success. Despite the late withdrawal of Borland, we managed to have a great meeting, attendance, while exact figures are not yet available, was up. The presentations were good, especially Michelle Amory from Symantec, dropped in to the presentation at the last minute, due to the ill-health of Brett Goshorn, the scheduled presenter.

The Dell presentation was interesting but a bit of a commercial, with lots of "We do this!", and if you analyse it, what they do is what a good dealer does anyway.

## Questions on Speedisk

During the Symantec presentation I answered a question put to Michelle. The question was "Will speedisk operate on a system while 32 bit file access is active?" I said it did. I have since discovered that it does not. When I checked with Symantec's Tech Support, they informed me that it does not but there is a patch available that fixes the problem. They are sending me a copy of the patch, and I have permission to place this patch on the BBS. If you do not have access to the BBS, then get in touch and we will find some way of getting the patch to you.

## Comms Lectures to be repeated

Last month saw the concluding part of my Comms lectures, but don't despair if you missed it, the series will be repeated in a couple of months, and will be updated as new technology comes

along. I am going to buy a new printer soon. When I do I will be putting together some notes for this lecture, which will contain a print of the overheads used with some notes added. These will probably be available for a nominal fee from the library, but that requires a decision by the committee.

## Don't grumble if you miss out on special offers

One final thing about last month's meeting. There were several people who were looking for the special offer from Symantec that was available at the previous meeting, and were not successful in finding it. Some were a bit peeved. Well, these offers are only available at the time and in limited numbers so if you missed out I am sorry. Don't hold BRISBUG PC User Group Inc. responsible, we get these offers when they are available and distribute them as requested. They ARE NOT handled through the Library, or anything to do with BRISBUG PC User Group Inc. We only act as a distribution point. So don't go crook at us if you miss out, we try our hardest to get them to as many people as possible, but only within our means at the time.

One more thing while I am on a roll. Someone phoned looking for me a few weeks ago, and as I happened to be out, started to chew my wife's ear about not receiving a book ordered. My wife understandably got a bit miffed at this, and phoned Lloyd. Lloyd got a bit more miffed because he had been under a lot of pressure to get the magazine out, and, done a wonderful job of achieving this.

*Continued on page 11*

## MAGAZINE

### Editor (acting)

Lloyd Smith

### Associate Editor

Geoff Harrod

### Assistant Editor

Brenda Baber

### Reviews Editor

Ash Nallawalla

### Layout Design

Belinda Gorrie

### Photography

Ian Adcock

Contributions always welcome!

Disk, artwork or copy to:

Lloyd Smith, 95 Station Rd.

BOOVAL

### Artwork Separations:

Queensland Business Magazines

### Printer: MARLIN PRINTING

37 Caloundra Rd. Caloundra

(074) 915-833

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## ADVERTISING

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

### DEADLINES

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

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

### TERMS

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

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

### FORMAT

The magazine is A4 size, offset printed and saddle stitched. More than 2500 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.

# Significant Bits wins International Awards

*Editorial*

Ron Lewis and Lloyd Smith

## The Contest

Earlier this year, Ron Lewis submitted three issues of Significant Bits to the 1994 Intergalactic User Group Officers Conference Newsletter Contest in New York. This contest was open to all volunteer nonprofit user groups, and the entries were judged by publishing professionals and editors.

Our entries were submitted in Category IV ( Over 32 pages) and the entries competed for:

- Best Publication
- Best Design
- Best Feature Articles
- Best Columns or Columnist
- Best Coverage of Group Events and Meetings.

Winners were announced at the Intergalactic User Group Officers Conference in New York held on 24 - 27 June, 1994. The winning entries were displayed at the conference and in the APCUG sessions at their Fall Comdex. Plaques will be awarded to all winners and certificated to all runners up.

Due to Ron's efforts, Brisbug and Significant Bits has been announced as the Winner of the "Best Feature Articles" section and is also the runner up in the "Best Coverage of Group Events and Meetings".

## Ron's comments

The following are Ron Lewis' (sometime Editor) comments....

"The primary purpose of "Significant Bits" is not to win awards; it is to inform and entertain members. I am delighted, however, that our magazine has won two awards, and for what I regard as its two most important aspects... Features and Club Activities reporting. Our magazine is the one service of Brisbug that *all* members get, and in my opinion is the glue that binds members together. It is also our public face, and a valuable "marketing tool" to supporters and the computing community.

## Issues submitted

The issues submitted for this award (December 1993 to March 1994 inclusive) typified what the "SigBits" team were trying to achieve. They represent the input of many people, the most influential of which were the likes of Geoff Harrod (design, columns and features), Dan Bridges (ditto), and Chip Karmatz, who, in his short "reign" as Managing Editor not only introduced colour, but, based on his extensive practical experience, insisted on professional standards of layout, grammar, proof reading, and editing.

They also confirm our commitment of your committee to fund the single most expensive project of Brisbug sufficiently to achieve excellence, although there are obviously still challenges for the new magazine team in that area.

Prestige articles

Features are the prestige attractant for a magazine. They communicate the skills and knowledge of our authors not only to their fellow members, but to the outside world where we are judged by their quality. Our numerous features have been wide-ranging as they have been entertaining and informative.

Articles such as Dan Bridges' views of high speed modems (Dec 1993 *et al*) which have been widely reproduced in other club journals contrast very nicely with Rex Newsome's whimsical expose of *The MultiMedia Computing Helmet* (same issue). Carlo Hamalainen's series on Assembler illustrated the talents of our younger members. My all-time favourite article, "A Look into the Genealogy SIG" by new author, David Thrupp (April 1994), is a great piece of writing which evoked some vivid images and illustrated something *really useful* to do with a PC.

Playing "newspapers"

The award for club events reporting is particularly pleasing to me personally. Not only because much of the reporting just-passed meetings

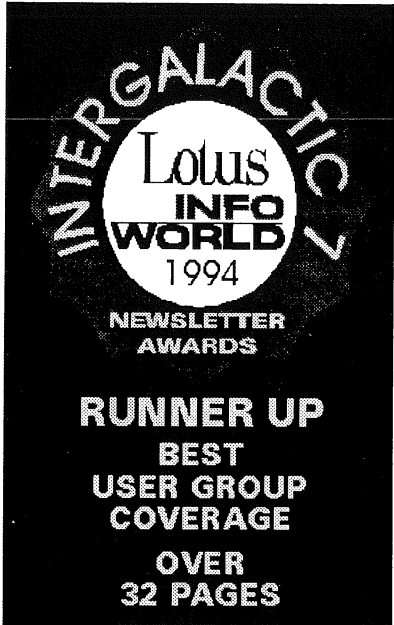
was done under the pressure of making production deadlines, or because it allowed me to indulge my personal interests of closer relations with sister clubs. No, it also allowed me to "play newspapers"... to take the photos, write the copy, do the final paste-up. Once Chip Karmatz had shown me how to do it *properly*, it was really satisfying use for my PC. (Of course not all photos and articles were mine. Lloyd Smith, Chip Karmatz and many others from sister clubs also contributed).

Congratulations team...

To the team... the authors, typesetters, Marlin Printers (who take all sorts of disasters, delays and changes in their stride), baggers, and you the members who funded (and hopefully appreciated) our efforts, I say

**'Congratulations, we've won two awards'.**

And to you, Ron, We all say "Thank you for a very splendid effort".



ADVERTISING DETAILS (cont'd)

FULL PAGE SIZE DETAILS

Normal article text (3 col)  
260x178  
Page trim  
295x208  
Max assured print area  
280x190  
Optional bleed extent  
300x215

RATES

Color covers .....	\$600
Doublepage spreads ..	\$500
Colour page .....	\$450
Colour 1/2 page .....	\$250
Colour 1 column .....	\$110
Colour 1/12 page .....	\$50
Centrefold spread .....	\$525
Full page .....	\$275
2/3 page .....	\$175
1/2 page .....	\$160
1 column .....	\$110
1/4 page .....	\$70
1/6 page .....	\$50
1/12 page .....	\$25

Special positions:

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

INSERTS

Inserts are subject to prior arrangement.  
The charge is 1.5 time the full page rate. The inserts may be color and double-sided and may be in foldout or booklet form, but may not exceed A4 size.  
To meet Post Office requirements, they must have been printed in Australia or New Zealand.

The required quantity of printed inserts are to be delivered to Significant Bits.  
Quantity, delivery and other details will be advised on request.

Advertisers may contact  
Lloyd Smith (07) 2816503

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



# SIG News

## SouthSide SIG

Meets on  
Tuesday, 26th  
June at 7:30pm  
at Rex Ramsey's  
home, at 114  
Forestdale Dr,  
Forestdale.

Topic:  
Windows Basic  
BYO New  
Programs to try  
out, and  
Questions  
Contact: Rex  
Ramsey  
8004827

Business &  
Finance SIG  
meets at 3.15pm  
in registration  
room (B343A).  
Alan Weeks  
8708183

## Dulcie Haydon Visual Basic SIG

Report Compiled by G Darroch

Last Month after I had got over my winge about lack of machines, we got down to a general discussion about VB. When we started to get into things a bit more several laptops appeared to put me in my place about my previous winge! Seriously though, the more machines we can have along for this SIG, the better.

There is no substitute for sitting round a machine actually doing what we are talking about. Next month we will try to carry on from this discussion and start to do some coding. I emphasise the simple in that statement. If I have enough time I will try to copy some text from a book that gives a simple coding exercise and we can then collectively code this in and build a program. Ala "Hello World". So hope to see you there and that you have enjoyed the SIG so far.

*Contact Graeme Darroch (07) 209 1999 or Alan Bridges (07) 801 3520*

## Genealogy SIG

Rob Gurney is now out of hospital and on the mend - The next outing will be at either Enoggera - Church of Jesus Christ of the Latter Day Saints or at the Mt. Cootha Cemetry with Lunch in the park afterwards.

*Contact Rob Gurney (07) 355-4982*

## Pascal SIG

Pascal Sig has now concluded.

## Windows Sig

After Microsoft's presentation of Chicago, things will definately be buzzing.

There will be a demonstration of TYPE TWISTER and a short training session for newer members.

*Main Theatre - 3.15 pm (or thereabouts)  
Brian Bere-Streeter (07) 349 4696*

## Banking on your PC with Handyline

By Alan Weeks

Handyline is the home and office banking system operated by Westpac Banking Corporation for its customers.

Most common banking transactions can be completed in your home or office by using your touch-tone telephone or personal computer (PC).

This article gives a brief overview of the total Handyline system. As Significant Bits readers are mostly PC users, emphasis is given to access, use and evaluation by personal computer.

For BRISBUG members who would like to evaluate Handyline, instructions are given on how to use Option 1, audiotex and Option 2, videotex.

Note that Westpac has provided phone numbers and access codes to allow evaluation by all BRISBUG members, whether Westpac customers or not.

## Overview

Westpac introduced home and office banking in 1986 as Handyline. To start, the service was a visual computer service only using the Prestel videotex standard for display on a suitable PC or television screen. (Videotex differs from the BrisBug Bulletin Board system (BBS) in that the information is formatted onto "pages" which are individually numbered. While BBS systems scroll up and down the screen, videotex does not scroll. Unlike many free BBS, you will obtain immediate access to Handyline most of the time!)

Then in 1987, Westpac was the first bank in Australia to offer banking by telephone ie audio. This audio service was added to Handyline as audiotex (Option 1). At first, many users required a tone sender to operate the audio services. But more recently, the widespread use of touch tone phones has largely replaced the need for a tone sender.

While audiotex is available from any touch tone phone, and provides the most wanted services, the user may need to manually write down the account details given. For multi-transactions, this could involve a great deal of writing. In contrast, the options 2 & 3 for PC offer a much wider range of services and three major conveniences.

Firstly, the information is visual and looks like the usual bank statements. Secondly, the details can be saved to disk or printed out. This reduces the

chance of clerical error by the customer. Thirdly, depending upon the services required, the customer can choose from two options at differing levels of service and differing charges. Higher level services available on Option 3 include foreign exchange rates, daily market reports and a limited electronic mail facility. Mail service to other customers is not offered as customers usually do not want any of their banking details disclosed.

Services Options

Option 1, audiotex  
1 Account balance enquiry 2 Transfer funds between accounts 3 Bill payments 4 Statements information, transactions since last statement

Option 2, videotex  
1 All of option 1 2 Addresses of branches and offices 3 Information on investment products 4 Insurance services 5 Personal loan calculator & self-assessment.

Option 3, videotex  
1 All of option 2 2 Enlarged business services and product information including foreign exchange and market news.

Charges

Option 1, audiotex: No subscription charge \$1 for each statement (max \$7 pm) Option 2, videotex: Includes Option 1 at no charge \$5.00 subscription charge per month No charge for statement details Option 3, videotex: Includes Options 1 & 2 at no charge \$15.00 subscription charge per month

There are no on-line time fees or page charges. Normal Telecom or Optus connect charges are borne by the customer.

How to use Handyline

Handyline is easy to use on the telephone or with PC. On logging on, the customer enters a unique identification number of nine digits plus their five digit password. Both are numeric so that a telephone can be used. Customers are encouraged to change their password frequently to ensure security. Once logged on, the customer is required to confirm the last date of usage as a further security measure.

What you need to access Handyline

Access to Handyline services is direct. There is no third-party service requiring an additional fee.

Option 1, audiotex only - A touch-tone telephone

or a tone sender with a rotary dial phone.

Option 2 and Option 3 - Hardware.

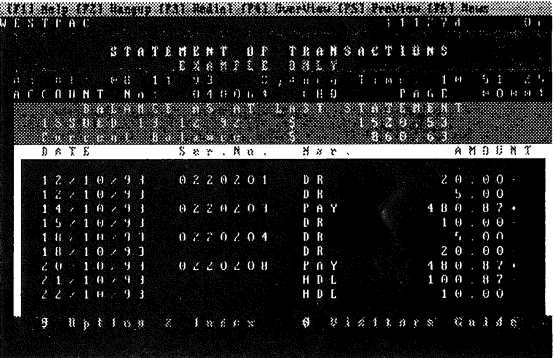
A modem capable of the Prestel "split" rate of 1200/75 for local use in Brisbane. Your PC.

Software - A communications programme capable of displaying Videotex pages. In Shareware, I-TEL is satisfactory, while commercial programmes include NetComm's AutoSoft and CyberSoft's Gateway.

Evaluation Access

Audiotex

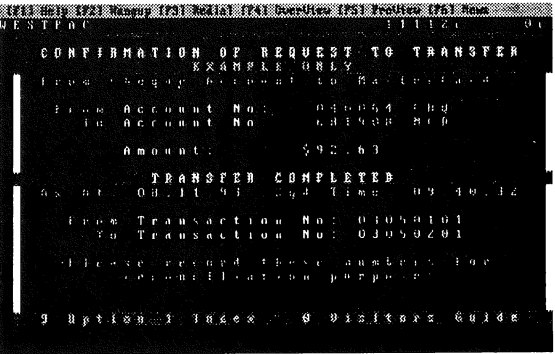
Use a touch tone phone to dial (07) 891 0666, or 008 177 404 outside Brisbane area. When requested to input your ID, press 1 and #, when requested for password, press 1 and #. Follow the spoken directions exactly. Should you require further assistance, hang up, then re-dial 13 1331 and ask for assistance with Handyline.



Example of Handyline screen: Statement of Transactions

Load your videotex-capable software, set your modem to speed 1200/75, parity even, data bits 7, stop bits 1 and emulation videotex. Dial (07) 891 0202 in Brisbane. When requested for your ID number, key 1 and #. (In videotex, the hash key or # is <ENTER>, NOT the # on number 3!) For password key 1 & #. Follow the directions on screen.

If you are a Westpac customer and wish to apply for Handyline access, you may apply online. Further assistance can be obtained on 13 1331.



Sample screen: Confirmation of Request to Transfer Funds

Continued on Page 11

# EDUCACHEON News

---

Mark Mullins — Education Director

classes...  
note the  
start times

Firstly, my apologies to anyone who fell victim to the gremlin that placed the May timetable in the June education article. The timetable appeared to conflict with the text and it did. That unfortunately is all I can say apart from promising to try to make sure it doesn't happen again.

## Mysterious Messages from beyond

This month I have been struck daily with customers and members alike complaining of General Protection Faults otherwise known as GPF's occurring whilst running Window's based programs. Seeing as this is the education article I will give you an example of such an error. Hold on...here it comes. **... "123W caused a general protection fault in module 123w.exe @ 0001:1332"**. Nasty experience wasn't it.

What caused this mysterious message to wack itself right in the middle of the screen and lock up the computer and lose all data not saved prior to the fault occurring? (Hold on...I'm looking up wack to see if I spelt it correctly. The spell checker says 'whack' or 'wacky'. Now lets see...'wacky' refers to the antics of Walt Disney cartoon characters, 'whack' is to strike or slap with a sharp resounding blow, a 'whacker' is a thing that removes as by a chopping blow [*Editor breathes sigh of relief*] and 'whacky' is the same as wacky. Streuth ! I'm confused so I'll look up the thesaurus...no, only says 'vulgar person' and I already knew I was.)

## Conflicting memory address

On with the show ! The error described above basically means that Lotus 123 Version 4 for Windows caused some sort of conflict in memory when running the executable file 123w.exe. For simplicity's sake 123w.exe is the name of the file in Lotus 123 (which all of you who attended the Introductory Spreadsheets would know is a spreadsheet program) which controls most of the program. If you disagree with this interpretation

please phone 1194 and complain to the chap on the other end. Don't worry if he seems to keep talking just tell him your problem although bear in mind that he generally only gives you a minute to get your point across.

The program in question was released about six months ago, I think, and in this instance it was being run on a 386SX-20 with two megabytes of Random Access Memory. The problem is that the software is current and to work effectively it should be run on a current standard of machine such as a 486DX-33 with 8 megabytes of RAM. If the program had been run on such a machine the problem would not have occurred.

These same sentiments were expressed by Ralph De Vries in Windows Watch in last months Significant Bits. I also run in Windows 95% of the time and I have a 486DX-33 with 8 megabytes of RAM and I only get GPF's when using the processor and RAM intensive graphics program Corel 4. I know I need another 8 megabytes of RAM but like most people I can't afford it. I simply put up with it.

## How much memory will you need to run Windows 4?

As an aside I will be interested in Microsoft's reply to the question "How much RAM is required to run Windows 4 ?". Multiply the answer by two and you will then know how much RAM you need to run Windows based programs on top of Windows !

Don't get me wrong, I am in fact a Windows fan which makes me 'uncool' in the computing fraternity because it is the same operating system that most people use. If I used OS/2 or that weird Unix derivative I would be regarded with awe as a true maverick. The only problem I have with this is that I can't get interested in something that even the company that makes it is apparently not interested in. I assume they are not interested because their marketing of the product is practically non-existent when compared to Microsoft's efforts.



New User orientated courses to begin this month

At the July meeting we will again be embarking on new user orientated courses. Given last months attendances I feel that we are heading in the right direction. July's meeting will see *John McVeigh giving a presentation on Introductory Databases which will commence at 9.00 am.*

*At 10.30 am the Masked Tutor (Oh I hope it's not me again !), will be presenting Introductory Windows.* Once again it is real grass roots stuff so don't come if you are a Window's languages developer.

If you attended C++ on 26 June you will now know that it was not on due to other commitments by the ever effervescent Geoff Baker. If you did not go you literally missed nothing. Geoff who is eminently knowledgeable in programming and who has my heartfelt thanks for his sterling efforts will proceed on Sunday 3 July at the usual venue. Geoff has told me that my puns about him being nonplused just didn't add up. My apologies !

*The new user's orientation conducted by Rex Ramsey will be held at 12.15 pm as usual.* The last class was standing room only so get in early for a good overview of what Brisbug has on offer.

*The New Users Technical Chat which is conducted by Clarence Stock at 3.15 pm* is also well attended and allows for free flowing discussion on many topics which may be causing newer users to tear their hair out, plait it and make lassos to catch ferrets.

Junior Group

The Junior Group forges on covering a wide variety of interesting topics for young and older alike.

Les Cathcart finally received his just deserts in the form of a software package presented by Graeme Darroch.Good on ya Les!

The Junior Group Logo contest has been extended until the end of August so all youngsters get in and get creative. It doesn't necessarily have to be produced on a computer so feel free to use Dad's best fountain pen. If he gets angry tell him to ring that guy on 1194.Send your finished product to Les Cathcart care of Brisbug, PO Box 985, Toowong, 4066.

Normal? classes

Leon Percy and dBase, John Tacey and DOS, Rex Ramsey and Basic Languages as well as Ron Lewis and Hardware will all be there again at 10.30 am so be there or be a plane figure having four equal sides and four right angles. Aren't dictionaries great ! When you were at school did you have a kid in class who was for ever finding rude words in the dictionary and took great pleasure at reading the definitions in full no matter how disinterested you were ? Did you also note that without exception they always picked their nose and ears and/or both ? Did you ever wonder why the television program "Time Out" is only on when the least people are watching television and for that matter why is it now presented by American evangelists and not your average cleric ? Whatever happened to Father Gerry ? Did you wonder why the female protester at the skyrail site at Kuranda super glued herself around a tree and was then told they had not intended to cut it down in any case? Does she use OS/2 or Windows?

I hear the sound of a domestic rodent knocking on my door after a long night on the town so let me leave you to ponder these questions the answers to which I believe will form the very fabric of life in the future as they have done in the past.



CLASS  
TIMES  
HAVE  
CHANGED  
- PLEASE  
NOTE

CLASS TIMES

9.00am	Introductory Databases	John McVeigh	B310
	Junior Group	Les Cathcart	B301
10.30am	BASIC Languages	Rex Ramsey	B309
	Hardware	Ron Lewis	Theatre
	Introduction to DOS	John Tacey	B315
	dBase	Leon Percy	B312
	Introductory Windows	Masked Tutor	B310
12.15pm	New members Orientation	Rex Ramsey	B309
3.00pm	New Users Technical Chat	Clarence Stock	B309

# Minutes - Meeting on 19th June

Neil Krause — Secretary

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## Minutes of June General Meeting

Club President Lloyd Smith opened the meeting at 1. 00 pm.

### Membership Drive

The President reported that the Membership Drive was now in its second month and still had four months to run. Lloyd reported that 72 new members had joined the club in the last month. He reminded members present that the major prize draw of the Compaq Laptop for new members will be held at the October meeting and that fabulous Multimedia Computer for members will be drawn the following month.

Lloyd urged everyone to get behind the membership drive and avail themselves of the great prizes on offer. Membership Secretary Jan Ausburn then proceeded the prize draw for this month. Prizes included multiple copies of Paradox (Windows and DOS versions), Freelance Graphics and Norton Utilities.

### Volunteer of the month

Lloyd explained the concept of the rewards scheme. He said that all volunteers were eligible for nomination and he invited members to nominate someone who they felt was working hard for the Club. These nominations can be posted to him or simply placed in the suggestion box at any meeting.

This months recipient of a reward was Les Cathcart who was the driving force behind the Junior Group. Lloyd publicly thanked Les for all this work and presented him with some selected software to the popular acclamation of the members present.

### Reports

Treasurer reported that the Bank balance at end of the month was \$7,087.

Vice President reported that the Club's stand at the Pet and Hobby Expo was manned by four members and one Committee member and the results were reasonable. Graeme said that the Club would have a stand at the Queensland PC Expo in November and that he will soon be seeking volunteers to assist at the stand.

Education Officer Mark Mullins reminded members that there would be classes for new users and Windows for beginners next month. Les Cathcart also reminded members that the junior group logo competition will continue until the end of August.

Sysop Paul Marwick said that Line 4 of the BBS was now running a Microcomm modem capable of 28800 baud. Paul said that old modems may find it difficult to communicate with this modem. He also informed members that he plans to have a preliminary meeting with people seeking Internet access soon.

President said he had some complaints from country members who hadn't used the BBS for some time and had forgotten their passwords. He reminded members that there was a specific procedure for changing passwords. BBS was now charging an administration fee of \$5 for people who have forgotten their passwords and want new ones.

### Club Development

Development Director Carl Planting told the meeting that a number of areas have been identified where improvements could be made or more facilities and benefits provided for members. Carl said that the provision of help lines, classes for Introduction to DOS, training software, a CD Rom library for downloading, Internet Connection, involvement with the Public Service Consortium to obtain discounts for club members were just some of the things being considered.

Carl pointed out that Clubs such as ours survive by its income and fail by its expenditure. The club could therefore look at the provision of 0055 numbers for bulletin boards for non-members and pre-paid memberships distributed through major retailers of computer equipment Magazine.

Carl advised members that he now has database of all schools in Queensland (including Private Schools) and Tafe colleges also and the club could communicate to these institutions and seek memberships. He explained also that the Club has little qualitative knowledge of its members. He explained that a questionnaire was needed to gather information and we also needed a specialised Public Relations Officer to project Brisbug to the

outside world. In the words of John Kennedy Ask not what Brisbug can do for me but what can I do for Brisbug! Carl asked for volunteers to assist in these projects by phoning him on 391-6000.

Lloyd said that the Magazine was produced with a lot of assistance and invited members to get involved with the production of the Magazine.

He thanked members for their presence and then closed the meeting at 1.30 pm.

#### Banking on your PC with Handline - Continued

### Hours of Operation

Handyline is operated seven days a week. Daily hours are 4:00am to 1:00 am. In practice, some details of accounts may not be available until 7:00 am on some days.

### Summary

Handyline offers a wide range of useful home and office banking services. The options 2 and 3 using a PC are of particular interest to BRISBUG members. With the appropriately chosen option, it can be a cost-effective way of handling your bank funds. BRISBUG members can try the service before making a decision to apply.

### Long-term evaluation

In my case, option 2 is very satisfactory and cost-effective. Option 1 is used as a backup. I have arranged most of my cash inflows as electronic funds transfers. Most of my outflows are by credit card. I track my accounts and transfer funds by my PC. I seldom visit the actual branch at which my accounts are located. This saves a lot of time, trouble and risk of parking fines.

However, if you have a need to frequently deposit cash at your branch, this may cause you to carefully choose your option in Handyline. You may choose the low-cost option 1, instead of the more comprehensive other options which incur higher charges. Some users may be disappointed with the relatively small number of organisations offered in the bill payment facility. Westpac claim that this is under review. Consideration is expected to be given to adding frequently-used organisations such as local government authorities.

Unlike the much publicised proposed information super-highway, this service is available now to anyone with a telephone.

Sources: Westpac Banking Corporation documentation Manager, Handyline Operations Author's own long-term experience.

#### Assistant Stoker - Continued from Page 3

This all points to the fact that while we do the best job we can for BRISBUG, we are volunteers. As such we do have some other things that we do in our life. My wife knows nothing about BRISBUG, and, is not in the slightest interested in the club. She knows even less about a book someone has ordered from the Library. So this whole thing escalated from something that was unnecessary.

The book had been already been dispatched. The magazine production had taken priority, and while I agree the member did not know this, a little consideration for the volunteers who do the work would be appreciated. We do as much as we can, as quickly as we can. If your order has not arrived and is perhaps a week or so longer than you would expect, give us a chance to catch up. Don't go having a moan to someone who has nothing to do with it. Especially if it is my wife. ( She does not appreciate getting calls to be spoken to about something she has no control over.)

### Next Meeting

Now to next month's meeting, which I think is going to be a Biggy! We are going to have two especially interesting presentations. The first will be from Borland (see I told you last month they would be here). The subject will be the Borland Consulting System, which is a system that Borland have set up, whereby Borland will act as Project Managers for programming jobs, and will subcontract programming work to registered programmers. So if you are a programmer this could be a way to make some extra money. Details of the hows and whys will be given in the presentation.

### Main Event - CHICAGO

The Main Event will be a look at the much publicised successor to the current version of Windows. This will be a BETA copy of **CHICAGO** and Microsoft will be giving the presentation. This will be very popular and I would recommend that if your interested, get in early. We will be policing the doors to make sure that only people with registration dots (of whatever colour is current this time) may enter.

Remember if you want in - **REGISTER FIRST.**

Hope to see you at the meeting, remember to REGISTER and come early.

Graeme



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Mind you, our efforts haven't exactly gone unrewarded.

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# Doctor DEBUG

## "The Man from TIO"

Part 2 of a short story that was presented in the Dr Debug echomail area on 20th May 1994. It was posted by John Kristoff who claims that it was "written by the Legend of the Lab himself, Doctor Debug."

I knew something was wrong the moment I stepped away from the baggage claim at Miami airport. The flight itself had been uneventful, and the Doctor had amused himself by tying his laptop into the cockpit warning light system and listening to the resulting fun over the "pilot to tower" channel they so thoughtfully provide. (One of the pilots got a bit freaky and actually bailed out over South Carolina).

### Please come with us, sir

But as I turned to walk for the rental car place, several men in dark suits and sunglasses began moving toward me. "Please come with us, sir" one of them said, grabbing my arm and leading me away quickly. Before I could protest they had led me to an unused counter. In a moment I was spread over that counter and expertly frisked. "What's all this then?" I managed to ask. The man who seemed to be in charge pulled out a badge which read "Conners, FBI".

"It was just a prank!" I said, sweating profusely. "It was only the warning lights, and..." I noticed at this point that they were not listening to me, but instead watching one of the men pry open my laptop. To my astonishment, he pulled a large bag of white powder out of the case. "You are under arrest, scumbag!" snarled Conners. I tried gamely to point out that only a fool would smuggle drugs INTO Florida, but that only won me a punch to the kidneys and a not so gentle reminder to keep quiet. As my rights were read, my mind raced. Someone had set me up, probably to get me safely out of the way and keep me from investigating number 5's death. I had to escape, but there were six of them and barely one of me. And I was now cuffed.

They were about to lead me away when I noticed a puddle of water just underneath Conner's feet - a pipe was dripping from above him. A light-bulb went on in my mind. "Wait," I said as they began to lead me away. "That computer is valuable. May I close it up properly?" They looked at each other uneasily, but Conners finally showed a moment of humanity. "OK,

but make it quick." He undid my cuffs, and I bent down to the PC. Saying a silent prayer, I ripped that back-up battery out of the Zenith and slammed it down into the puddle, at the same time shielding my eyes. The flash and small explosion caused by the lithium reacting with the water sent the FBI men flying in all directions. I grabbed my gear and ran like heck for the nearest exit.

There was no time to rent a car now, but the Doctor needed transportation badly. Making my way to a secluded area of the parking lot, I began hot wiring a late model Ford. Well, that didn't work so well, so I tried the Chevy beside it. Three Chryslers and a Subaru later, I felt a tap on my shoulder. This is it, I thought. I slowly turned around.

### The Doctor falls into the hands of the CIA

"Vat are you doink, Herr Doktor?" asked a smiling man with shocking grey hair. "Ve take my auto, Ya?" I placed him in a moment... Hans von MaldeMere. Nazi Germany's most brilliant cybernetic specialist, now working for CIA. At least, he had been a few years back. Seeing a group of police run out of the terminal building in our direction made my mind up. I jumped into his Duesenberg and in moments we were headed for Key West.

As we rode, MaldeMere told me that the "company" had been asked by TIO to send someone to look after me. The aged german had just been in the area and, having known the Doctor, volunteered to help out. He was very well briefed, and he agreed to help in any way possible. I was concerned, however, as MalDeMere had a reputation for being a sadistic and ill-tempered man. It probably stemmed from his childhood, as his father had been a Colonel in the German Army while his mother fought with the French Resistance during WWI. In a tragic and quite touching scene his parents had shot, stabbed, and then strangled each other during the climactic battle of LangSyne.

Settling back into the old car's passenger seat, I decided to watch my rescuer very carefully indeed.

*To be continued....*

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



**M**ANY buyers of new PCs in recent times have been rather alarmed at a message that pops up during the startup process. Just after the BIOS sign-on, "ChipAway Virus Enable" appears, and then the boot up procedure continues. That does look awfully like some virus activation message, but in fact it is the opposite, you might say, and no cause for alarm at all.

## Alarming Message!

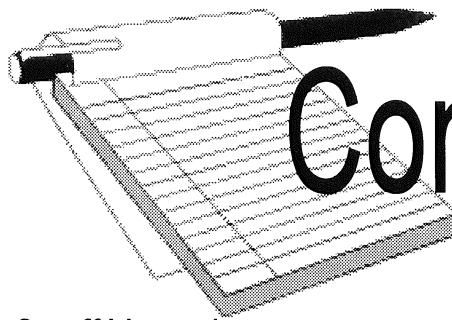
The message appears on some PC main boards recently coming from Taiwan — rather good ones actually. They have a virus protection system built into a ROM chip, that activates during start up before any reading of drives or CONFIG.SYS or anything else occurs. That means the protection is active before anything can access the computer, unlike software anti-virus systems that can only start working after all the computer's startup process has finished, and the files that comprise the anti-virus system have been read off the disk. So the idea of the startup ROM anti-virus system is very good.

I'm not sure how powerful the system is, but it certainly checks the basics like boot sector and partition tables, maybe better than any software system could. It obviously cannot compete with file based programs for being up-to-date on virus signatures.

The only problem is its sign-on message, no doubt written by a native Mandarin speaker, which, though intended to be reassuring, succeeds in being just the opposite. A good system, marred slightly by a few choice words.

## RISC and Emulation

Despite my ingrained distrust of the sort of hype that Apple have often used with their new products, it appears I got over-enthused about some aspects



Geoff Harrod

# Consultant's Notepad

of their PowerPC when I wrote about it a little while back. Now that things have settled down, it is apparent that it is indeed a startling speedster, but only with Mac programs that have been re-written for PowerPC, which are proving very much slower forthcoming than early predictions. The Power Mac will indeed run old Mac programs, but it does so by emulating the 68000 processor's instruction set in a firmware program. The story was that, although software emulation of chip instructions has always been a slow technique, the unique characteristics of RISC chips allowed it to work much faster. But it doesn't seem to really work out quite like that.

Again, the story was that the Power Macs would run PC Windows programs "better than Windows" (we've heard that story somewhere else too!) —about like a 486 PC anyway. Well, the "Soft Windows" emulator actually works more like a 386, which is in fact quite a respectable achievement. However, in its present version, it only emulates a 286 processor's instruction set, which makes it next to useless, as almost all modern Windows programs will only work on a 386/486 in Enhanced Mode.

Lastly, the extreme claims of the PowerPC chip running several times faster than a Pentium are still being made, but the new 90 MHz Pentiums have closed the gap greatly if not reversed it. And people still say the new Macs are less costly than a Pentium PC, which may have been true when the Pentium was still rare. Now you can buy a very good Pentium MultiMedia PC for very much less than an equivalent Power Macintosh.

Emulation is going to be the crucial factor with any move to RISC chips, and so far has proved a major problem. Even the very thoroughly designed DEC Alpha has emulation problems running Windows programs other than those produced as native NT programs for the Alpha, of which there are very few yet. The MicroStation ver 5 CAD system is almost alone still in being released in DOS/Windows, and in Windows-NT versions for Intel 486/Pentium, Alpha, PowerPC and MIPS RISC systems, and in Solaris (Unix) version for Sun SPARC RISC systems. Problems with emulating existing systems to be able to run existing software are hampering the acceptance of these new systems.

The PowerPC chip is proving a big success in the new version of IBM's RS/6000 graphic workstation computer. The PowerPC chip was developed from the original POWER-RISC chip that IBM developed for the RS/6000. However, I was surprised to find that the first version of the PowerPC chip, the 601, which is the lowest performance version, intended for mass market machines like the Mac, is being used in the RS/6000 and producing a 2.5 times speed improvement over its progenitor! What will the 630 achieve when it arrives?

IBM have also slashed the price of the RS/6000 almost in half. That still makes it about \$20,000, but it's good value for what it does. It now looks like a desktop PS/2 with a 20" screen, rather than a chubby desk-high tower. It seems IBM are not going to use the PowerPC RISC chip in mass market PCs at all; they are sticking with Intel for that. Possibly the emulation matter has some influence there, where users will want to



continue using established PC software. It's less of an issue in machines like the RS/6000 that mainly run very specialised and expensive software, and all existing RS/6000 AIX (Unix) software will run on the PowerPC chip without emulation anyway. I still haven't been able to get a clear picture of where OS/2 fits into IBM's plans. They are putting all the emphasis on AIX, their own brand of Unix, for the PowerPC chip machines.

On the other hand, DIGITAL seem to be pinning their future on emulation in RISC with their concept of a "universal platform" based on the Alpha chip, that will run any operating system and software at will. In the meantime though, they are producing some extremely good 486 and Pentium PCs as well as the Alpha AXP.

At the CADEX CAD expo in Sydney in May, an Intel rep demonstrated Multimedia with full motion video and stereo sound in resizable windows, as I mentioned last month. It impressed the Sun and Silicon Graphics reps on the panel because, although not quite up to the standard achieved on their own (\$20,000 to \$40,000) equipment, it was done on a computer costing less than \$6000, running Windows-NT on a Pentium. It was as good as the AV Macintoshes, at a lot less cost. Intel are certainly not about to lie down and die in the face of the RISC challenge.

## 32-bit Windows

A new category of PC programs is now beginning to be released, and I am at present writing a manual for one of them. It formerly ran as an "extended-DOS" program on 386+ machines, by using the Phar Lapp DOS-extender, like most PC CAD systems.

Phar Lapp is an operating system extension that runs in protected mode in extended memory, and provides support for the program to run in extended memory, occupy and use many Megabytes and work on a 32-bit basis. The extension gets compiled into the EXE file, and manages calls to real-mode 16-bit DOS for disk and video access etc.

The new version of this program was written under Windows-NT and

compiled as a "Win32s" application, which allows it to be run on ordinary DOS/Windows as well as NT. To run on Windows 3.1/3.11 (enhanced mode), a Win32s support file is loaded concurrently. The result is, the program runs as a full 32-bit protected mode program, rather than as a mostly 16-bit protected mode program as happens with ordinary Windows.

The only difference from running under NT is that some conversion to and from 16-bit data has to be done whenever Windows has to call on the underlying DOS for basic services, and those conversions and DOS calls slow operation.

If a Win32s application is run on Windows for Workgroups 3.11 though, and WFW's 32-bit file and disk access is operational, then the need for 16-bit conversions (called "thunking") is greatly reduced, and quite noticeable speed gains result.

The 32-bit access in WFW 3.11 was "pinched" from the forthcoming "Chicago" release (Windows 4), which will bring complete 32-bit operation to the PC for the first time for mass users. OS/2 is still partly 16-bit. NT is entirely 32-bit but only suitable for major power users.

The Win32s system allows developers to produce a single version for both DOS/Windows and Windows-NT and gain significant performance advantages over ordinary Windows programs. This is a big advantage considering that the NT market will inevitably remain small for quite a long time, at least on the Intel-PC machines. Expect to see more Win32s programs.

## Windows as a DOS-extender

Another trend that has emerged to avoid the need for DOS-extenders is to use Windows just as a DOS-extender. Some new versions of CAD programs have come out as Windows programs, but without actually being rewritten as true Windows applications. They display with the usual window title bar with minimise and system buttons, but have no Windows pull-down menu bar, and

display exactly the same as the DOS version within the window.

These are really interim versions, that serve the dual purpose of being able to be run under Windows, as more and more users want to do, and also to use the extended memory and system facilities that Windows provides. After all, Windows (at present) is really a combined DOS-extender and graphics sub-system.

A major problem for writers of DOS or extended-DOS based graphics programs is the need to provide their own drivers for every likely type of video board and peripheral. With the ever increasing range of mostly mutually incompatible video accelerator boards, this has become an impossible task.

Using Windows as a DOS-extender avoids the problem as it automatically uses whatever video scheme Windows is set for, and also uses the already installed Windows drivers rather than requiring special DOS video drivers.

One of the main reasons for the mass move to Windows and/or NT by the CAD producers is to get away from the major problems of supplying DOS video drivers for the ever expanding range of video boards. The various board and peripheral makers can be expected to produce good Windows driver for their products, but not for every individual DOS program.

So I don't see a long-term future for DOS-extenders now. Windows or Windows-NT on PCs, the Power Macintosh, and X-Windows/Motif on Unix, are now the standard vehicles for CAD. There are currently no versions for OS/2 that I've heard of, and no plans for any by the major makers. That's the reason for my lack of interest in OS/2. It's not that I think it's a poor system; it's just irrelevant in my area of work, like Pick or System Manager. And, regardless of its critics' snipings, Windows 3.1/3.11 is proving a reliable and efficient platform for major CAD systems and other power applications in highly demanding work environments, as well as in countless more mundane office situations.



9407

# Learning Assembler using DEBUG

## *The story so far:*

When the computer starts, the ROM BIOS start-up routine searches the first sector of the first track of A:, or if the drive latch is open, of C:. If a sector with a valid signature word is found the BIOS loads it into memory location 0:7C00h and then executes it. ("The Michelangelo Virus - An analysis", SigBits Mar 94.)

The first sector on a floppy disk is the boot-sector. On a HD the situation is more complex. Since a HD can be very large, it can be split into separate logical drives, called "volumes". The partitioning of a HD into one or more logical drives requires that the first sector on the first track of a HD be

Dan Bridges

## Part 4: The Boot-Sector (1)

the Master Boot Record (MBR). This sector contains a partition table that has space for up to four entries, but only one of these can be the "active" (bootable) entry. The code in the MBR determines which entry is marked as active and that no further entries are so marked. It then attempts to read the first sector of the active partition (the partition's boot-sector) into 0:7C00h. The MBR code then checks that this copied sector has a valid signature word at its end. ("Learning Assembler using DEBUG", SigBits Apr 94).

By now the FD/HD boot-sector has been loaded into memory at 0:7C00 and has passed the signature check so execution passes to it. In this article we'll examine what goes on when the boot-sector code executes. Unless you're quite familiar with assembly language addition, multiplication and division you should reread "Learning Assembler using DEBUG: Arithmetic Operations & Loops", SigBits May 94, before attempting to follow the code in this article.

The code in the 512 bytes of the boot-sector certainly packs a punch for its size. It's rather complex but very interesting. To understand it you really should follow along, tracing through the code, as it runs in DEBUG. The problem is that this code is designed to run in segment 0000h which is now occupied by other parts of DOS. Attempting at this late stage to reload the boot-sector's code back at 0:7C00h and then run it will quickly lock the system.

To remedy this, you will learn how to create a modified version of the boot-sector ("hack" it) so that it can be run within DEBUG. You will then be able to closely monitor every step of its operation.

By the end of working through this article you will have developed skills and knowledge in a variety of areas, namely:

- \* Comprehensive DEBUG userability;
- \* A good grasp of assembler integer arithmetic;
- \* An introduction to the BIOS Parameter Block, Diskette Base Tables and DOS' directory entry structure;
- \* More familiarity with segments;
- \* A significant improvement in your ease with assembly language.

Even if you never plan to write a line of assembler code in the future you can still approach the refined Art of Disassembly as a thoroughly satisfying alternative to the solving of other types of puzzles, such as crosswords.

DEBUG

```
-E 200 4 3 2 1      ;Place four numbers at offset 0200h.  
-E 8000:200 9 8 7 6 ;Do the same thing, but in a different seg.
```

```
-A100  
1362:0100 MOV DS,8000      ;You can't directly load a constant  
                        ^ Error ; into a segment register.  
1362:0100 MOV AX,8000      ;Instead, place value in a register,  
1362:0103 PUSH AX          ; push it on to the Stack,  
1362:0104 POP DS           ; and then pop it into the segment register.  
1362:0105 MOV BX,200       ;BX=0200h.  
1362:0108 LES SI,[BX]      ;Load dword at mem loc DS:[BX] into ES:SI.  
1362:010A CS:              ;Segment override prefix for next command.  
1362:010B LES SI,[BX]      ;Load dword at mem loc CS:[BX] into ES:SI.  
1362:010D                  ;Blank line to end assembler mode.
```

```
-T=100 6 ;Perform 6 consecutive trace commands.
```

```
AX=8000 SP=FFEE DS=0000  
1362:0103 PUSH AX
```

```
SP=FFEC ;Stack grows downwards (min. of 1 word) when pushed.  
1362:0104 POP DS
```

```
SP=FFEE DS=8000 ;DS has now been changed.  
1362:0105 MOV BX,0200
```

```
;Significant registers before DS:[BX] -> ES:SI.  
;Note DEBUG's display of the contents of mem loc DS:BX.  
;Note also that mem offsets normally are relative to DS.  
DS=8000 BX=0200 ES=1362 SI=0000  
1362:0108 LES SI,[BX]      DS:0200=0809
```

```
ES=0607 SI=0809 ;Result of DS:[BX] -> ES:SI.  
CS=1362 BX=0200 ;Significant registers before CS:[BX] -> ES:SI.  
1362:010A CS: ;The seg override prefix and LES are executed  
1362:010B LES SI,[BX]      CS:0200=0304 ; in 1 trace.
```

```
ES=0102 SI=0304 ;Result of CS:[BX] -> ES:SI.  
1362:010D
```

**Figure 1.** DEBUG session that demonstrates how segment registers can be loaded; the use of a segment override prefix; loading the contents of a full address pointer into a selected segment register:offset register pair.

New Stuff

We'll encounter a few new commands and concepts when we examine the boot-sector's code. Figure 1 demonstrates three of them.

You can't directly copy a constant or the value of a segment register, into a segment register. Instead you need to use a general-purpose register (AX, BX, CX, DX) as an intermediary. The first step is to copy the value into the register e.g. "MOV AX,200". Once there, there are two common methods of transferring this value to the segment register. One method is to copy directly to the segment register e.g. "MOV ES,AX". The other transfer method is to use the Stack e.g. "PUSH AX" then "POP ES". Refer to the code at offsets 0100-0104h in Figure 1 where you'll see an example of the later method. Note: you may be wondering why you couldn't use "PUSH 200" followed by "POP ES". Unfortunately the lowly 8086, and thus DEBUG, doesn't support the direct placement of a constant onto the Stack.

Sometimes you will need to access data outside the current data segment. One way of doing this is to prefacing your offset access instruction with a segment override prefix. With DEBUG this is on a separate line proceeding the instruction to be modified e.g. "ES:" then "MOV AX,[BX]".

With MASM/TASM you will find the prefix on the same line as the offset address it refers to e.g. "MOV AX,ES:[BX]".

"LES/LDS reg, seg:offset" loads either ES:reg or DS:reg with the contents of the seg:offset memory location. So "LES AX,[DX]" loads ES:AX with DS:[DX], while "CS:" then "LES AX,[DX]" loads ES:AX with CS:[DX]. See offsets 0105-010Ch in Figure 1.

```
DEBUG

-E220 2 1      ;Enter two numbers at offset 0220h.

-A100
xxxx:0100 MOV BX,200      ;BX=0200h.
xxxx:0103 MOV SI,[BX+20]   ;Copy the contents of mem loc 0220h to SI.
xxxx:0106 LEA DI,[BX+20]   ;Load effective address 0220h into DI.
xxxx:0109

-T=100 3       ;Perform three traces.

BX=0200 SI=0000 ;Registers before MOV.
xxxx:0103 MOV SI,[BX+20]   DS:0220=0102

SI=0102 ;SI received the contents of mem loc 0220h.
xxxx:0106 LEA DI,[BX+20]   DS:0220=0102

DI=0220 ;DI received mem address [BX+20].
xxxx:0109
```

Figure 2. DEBUG session showing use of the LEA instruction.

The boot-sector's code is loaded and executed at 0:7C00h.  
Bypass the disk data section (including the BIOS Parameter Block)

**Start\_Of\_Main\_Code:**

Set the top-of-Stack loc (SS:SP) to the start of the loaded sector (0:7C00h). This will grow downwards so it won't overwrite code/data.

Locate the Interrupt Vector Table (IVT) entry 1Eh. (There are FFh (256) four-byte entries in all, located from 0:0000-0:03FFh.)

Save 1Eh's values (the loc of the current Diskette's Base Table) on the Stack.

Copy the 11 bytes of the DBT to 0:7C3Eh. This overwrites the code at the Start\_Of\_Main\_Code section that has outlived its usefulness.

Ensure that the Data Segment is 0000h (where the routine is loaded).

Ignore what the System BIOS has nominated. Set the head-settling time value (in the DBT) to 15ms.

Ignore what the DBT's last-sector-on-track value is. We could have a 720Kb FD in a 1.4Mb FDD. So use the BIOS Parameter Block's (specific to this floppy) sectors-per-track value to decide what ends up in the DBT's sectors-per-track.

Alter the IVT 1Eh entry to point to 0:7C3Eh (Start\_Of\_Main\_Code).

Use Int 13h to reset the disk subsystem so it adjusts to the altered parameters.

Is this volume > 32Mb.

Yes. Jump to Big\_DOS\_Total\_Sectors.

No. Continue.

Adjust the >32Mb size value to mirror what's in this <32Mb volume.

**Big\_DOS\_Total\_Sectors:**

Work out how many sectors the total num of FAT copies occupy.

Include the num of hidden sectors before the FAT(s).

Don't forget about reserved sectors before the FAT(s), as well.

The running sector total (dword sized) is now copied to two locations since two sector totals will be maintained.

The 1st total specifies the number of sectors before the root dir.

When we use this value in a next sector physical read we obtain the first sector of the root directory.

Perform a bit of mucking around to account for the total sectors that the root dir occupies. Add this to the 2nd total.

The 2nd sector total produced covers from the very start of the logical drive to the end of the root directory. A next sector physical read will copy the first sector of the data (file) area.

Use the 1st total to copy the first root directory sector to the 0:0500h work location.

Compare the first 11 bytes of the copied sector with the reference string "IO SYS".

Are they the same? (Is IO.SYS the first root directory entry?)

No. Jump to Error\_Message.

Yes. Continue.

Move the comparison point forward 20h (32) bytes so we're at the start of the next directory entry.

Compare the first 11 bytes with the reference string "MSDOS SYS".

Are they the same? (Is MSDOS.SYS the second root directory entry?)

Yes. Jump to IO\_SYS\_And\_MSDOS\_SYS\_Found.

No. Fall through to Error\_Message.

**Error\_Message:**

Display a "Non-system disk..." message.

Pause until the user presses any key.

Restore the original value of the IVT 1Eh entry.

Perform an Int 19h reboot to start all over again, so stopping execution in this particular copy of the boot sector. The reboot, as far as the user is concerned, will occur instantaneously.

**IO\_SYS\_And\_MSDOS\_SYS\_Found:**

A directory entry, among a number of other things, specifies the starting cluster for the file. "Cluster" is a DOS concept and we're running on System BIOS at the moment (DOS hasn't loaded yet) so we convert IO.SYS' starting cluster to a logical sector number.

Read the first 3 sectors of IO.SYS to mem loc 0:0700h.

If an error occurs during the read process (bad sector/disk removed) jump to Error\_Message (and thus an eventual reboot).

Set a few registers for IO.SYS' later usage.

Jump to 0070:0000h. Execution now passes to the copy of first 3 sectors of IO.SYS. This portion contains a loader routine for the rest of IO.SYS.

Figure 3. A simplified description of the boot-sector's operation.

Computed (Indirect) Addressing

Say you had BX pointing to some destination area. You currently have SI set to the beginning of a string with DI at the corresponding offset in the destination. Now you might want to adjust SI to point to the beginning of the next string 20h later with "ADD SI,20" and then copy this new word to AX with "MOV AX,[SI]". A better way to do this would be to use an address form that permits computed addressing as in "MOV AX,[SI+20]"

- A computed address can have up to three components:
- \* A Base Offset derived either from the Base register (BX) or the Base Pointer register (BP);
  - \* An Index Offset derived from either the Source Index register (SI) or the Destination Index register (DI);
  - \* A constant memory offset e.g. 20h.

So you could have "MOV AX,[SI]", "MOV AX,[SI+20]", "MOV AX,[BX+SI]", "MOV AX,[BX+SI+20]", "MOV AX,[BX+20]", etc.

Say that, instead of the case of "MOV AX,[BX+SI+20]" where you are copying the word located at this computed address into AX, you want to copy the address, produced by the addition of BX + SI + 20h, into AX. To do this you can use the LEA instruction (Load Effective Address) e.g. "LEA AX,[BX+SI+20]". See Figure 2 for a worked example.

The Boot-Sector's Narrative

Figure 3 relates a potted version of the boot-sector's operation. Have an initial read through it now to get an overall impression of what's going on. If you're unfamiliar with a FD's layout refer to Figure 4. A HD's layout is similar except:

- (i) At the start of the disk there is a MBR sector. The rest of the sectors in track 0 are unused.
- (ii) There can be more than one volume (drive letter) per physical disk, thanks to the Master Partition Table.
- (iii) Each volume will have its own boot-sector, FAT(s) etc. The boot-sector of the first volume usually starts at Cyl 0, Hd 1, Sec 1.

There are two technical concepts we haven't covered before: Diskette Base-Table (DBT) and BIOS Parameter Block (BPB).

A default DBT is provided by the System BIOS for each FDD, based on what FD types are stored in the CMOS ROM. The DBT contains rather technical parameters for the FDD controller. See Figure 5. Knowing that it exists provides an insight into how utilities like FDFORMAT ("Doctor Mike Rowe", SigBits, Nov 91) and programs that speed up the time that it takes a FDD to stop, operate.

The only item in the DBT that the boot-sector is interested in is the head-settling time. A FDD head and actuator arm assembly has inertia. When the head moves from one track to another there must be a small wait for the vibration of the head/arm to die down. The settling time specified by the boot-sector is 15ms. This replaces whatever was in the original DBT. (The original PC System BIOS specied 25ms but modern BIOSes usually nominate 15ms.)

Interrupt Vector Table entry 1Eh, at memory location 0000:0078h, contains a dword value that points to where the current FD's DBT is located. Originally it

Physical (Cyl,Hd,Sec)		# of Sectors	Logical (Sector #)	DOS (Cluster #)
0,0,1	BOOT SECTOR	1	0	
0,0,2	FAT #1	9	1	
0,0,0Bh	FAT #2	9	10 (0Ah)	
0,1,02h	ROOT DIR	14	19 (13h)	
0,1,10h	FILE AREA	2847	33 (21h)	2
4Fh,1,12h	END OF DISK		2879 (B3Fh)	2848

Figure 4. The physical and logical layout of a 1.4Mb FD. There is one sector per cluster on this sized FD.

OFFSET	
00h	4 bits used for step-rate time, 4 bits for head-unload time.
01h	7 bits used for head-load time, 1 bit for DMA flag.
02h	Delay until FDD motor turns off. In ticks. Usually 25h (2 sec).
03h	Sector size. Usually 02h (512 bytes).
04h	Last sector on track. (09h,0Fh,12h typical).
05h	Inter-sector gap (Search Gap) for read/writing. 1Fh typical.
06h	Data Transfer Length (DTL) when sector length not specified. FFh typically. Used for DMA transfers.
07h	Formatting sector-gap length. 54h,6Ch typical.
08h	Formatting filler character. Typically F6h.
09h	Head-settle time. In ms. Typically 0Fh (15ms).
0Ah	FDD motor start-up time. In 1/8 secs. 08h (1 sec) with DOS 5/6.

Figure 5. The structure of the Diskette Base-Table. I don't know the units for search gap, DTL and formatting sector gap values.

OFFSET	1.4Mb	1.2Mb	100Mb	Description
0000h	-->	3CEBh	<--	JMP to code at 003Eh.
0002h	-->	90h	<--	NOP "Do Nothing" instruction.
0003h	-->	"IBMDOS5.0"	<--	DOS name & version. 8 bytes.
0008h	-->	0200h(512)	<--	Bytes per sector. Word.
000Dh	01h	01h	04h	Sectors per cluster. Power of 2. Byte.
000Eh	-->	0001h	<--	Reserved sectors at beginning. Word. (Boot-sector)
0010h	-->	02h	<--	# of FATs. Byte.
0011h	00E0h (224)	00E0h (224)	0200h (512)	Root dir entries. Word.
0013h	0840h (2880)	0960h (2400)	0000h	Sectors in volume. Zero if > 32Mb. Word.
0015h	F0h	F9h	F8h	Media descriptor. Byte.
0016h	0009h	0007h	C8h (200)	Sectors per FAT. Word.
0018h	0012h (18)	000Fh (15)	0020h (32)	Sectors per track. Word.
001Ah	0002h	0002h	0002h	# of heads (sides). Word.
001Ch	0000h	0000h	0020h (32)	# of hidden sectors before this vol. DWord. 1 Track before 1st partition. The track begins with the MBR.
0020h	0000h	0000h	3200h (204800)	Sectors in volume if > 32Mb. DWord.
0024h	00h	00h	80h	Physical drive #. Byte.
0025h				Reserved. Byte.
0026h	29h	29h	29h	Extended boot record signature. Byte.
0027h	-->	xxxxh	<--	Volume serial #. 4 bytes.
0028h	-->	"ABCDEFGHJK"	<--	Volume Label. 11 bytes
0036h	"FAT12"	"FAT12"	"FAT16"	File system ID. 11 bytes.
003Eh				Main code section.

Figure 6. Typical values in the BIOS Parameter Block & associated data region for 1.2Mb, 1.4Mb and 100Mb disks. HD track size is 32 sectors.

points to the System BIOS memory region (usually F000:EFC7h). From DOS 1.1 onwards, DOS redirects it to 0000:0522h.

A BPB is contained within every disk's boot-sector. It was placed there when the disk was formatted. Refer to Figure 6.

In Figure 3 you will have noticed that, if the size of the volume is less than 32Mb, this value is copied to the "greater than 32Mb" location. The reason for this is that, regardless of volume size, the "greater than 32Mb" value is the one used in the final calculation. (Remember that a large volume will not have anything in the "less than 32Mb" position.)

Figure 7 shows the complete disassembly of the boot-sector's code, while Figure 8 lists significant memory offsets. Don't worry if you don't understand most of it yet, as we'll be hacking it shortly so it can be run from within DEBUG.

Figure 9 provides worked examples of the mechanism (at offsets 7CA8-7CBCh) to account for the sectors occupied by the root directory. By effectively adding 511 to the total before the DX:AX/BX division occurs, the code ensures that AX contains the number of sectors used.

In earlier articles we've seen how to decode an encoded HSC address. In this installment we deal with the inverse situation: how to create an encoded address. Study the

# of root dir entries	DFh (223)	E0h (224)	E1h (225)
MUL WORD PTR [7C11] (# of Dir entries * 32)	1BE0h	1C00h	1C20h
ADD AX,BX (total dir size + 512)	1DE0h	1E00h	1E20h
DEC AX (subtract 1)	1DDFh	1DFFh	1E1Fh
DIV BX (total / 512) (value in AX afterwards)	Eh	Eh	Fh

Figure 9. Examples of the working of the mechanism to account for the number of sectors occupied by the root directory.

conversion process (offsets 7D83-7D9Ah), depicted in Figure 10, that sets up the DX and CX registers with suitable values for BIOS Int 13h Function 02h - Read Disk Sector(s).

The boot-sector's code looks for "IO SYS" and "MSDOS SYS" in the Filename + Extension fields of the respective first and second root directory entries. Figure 11 shows the

layout of a directory entry. (For information on the format of the Attribute, Time and Date coding refer to "Learning QBASIC - Part 10", SigBits, May 93.)

Prior to DOS 5, it was also necessary for the starting cluster number of IO.SYS to be Cluster 2. If not, then it was a "Non-system disk". (As to why the file area starts at cluster #2 I have no idea. Perhaps it's an historical artifact.) DOS 5+ contains additional code (7D05-7D11h) that uses IO.SYS' starting cluster number to calculate any extra number of sectors from the start of the file area to the start of IO.SYS' first cluster. If you have any floppies that were formatted under DOS4 (I never used it, but the floppies of a commercial program I have were formatted under it) check the code at offsets 7D08-7D14h, which corresponds to DOS 5/6's code at 7D12-7D1Fh.

To understand the Stack operations at 7C4E-7C51h, 7CF7-7CFDh and 7D00-7D02h refer to Figure 12. If an error occurs due to the values supplied to the Convert\_Next\_Sec\_Num\_to\_Physical subroutine, a different procedure has to be performed to display the error message. This is due to the presence of three extra words on the Stack, put there by the pushes at 7D20-7D22h. So Error\_Message is accessed via Prepare\_For\_Error\_Message (7D00h) which first tosses away the three extra pushes.

Part 4 to be concluded next month.

OFFSET	
0500-xxxxh	Area where boot disk's root directory is copied.
0700-0CFFh	Area where first 3 sectors of IO.SYS is copied.
7C00-7C3Dh	BIOS Parameter Block (BPB) data section
7C00h	JMP 7C3E
7C0Bh	Bytes per sector.
7C0Dh	Sectors per cluster.
7C0Eh	Reserved sectors at beginning.
7C10h	# of FATs.
7C11h	Root dir entries.
7C13h	Sectors in volume if < 32Mb.
7C15h	Media descriptor.
7C16h	Sectors per FAT.
7C18h	Sectors per track.
7C1Ah	# of heads (sides).
7C1Ch	# of hidden sectors before this vol.
7C20h	Sectors in volume if > 32Mb.
7C24h	Physical drive #.
7C25h	Reserved. Used in boot process to store Hd # (side) when working out physical coordinates of a sector.
7C3E-7D9Dh	Code section. Code at the beginning of the Code section is overwritten when it loads a copy of the DBT.
7C3E-7C48h	Diskette Base Table (DBT) data section.
7C47h	Head-settle time. Set to 15ms by boot code.
7C49-7D9Dh	The code section continues. Memory space is reused here to store 2 copies of the DX:AX running total of sectors occupied by hidden & reserved sectors and by the copies of the FAT.
7C49-7C4Ch	DX:AX sector total of sectors up to and including root directory. This is the # of sectors before the start of the boot disk's data area.
7C4D-7C4Eh	Physical cylinder temp storage area.
7C4Fh	Physical sector # temp storage area.
7C50-7C53h	DX:AX total of sectors before root directory.
7D9Eh	"Non-System disk..." message
7DE6h	"IO SYS" string
7DF1h	"MSDOS SYS" string
7DFEh	AA55h Signature word

Figure 8. Memory offset map of the boot-sector when it's loaded at offset 7C00h. Only relevant offsets are described.

Physical address on first HD = Cyl 891, Hd 3, Sec 7			
	DH	DL	
MOV DX,Cyl	00000011	01111011	(891)
SHL DH,6	<-----		
	11000000		
Sec=7	00000111		
OR DH,Sec	-----		
	11000111		
Function 02h - Read Disk Sector(s).			
	CH	CL	
MOV CX,DX			
CX	11000111	01111011	(C77Bh)
XCHG CH,CL	01111011	11000111	(7BC7h)
	DH	DL	
MOV DH,Hd	00000011		(03h)
MOV DL,Drive		10000000	(80h)
HDOS Address = DH,DL,CH,CL = 0380h,7BC7h			

Figure 10. The conversion of a Cyl/Hd/Sec physical address to encoded HDOS values for use in BIOS interrupt 13h.

Offset	Description	Size	Type
00h	Filename	8	ASCII
08h	Extension	3	ASCII
0Bh (11)	Attribute	1	Coded
0Ch (12)	Reserved	10	0h
16h (22)	Time	2	Coded
18h (24)	Date	2	Coded
1Ah (26)	Starting Cluster #	2	Word
1Ch (28)	Size	4	Dword

**Figure 11. The layout of each 32-byte directory entry.**

(1)	(2)	(3)
After 7C43h	After the four pushes starting at 7C4Eh.	Non-sys disk msg has been displayed and a key has been pressed. Just before Int 19h reboot (7CFEh).
0:7C00 -->	F000 Seg Addr in 1Eh EFC7 Off Addr in 1Eh 0000 IVT Segment 0:7BF8 --> 0078 IVT 1Eh Offset	0:7C00 --> F000 Became Seg addr in 1Eh EFC7 Became Off Addr in 1Eh 0000 Went to DS 0078 Went to SI

**Figure 12. The SP (Stack Pointer) register value and contents of the Stack at two points in the boot-sector code's operation.**

**Figure 7. Complete disassembly of the boot-sector. Memory segment:offset addresses shown refer to actual startup.**

```

0000:7C00 JMP 7C3E ;Jump past disk data section.
0000:7C02 NOP ;"Do nothing" command. In all DOS 3+ boot sectors.

0000:7C03-7C3D ;Data section including BIOS Parameter Block (BPB).

0000:7C3E CLI ;Clear Interrupt Flag. Prohibit interrupts.
0000:7C3F XOR AX,AX ;AX=0h
0000:7C41 MOV SS,AX ;SS=0h
0000:7C43 MOV SP,7C00 ;SP=7C00h
0000:7C46 PUSH SS
0000:7C47 POP ES ;ES=0h
0000:7C48 MOV BX,0078 ;BX=0078h
0000:7C4B SS:
;Use the Stack Segment register address (0000h)
;with the following [BX] offset address. This is called a "Segment
;Override" prefix. The next line becomes "LDS SI,SS:[BX]".

0000:7C4C LDS SI,[BX]
;Load into DS:SI memory contents pointed to
;by the address in SS:BX i.e. 0:0078h. 0:0078h is the Interrupt
;Vector Table (IVT) entry 1Eh which points to the location of
;the current diskette's base table (DBT). So now DS:SI contains
;DBT_Segment:Start_Of_DBT.

0000:7C4E PUSH DS
0000:7C4F PUSH SI
0000:7C50 PUSH SS
0000:7C51 PUSH BX ;Save these registers on the Stack.
0000:7C52 MOV DI,7C3E ;DI=7C3Eh
0000:7C55 MOV CX,000B ;CX=Bh (11 decimal - Length of DBT).
0000:7C58 CLD ;Clear Direction Flag. Direction is UP.
0000:7C59 REPZ ;Repeat following command until CX=0
0000:7C5A MOVSB ;Copy 11 bytes from DS:SI -> ES:DI
; i.e. DBT_Segment:Start_Of_DBT -> 0:7C3Eh.
; The destination is just past the end of the BPB. After copying
; the 11 bytes, the DI (Destination Index) register is set to 7C49h
; (7C3Eh + Bh). This is just past the end of the copied DBT.
0000:7C5B PUSH ES
0000:7C5C POP DS ;DS was set to another segment in the LDS
; operation. Now, DS=0000h.

0000:7C5D MOV BYTE PTR [DI-02],0F
; After copying the above 11 bytes
; the DI (Destination Index) register is currently set to 7C49h
; (7C3Eh + Bh). This is just past the end of the copied DBT.
; The command at 7C5Dh sets 7C47h=0Fh. This ensures that the
; FDD head-settle time will be 15ms, regardless of what was
; originally specified by the System ROM BIOS.

0000:7C61 MOV CX,[7C18]
; CX = # of Sectors per Track.
; Due to the maximum possible, only CL has significance. CH=00h.

0000:7C65 MOV [DI-07],CL
; [DI-7] = address 7C42h.
; Set the DBT's last-sector-on-track value to the
; sectors-per-track value from the boot drive's BPB.

0000:7C68 MOV [BX+02],AX ;Ensure IVT entry 1Eh's segment is 0000h.
0000:7C6B MOV WORD PTR [BX],7C3E ;IVT entry 1Eh now is 0:7C3Eh.
0000:7C6F STI ;Enable interrupts again.

;AX is still 0000h from instruction at offset 7C3Fh.

0000:7C70 INT 13 ;INT 13h Func 00h - Reset disk system.
0000:7C72 JC Error_Message

```

```

0000:7C74 XOR AX,AX ;AX=00h
0000:7C76 CMP [7C13],AX ;Is the total # of sectors shown as zero?
; If the vol > 32Mb then this value will be zero.

0000:7C7A JZ Big_DOS_Total_Sectors
0000:7C7C MOV CX,[7C13] ;CX=BPB's total # of sectors.
0000:7C80 MOV [7C20],CX
; Copy the BPB's total # of sectors in the
; >32Mb position, even though this volume isn't. CX is only used
; here as a transfer register and is unused until it's overwritten
; at 7CD9h.

Big_DOS_Total_Sectors:

0000:7C84 MOV AL,[7C10] ;AL = # of FAT copies (usually 2).
0000:7C87 MUL WORD PTR [7C16] ;Multiply value at the 7C16h address
; by AL i.e. multiply sectors per FAT by # of FATs. The result is
; in AX. This calculates the total sectors occupied by the FATs.

0000:7C8B ADD AX,[7C1C] ;To this result add the "low" word of
; the # of hidden sectors.

0000:7C8F ADC DX,[7C1E]
; DX holds the "high" word of the # of
; hidden sectors. If the result of the previous "low" addition was
; large enough to produce a carry, account for it now by
; incrementing DX.

0000:7C93 ADD AX,[7C0E] ;Add the # of sectors in the reserved
; area to the result.

0000:7C97 ADC DX,00 ;Inc DX if carry from previous add.
0000:7C9A MOV [7C50],AX ;Both 7C4Bh and 7C50h contain dwords
0000:7C9D MOV [7C52],DX ;that hold the # of sectors before
0000:7CA1 MOV [7C49],AX ;the root directory.
0000:7CA4 MOV [7C4B],DX

;A whole sector is allocated if only 1 byte extra's storage is
; required. The following rigmarole is a means of rounding up
; to accomplish this.

0000:7CA8 MOV AX,0020 ;AX=20h (32 decimal)
0000:7CAB MUL WORD PTR [7C11]
;Multiply the max # of root directory
; entries by 20h (32 bytes per directory entry). DX:AX holds the
; result. This is the size of the root directory. DX will be empty
; since the standard HD root dir size is always 400h (16Kb - 512
; entries).

0000:7CAF MOV BX,[7C0B] ;BX = # of bytes/sector (usually 200h).
0000:7CB3 ADD AX,BX ;Add # of bytes/sector to the root
; directory size.
0000:7CB5 DEC AX ;Reduce this total by 1 byte.
0000:7CB6 DIV BX ;Divide DX:AX by BX. Whole number result in AX.

; This result is the # of sectors required to hold the root dir.

0000:7CB8 ADD [7C49],AX ;Add the result to total of sectors
; including root directory.
0000:7CBC ADC WORD PTR [7C4B],00 ;Account for any carry from add.
0000:7CC1 MOV BX,0500 ;ES:BX (0:500h) will be destination used
; in the coming Read_Sector subroutine.
0000:7CC4 MOV DX,[7C52] ;Reset DX:AX to the total of sectors before
0000:7CC8 MOV AX,[7C50] ;the root directory.
0000:7CCB CALL Convert_Next_Sec_Num_To_Physical_Coordinates
0000:7CCE JC Error_Message
0000:7CD0 MOV AL,01 ;AL=1. # of disk sectors to read.

```



**FIG 7 - Continued**

```
0000:7CD2 CALL Read_Sector
;In this case the read is the 1st root dir sector.
0000:7CD5 JC Error_Message
0000:7CD7 MOV DI,BX ;DI=500h =loc of copy of 1st root dir entry.
0000:7CD9 MOV CX,000B ;CX = 11 bytes (filename's 8+3).
0000:7CDC MOV SI,7DE6 ;Location of reference string "IO SYS".
0000:7CDF REPZ
0000:7CE0 CMPSB ;Comparison based on DS:[SI] - ES:[DI]
; i.e. 0:[7DE6h] - 0:[0500h]
0000:7CE1 JNZ Error_Message ;If the 1st root dir entry is not
; "IO SYS" then this is not a valid boot disk.
0000:7CE3 LEA DI,[BX+20] ;BX=520h. This is the offset, in the copy,
; of the 2nd root dir entry (each entry is 20h in size).
```

;After the previous REPZ CMPSB, SI will now be set to 7DF1h. This is  
; the location of the reference string "MSDOS SYS".

```
0000:7CE6 MOV CX,000B ;We're going to compare another 11 bytes.
0000:7CE9 REPZ
0000:7CEA CMPSB ;Comparison based on 0:[7DF1h] - 0:[0520h]
0000:7CEB JZ IO_SYS_And_MSDOS_SYS_Found ;IO.SYS was 1st root dir
; entry and MSDOS.SYS was the 2nd.
```

#### Error\_Message:

```
0000:7CED MOV SI,7D9E ;Loc of "Non-system disk..." message.
0000:7CF0 CALL Display_Message
0000:7CF3 XOR AX,AX ;AX=0. Function 00h.
0000:7CF5 INT 16 ;Int 16h Func 00h. Read next keystroke.
;Used to pause error message display.
0000:7CF7 POP SI ;These pops restore the original
0000:7CF8 POP DS ; contents of the IVT 1Eh entry.
0000:7CF9 POP [SI]
0000:7CFB POP [SI+02]
0000:7CFE INT 19 ;Reboot computer.
```

#### Prepare\_For\_Error\_Message:

```
0000:7D00 POP AX ;This section is chained to from within the
0000:7D01 POP AX ; Read_A_Sector_From_IO_SYS where 3 extra
0000:7D02 POP AX ; pushes occurred. So throw the extra pushes
0000:7D03 JMP Error_Message ; away first.
```

#### IO\_SYS\_And\_MSDOS\_SYS\_Found:

```
0000:7D05 MOV AX,[BX+1A] ;Starting cluster for IO.SYS.
; (Cluster 2 if IO.SYS is the first file in the root dir.)
0000:7D08 DEC AX
0000:7D09 DEC AX ;Subtract 2 because the first cluster
; in the file area is cluster 2.
0000:7D0A MOV BL,[7C0D] ;# of sectors per cluster.
0000:7D0E XOR BH,BH ;Clear BH.
0000:7D10 MUL BX ;AX * BX = # of sectors before the
; the start of IO.SYS.
0000:7D12 ADD AX,[7C49] ;Store the dword result at 7C49h.
0000:7D16 ADC DX,[7C4B]
0000:7D1A MOV BX,0700 ;Set up 0700h as a new buffer area.
0000:7D1D MOV CX,0003 ;Three sectors from IO.SYS will be read.
```

#### Read\_A\_Sector\_From\_IO\_SYS:

```
0000:7D20 PUSH AX
0000:7D21 PUSH DX
0000:7D22 PUSH CX
0000:7D23 CALL Convert_Next_Sec_Num_To_Physical_Coordinates
0000:7D26 JC Prepare_For_Error_Message
0000:7D28 MOV AL,01 ;1 sector to be read.
0000:7D2A CALL Read_Sector
0000:7D2D POP CX
0000:7D2E POP DX
0000:7D2F POP AX
0000:7D30 JC Error_Message
0000:7D32 ADD AX,0001 ;Move to next sector of IO.SYS.
0000:7D35 ADC DX,00
0000:7D38 ADD BX,[7C0B] ;Add # of bytes/sector to adjust
; destination of next read operation.
0000:7D3C LOOP Read_A_Sector_From_IO_SYS
0000:7D3E MOV CH,[7C15] ;DOS Media Descriptor Byte.
0000:7D42 MOV DL,[7C24] ;Drive #.
0000:7D46 MOV BX,[7C49] ;AX:BX = # of sectors to start of IO.SYS.
0000:7D4A MOV AX,[7C4B]
0000:7D4D JMP 0070:0000
```

; Execution now passes to the first 3 sectors of IO.SYS  
; copied to 0000:0700h. Note the change of segment.

; \*\*\*\*\* END OF MAIN CODE \*\*\*\*\*

#### Display\_Message:

```
0000:7D52 LODSB ;Load a single byte from DS:SI into AL.
0000:7D53 OR AL,AL ;Any value, other than 00h (end-of-string),
0000:7D55 JZ 7D80 ; will produce a non-zero (NZ) result. If a 0
; result (ZR) then the end of the message has
; been reached so jump to the RET instruction
```

```
0000:7D57 MOV AH,0E ;Function 0Eh.
0000:7D59 MOV BX,0007 ;White-on-black text colour.
0000:7D5C INT 10 ;Int 10h Func 0Eh. Display the byte in AL.
0000:7D5E JMP Display_Message ;Keep repeating until 00h is found.
```

#### Convert\_Next\_Sec\_Num\_To\_Physical\_Coordinates:

```
0000:7D60 CMP DX,[7C18] ;Is DX less than the # of sectors/trk.
0000:7D64 JNB Set_Carry_Flag ;Jump if it isn't.
0000:7D66 DIV WORD PTR [7C18] ;Divide running total by
; # of sectors/trk.
```

```
0000:7D6A INC DL
; Increment remainder. We are interested
; in the next sector after the total specified. In the case of the
; total before the root dir this is the 1st root directory entry.
; The next sector after the total including the root dir is the 1st
; sector of the file area i.e. the start of the 1st file.
```

```
0000:7D6C MOV [7C4F],DL ;Copy remainder to physical # storage area.
; This is the offset, in the track, to the required sector.
```

```
0000:7D70 XOR DX,DX ;Clear DX.
0000:7D72 DIV WORD PTR [7C1A] ;Divide # of tracks by # of sides.
; Produces Head # in remainder (DL).
```

```
0000:7D76 MOV [7C25],DL ;Copy Head # to unused (reserved) area.
; This is the side where the sector is.
```

```
0000:7D7A MOV [7C4D],AX ;Copy cylinders to cyl temp storage area.
0000:7D7D CLC ;Clear Carry flag i.e. no error occurred.
0000:7D7E RET ;Return execution to calling program.
```

#### Set\_Carry\_Flag:

```
0000:7D7F STC ;Set Carry Flag i.e. some kind of error occurred.
0000:7D80 RET
```

#### Read\_Sector:

;AL must already contain the # of sectors to be read and ES:BX  
; must be pointing to the destination of the data to be read in.

```
0000:7D81 MOV AH,02 ;AH=02h. Function to read disk sector(s).
0000:7D83 MOV DX,[7C4D] ;Copy Cylinders to DX
```

;Routine to create a "sector" byte in the format the BIOS uses.  
;Bits 7 & 6 (counting from 0) are the two highest bits of the  
;10-bit cyl #. Bits 5-0 store the actual sector #.

```
0000:7D87 MOV CL,06
0000:7D89 SHL DH,CL
; Shift bits in DH left CL times.
; i.e. Multiply DH by 64 (2^6). This is storing the cylinder number
; in the two highest bits of DH. The other 6 bits will be zeroed.
; Notice that DL was not affected. This still contains "low" byte
; of the cylinder word. This will be bits 7-0 of the 10-bit Cyl #.
```

```
0000:7D8B OR DH,[7C4F]
; Effectively combines the two "high" bits
; with the 6 lowest bits of the physical sector #. The physical
; sector # will never be very large so its two highest bits will
; not have been used. The combined bits form a BIOS "Sector" byte.
```

```
0000:7D8F MOV CX,DX ;CH gets Sector #. CL gets Cyl #.
0000:7D91 XCHG CH,CL ;Now CH=Cyl #, CL=Sector #.
0000:7D93 MOV DL,[7C24] ;DL=Drive #.
0000:7D97 MOV DH,[7C25] ;DH=Head # (side).
0000:7D9B INT 13 ;INT 13h Func 02h - Read Disk Sector(s).
0000:7D9D RET
```

;===== END OF LISTING. (FIG 7) =====

# The HUGE Membership Drive

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## Results of the Second Drawing

We are now into the third month of our Membership Drive and there is an ever increasing stream of new members joining Brisbug. With three months to go, you still have a chance to win one of the fabulous prizes on offer in the intermediate draw.

Prizes such as Paradox for DOS and Windows, WordPerfect, AMI-Pro, Q & A for Windows and many others yet to be won in the monthly draws. The major prizes of Microsoft's Office Professional, Office (Standard), Works together with the Compaq Laptop VGA Colour computer will be drawn on the 16th October and the following month, a lucky new member will win the BytePro 486 computer, together with Multi-media CD-ROM and Sound Blaster.

A membership form is included once again in this issue, and if you require additional forms, these can be obtained from the Membership Secretary or from the Software Library. Time is quickly passing, so get out there and convince more people to JOIN BRISBUG.

## The Second Intermediate Prize Draw

Last month, the second draw for intermediate prizes was conducted at the General Meeting. This month, due to fortunate circumstances, we were able to use a smaller barrel (rather than the monster we had at the first draw). It was quite amusing at the May meeting watching Jan Ausburn place 100 or so slips with members names in the massive barrel, and then 'scrape' the slips off the sides before she selected the winners.

## Lucky prize winners

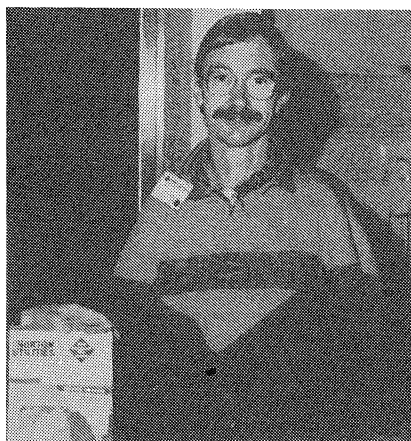
The Winners Lucky winners of prizes in June were:

Warren Ham - Paradox for DOS,  
Alan Cunningham - Paradox for Windows,  
Mark Carpenter - Freelance,  
Jim Brown - C++,  
Richard Settle - Paradox for Windows,  
Joanne Ellis - Paradox for DOS, and  
Peter Fiechtner - Nortons Utilities.

The lucky new member to win a prize was Anthony Cruice - Paradox for DOS.

Unfortunately only one winner was present - Peter Fiechtner, so we have only one photo for this magazine. All other winners have been notified, and (should) have collected their prizes from me by now.

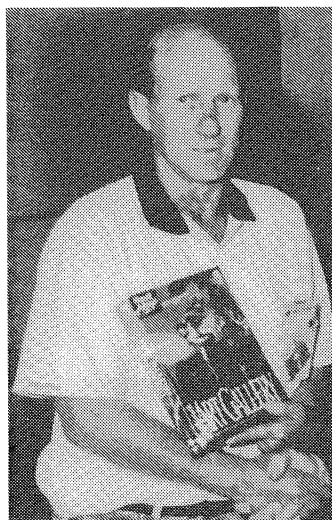
Because of the cost of freighting some of the rather large and heavy boxes containing the prizes, local winners must arrange to collect them from me, personally. Distant country members will have their prize freighted to them.



*Peter Fiechtner with his prize*

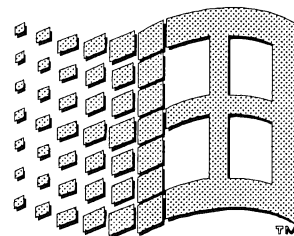
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## Rewards



This month, a very worthy worker received a reward for his efforts in conducting the Junior Group. Les Cathcart has worked tirelessly for the benefit of the younger members since the Junior Group was founded and he is very deserving of our thanks.

# Windows Watch



An Occasional Column, compiled by Ralph De Vries

## On a Personal Note

Anybody who knows the club scene at all well (usually somebody who has assisted in some form of 'running' the club or organisation), knows that sooner or later one has to say goodbye to a member who has done more than his or her fair share in the running of the club.

In the case of Brisbug, Ron Lewis is such a member. It's not my intention to cover all of Ron's achievements - that's better done by those members who have known Ron much longer than I have.

I am specifically referring to Ron's achievements as newsletter editor of *Significant Bits*. When I first started to contribute the odd article to our magazine, it was still Geoff Harrod's baby, but Ron was already doing his share in producing each issue. It was a time of change in both hardware and software, and produced some 'interesting' problems, to say the least!

When Geoff got involved in the production of a new CAD magazine, the burden of producing *Significant Bits* fell more and more on Ron. As a former newsletter editor (eight years editing the Commodore Users Group A5 size newsletter), I am probably in a slightly better position to know how hard Ron has had to work, each and every month, to get *Sig Bits* out on time; particularly when one takes into account that he was also the President of the club, as well as a regular monthly lecturer. A clear case of burning the candle at both ends and in the middle as well. Hence, when Ron took off his President's hat, I felt that he really had only divested himself of the least onerous task of the three.

During the last couple of years *Significant Bits* has grown up, and cannot really be called a newsletter anymore. By now it probably carries more and better material than certain commercial computer publications. If one takes into account that a commercial magazine has a sizeable staff to produce each and every issue, it becomes apparent that

Ron was doing far more than his fair share, which meant that both his family life and business must have suffered considerably, hence his resignation didn't really come as a surprise to me.

I can only think of two or three other Committee members who have put in as much time, as Ron has, in making Brisbug one of the success stories amongst Australian computer clubs. It's been a great job, well done, Ron!

## Databases and Windows

I am definitely not the right person to write about databases. Not for me the mysteries of ODBC, SQL and other esoteric terms and functions - I leave that to the Dbase and Clipper experts in our group. I am still trying to develop a decent database for my audio CDs, and one of these days I will do it - just wait and see!

Under Windows, database programs took longer to mature than either word processors and spreadsheets. I seem to recall seeing a beta (gamma?) version of *Dbase for Windows* demonstrated about 18 months ago, and we are still waiting for its release. In the meantime we have seen Windows versions of *Paradox*, *FoxPro*, to mention just two of the 'older heavyweights'. Microsoft also released *Access*, its Windows-only product, at a very low introductory price. (I purchased a copy, but sold it in due course, as the program was too powerful and complicated for my own needs.)

Recently I have 'played around' with *FileMaker Pro 2.1* by Claris (Apple's software company), which is really a so-called flatfile database with some nice features. Originally for the Mac, it's been available for some time now on the PC. Although it really does most things which I require from a database, it falls down on TrueType font support in the video mode which I normally use (800 x 600). Font appearance on the screen differs markedly from printed output - a pity.

During the Brisbug May meeting we had two

database demonstrations in quick succession. Lotus showed us first version 3.0 of *Approach*, and later in the day Microsoft put *Access 2.0* through its paces. Without a doubt *Access 2.0* was the more powerful package of the two (so is the price!), but my own preferences were for the Lotus number, particularly at its special Brisbug introductory price of \$145.00.

*Approach* in its earlier versions appeared to have 'borrowed' quite a few features from FileMaker Pro, but in its latest re-incarnation it is a true Windows application with the look and feel of other Lotus Windows products. I have ordered my copy, and will attempt to do a review of *Approach 3.0* in due course.

In the meantime I look forward to the **expert** reviews of the programmable Windows database heavy-weights such as Paradox, FoxPro, Access and others!

## Round the Twist

Just received *Type Twister*, a new program from Aldus. Basically what we have here is a small program (by Windows standards - it only takes up 1½ Mbyte of hard drive space), which does 'things' to type. This is definitely not a program for your average office or government department, but great for Flyers, Ads, Birthday cards, Presentation SlideShows, etc.

If you own one of the newer Microsoft products you probably have seen *WordArt*, which comes with Word, Publisher, Works etc., and allows you to manipulate type in a variety of manners. WordPerfect for Windows has a similar program built in (TypeArt). Essentially *TypeTwister* is an expanded form of *WordArt*, but with a substantially larger set of special effects. The program comes with its own set of some 20 built-in proprietary fonts, but it will also use True-

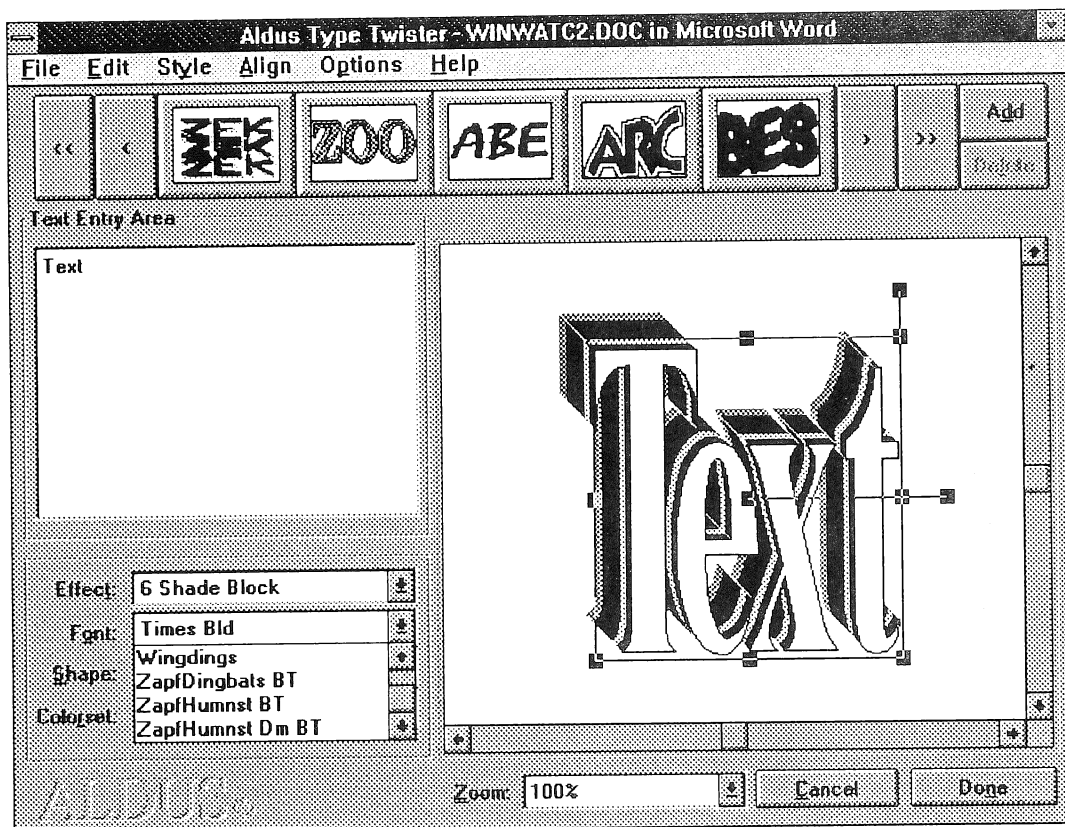
Type or ATM fonts. *TypeTwister* is primarily an OLE application which can be called up by those programs which support Insertion of Objects, such as Word, Corel, Page-maker, etc. etc. Although the program can be used as a stand-alone program, you can only save the final product to the clipboard for use in other Windows applications, or in other words, you cannot save the files in a proprietary file format.

I have used it successfully with programs such as Word and Publisher, but had some problems when I tried to use it with CorelDraw. However

WordArt does not work too well with CorelDraw either, so I am inclined to blame the OLE function in CorelDraw.

Basically *TypeTwister* is a fun program, but cannot be described as a 'must have' program for ye average user, who is probably quite happy with the likes of *WordArt* for special effects. Users of drawing programs such as Corel or Designer, will be able to duplicate most, if not all of the features of *TypeTwister*, given a bit of time and experimentation. On the following page are a few examples of *TypeTwister*'s capabilities.

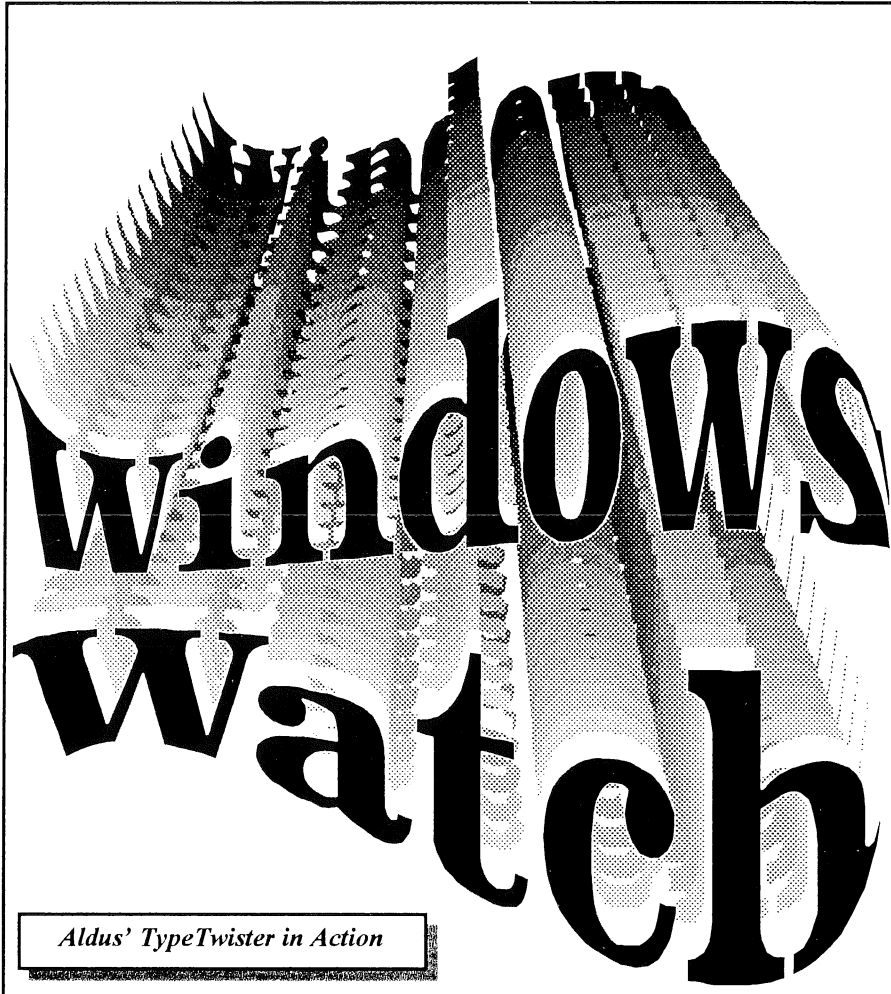
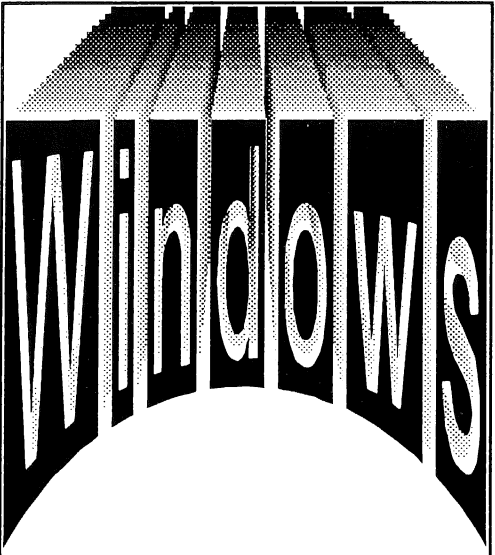
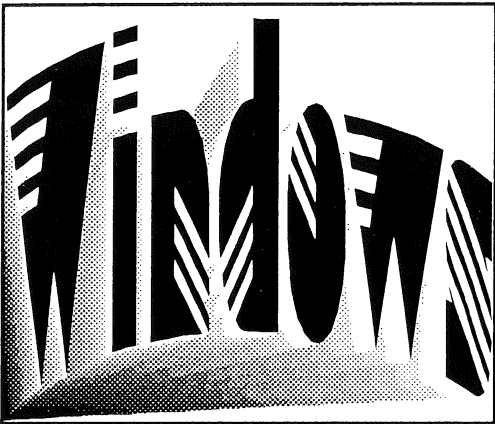
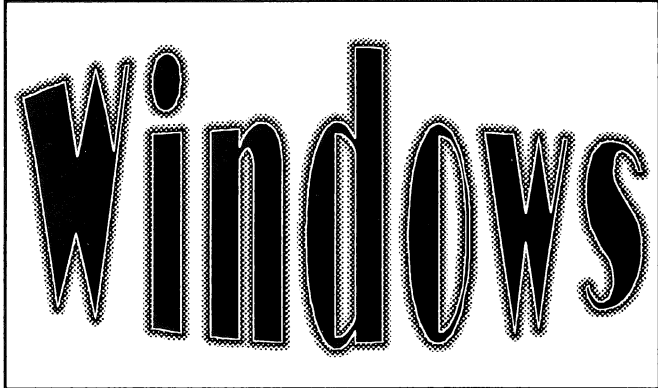
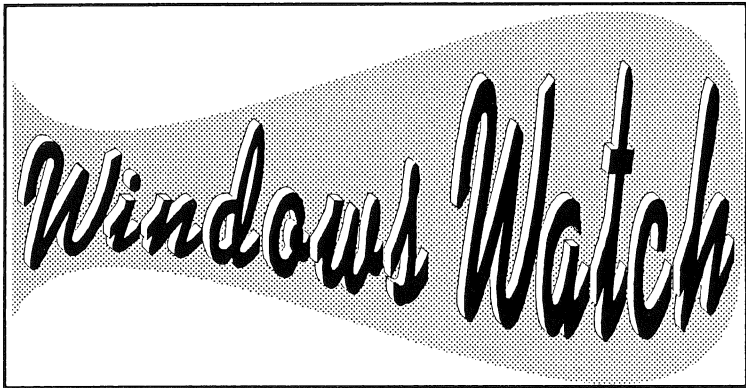
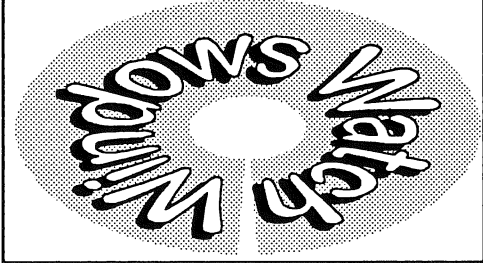
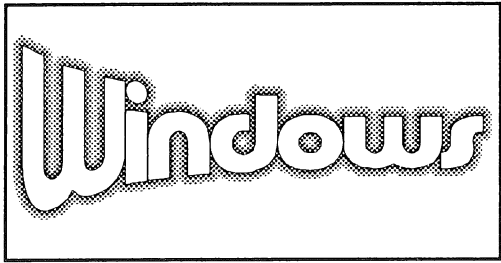
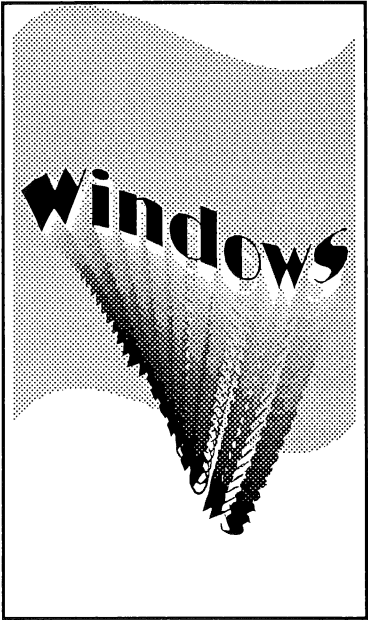
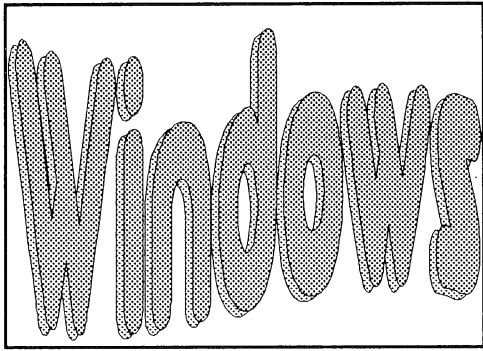
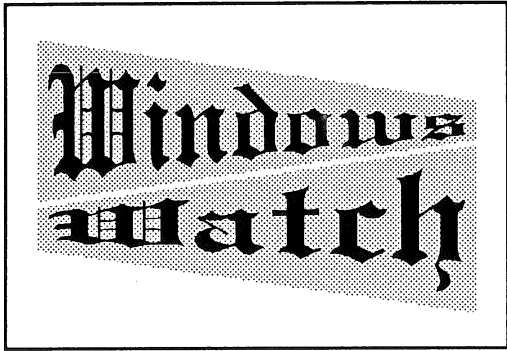
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The TypeTwister Screen

## Chicago

At long last an (early) beta version of Chicago is to be released in June, but there is to be a second (final?) beta version in about three months' time, followed by the official release of Windows (4.0?) in the last quarter of '94, according to Bill Gates. Here's hoping that he makes his deadline. Expect to see lots more tidbits of info on this major upgrade in the computer press and elsewhere, as Microsoft has made some substantial Chicago information files available on several bulletin boards.



Aldus' TypeTwister in Action

# The OS/2 Column

Paul Marwick

By now most of you will have seen news of a new OS/2 beta which has been released. This beta has been called a number of things - Warp, Performance Beta and Personal OS/2. Officially, it's the OS/2 for Windows Performance beta 1. It reports a version number of 2.99 (and how that fits into the general version numbering system used by IBM is currently anyone's guess).

While the beta version has a number of problems (it is, after all, a beta version), it holds great promise for the next full release of OS/2. It requires considerably less in the way of memory to run, it is a good deal snappier in operation, and it offers a number of enhancements in areas such as colour palette setting and customisation of the Work Place Shell. In addition, it offers a new "fastload" option for Windows. This option speeds up the loading of Windows applications considerably, at the price of slowing down initial boot (the reason for this being that the fastload option loads a Windows stub during system boot, which means that the Windows kernel is loaded at all times).

## *Generally a very promising product.*

The beta can be installed and run on a machine with only 4 megabytes of memory. While its performance is not exactly sizzling in that environment, it is quite acceptable. Many normal operations have been speeded up quite a bit. The beta is much faster opening folders (to the point where the folder animation, something I normally disable as soon as I've installed a version of OS/2 is quite acceptable). Initial system load is also a good deal faster than it has been in the past.

I've had the beta installed on one of my machines and been generally quite happy with its performance. Unfortunately, on that machine, it had a severe problem with high speed serial communications. Since the machine I installed it on is my office machine, which also serves as a FAX machine, I ended up having to take it off and reinstall OS/2 2.11, which is a pity.

Unlike earlier beta versions of OS/2, this beta came with a user questionnaire, used for sending bug reports to IBM. I've now sent two such bug reports to the internet address that they provide.



## Now back to REXX...

Most of the REXX procedures that have been looked at so far have been simplistic and fairly useless (except as illustration of various features of the language). This month, we're going to start looking at doing something useful with REXX.

### Checking the time

There have been a couple of DOS programs around for a while which will allow you to use a modem to call the Telecom time service and set your computer's time and date with data derived from that service. That can be a very useful function. The CMOS clocks in most PCs are less than entirely accurate, and tend to wander. Some software also seems to have the ability to affect the time set in the machine's memory. So being able to automatically set the time against a known accurate source is potentially very useful.

I've found that most PCs exhibit less problems with time keeping under OS/2 than they do under DOS or Windows. However, there is still a likelihood that the time will drift, so it still needs to be set occasionally.

I thought about trying one of the DOS programs for this purpose. However, apart from the fact that I



don't especially like the idea of a DOS program messing around with the time settings under OS/2, there is another problem with doing this on the BBS machines. Neither of them have any DOS communications support loaded. None of the BBS related software is DOS based, so loading the DOS serial support drivers would simply waste memory. On my machine, it isn't even an option - the modem lines run from a 4 port DigiBoard (a co-processed serial card which uses no interrupts and has good OS/2 support). While the DigiBoard OS/2 drivers are excellent, they have no support at all for DOS communications.

At this point, I thought about using REXX to perform the function. REXX is particularly well suited to string manipulation, and the data derived from the Telecom time service is all ASCII strings. REXX is also quite capable of manipulating the strings derived from the time service to a form suitable for feeding to the TIME and DATE commands, thus setting the system time and date. Finally, since OS/2 treats serial ports as simply another file handle, REXX should be able to manipulate the serial ports in much the same way as it does any other file. REXX also has some built in serial routines which can be used.

### Using REXX to tell the time

With this in mind, I wrote a REXX procedure to use the modem to call the Telecom time service and update the system clock. I've been using that routine on both BBS machines for a while now. Once a week, as part of general maintenance, each of them will go out and make a call to correct any drift in their time keeping. This helps keep both machines in synch and also means that BBS users can set their watches by the time displayed on the system with a fair degree of accuracy.

The routine I use is fairly simple. Since it is all part of a regular maintenance schedule, it is hard-coded as to what serial port to use, what string to use to initialise the modem and what number to call. This is fine for my purposes, but not all that useful as a general purpose routine, since there will normally be a number of variables which need to be set for any individual machine - serial port to use, speed of the modem, initialisation of the modem, number to call (and possibly an STD code to use if the caller is out of the metropolitan area where the service is offered).

To produce a useful, general purpose version of my original routine, there has to be a mechanism to collect the variable data and make use of it. There are two possible ways of doing this. The first is to build an interactive menu, which prompts the user for

each required parameter and then uses those parameters to set the system up to call the time service. The second is to build a command line version which expects the parameters to be entered and then uses them to set the system up correctly. My personal preference is for the latter approach - while it may be a bit painful having to remember all the necessary parameters (and the order in which they need to be used), it makes for quicker use once they've been setup. If nothing else, once they've been done, its easy enough to code them into a batch file so that the user has only to look at them again if one of the parameters changes.

### Gathering information

This month, we're going to look at building the information gathering portion of the routine. We'll look at both options - a menu driven version and a command line version. Both will also allow us to take a closer look at error handling in REXX as well, since it will be necessary to check that the parameters entered are correct. You should note that this routine requires two different types of error checking. The first is checking the validity of user input, the second is checking that responses from the modem and/or serial port are correct. We're initially going to be looking at checking user input for validity.

While the routines discussed here are fairly specific to the task to be performed, the same principles can be applied to any routine which needs to check user input for validity.

### Starting with TSET

So, lets get started with TSET.CMD. Wonderful name, isn't it? So very informative. I guess we could use a longer name and make it more self-explanatory, but that means the user must do more typing, so we'll leave the name as it is.

That brings up a bit of a problem though. In a short while, I'm certainly not going to remember what TSET does. So the first thing to do is to build in a brief help system. That way the user can at least get some information back to give them an idea of what its all about.

The first part of our routine is going to look and see if the user is asking for help. To do this, we'll make use of some of the REXX comparison operators. See Figure 1below for the beginning of the routine.

Figure 1

```
/* TSET.CMD v0.01 */
'@echo off & cls'
parse upper port speed city dial init std
```

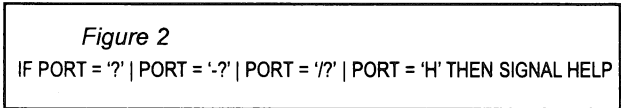
The first line of the procedure simply passes two commands to the operating system - first turning off echo to the screen, then clearing the screen. Once that is done, we need to collect information from the user so that the variable data can be given values. To do this, we use the PARSE command, with the UPPER modifier (the latter may not be strictly necessary, but it makes comparisons easier later). Parse allows us to separate user input into needed fields, so that we can collect all the necessary information on a single command line. By default, parse will split the command line arguments, using either white space or tab characters to delimit the various components.

So, if the user enters "TSET 1 2400 BRISBANE T ATZ 07", the procedure will assign the 1 to the PORT variable, 2400 to the SPEED variable, T to the dial variable, Brisbane to the CITY variable, atz to the INIT variable and 07 to the STD variable. Great, we've got all the necessary information in one quick burst and we're ready to go and make the call.

Well, not quite. I know I'm not going to remember the order of those arguments for very long, so unless I use a call command in another batch file, I'm soon going to have no idea what parameters I need to enter, or the order in which they're expected.

Because the required arguments and their order are likely to be forgotten, we had better add some help in here. Or else we're going to have to read the procedure every time we want to make use of it.

To do this, we'll employ some of the comparison operators that REXX offers (see Figure 2).



The first thing to do is to check and see if the user is trying to get some help. Most people are now used to the fact that many programs will offer a bit of information if you enter the name followed by a question mark. So first we check to see if that's what the user is

doing, by checking for a number of specific values that may be in the first argument parsed from the command line. Trouble is, there are several possible variations on how a user might expect to obtain help. So we want to check for all of the likely ones.

### Getting Help...

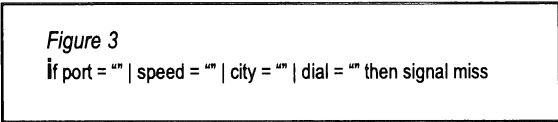
IF PORT = '?' is easy enough. But the user might enter a hyphen before the question mark. Or a slash, since either of these are quite common as well. So we use the | (pipe) symbol to allow us to expand the first possible command line argument into a couple of other likely arguments. Or maybe the user may try entering "H" for help...

What the line does is check to see whether the user entered "?", OR "-" OR "/", OR "h". If any of these conditions is true, it jumps to the subroutine defined by HELP.

Using this, we have the basis of a reminder system, and can print the necessary information to the screen so the user knows what arguments are expected and what order they need to be in.

There are several other requirements as well. The first four that the procedure expects are required, whereas the last two are optional. It will be necessary to ensure that something has been entered for those first four arguments, but not worry about whether there is any input for the others. Again, we make use of the comparison operators to check that some input has been received (at this stage, we're not worrying about the validity of the input, just that there is some input...). Figure 3 demonstrates checking for input, without regard for its validity.

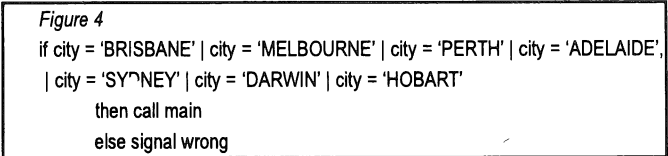
This checks to see that there is some data assigned to the first four variables, and if any of them test as



empty, will signal a routine to print an error message. To make the error message more useful, we can then link from it to the general help screen that we've already produced.

There are still more requirements in terms of checking user input. There are only certain cities which offer the time service, so we need to ensure that the user has entered one of the valid cities. In this instance, we're concerned with the validity of the input rather than just the fact that there is some data there (we could also be concerned with the validity of things like the serial port selected and the speed selected, but the validity of this data will be tested later, so we'll ignore it for the moment.

Since there are multiple valid targets that can be selected, we need to test the entry in the CITY field to see



whether it matches any of the valid input strings. For this, see Figure 4.

Again, we're making use of the | (pipe) to do OR testing on multiple possible entries. The basic construction of this is an IF-THEN-ELSE loop, with multiple arguments defined by the OR. One problem with this is that there are a number of arguments to check, which makes for a very long line in our procedure (see figure 4). You will also notice that all the conditions we are testing for here are upper case - this is one of the prime reasons that we used 'PARSE UPPER' in Figure 2, so that this type of comparison could be accurately performed, no matter what case the initial user input was entered in.

In this figure, you'll notice that the comparison operators continue over two lines. REXX provides a means of

allowing a command to span more than one line (it also provides a means of using multiple commands on a single line, but we'll get to that later). In this instance, using a comma (,) signifies to the REXX interpreter that the command continues on the next line. I'm far from sure why a comma was chosen, but at least it does mean that you can split long command lines to make them easier to handle in your editor, as well as making them easier to follow.

If one of the test conditions is true, the procedure then calls a new routine called MAIN. If none of the conditions are true, the ELSE instruction passes control to the WRONG routine, which is used to provide another error message to the user.

The MAIN routine will eventually be the working portion of our procedure, which sets up the modem communications and makes the call. For the moment, it is simply going to provide us with feedback as to the conditions that are set by user input. Next month we'll make it do something more than just print a message to the screen.

At this stage, we've got about all we need for checking user input and providing informative messages to the user in the case of an error. All that needs to be done is add the messages defined by the HELP, MISS, WRONG and MAIN routines. The complete procedure is shown in Figure 5.

This provides all the basic elements for a command line REXX utility. The test conditions and messages can easily be modified for other purposes. One item that should be noticed is that we have not done any checking on the last two possible parameters, since these are optional parameters. One further thing to note about these two optional arguments is that they are positional - if the user needs to use an STD code to make the call, they will have to use a modem initialisation string as well.

As well as providing us with a good general purpose data input collection routine, most of the testing that we have done can also be made use of to build

Figure 5

```
/* Set system time & date via modem, part 1 */
'echo off & cls'
parse upper arg port speed city dial init std
if port = '?' | port = '-?' | port = '/?' | port = 'H' | port = '-H' ,
then signal Help
if port = "" | speed = "" | city = "" | dial = "" then signal miss
if city = 'BRISBANE' | city = 'MELBOURNE' | city = 'PERTH' | city = 'ADELAIDE' | city = 'SYDNEY',
| city = 'DARWIN' | city = 'HOBART'
then call main
else signal wrong
Main:
say '
say 'Time check operation using the following values:'
say "
say 'Modem: COM'port
say 'Port Speed 'speed
say 'Calling: 'city
if dial = T then say 'Dial Type: Tone'
else if dial = P then say 'Dial Type: Pulse'
if length(init) \= 0 then say 'Modem Init: 'init
if length(std) \= 0 then say 'STD code: 'std
exit
/* First level of error checking - send this response to the screen if it
looks as though the user is looking for help */
Help:
say "
say 'This routine will call the Telecom time service to set your system time'
say 'and date.'
say "
say 'Command syntax is "TSET PORT SPEED CITY DIAL INIT STD-CODE" where'
say 'the parameters are as below:'
say 'PORT (1, 2, 3, etc) - the serial port your modem is connected to'
say 'SPEED (2400, 19200, etc) - your modem communications speed'
say 'CITY (Brisbane, Melbourne, Sydney, Perth, Adelaide or Hobart) - set'
say 'the number to call' say 'DIAL (either T or P) is the type of dial to use - tone or pulse'
say 'INIT (optional) initialisation string for your modem.'
say 'STD-CODE (optional) if you need to use an STD code to dial'
say 'the city in question, it may be entered as the last parameter.'
say 'NOTE: While the last two parameters are optional, they are also'
say 'positional - if you need to use an long distance dialing code, you'
say 'will HAVE to also specify a modem initialisation string.' say "
exit
/* Second level of error checking - send this to the screen if any of the
required parameters are missing */
Miss:
say " say 'Error! Incorrect or incomplete command parameters entered.'
call help
/* Third level of error checking. Since we have only a limited number of
locations that we can call, we have to check to see whether the city that
has been entered is valid. Send this if the user has not entered one of the
valid cities we can use to set the number to dial */
Wrong:
'@cls'
say "
say 'You specified 'city 'as the City to call for time information.'
say "
say 'Sorry, but this is not valid - you must specify a city from the'
say 'following list: Adelaide, Brisbane, Hobart, Melbourne Perth or'
say 'Sydney.'
say " say 'Please try again, specifying one of these cities.'
say "
say "
exit
```

an interactive method of collecting user input. See Figure 6 for a menu driven version of the same data collection routine. This procedure uses the PULL instruction to gather user input one element at a time, also using SAY to tell the user what input is required.

Neither of these routines is bulletproof. We could add further error checking to them, and may do so at a

later stage. For the moment, they prepare the way for the routine which will be used to call the Telecom time service and then set the machine date and time using data collected from that service. Next month we'll look at building that routine.

We may also look at making our menu driven interface a bit prettier, using some of the screen controls that REXX provides.

Figure 6

```
/* Menu driven data collection routine to set modem, ect */
'@echo off & cls'
/* Tell the user what its all about and prompt for the first item of data */
say 'This routine will call the Telecom time service to set the date'
say 'and time of your PC. Please enter the parameters required to'
say 'set up the service.'
/* Make the whole section into a subroutines so that we can return to the
beginning if data entered needs to be corrected. */
Top:
/* Get the com port number and assign it to the port variable. */
say "
say 'Please enter the port your modem is connected to?:'
pull port
/* Even though this is mainly for high speed modems which operate with a
locked port, we need the speed data so that we know what speed to use
when sending modem commands. */
say 'Please enter the operating speed of your modem:'
pull speed
/* This goes into a separate subroutine so that we can correct any errors in
the city specified without repeating the entire data collection operation. */
Dcity:
say 'Please enter the city to call (Adelaide, Brisbane, Darwin, Hobart,'
say 'Melbourne or Sydney):'
pull city
if city = 'BRISBANE' | city = 'MELBOURNE' | city = 'PERTH' |
city = 'ADELAIDE' | city = 'SYDNEY' | city = 'DARWIN' | city = 'HOBART'
then call next
/* If the specified city is one of the ones we can use, continue to the next
portion of the routine. */
else signal wrong
/* If not, call an error routine which will re-specify the allowable city entries,
then return to the DCITY routine so the user can reenter the city data */
Next:
say 'Please enter the type of dial supported by your phone - T for tone' say
'dial, P for pulse dial:'
pull dial
say 'If your modem needs a specify string to initialise it, please enter'
say 'that string, otherwise press return:'
pull init
say 'If you need to use a long distance dialing code in order to reach the'
say 'city you have chose to use, enter it. If not, press return:'
pull std
/* This is the start of the main section of the routine. First print a summary
of the data collected so far, then prompt for reentry (in case of an error, exit
or continue. */
say "
say 'Time check operation using the following values:'
say "
say 'Modem: COM'port
say 'Port Speed 'speed
say 'Calling: 'city
if dial = T then say 'Dial Type: Tone'
else if dial = P then say 'Dial Type: Pulse'
```

```
if length(init) \= 0 then say 'Modem Init:' init
if length(std) \= 0 then say 'STD code: 'std
say "
say 'Check the parameters above, then press C to continue, R to reenter'
say 'parameters, or E to exit:'
pull choice
if choice = 'C' then call main
if choice = 'R' then signal port
if choice = 'E' then exit
Main:
/* This is the main section of the routine. Well, it will be, anyway */
say 'more next month...'
exit
Wrong:
'@cls'
say "
say "
say 'You specified 'city 'as the City to call for time information.'
say "
say 'Sorry, but this is not valid - you must specify a city from the' say 'following list:
Adelaide, Brisbane, Hobart, Melbourne Perth or;
say 'Sydney.'
say "
say 'Please try again, specifying one of these cities.'
say "
say "
call dcity
```



Whew! - That was a BIG job



# BRISBUG PC USER GROUP INC.

P.O. BOX 5000 BRASSALL QLD 4305

Phone (07) 201 5005

## MEMBERSHIP APPLICATION FORM

Name: \_\_\_\_\_

Please Print

Address: \_\_\_\_\_

Suburb/City: \_\_\_\_\_

State: \_\_\_\_\_ Post Code: \_\_\_\_\_ Phone (Home): \_\_\_\_\_ (Work): \_\_\_\_\_

Number of Members in Family: \_\_\_\_\_ Ages: \_\_\_\_\_

Type of User: Business ☐ Educational ☐ Hobby ☐ Other \_\_\_\_\_

Type of Computer: XT ☐ AT ☐ 386 ☐ 486 ☐ Other \_\_\_\_\_

Screen Type: MONO ☐ CGA ☐ EGA ☐ VGA ☐ SVGA ☐

Hard Disk Drive: YES ☐ NO ☐ Size: \_\_\_\_\_ MB Memory: \_\_\_\_\_ MB

Modem: Yes ☐ No ☐ Disk Size Preferred: 5 1/4 ☐ 3 1/2 ☐

Operating System: DOS ☐ WINDOWS ☐ OS/2 ☐ Other: \_\_\_\_\_

Special Interests: \_\_\_\_\_

Membership Type: Individual / Family ☐ Educational ☐ Corporate/Associate Club ☐

Individual/Family/Educational Fees

Joining: \$ 45.00

Renewal: \$ 40.00

Corporate/Associate Club Fees

Joining: \$110.00

Renewal: \$100.00

Introduced by: \_\_\_\_\_ Membership No.: \_\_\_\_\_

Please Print Members Name

If payment of Membership Fees are to be made by Credit Card please complete details.

Tick Box



Expiry Date: \_\_\_\_\_ / \_\_\_\_\_

CARD NUMBER				
-------------	--	--	--	--

CARDHOLDERS NAME: \_\_\_\_\_

Please Print

CARDHOLDER'S SIGNATURE \_\_\_\_\_

I / We hereby apply for Membership of BRISBUG and agree to abide by its rules.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### OFFICE USE ONLY

Membership No.	Date Received	Receipt No.	Date Processed	Date Memb.Card/Catalogs Sent

# The HUGE Membership Drive Competition

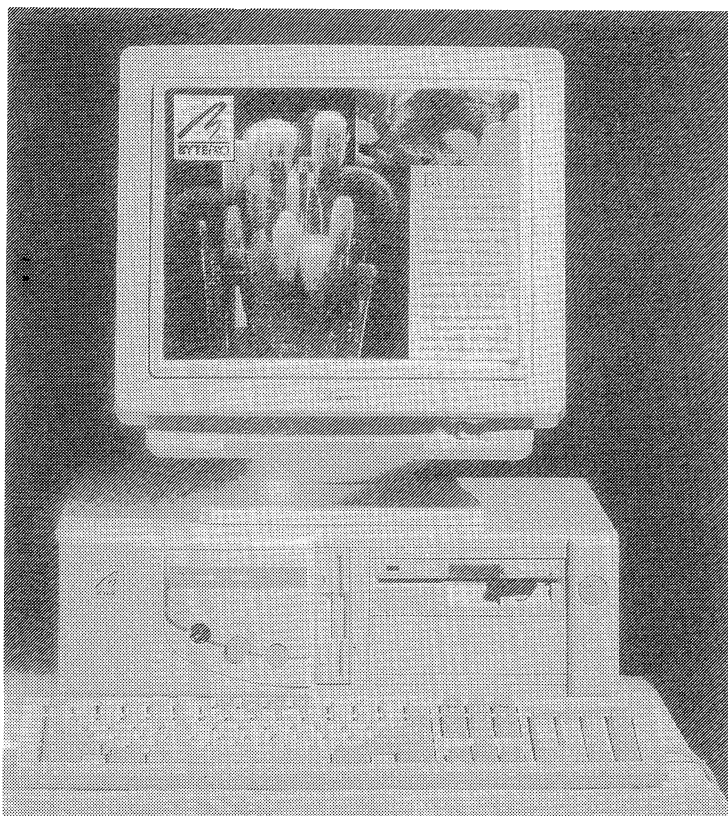


*All members of Brisbug are invited to participate in a Membership Drive promotion to be conducted over the 6 months from 17th April until 13th October 1994. Thousands of dollars worth of prizes can be yours for simply introducing a new member to Brisbug.*

## **What you can win**

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

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



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

## **When do I win?**

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

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

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

## **The Grand Finale...**

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

## **And Gand Finale 2**

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

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

Each month, at the General meeting, a draw for



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**Borland**  
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**SYMANTEC.™**

## WordPerfect

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

### The closing dates are:

### Intermediate Win Competitions:

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

### Main Competition -

13th October 1994.

### The rules of the competition are:

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

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

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

The membership application must be in the hands of the Membership Secretary by 5pm on the closing dates listed. Applications received after the closing date will be carried forward to the next month,

**Lotus**  
Working Together®

**b**  
BYTEPOWER

but applications received after the expiration of the contest (13th October 1994) will not be considered.

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

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

## BRISBUG MEMBERSHIP DRIVE PROMOTION

### CONDITIONS OF ENTRY

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

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

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

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

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

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

4. Each month during the promotion, intermediate draws for

prizes will be conducted. The closing dates for each intermediate draw will be 5pm on the following dates:

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

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

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

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

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

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

(a) During the continuance of this promotion, every financial

member of Brisbug who introduces a new member who joins Brisbug shall be eligible to participate in the monthly draw for intermediate win prizes for that month.

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

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

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

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

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

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

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

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

# For all new users!

By Brenda Baber

**Do you have a funny C:> thing staring at you on the computer and not know what it is or what to do with it? That was me when I got my first computer! I had told the supplier I wanted it to run straight into my working program, but alas, I had to figure it out myself! Let me try and explain as easily for you as I can.**

The " C " is the most common letter of the alphabet used to name a hard drive on a computer; the " : " is a symbol to be read as the word "drive" and the > is the prompt to say . . . lets go! Therefore C:> reads as "C drive - type something here!" - Commonly referred to as the C prompt. If your system happened to read A:> , you are sitting at the "A prompt"

## CHANGE DIRECTORY

(now you get to use " \ " - backslashes)

Changing into a different directory allows you to work from within the new directory and maybe start your game or program. Consider that you have a directory called GAMES and you are currently at the C prompt. How do you get to the GAMES directory?

Type in CD\GAMES (change directory to games - make sure you use the backslash), press ENTER and voila!, your prompt should now read C:\GAMES>

From here you can list the file and further subdirectories within the GAMES directory by using the DIR commands as previously. One way to then get into one of those subdirectories is to type in CD\GAMES\ACE (if you have a game called ACE of course!) then press ENTER.

This is all considering that the things you want to use are currently on your computer anyway! What if you have a disk in your hand with a game on it called e.g. FROG. Well, you can run it from the disk by putting it in your A: (or B:), listing the files and directories on that disk, finding the one to make the game work (more in a mo') and making it work that way OR you can put it in its own directory on your hard drive and run from there. Ah Ha! But how??

## MAKE A DIRECTORY

From the C prompt, type in MD FROG - done! You now have a subdirectory called frog. If you want, you can put that subdirectory within the GAMES directory by typing in CD\GAMES before you make the new directory.

By the way, if you get yourself into all sorts of directories and totally bamboozled, type CD\ and press ENTER to get you back to the root directory.

So what next! Now you can have a look at what is actually on that drive you are currently in.

Firstly, type in the 3 letters DIR - this is short for "directory" and will list what you have in the directory you are about to show.

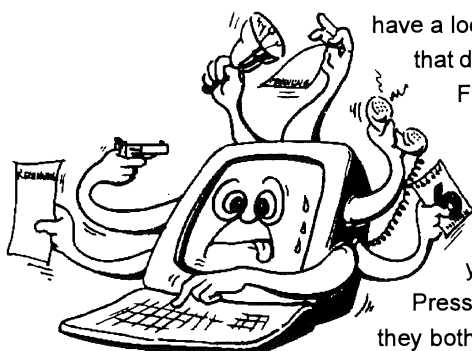
Press ENTER (or RETURN - they both mean the same thing).

Great - my machine did something! What?? It just listed the files and other directories currently within that "root directory".

## Oh okay! But what is a root directory?

Consider your computer as a filing cabinet - the root directory is the cabinet itself, it holds everything else in it - so does a "root directory". The drawers can be called your "subdirectories". More about those in a minute. Each file has a name and a 3 letter "extension" to it. *But my screen moved so fast I couldn't see anything!* Try typing in DIR/P - this will show you one page at a time or try typing in DIR/W - shows all your directories and files ACROSS the screen.

If things are really bad, DIR/P/W will show everything across the screen and also one page at a time. Want it alphabetically and tidy? DIR/O . . . and so on. Try it and see! (Note: All your slashes here should be "/" i.e. forward slashes)



COPY YOUR FILES INTO THEIR OWN DIRECTORY

Now you need to look at your disk first to find the files you want to move.

Type in A: - this moves you over to A: If you get something saying BAD COMMAND OR FILE NAME try typing B: , this just means that your floppy drive is B instead of A. Now . . . DIR to show the list of files, if you get one subdirectory with <DIR> beside it, you need to . . . CD\FROG. Once you have your list of files, you are ready to copy them onto your hard drive.

Type in COPY \*.\* C:\GAMES\FROG (careful to use the correct slashes and spaces after COPY and before C: Great, but what did that mean?

A \* is a wildcard, which means it can represent any letter or combination of letters. Therefore we have copied all files with all extensions to the subdirectory called FROG which is inside the GAMES directory.

FIND THE FILE THAT MAKES YOUR PROGRAM WORK!

Once you have listed your files, you will notice they mostly end in a 3 letter extension eg .bat, .exe, .com, .txt Generally a file which ends in .exe, .bat or .com will be the correct file to make your program work. Therefore look for a file possibly called FROG.EXE (within the Games\frog subdirectory) and that should be the file you need. Type in FROG and press ENTER (no need to type in the extension)

IS YOUR PROGRAM RUNNING???

Whoopee!!

Good luck till next time



BBS PHONE NUMBERS

BBS Line 1	871 0298
BBS Line 2	871 0304
BBS Line 3	870 2972
BBS Line 4	870 0653
Management BBS	209 4980

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It was a cold still night with the silence punctuated only by the sound of the plastic oars caressing the smooth waters of the Indooroopilly reach of the Brisbane River. The outline of a large rodent with an even larger beanie paddling his small dingy is silhouetted against the full moon. What evilness was being perpetrated ? Well, none actually. Ratty having spent his last dollar on project "Willawong" now goes searching for lost golf balls at night which he resells at enormous profit to unsuspecting golfers. Life goes on and Ratty must find sustenance for his issue.Help Ratty feed and clothe his litter !!

MS Flight Simulator V.5.0	\$ 55
Norton Desktop for Windows V 2.2	\$ 100
Microsoft Office V 4.2	\$ 765

486DX-40, 4Mb RAM, 270Mb HDD, NI SVGA 14" monitor, 3 vlb slots, vesa i/o, 1mb vesa accelerator card, MS mouse, DOS 6.2, Windows 3.1, 16-bit Sound Blaster card with Panasonic CD-ROM , 2 years parts and labour warranty, installed on-site with 24 hour support from a really friendly rat \$ 3,160

Hardware - Software - Firmware -Anywhere



MEETINGS

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

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

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

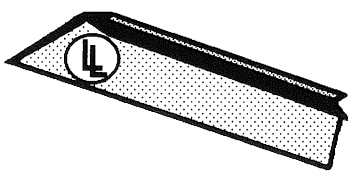
Disabled access is available.

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

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

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

# Lindsay's Letter



Lindsay Bates

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

**W**ELCOME to the July Edition of LL! Research shows that most of us use our computers to run both Windows and DOS programs. With this in mind, I always try to write some bits on Windows and some on DOS. But how to get the balance right? Do I do enough DOS? And does what I write interest enough of you?

Those of you who give me feedback almost all say that what I write is understandable. That's great! (and thank you for taking time to ring). If there's anything you'd like more of (or less of) in LL, please tell me. I can't promise to be able to do it, but I'd do my best. This month I hope there are some things that will help you, interest you and inform you. It all goes towards the Brisbug aim of assisting you get more from your PC.



⌘ 486 CPU chips from suppliers other than Intel are now available locally. And mostly you will NOT be told what brand is fitted to the new computer you're looking at purchasing! So it's now up to you to ensure you get the CPU brand you want when purchasing your PC.

⌘ UMC (makers of motherboards) have now joined Intel, AMD, Cyrix and Texas Instruments as manufacturers of CPUs for our PCs. No longer does Intel have this as a cosy market all to themselves.

⌘ The "A funny thing happened on the way towards faster PCs" department:

Who would have expected it! Just starting to become available are the fastest 486 - the 486DX4-100 - and the fastest Pentium - the Pentium 90. I've just seen some new wholesale prices for

these two screamers, and they cost (on that list) within \$20 of each other!

The point to this is that ALL Pentiums are faster than the 100Mhz 486, so the price difference - or rather, the lack of price difference - may come as a surprise. Clearly Intel consider that the 486 speedster is what the industry - and the public - want, and is prepared to pay a premium for, over their faster Pentium cousins. Speedwise, it still makes the Pentium 60 far and away the best value of all the new releases (see also *Best Value Buys* below).

⌘ It's still up for grabs what will happen to Microsoft's DoubleSpace as used in DOS 6.0 and 6.2 (but not 6.21). They could still have the decision that went against their continued use of DoubleSpace reversed in the US courts.

Meantime, the release of Chicago is coming nearer - and it certainly needs some sort of disk compression in it. On this subject it's still very much a case of Watch this Space.

⌘ Apparently we're one step closer to being able to watch the news on our PC (alongside the wordprocessor or spreadsheet). In the US, Intel is testing this with CNN News across a local area network. That a network can handle the demands of a TV newscast is indicative of the giant strides being made in this area.

⌘ You've probably come across SOHO by now - Small Office, Home Office. Expect to see a lot of this as the computer market - both hardware and software - gears up to attack what they see as a highly lucrative sales area.

⌘ I'm beginning to wonder just a little about Intel's Pentium chips. Take this recent report in *The Courier Mail*.

The heading said: "Next Pentium chips to run current programs." And it continued: "The next two generations of Intel Pentium computer chips will run the programs used on today's IBM-compatible personal computers," (italics mine). That's good to hear. What it does, though, is rather beg the question as to where Intel would really like to see the Pentium being used.

⌘ I've just watched the first issue of *Hot Chips* on ABC TV. In some ways it seems to be more upmarket than SBS's *The Big Byte*. Certainly more glitzy anyway. It will be interesting to see how it develops.

## \$ THE MARKET

Well, things are sure a-changing in a hurry in 1994. Unbelievable!

## MULTIMEDIA

As I said would happen, this year is indeed turning out to be the year of multimedia. Prices have dropped - or tumbled in some cases - and the whole market seems to be gearing towards CD-ROMs and sound-cards in all of our computers.

Increasingly it's going to be harder and harder for us to run our computers without multimedia (if we want to be up with the market, that is). New programs will continue to be able to be installed from FD, but the day will come when we'll need a CD-ROM for this task.

With CD-ROMs, the market is currently up to double-spin. But triple and/or quad-spin will be the norm in due course.

As to sound-cards, 16-bit is fast taking over from the earlier 8-bit cards, and a multimedia upgrade kit with 16-bit card is still probably best value for the average purchaser. But make sure it's supplied to you fully INSTALLED onto your system, for they're still incredibly complex, and can be a nightmare to install yourself.

## ALL THOSE 486'S

Which computer to buy - or upgrade to? These have to be the words on everyone's lips!

Used to be you had just 6 or 7 CPUs to choose from. Recently I counted a list of over 30! That's enough to ensure the above words die on your lips pretty quickly! This unbelievable number has come to the market in very short order indeed, and currently includes offerings from Intel, AMD, Cyrix, Texas Instruments (and soon UMC).

And that's just for starters. To come are the RISC chips like PowerPC, DEC Alpha and the like. So if you're buying a 486DX2-66, increasingly it may be from Intel or AMD or Cyrix. Confusing, eh!

But as so often happens, we, the end-users, will profit from this plethora of CPU makers in the market-place. Already there have been quite large drops in price of various chips, as each company jockeys for their market share.

So now we have two major decisions to make when we buy new, or upgrade our present system. First, which chip? Second, which brand? And the latter can certainly affect the pocket-book. Want to buy only a tried-and-true 486DX2-66 from Intel? Then you may pay considerably more than for a comparable AMD or Cyrix chip.

## NOTEBOOKS

If 1994 is the year of multimedia, the next 12 months looks like being the time for portable computers to come of age.

Laptops, then Notebooks, then Sub-Notebooks - they've been around for years, but somehow have never quite managed to take off. In large measure

this was due to prices being too high - much too high, in fact, for the average buyer. Upgradeability was also poor, and if you could manage to purchase one, it only had a mono screen (like going back to B&W TV!) Adding peripherals such as a sound-card could be a pain, if not downright impossible.

But it's all changing - and in a great hurry, too! Just about everyone now has some notebooks in their range of PCs. Prices are slowly becoming more affordable, even for colour, but sadly, the portable still attracts a sizable premium over their desktop cousins.

Upgradeability - such as moving from 4Mb to 8Mb RAM, or going to a larger HD - is improving rapidly due to new modular design (where you can pull out the old and bung in the new).

Battery time is still the bane of the portable, but improvements are being made in this area. They're still too heavy and probably too bulky as well, but are improving all the while.

Recent welcome moves in the notebook area have been to including inbuilt sound-cards, CD-ROMs, microphones and speakers. Maybe it's not quite so far off that we'll be able to enjoy our PC at home - AND out of the house as well. For my money that really is a case of having your cake and eating it too. (See *Toshiba Notebook review below*.)

## BEST VALUE BUYS

In *In the News* above I said how the Pentium 60 is great value if you're talking about bangs for bucks.

But I remain unconvinced that the Pentium's time has yet come as the way **HARDWARE** to take us forward to '95 and beyond. In due course maybe PC technology will catch up to the Pentium's obvious power and speed. But that hasn't happened yet.

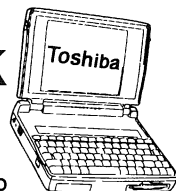
Meantime, if you want best feet-on-the-ground value for your PC dollar, currently you'll have to go a fair way to beat the 486DX2-66. Not all that long ago it was our fastest computer, but it's been eclipsed by the deluge of recent 486 and Pentium

releases. But these new chips - if for no other reason than that they are new - attract a considerable premium over "old" chips like the DX2-66.

In contrast, the price of the 66 is excellent. And you can do even better if you're happy to purchase a computer fitted with an AMD or Cyrix chip rather than one from Intel. With the DX2-66, you'll get speed, excellent speed in fact, but without spending a fortune. In the case of the Intel chip you also get a tried and tested product.

Spend up to a grand or so more, if you will, for one of the faster chips, but you'll find that Windows, with its dated 16-bit code will still tend to plod along at its own pace. The 486DX2-66 is decidedly good value, and it will probably stay that way until it takes its turn at being the entry-level computer in the PC world.

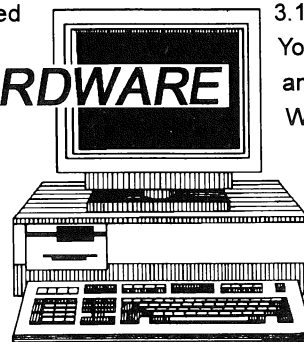
## TOSHIBA NOTEBOOK THE T1910 SERIES



Like to be able to use your computer at the kitchen table, in the workshop, (in the Throne Room?), in the car, or at the beach? Then you'll soon be wanting to look at buying a notebook computer. I have to admit that, if you've never done it before, the first few times of turning on your computer and writing a new batchfile in the front seat of the car - well, it's sure an unusual experience!

The Toshiba I tested was a 486SX-33 fitted with 4Mb RAM, a 130Mb 17ms HD, a 1.44Mb FD, and a mono display (64 grey tones). DOS 6.2 and Windows 3.1 came already installed. You were advised to make an immediate backup of Windows as no disks were supplied - which is not good in my view. There were a few enhancements to the "Toshiba" Windows 3.1 installed, but it was still a pretty standard 3.1.

The "mouse" was a trackball which attached easily to the right hand side of the keyboard only - too bad if you're a lefty (which I am)! The trackball worked





quite effectively, but a lot of intense graphics work sure can wear the thumb out!

The other thing about using a pointing device - trackball, mouse or whatever - on a notebook (well this notebook, anyway) is that you keep losing the mouse cursor. The Toshiba has a program that allows you to make a mouse "trail" to help this. But it didn't help me. When you lose the mouse (mostly off the right or bottom of screen), it really IS hard to find it. But you lose it in normal operation, too. It's to do with the type of display used by many portables - the screen just doesn't refresh fast enough to keep up. This affects many fast games as well, so you've been warned.

The display itself was nicely crisp and clear, and readable enough provided you weren't at too much of an angle to the screen. However there was noticeable "colour" variation at places on the edge of the display. Personally I don't like mono screens - it's too much like going back to B&W TV days. When I returned to all that colour on my desktop, it nearly blew me off the chair!

The 82-key keyboard can be a pain to use when you're used to the standard 101-keys. But the "regular" keys are still all in the right places, with adequate space in between. It was just a matter of getting used to Ctrl, Alt, the arrow keys, and others, all being in the wrong places!

The Toshiba was set to boot straight into Windows, but this was easy enough to change if you wanted to enter DOS or a DOS menu first.

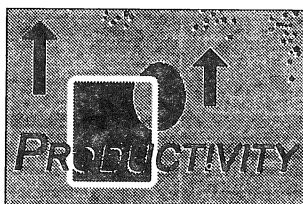
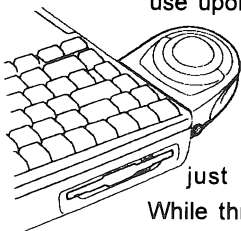
The HD and the CPU both gave slow readings on my regular tests, indicating that the notebook should be a bit of a sluggard. However, as I used it, it didn't feel to be, so I would have no problems recommending it to someone who was particularly speed conscious.

The unit came with a fairly large carry bag for all the goodies not permanently attached. This included all that was necessary in order to recharge the inbuilt battery. The notebook gave a warning when the battery was getting low, and I found all this part of things quite easy to get used to.

The unit had all the usual connections. You could connect an external mouse, external monitor and keyboard, and there was a parallel port, serial port and PCMCIA port. A nice touch was the provision of setting the notebook so that closing the lid closed the computer down - but it was ready for instantaneous use upon opening the lid again. In this event everything was exactly where you left it; why, oh why, can't I do that with my desktop!!

The notebook weighed in at just under 3Kb including battery. While this is not heavy, I still wouldn't like to have it under my arm for too long. I enjoyed my time with the Toshiba. It was relatively easy to use and live with and the portability (if you're used to being tied to the desktop) was great.

If you set it up with a 101-keyboard, a colour screen and a mouse, it would be an excellent compromise of usability and functionality with portability. Unfortunately it would also cost you something like the price of two desktops; sadly it's a luxury I'll have to forego for the present.



## MAKING WINDOWS FASTER

It's the cry of most of us, isn't it? Windows and Windows Applications are SO SLOW that we're always looking for extra speed. So what are some of the ways to go about this?

1. Replace your current monitor card with a Windows Accelerator Card. I don't usually advise this. You spend some hundreds on the change-over, and on lots of operations you won't see any speed increase at all with a regular 1Mb Accelerator Card. Spend more money still for a 2Mb and/or even faster card and you may see a difference. As for me, I'd sooner save those dollars and put them towards a faster CPU.

2. Run your monitor in 16-colours, not 256. It's an unfortunate fact of life today that more and more programs are demanding 256 colours. But with many video cards this does slow things down

considerably. If you don't need 256 colours, running the lower res... will probably speed things up.

3. Put in more RAM. If you're currently running with only 4Mb, probably your most cost-effective means of speeding up Windows is to increase to 8Mb. This will cost you some hundreds, but it's money well spent, for many modern Windows programs are NOT happy trying to run in 4Mb. The extra memory allows many, many operations to be done in (fast) RAM memory - instead of constantly swapping out to the (slower) hard-disk. (Note, however, that I've never seen much gain for the average user to put in *more* than 8Mb.)

4. Buy a faster computer. There's no doubt that the faster the CPU in your computer, the faster Windows will operate. A faster computer is highly cost-effective, too. Look at it this way. As I write, there's a difference of only some \$300 between an AMD 486DX-33 and a DX2-66. The 66 will run *EVERYTHING* considerably faster than the 33, including Windows. If you can't manage to upgrade the PC at this time, then increasing to 8Mb RAM is a great alternative.

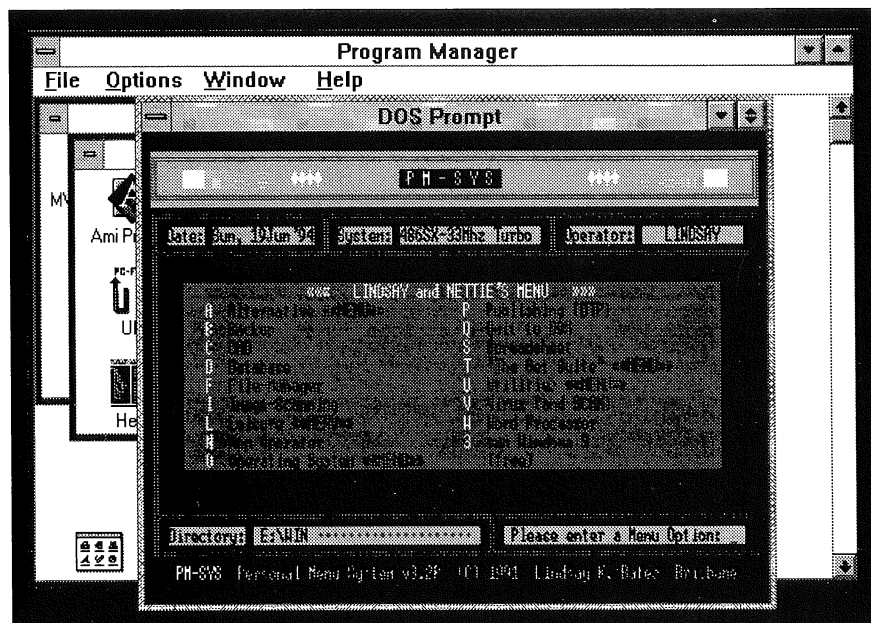
## TUTORIAL —

### RUN YOUR DOS PROGRAM IN A WINDOW

If you like working in Windows it makes sense to run any DOS programs within Windows too (386 and above computers). One way to do this is to use Alt+Enter once you're gone out to your DOS program.

But you can automate this task to save having to do it each time, and this is done via a PIF. (The PIF will then always run the program in a window - but you can once again use Alt+Enter at any time to instantly change to Full-screen if desired. Or you can change your PIF back to Full-screen at any time.)

PIF stands for Program Information File, and you'll need to make a PIF for each DOS program you want to run. There are two lots of good news here. The first is that making a PIF for a DOS program is a once-only task. The second applies if you currently run your DOS programs from a menu. Make a PIF



## Make just one PIF to run your DOS Menu. Then all your DOS programs will run in a window!

for the menu - and everything else run from it will tag along, i.e., just one PIF needed! (But note the proviso below relating to games and some graphics).

All right. One of my very favourite programs is LIST.COM so I'll use it as my example.

### CREATING A PIF

First, I find my PIF Editor Icon and double-click to run it. Program Filename? - I type in LIST.COM. It's important to always put the extension here (not just LIST like we could do in the good ole days).

Now, really, that's all I need to do. I could choose to put in a Window Title if I wished, but Windows will do it for me, anyway. I don't need any parameters, and I also don't need a Start-up Directory either, as I know that LIST is in a directory in PATH.

Now if I wanted absolute speed (or LIST wasn't in PATH, or I knew the directory was important for this particular program), it would be a good idea to put the directory in. All I'd do for this is tap Tab a couple of times to get down to the Start-up Directory field (you cannot use Enter for this task - Tab is what to use to change fields in a dialog box), and type in C:\UTL (the directory LIST.COM is in).

Now, there's just one more task here: click once on Windowed down near the bottom, as that's what we want rather than the usual full-screen.

To finish, I click on File, then Save As, backspace and wipe out the asterisks, and type in LIST. I then have LIST.COM and LIST.PIF on the computer. THAT, in fact, is exactly why Windows always tends to pester you for the extension - it does want to know which of these you wish to run!

### CHECK THE PROGRAM FIRST

Before we proceed further, there's one proviso to the matter of running DOS programs within a Window. And it's this.

Some programs - especially games and some DOS graphics programs that use the screen in a special way - well, these may NOT run in a Window. (In fact some older games won't run in either sort

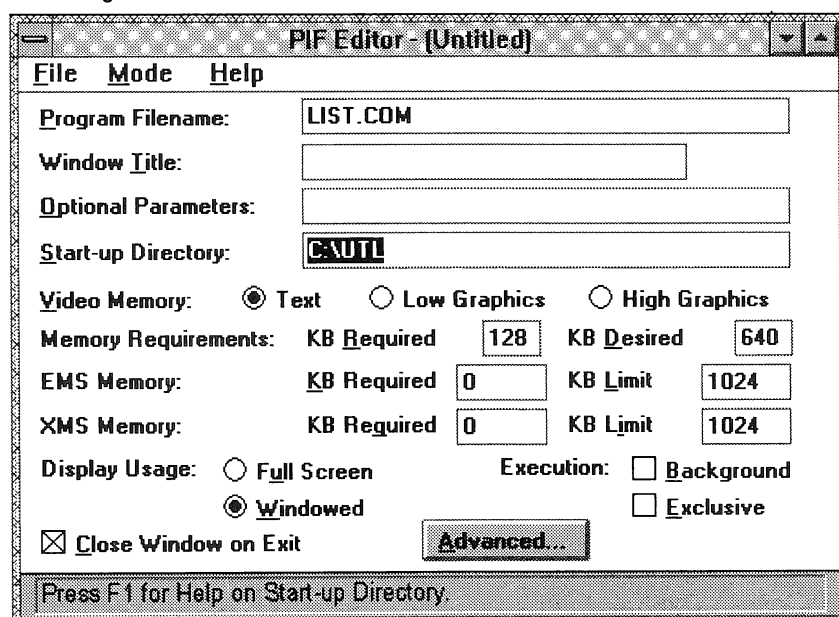
of Windows window - for these you must exit right out of Windows, and run them in plain old DOS). Now if you want to know whether a particular one will run in a window - well, just try it and see (using Alt+Enter). If it bombs, use Alt+Enter to go to full screen, and close the program normally. If this is not possible, then use Ctrl+Alt+Del to close the DOS window.

No, it won't reboot the computer! Windows has an "out" to allow this. You'll be given a message about the DOS Prompt and should tap Enter to close the window. Normally that will be it. If you're really unlucky you may have to reboot the computer to clear things up - so ensure all other programs are closed before you start experimenting.

### RUNNING FROM AN ICON

Now I hope you know how to make LIST.PIF into an icon on your desktop (I've done this a number of times over the years). If you don't, here's a quick tutorial.

Double-click on the File Manager Icon. Grab the bottom of the File Manager window and lift it's skirts (move it UP) till you can see at least the bottom of a Program Manager Window. In File Manager find LIST.PIF (or whatever yours is called) in your Windows directory. Using the click-and-drag technique I've done recently in this column, grab LIST.PIF, drag it down to Program Manager, and drop it into a Program Manager window there. I'll drop it into the (minimised) StartUp Window.



## Create a PIF file to run your DOS programs in a window

A LIST Icon will be created there for me. I now close File Manager, double-click on StartUp to maximise it, and again using click-and-drag, move the LIST Icon to the window I want it in. Minimise StartUp again - and it's done! And there's just one more step you may like to try .

**WHY NOT CHANGE THOSE ICONS?**

Now maybe you're like me and you hate that boring DOS Icon that the above tutorial will use. In any case, a change is as good as a holiday, isn't it? Did you know that most Windows program have an icon or icons in them? What's more, you can use ANY of these for ANY of your Windows program icons - and change them to your heart's content! And it's not difficult to do.

Let's try it for my LIST.PIF Icon above.

Click once on the LIST Icon to highlight it. Do Alt+Enter to run the Program Item Properties box. Click Change Icon. Now if LIST.PIF happened to have an icon/s in it, you'd be visually shown it /them. As it does not, you're told this. Just click OK.

Windows now shows you it's default "list of icons" - those that are in

PROGMAN.EXE (the file that runs Program Manager). The one I call boring is highlighted. See any others you like better? If not, click the right arrow on the scroll-bar till you find one you DO like. Click on it, and click OK and OK - and there it is!

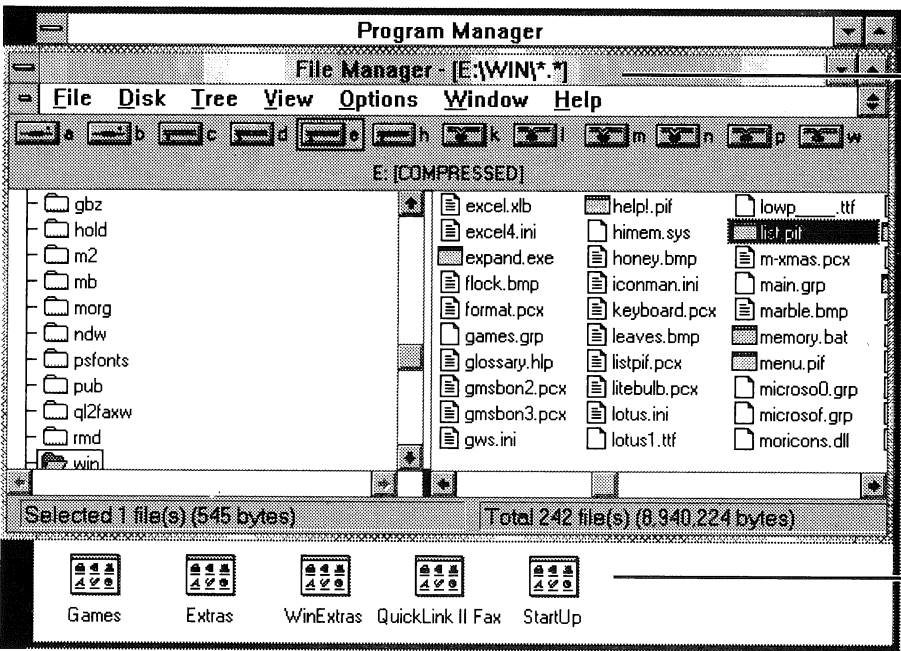
**ANY OTHER ICONS OUT THERE?**

There sure are! If you're super-fussy and STILL didn't find an icon you

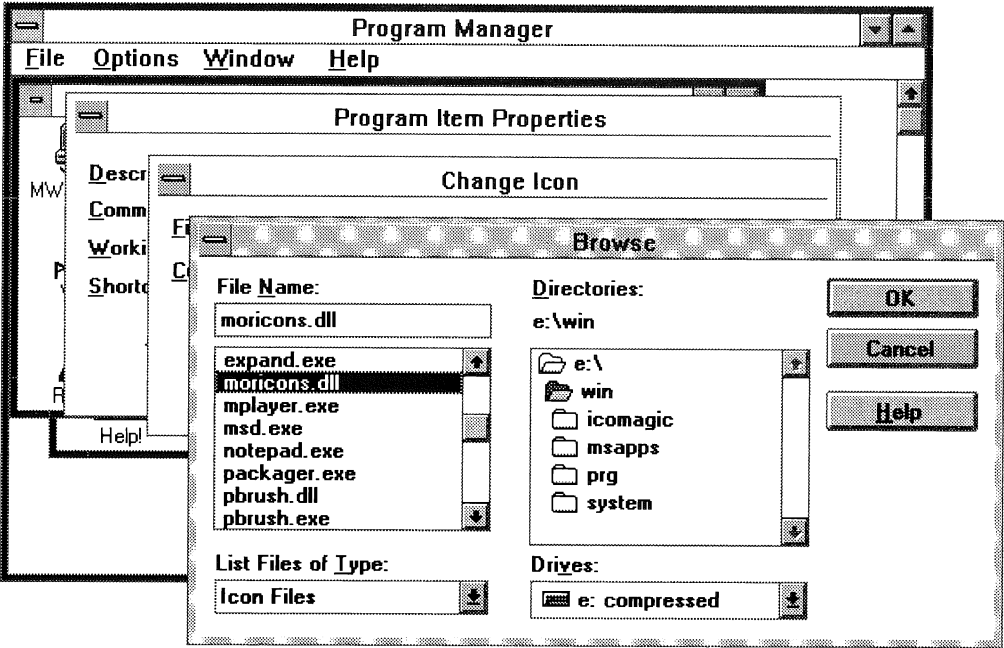
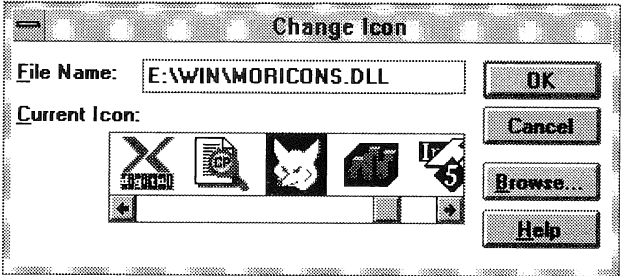
liked (or just plain nosey!), then why not look around the store?

When in the Change Icon dialog box, click on Browse. You should be presented with a list of .EXE and other files. Many of these will contain one or more icons, and you can find this out by clicking on them in turn. If there's no icon, you'll be told this and need to click OK. If there's an icon and you don't like it, just click on Cancel to return to the Change Icon box. When you do like one, highlight it, and click OK, OK, OK (I hope that's right!) to set it as your icon.

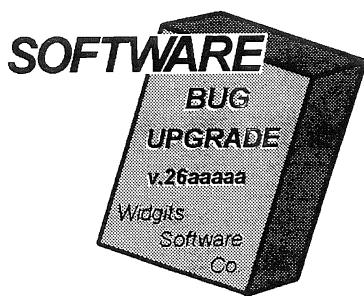
Choosing a different icon in no way will affect the program you're running from that icon. And don't forget that you can change the icon as often as you wish, so choose away! One file to specially have a look in is called MORICONS.DLL - and the name tells it all. Enjoy!



**Grab a program file and make it into an Icon on your desktop.**



**You can change the icon of ANY program at any time.**



## SOUND EFFECTS 6.1

If you'd like to hear some COOL sounds in DOS or Windows, then SOUND FX could be for you. Sound Effects 6.1 consists of an unbelievable 34 files (over 600K) of FREE programs for you to enjoy.

Yes, free! David Smith hails from US, claims that he programs for fun (I believe him), turns out a prodigious amount of utilities and other goodies, and lets us use piles of them for free.

So you want to make some fancy sounds even via the ole PC speaker?

No problem. Just type SFX and you're away. SFX runs a menu, from which you can try 70 different sound effects (and yes, you can include them in your batch files — THAT oughter catch someone's attention!)

Or you can try 7 voice demos. Like: "Bad ole Puddy tat!" and, "Drop the gun," from Robocop. All through the PC speaker! The burp is a beauty, and so's the: "Ahhhhhhh...", cartoon scream.

If you're into Windows, you can put 9 Sound Icons on the Desktop and play one when someone's least expecting it! There's Photons, Yomomma, Delicious, Motors, Bloop, Bomb, Plasma, and many, many more.

Sounds Effects 6.1 is highly regarded on Compuserve, and Sierra On-Line say it's tops. It is too! SFX61 is on the new Lindsay's Letter Disk #2. Order it as Brisbug 8609, a HD disk available now from the Library, or ring me (Lindsay's Letter Disk #1 is Brisbug 8606).

I expect to review more of Dave Smith's wonderful utils (also on 8609) quite soon. ...Enjoy!



## SMILE AWHILE COMPUTER EXPLORING?

Loved the gaffe in the last edition (for awhile) of The Big Byte on SBS. The reporter was giving us a run-down on the new, non-personal (video) banking using touch screens. One of the supervisors (the only humans around) had just given the reporter a demo of how it all worked.

"You need to try it on your own now," she told the reporter, then added: "I'll go away now while you explore yourself." Oh, dear . . .



## HINTS AND TIPS

**1. DOUBLESPEACE USERS:** ensure that you have a bootdisk with your current DOS version on it - or you may not be able to access your hard-drive. And make sure that on it is the right version of DBLSPACE.BIN, because 6.2 cannot read 6.0s!

**2. PRE-FORMATTED FLOPPIES.** I've had reports from a number of people of problems with pre-formatted FDs. Seems bulk formatting doesn't always turn out right, and you've paid extra money - then have to format them, anyway! Perhaps the worst aspect of this is that you can't be CERTAIN of their reliability unless you format them yourself - what could be worse than storing important data on a faulty floppy-diskette? I know formatting is a pain but I just won't buy the pre-formatted variety.

### 3. FORMATTING FLOPPIES.

The easiest way to format these days is probably via Windows. Double-click on the File Manager Icon. Click on Disk and Format Disk. If the FD you want is Drive B then click on the arrow to the right of Drive A, then on Drive B. We're now ready to proceed for either Drive A

or Drive B, whichever you wanted. Click OK, then Yes.

You can actually keep working in another program whilst formatting is proceeding, but "jerkiness" may make this difficult for you.

When the job is completed, if it is error-free it will show the same figure for Disk space and Available on disk. If not, DOS may have marked bad sectors. These indicate a non-perfect disk, but provided there isn't too much used up in bad sectors, it's normally okay to still use the disk (DOS marks these sectors so that they're never used). Click either Yes or No to go again, or exit.

My procedure with formatting new floppies is to **put the label on at the same time**. So if it's labelled, it is formatted - and **MAY** be used! This procedure may prevent you from inadvertently formatting a disk with data on at some time.



☞ If fish had computers, would they use us as screensavers?

☞ From a TV ad: "Open every day - including Sunday."

☞ Without real, person-to-person, down-to-earth effective communication there can be no relationships.

Without relationships this world will cease to function. So finally it all depends on communication.

See you next month - have a good one!

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

# Brisbug Development

## or *Where do we go from here ?*

Carl Planting

At the last club meeting on Sunday 19th June, in my address to members I spoke on the subject of the issues we have decided to tackle during this year. At the same time I directed a request to all members present to volunteer any help or expertise they had to offer. I am pleased to say that I received a number of offers which include supplying a copy of a database of schools, and assistance with the questionnaire and market research.

Also there were offers of general help from some members. This is most encouraging and hopefully when members have read this article, more offers of help will be forthcoming.

It is perhaps worth reflecting on the elements of Development we have identified.

### **Present and Future Benefits/ Services for Members**

The present benefits enjoyed include the monthly Magazine, the Bulletin Board (now with the added advantage of an *internet* connection), the Software Library and the Helplines (currently listed in the magazine) and our courses and lectures on DOS, Windows, Spreadsheets, Languages (C, C++, and Pascal), and Databases.

Future benefits would not only include the Magazine, BBS, Software Library and Help List (offering a wider range of help including a possible Beginners help section) but also expanded courses and lectures possibly including training beginners in software usage. Discounts from suppliers would be encouraged, the Bulletin Board could be expanded to provide "user-pay" services such as making CD-ROM's available for downloading or providing access to CD's of library programs from the Board.

Other suggestions include becoming an approved supplier (Public Service Consortium), providing a series of articles for publication in monthly magazines, and competitions providing benefits for members (eg Weekend at Kingfisher Bay for joining - joint promotion).

### **Additional sources of revenue and recruitment of new members**

Utilizing a database of schools, TAFEs and Dealers (eg Harvey Norman or Dick Smith) we would offer bulk discounts for prepaid memberships - including a certificate.

Previously published articles would be collected, collated and re-issued as a series to members, especially articles relating to some of the basic commands and uses of computers. Monthly raffles and competitions could be encouraged and the possibility of "user-payments" for meetings (to help with budgets).

### **Research and Database**

Our current application form asks members for the minimum of information -name, address, suburb/city, postcode, home and work phone numbers, computer type, disk size, modem and special interests. Whilst this information has been satisfactory in the past, we do not have sufficient information from this to plan for the future.

Our information horizons need to be expanded, and we need people with particular market research expertise to assist. Research to be undertaken could include definable and quantitative information such as: what equipment members have - what equipment they want to buy - the profession or occupation of members?

Research could include qualitative information - why did you join - what do you want from the club - are you prepared to pay for specialised courses - what specialised courses do you want - do we have enough social interaction (it is a social club) - does the bulletin board meet members needs - why did you leave.

We need to meet members needs, but we must first find out what they are. We also need to determine why only 20% of members attend monthly meetings.

With this sort of information we can do statistical sampling (not 100%) to get a reasonably accurate





feedback. A database of member information could include offers from helpers and those with special skills and training.

Along with member information other statistics are also necessary and information such as ABC circulation figures and ABS (Stats. office) for Queensland. Once we have all this information we need expert advice on how to use it for the benefit of our club and members.

### Externalise/Public Image

Apart from the club requirements, our public image is very important to Brisbug. Public relations play a very large part in the success of any organisation and a good Public Relations Officer can do a lot to make a good business a success. Brisbug needs the services of a good Public Relations Officer to handle press releases, provide articles for inclusion in newspapers and become the spokesperson for Brisbug on both radio and television. Brisbug must become an authoritative voice in the public environment.

### Our literature

Most of our literature has evolved by necessity, and now is the time to look at how we present ourselves. Membership kits should be acquired from other clubs and compared with our membership kit. The possibility exists for a change and the services of a Graphic Designer would be of great assistance to look at our documentation and advise us if our literature and its contents present the best message. Is yellow and black our image?

### Assistance required

For the benefit of members who enquire what assistance we were seeking the following is an immediate list (more will follow later):

- \* Market research expertise
- \* Public Relations expertise
- \* Graphic Design expertise
- \* Marketing and promotional expertise (merchandising offers)
- \* Helpers to set up databases of schools, TAFEs, Dealers etc to help target new members
- \* Helpline volunteers \* People to run courses (introductory)
- \* Contributors of monthly articles (magazine).

### Ask not what Brisbug can do for you, but what you can do for Brisbug!

We look forward to your generous offers of assistance.

## Marwick Computer Services

### OS/2 Software Specials

DeScribe 4.0 32-bit word processor \_\_\_\_\_ \$299.00

BackMaster backup software for QIC-40/80 tape drives \_\_\_\_\_ \$135.00

NEW - Graham Utilities for OS/2  
*Many Useful Utilities* \_\_\_\_\_ \$ 180.00

PMComm graphic communications package \_\_\_\_\_ \$160.00

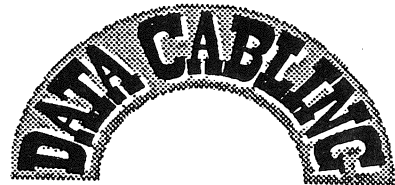
**Other OS/2 software on request**

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# Junior Group News

Reported by Les Cathcart

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With Annette Bulmer away, this months report has fallen to me. I would rather have reports and news from the Juniors themselves printed in this section, as it is their section of the magazine and this is their chance to let the Senior club know what is happening in the Junior Club.

Hey, Juniors! What about it? Get something to the Editor each month as my helpers and I feel that we are there to help you not to write your pages of the Magazine.

## Last Months Activities

With the help of some of the older members of the club we had a full day. I should like to thank the members that gave up their time at the meeting to show us what can be done with different programs and where it can help us in the future.

Brad Angie once again returned from the North Coast, to explain more about his business, where he uses computers to make vinyl signs and tell us how the different printers work with the programs that he uses. This was a follow up to last months demonstration, and I must say the audience was so interested in what he was doing, that both they all lost track of the time.

Brian Doyle also addressed the Group, and explained a little about the different types of programs used by him in his business. From the expressions on some of the faces, it was a delight to see that they were interested in what Brian had to say.

Brian obviously enjoyed the session and the Juniors had many questions for him. Some of them were quite adult and well thought out. After Brian had finished he asked if he could return at a later date and tell the group more.

Past President Ron Lewis was the third presenter, and he explained to the group what was inside a computer, but things did not go the way that he thought. By this I should explain he was given a computer and the tools and told he was on.

So being a veteran speaker, he started with a lot of eager little eyes looking on and, listening

carefully to all that he said. Ron explained what he was doing and identified the components as he removed them from the computer. Things went wrong when he held up one of the cards and described it as a video card, and one of the younger members of the group questioned his description.

The youngster politely told him that it was a Sound Card. I don't think that Ron will be able to live it down, and it seemed to be one of the thing the Juniors talked about for the rest of the day. How can someone with that much knowledge make such a mistake.

Well, the Juniors would like to say a BIG THANK YOU to all three speakers and for the time they gave and hope that we can get more people from the senior section of the club to come along and tell us about your experiences or your work or the programs that you find helpful.

To the member who took the photos which appear with this article, I would also like to express my thanks. I am sorry that I did get your name but you should know that a meeting like this one keeps me flat-out trying to remember my own name by the end of the day.

## Next Meeting

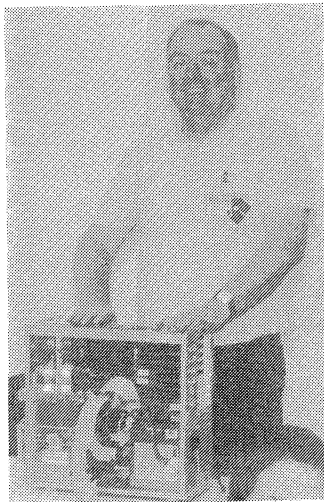
Our next meeting should be also very popular with both the Juniors and their parents. WordPerfect Corp. representative, Wendy Bell has agreed to address the Junior Group and explain some of the mysteries of WordPerfect.

Quite a lot of the older Juniors are using this program at school and are only taught the very basics of it. I feel that they can gain a lot if only they knew how to use it more. So come along to the Junior Group meeting and discover "How to use WordPerfect".

I should like to hear from the Juniors what they would like to see demonstrated at the monthly meetings. This is your group - so please give your input to me, or one of the helpers, as we can only do so much!

# Sunday with the Juniors

Right - Enthralled Juniors watch Brad Angie demonstrate one of the Laser Printers



Left - Ron Lewis Prepares to dismantle a computer for the Juniors



Here's your screwdriver, Ron. Now put it back together



Hey Ron! That's not a Video Card!

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### MEETING DATES

#### Coming Events

- 21st August - Borland
- 18th September - Lotus
- 16th October - Borland
- 20th November - Microsoft
- 18th December - Christmas

Mark your Calendars!

# Starting - SNIPPETS CORNER....

Rita Copeland

***"Ask not what your club can do for you, but what you can do for your club!"***

Thus spake Carl Planting, paraphrasing John F. Kennedy, at the last Brisbug meeting.

And here's something you can do right now. Help the next person over the hurdle you have just surmounted.

We have all been beginners at something or other no matter how long we've been playing with our computers. Don't you remember how frustrating it was to wrestle with the impossible for hours only to find out in the end that you were only a keystroke away from being able to get on with the job again? Well, what about being the good samaritan who gives that timely tip to someone out there so they don't have to waste those same amount of hours also.

We're starting a snippets corner. Dash off your latest breakthrough in even as few words as will fill a quarter of a page (100 - 500 or whatever won't exhaust your brain power; you don't have to be a literary genius). Then get that snippet in to the editor for publication in Significant Bits.

## Getting started

Here's the technical on how to do that. (See, I'm now into writing the first snippet!)

Write in whatever wordprocessor or text editor you're used to working with so it's not a big chore. Spell check it if you have that facility, or give it a good eye-over looking for typographical mistakes. When you are satisfied, save your work in DOS.

## Don't know how to do that?

Read on.

Most major wordprocessors have a Text in/Out or Import/Export feature. WordPerfect has it on one of its function keys - Version 5.0 or so uses Control F5, 1(DOS text), 1(Save). Look on your keyboard

template, or call up your help screen (F3 in WordPerfect, probably F1 in most other wordprocessors) and check out what the function does. The principle is: you pick the choice that saves the document as a DOS, or TEXT, or ASCII file. This means that the document is saved as straight text - no fancy characters or special codes for carriage returns, tabs, indents, etc.

Different wordprocessors use different codes for these things which is what makes them unable to be read by anything but their own program. Only when you have stripped off these special codes can the text-only document be called up into another program. The new program recognises it as a text-only document and immediately converts it to its own format, placing its own special codes where they should go.

## Naming the file

When naming the file, this time give it an extension like .TXT or .ASC or something other than the normal extension you would have used with your wordprocessor - just so you will know that you have already converted it and not get it overwritten again by your previously saved or backed-up version.

Copy this DOS file to a floppy and post off to the editor listed in this edition of Significant Bits (presently Lloyd Smith, 95 South Station Road, Booval, 4304). If you have a modem, send the file electronically to the management bulletin board 209-4980. (These numbers and addresses are usually listed in the front pages of Significant Bits.)

I should mention if you send your snippet on paper only (a hardcopy), all that text has to be typed into a computer again by someone and that could be too time consuming for a busy person, so do send it by modem or disk. Cardboard disk covers or boxes can be purchased (80c - \$1.00) at post offices for safe postage of disk.

## What happens to your "Snippet"

Now, are you interested in what happens at the other end? The editor sits at his computer with

PageMaker running and his page template all in place just waiting to call up your welcome little snippet.

(Page template means a tentative layout already designed for one, two or three column arrangement, place allotted for a picture or so, space for the heading, etc or whatever that particular page might be set to do).

All he has to do now is position his cursor at the top of the first column and call in your file. The text flows in painlessly down the column and snakes into the next if there's more to go.

## Proof reading

At this point there is, however, still a bit more proofreading to do - just in case you left some sneaky little special character there that did not convert or two words have snuggled up too close and need easing apart for better readability.

But, in general, the DOS text on disk is nice

and manageable. Imagine if the editor had to type out the whole magazine himself each month! Or if he had to search round for someone who had your type of wordprocessor to run it on first and convert it himself to DOS before he could read it into Pagemaker! We just wouldn't get it, would we?

His next trick is to tidy up the fonts and subheadings and here he is often controlled by what space there is on the page - changing font size or type, adjusting line spaces, embolding or italicising to fill the page to better effect.

Ah, what pride of authorship when you see YOUR snippet there in print for all to read! Feel good? GOOD!

So come on, get your good feelings on us. You know so much about the things that could go wrong. Tell us about them and tell us how you got yourself out of the mess.

AND SAVE US FROM FALLING INTO THE SAME MESS.

---

# Games review

Corpsgrinder

---

## COMANCHE - MAXIMUM OVERKILL

*Requires: 386 or better, 4 meg ram, VGA, 12 meg hard disk space*

Comanche is a flight/combat simulator, featuring America's most advanced helicopter gunship. Hard to go wrong with this, you'd think.

The main attraction is NovaLogic's technique for displaying voxel-mapped terrain. The game-world is wildly coloured, with plenty of mountains and ravines, and it looks superb. However, you soon realise that the same few worlds (with different colours) are recycled for every mission, whether it takes place in Russia, Hawaii, or Central America. Then you discover that there are only four types of enemies in this world: fuel tanks, Hokum choppers, T-80 tanks, and SA-8 SAM vehicles. You will also have noticed that there are no trees, roads, or people, and the only building is an Aztec temple, such as is commonly found in Central Europe.

You are given twenty missions to complete, which adds up to about three hours of play. However, some missions are very difficult so it may take a couple of days to complete them all. Repeat-play value tends to be quite low. In a rather sad attempt to

squeeze maximum mileage out of the game, when you fail a mission (by dying) you are placed back at the start of the previous mission. Fortunately, you carry four times the realistic weapons load of a Comanche with no loss of performance. The sound effects vary in quality, with the 20mm cannon sounding like a vibrator, but the digitised speech is used to great effect. There are also the usual range of 'views' to choose from, such as side and rear views, chase view and full screen view. You can, of course, land on the water without sinking.

There's no weapon selection screens or intelligence briefings, all you get is a one-paragraph summary of your mission and then it's into the mission itself. It's worth bearing in mind that Comanche isn't so much a simulator as a simulator of a simulator, which means realism finishes a long second behind playability.

Your enemies are many and stupid, and they take ages to notice you flying low overhead. You'll thrill to zooming down a narrow canyon popping tanks as you go, until you realise that there is absolutely no challenge in this, because your chopper is apparently one pixel wide and even if you ram yourself into a cliff at top speed you'll rebound with a disappointing 'clunk' sound.

*Continued over...*



Games  
review...  
Corpsgrinder  
tinued

Speed is a problem. Comanche is perfectly playable on a 386DX40, but the screen refresh rate is slow and you feel like you're flying through syrup. A decent 486 would be required to fully appreciate the game.

Comanche is best played with the joystick and keyboard together. A typical mission involves flying out and destroying EVERYTHING. Sometimes you have a wingman, who just follows you around placidly, requiring you to target and fire his missiles for him. Combat is usually a turkey-shoot until you are overwhelmed by sheer numbers. You can also call in artillery strikes, which is a nice touch.

"Maximum Overkill" describes nothing so much as the blurb on the back of the box.

Comanche should be available for around ninety dollars at your local games shop, though it's becoming hard to find. Next issue I'll review the expansion sets for Comanche, space permitting.

Good points : breathtaking graphics, very playable.

Bad points : unrealistic, too limited, too short, slow on a 386.

In a word : Poor.

## CRUSADERS OF THE DARK SAVANT

*Requires: 10 Mhz or faster, MS-DOS 3.x or 5.0+, VGA or EGA, 7 meg hard disk space*

The Wizardry series of dungeon adventures have been around longer than syphilis and are nearly as popular.

Sir-Tech's Crusaders of the Dark Savant is sixth in the series, the sequel to Bane of the Cosmic Forge. You have the option of importing your party of six from Bane, or starting from scratch with first-level characters. New features in this game include an automapping ability, enhanced personal skills, and the facility to drop objects and pick them up later.

Your quest takes place on a primitive alien planet, as you search for the Astral Dominae, a legendary artifact said to contain the secret of life. Unfortunately, the rest of the universe (spacefaring races who fight with

swords and muskets) are also in on the act. Add to this the warfare between the native peoples on the planet and you have a recipe for chaos.

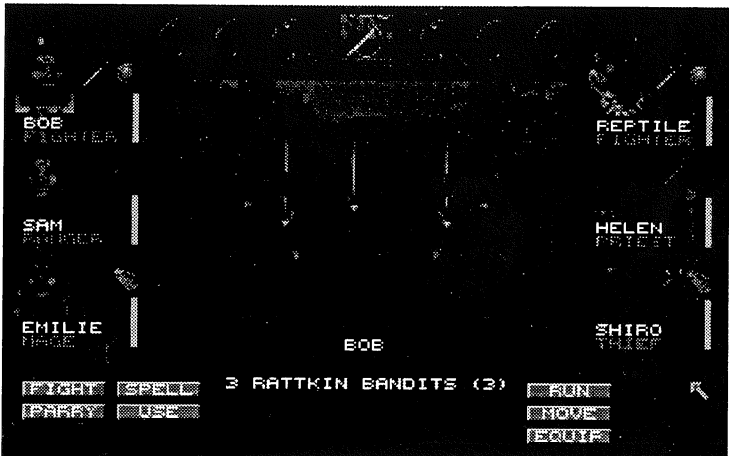
There are several military factions vying for control of the planet and the Astral Dominae, and they all want your support. A clever player will try to keep everyone happy until he decides where to throw his weight. You must also thwart the plans of the dread Dark Savant, a sort of cross between Darth Vader and Robert Maxwell.

You move your party around square by square with the arrow keys, much like the Beholder series, except you don't see monsters from a distance. When an encounter occurs your party stops moving and the computer displays the monsters or people you have met. If it's a non-player character, you have the option to talk, buy or sell items, trade information, pickpocket, attempt diplomacy, or just fight.

Conversations are conducted by typing in what you want to say and reading the response. Very sophisticated. A battle, on the other hand, can involve dozens of enemies, and is usually very tough. Each character may choose to cast a spell, fight, flee, use an item, or hide to prepare for a backstab. Fighters may swing, thrust, bash or melee with their weapon, while spellcasters choose a spell and the number of power levels they wish to put into it. When every character has chosen his action for the round, the computer processes the battle, and runs through each attack in order.

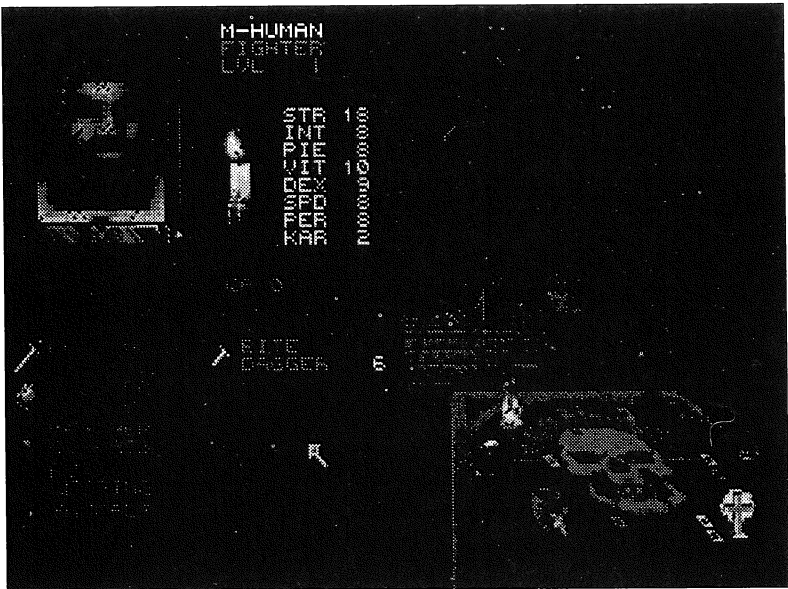
The combat system is the backbone of the game, with tremendous variety, plenty of options and detail, and every monster has a wide variety of possible attacks. Other features include weapon ranges, multiple attacks, primary and secondary weapons, variable initiative, armour pieces, fatigue, criticals, and potential spell failure.

The character statistics clearly have AD&D in their ancestry, but are much more detailed. There



are eleven races, who may choose from fourteen classes. Skills are measured in percentages, while magic ability is divided into six elements, and then into spell points and known spells in that area. The mechanics of combat and spellcasting are about four times more complicated than their AD&D equivalents. The main reason for playing this game, however, lies in the background detail of the world and its people. Crusaders is one of the best-scripted games around : the city descriptions are superb, the conversations are well written, and the storyline is deep and solid.

The graphics are great, the monsters are always well drawn, and the inventory screen is a work of art. Sound effects are sparse but used well. The game's main drawback (once you get used to self-paced combat and the fact that you can't see monsters 'till you encounter them) is the degree of difficulty. The fights are often brutal even on the lowest difficulty level, and the puzzles can be very tricky though the solution is usually obvious in hindsight. You will need the patience of a glacier to complete this game, even with the hint book.



Finally, some advice. Don't take lizardmen characters; because they are Large creatures they take extra damage when hit. Also, teach your party to swim as soon as possible.

Crusaders is hard to get nowadays, but it can sometimes be found in the bargain bin of your local games

shop. There's also a sequel due shortly, according to fairly substantial rumour.

Good points : superbly scripted; deep, detailed, self-paced combat; looks great.

Bad points : very tough combat and puzzles, takes hours to roll up a decent party, weak ending.

In a word : Great.

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# Telecommuting and its Implication

By Pauline Ausburn

***Telecommuting, the new buzzword in computer circles, literally means working from anywhere other than the conventional office using telecommunication and information systems to send or receive information.***

This new-fashioned "office" could be located in a home, car or neighborhood or suburban branch office using an electronic briefcase, laptop computer or notebook computer together with electronic bulletin boards, videoconferencing, mobile telephones, automated telecommunications networks, on-line journals, electronic mail and teleconferencing.

This new technology is revolutionising the way people think about the traditional role of the office worker, considering the fact that life in the office has changed very little in the past ten years other than the sophistication of the tools used.

## Main advantages

There are many benefits in using this form of technology. From the employer's viewpoint, telecommuting is an advantage because there is a reduction in central office overheads as there are fewer employees working in the office and a smaller site is sufficient for the needs of the decreased number of workers and this constitutes a reduction in power costs and other expenses. Another benefit to the employer, is that some employees who are telecommuters are 15-20 percent more productive than those who work in the office. This is seemingly because these people are released from the ordeal of daily traveling and office interruptions.

Community advantages Telecommuting is convenient to the worker as it extends more command over working hours and cuts down the time previously spent in

traveling. The time which was previously wasted in commuting, can now be spent with the family. It also eases the pressure on the employees who find it necessary to place their children in childcare centers and those who have other family commitments.

Telecommuting also has advantages for the environment and the community. In a society of teleworkers, there would be a drastic reduction in petrol consumption, road accidents, traffic build up and therefore a decline in pollution. Even though there are many advantages, at the moment only four percent of the workforce are telecommuters.

## Dealing with problems

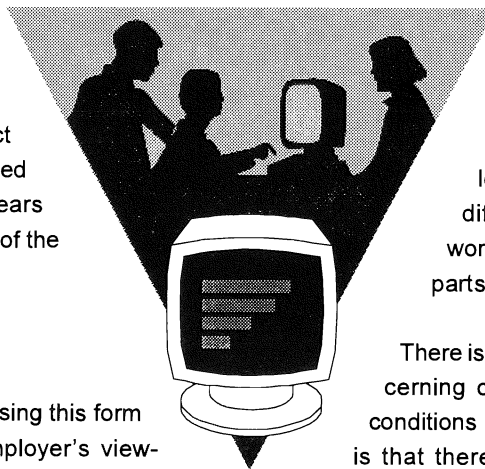
There are relatively few problems concerning telecommuting however, from a union perspective, there are a few disadvantages with employees working away from the office. These problems are based on the fact that telecommuters receive different pay, different benefits and have different work conditions to their office counterparts.

There is an absence of permanent rules concerning compensation, safety and working conditions of telecommuters. Another obstacle is that there would need to be a large-scale cultural change if telecommuting is to be accepted.

## Value of electronic communication

One manner in which telecommunication can be implemented, is in the linking of scientists who are doing research in remote areas with other scientists. These scientists use electronic links, modems, personal computers and facsimile machines to keep in touch with their associates who work in the city.

A scientist's PC which is linked to a modem, can connect to a laboratory computer through radio phone, satellite or telephone, allowing data to be sent and received by both parties. This lets decisions concerning the direction of the immediate stage of



## Star Trek Next Generation CD-ROM For MPC

**ALAMEDA, CALIFORNIA, U.S.A., 1994 JUN 9 (NB)** — The television series may be over, but multimedia personal computer (MPC) users can begin a Star Trek: Next Generation adventure with a new interactive CD-ROM from Spectrum Holobyte beginning this October. Spectrum says it has signed up eight of the principle actors from the popular science-fiction series for the title.

Company representatives told Newsbytes the title, "Star Trek: The Next Generation 'A Final Unity,'" will have an originally written and produced story. The interactivity comes in with the ability for players to choose to be any of the main characters, including the computer. The title is to feature three-dimensional (3-D) graphics and compact disc (CD) quality sound.

Spectrum has a license from Paramount to produce a specific number of computer and video games from the series and has already released a Nintendo Star Trek: The Next Generation video game. The

*Continued from previous page*

concerning the direction of the immediate stage of research to be reached more quickly and accurately and with a reduction in expenditure.

This technology can also be used to interview overseas job applicants, to help people "appear" at overseas seminars and to enable staff to communicate with offices throughout Australia without leaving their town. This would save the business a tremendous amount of time and money, money which would have been spent on traveling expenses.

### Future potential

Telecommunication is relatively new and in its infancy in Australia, but I believe it has great potential. It saves time and money, yields higher production rates, creates a decline in traffic problems, pollution, road accidents and petrol usage, and gives the employee more flexibility. It bridges the gap between people in remote areas and people in the cities and there are no problems with giving and receiving information.

However, not all jobs or employees are suitable as telecommuters and an immense cultural change in the population of Australia needs to take place before telecommuting can be implemented on a large scale. If these problems are over come, telecommunication could drastically affect the way people work and live.

# Newsbytes

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company also has the right to produce games from the "Generations" Star Trek movie Paramount is working on and representatives said further CD-ROM titles are in the planning stages.

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## Microsoft/World Wildlife Fund Combine On Software

**REDMOND, WASHINGTON, U.S.A., 1994 JUN 9 (NB)** — Conservationist and world traveler Sir Edmund Hillary has endorsed the work of Microsoft Corporation and the World Wildlife Fund (WWF) to develop computer software about endangered species of our planet.

Hillary, 74, and the first person to ascend to the summit of Mt. Everest, told a standing room only crowd of Microsoft employees such efforts are "vital to the future of conservation." Hillary said the global environment is severely stressed and something has to be done to save it. "We have to do something. We cannot leave it to other people."

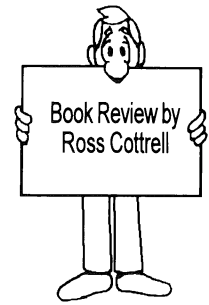
The joint product between Microsoft and the WWF will produce a Windows-based software program, called Dangerous Creatures, as one of nine new Microsoft products this year for the home computer market. Dangerous Creatures includes 1,000 articles and 250 pictures of natural habitats. The WWF served as technical adviser and fact-checker for the program.

In addition to the text and pictures, the software includes sound effects, narrations and pronunciations. It takes users on a tour of various wild areas of the globe to demonstrate the "delicate balance of the ecosystem" that surrounds the world's wildlife. Hillary described Dangerous Creatures as "great for the young who learn so quickly and visually." He added that he personally does not use computers.

Microsoft spokesperson Michelle Dollarhide told Newsbytes that Dangerous Creatures is scheduled to ship in late June with a suggested retail price of \$US79.95. She was uncertain if there will be a Macintosh version of the program, but said if there is it will not be in the near future.

# Review of **“Build Your Own Low-Cost Data Acquisition and Display Devices”**

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This is a book for the electronics enthusiast who has an IBM compatible PC and who wants to use it to interface to their electronic projects at low cost and without serious risk of damaging their computer. The emphasis is on using the 'standard' serial and parallel ports with suitable external circuitry rather than using specialised I/O cards which plug directly into the PC's system bus. You don't need a degree in electrical engineering and you don't need to be an expert assembly language programmer to make use of this book, but you do need some knowledge of electronics and computer programming.

## **Convert your computer to a Data Acquisition System**

The back cover boasts that it "... gives you all the hands-on guidance and tools you need to turn your IBM-compatible computer into a high-performance data acquisition system!". This claim has elements of truth but it seems quite exaggerated; I guess it depends on what you understand by the terms 'hands-on guidance', 'tools' and 'high-performance'. You won't get personal supervision from a book, the tools are all of the software variety (of course), and 'high-performance' is a highly subjective term - In my opinion there are other approaches that are better deserving of the term 'high-performance', and most of these are incompatible with the 'low-cost' requirement. Ignoring the hype though, the book does have a lot of useful information to convey to its intended readers. Johnson appears to know his subject well, including the details of a number of peculiarities of the hardware that lie in wait to trap the uninitiated.

## **Inner Workings**

The first 3 chapters are devoted to an overview of the territory to be covered, an introduction to the inner workings of the PC, including the PC and AT system busses, and the principles of data transmission.

Chapter 4 is dedicated to showing how the serial port can be used for I/O. It begins with details of the hardware then goes on to describe the workings of the UART and the programming of the UART and interrupt

controller. Johnson presents a 'serial toolkit' and finishes the chapter with an example application in the form of a simple terminal emulator program called TinyTerm.

Chapter 5 is dedicated to parallel I/O using the printer port. It begins with a description of the hardware (there's not much to it) and goes on to discuss several different methods of using the raw capabilities of the parallel port in several different ways. There is a 'parallel port toolkit' which implements some of the techniques described, and is designed to be similar to the 'serial toolkit' from chapter 4.

## **External Circuitry**

Chapter 6 describes the sorts of circuitry you might have on the outside of the PC, connected via the serial or parallel ports. It includes sections on serial and parallel interfacing, filtering, A/D and D/A conversion and, finally, an example application in the form of a digital voltmeter.

The final chapter covers the important topic of making an entire system work properly. Not only must all the parts work individually, but all the connections between the parts must work correctly. Topics include noise, grounding, cabling, line termination, troubleshooting and software.

The source code for the software is in Borland's Turbo Pascal (with a little assembly language in critical places) so you'll need a Turbo Pascal compiler if you want to modify the code, or at least a reading knowledge of Turbo Pascal if you want to port it to another language.

## **Availability**

By the time you read this the book should be available for \$40 from BCF Bookshop, or \$36 with the usual 10% discount for Brisbug members. The source code, object modules, executables and some documentation are available on disk from the publisher. Fortunately, they give a telephone number for international customers so if you have a credit card and ISD phone access, you have a fighting chance of getting hold of the disk.

Title: Build Your Own Low-Cost Data Acquisition and Display Devices

Author: Jeffrey Hirst Johnson

Publisher: TAB Books, Division of McGraw-Hill, Inc.

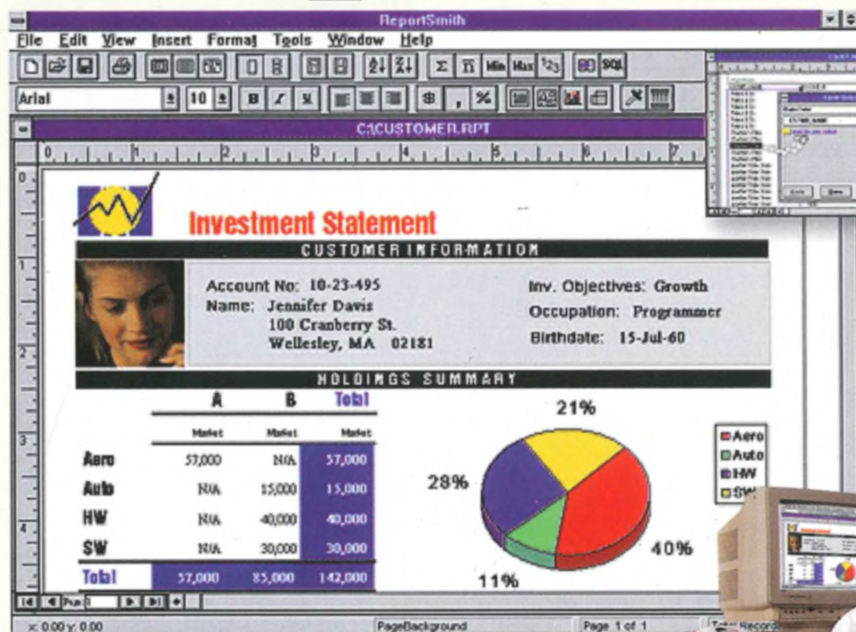
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## **BBUG 3321 UTILITY\_BELT**

### **Version 1.1A**

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Add some pizzazz to your batch files! UTILITY\_BELT is a collection of batch file, security and diagnostic utilities designed to give an advanced, professional look to even the simplest of batch files. Each program was designed for a specific purpose.

Programs included in the UTILITY\_BELT collection: SELECT which allows a user to choose from a list of options and can be used to direct the flow of the batch file accordingly. CONFIRM prompts the user for a Yes/No response. WAIT prompts the user to proceed or quit. GETKEY waits for a key press from the keyboard and returns a value based on the ASCII code of the key pressed. SLEEP pauses the computer for the specified length of time. BLEEP sounds a user defined tone (or series of tones) on the speaker. VPSET sets the current video display page for text modes. VPCOPY copies one video text page to another. VPFLIP will let the user flip instantly between alternate display pages that have been created with the other video programs. VPCLS clears the screen of the specified video page to a specified color. VPTNT clears the current screen to the specified colors in an explosive effect. VPBH will clear the current screen to the specified colors in a 'black hole' effect. VPSTRIPE is similar to

All of the programs in the UTILITY\_BELT collection were written in assembler to ensure compact, fast code.

A demonstration of the programs in action is also provided, and various programs outlined above used extensively in this demonstration.

## **BBUG 3322 VGACAP AND**

### **VGAFIL Version 7.7**

*CLASSIFICATION \* Graphics/Utilities \* Hard Disk \* VGA/MCGA/SVGA*

VGACAP is a TSR utility that captures screens in several formats: MCGA (320x200x256), VGA (640x480x16), and SVGA (640x480x256 - 800x600x16/256 1KBx768x16/256). VGACAP will also capture and "Bsave" 320x200x256 pictures. All others are saved to .RAW file files which then need to be converted.

VGAFIL is also included with VGACAP. VGAFIL is a conversion program that use in batch file format or a stand along program. VGAFIL converts and saves captured images to 32768-color TGA (Targa 16), 256-color .BMP (Windows 3), .PCX, .GIF files or 16-color .GIF files. You can also use VGAFil to customize and configure VGACap to take advantage of specific SVGA chipset hardcoded FAST screen captures.

Both of these programs are not for the faint-hearted, because you really need to know what you're doing when it comes to graphics and screen capture.

## **BBUG 3323 ZIP COMMENT EDITOR AND ZIP DIRECTORY**

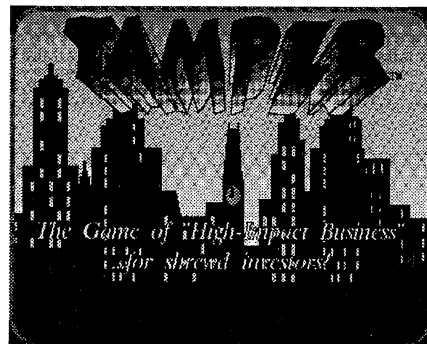
### **Version 1.1A**

*CLASSIFICATION \* Archive/Utilities \* Hard Disk*

For all those times when you've looked at a directory full of "zipped" files this program is the perfect answer to help you quickly find out exactly what you've got. ZIP COMMENT EDITOR and its companion program, ZIP DIRECTORY, allow editing and viewing of Zip file comments.

Using ZIP COMMENT EDITOR it is easy to "label" your zip files with comments. Then, once you have added zip comments to any zip file, you will never have to unzip them to find out what programs are inside. The bottom line here is you can cut down on all the wasted time of trying to figure out what's with all of your zip files. Obviously, if you don't have many zip files, this program won't be too useful. However, those of us who archive programs to save disk space will definitely appreciate and use this program.

You can easily display and edit zip comments as often as you wish. Comments can be saved into zip files. The on-line help feature



*BBUG 9178 - TAMPER - A Business "Board" game for your computer*

is nice (in case y you forget what to do next). For such a small program, Zip Comment Editor is loaded with features, including a shell to DOS feature. Even 43 and 50 line formats are supported.

## **BBUG 3324 ENGINEERING FORMULAS & PROPERTIES**

### **Version 1.0**

*CLASSIFICATION \* Engineering \* Windows \* Hard Disk*

ENGINEERING - BEAM FORMULAS FOR WINDOWS (E\_BFW) is a mechanical engineering application that was designed to be small fast, and easy to use as a beam formula solver. The program will solve 12 of the most common loading/support cases. Program outputs include end reactions shears, moments, and deflections.

The program consists of two main windows. The opening window provides control of the system and local menus, allowing selection of a particular beam case. Once a selection is made, a pop-dialog box provides a means for not only gathering inputs but also the calculated output. In addition to working with the "point and click" features of the mouse, there is complete keyboard control.

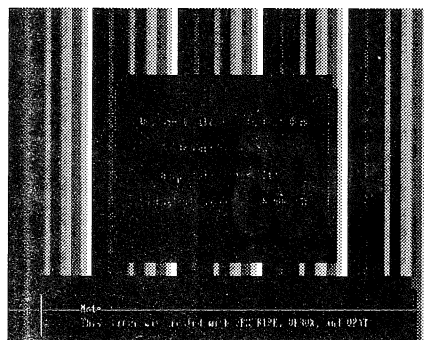
ENGINEERING - SECTION PROPERTIES FOR WINDOWS (E\_SPW) is a mechanical engineering application which allows an engineer o machine designer to quickly size standard shaped profiles for 2D properties: Area, Y-bar, Moment of Inertia, Section Modules, and Radius of Gyration.

This small program operates much like a section properties program for a small held calculator. You can use the "point and click" features of the mouse or work only with the keyboard.

## **BBUG 3325 PRINTENVELOPE**

### **Version 2.31**

*CLASSIFICATION \* Printing Utilities \**



*BBUG 3321 Utility Belt - Great Utilities*

VPCLS, but will produce a striped or rainbow pattern on the screen. Stripes can be horizontal or vertical. VPAT prints a text string at a specified location on the screen. VPBOX can draw a box of a given size at a given location on the screen. Used with VPAT to create message windows on a screen.

Also included are Security and Diagnostic Utilities: HANG will lock up a computer and require a power-off/power- on reset sequence. REBOOT is software controlled rebooting of the computer. WHATIS is a diagnostic program which reports the BIOS and DOS physical and logical parameters associated with disk drives.

This program is one of those rarities which not only perfectly matches your needs for printing professional looking envelopes. Very few programs ever come close to being the ideal solution, but PRINTENVELOPE hits the bull's-eye dead center. Just how good is this program? Simply put, it sets the standard for envelope and label printing programs.

PRINTENVELOPE can create addresses on the fly, paste data in from other applications, use addresses from its own address book, or import a mail list from Windows' Cardfile (or an ASCII delimited file format). And, we're not just talking envelopes here, because this program will print out labels. In addition you can also include .BMP graphics as part of the return address - which is ideal for company logos. The install is simple and straight forward. Using the program is as effortless as clicking on an icon and then typing in an address. You can store up to four return addresses in a variety of formats and fonts.

You won't find any limitations when it comes to envelope or label sizes, because in addition to all the choices built into the program, you can set custom sizes, too. The bottom line is simply that if it fits in your printer you'll be able to print it. PRINTENVELOPE supports laser, dot matrix, and PostScript printers as well as most printer fonts.

The address book feature of PRINTENVELOPE is quite handy and, again, so easy to use you'll wonder why other programs don't work this way. Once you've entered an address, you can then quickly paste it into the envelope and print as many copies as you wish. Once you've stored a lot of addresses, it's no problem to find whichever one you want; and making changes to any data already entered is very, very easy. The best part about PRINTENVELOPE is that it's a snap to print impressive looking envelopes.

This is definitely one of those “must have” programs!

Requires VBRUN100.DLL - BBUG Disk # 9169

**BBUG 3326    STARTUP  
SWAPPER Version 1.0**

CLASSIFICATION \* Utilities \* Windows \*  
Hard Disk

STARTUP SWAPPER works in conjunction with STARTUP SCREEN. STARTUP SWAPPER will automatically change the start up screen each time Windows is loaded. You won't find much in the way of limitations here, because this program can choose between 32,000 different screens.

It is easy to use and set up, and, if you need it, there's plenty of on-line help in the standard Windows' Help format. Two sample screens are included. One shot is of astronaut Buzz Aldrin from the first moon landing. The reflection in his helmet shows astronaut Neil Armstrong. The other shot is a Calvin and Hobbes inspired drawing with Calvin contemplating several designs for snowmen.

**STARTUP SCREEN** allows Windows users to replace the Windows startup screen with a picture of their own design or choosing. It includes complete instructions in Windows Help format as well as a sample startup

screen. It also allows users to use RLE files as wallpaper, saving them significant amounts of disk space.

Requires VBRUN100.DLL BBUG Disk # 9169.

**BBUG 3327 WORD FOR  
WINDOWS OFFICE POWER PACK  
Version 1.0 (Disk 1 of 2)**

CLASSIFICATION \* Word Processing \*  
Windows \* Microsoft Word

Here's 1.5MB worth of files for WinWord files you use as is, learn from, and modify to meet your own needs. The WORD FOR WINDOWS OFFICE POWER PACK comes with self-extracting files and includes a large collection of Word for Windows macros.

You'll be able to print envelopes on LaserJets, and other printers, including PostScript printers. There's a word counter, a file deleter, a clock, and much, much more. The best way to get the most out of this pack is to explore each of the files.

**BBUG 3327 WORD FOR WINDOWS OFFICE  
POWER PACK Version 1.0 (Disk 1 of 2)**

**BBUG 3329 PRINTSHOP  
GRAPHICS I & II Version 1.0**

CLASSIFICATION \* Desktop Publishing \*  
Printshop \* Floppy/Hard Disk

There are two graphics libraries included here for use with the Printshop program. All of the files were converted from the public domain Apple version graphics distributed by the Big Red Apple Club.

There is an impressive and wide variety of graphic picture files included here. Just about every subject is covered, from animals and people to cartoon images and line drawings.

**BBUG 3330 LASERJET FONTS**  
**1**

CLASSIFICATION \* *Printer Fonts* \* *Hard Disk*  
\* *Laser Printer*

You get three fixed width, 10 cpi "Garamond" like soft fonts (regular, bold, and italic) for the LaserJet series of printers.

Also included with these fonts is a program called Download which is a utility program that manages the process of downloading soft fonts to your LaserJet printer. Download can send a font to any MS-DOS device or even to a disk file. This is handy when you want to send a file to someone who will then later copy it to their LaserJet printer.

**BBUG 3330 LASERJET FONTS**  
**2**

CLASSIFICATION \* *Printer Fonts* \* *Hard Disk*  
\* *Laser Printer*

More fonts for the LaserJet series of printers. Included are Helvetica Soft Fonts, Script and Old English Fonts, PC Character and Computer Symbol fonts.

Also included with these fonts is a program called Download which is a utility program that manages the process of downloading soft fonts to your LaserJet printer. Download can send a font to any MS-DOS device or even to a disk file. This is handy when you

want to send a file to someone who will then later copy it to their LaserJet printer.

## BBUG 3332 UTILITIES AND FONTS FOR HP LASERJET

CLASSIFICATION \* Printer/Fonts \* Hard Disk  
\* LaserJet Printer

These are utilities and fonts for the HP LaserJet. You get Helvetica portrait and landscape fonts for normal, bold, and italic fonts in 8, 10, 12, and 18 point sizes. The fonts are in archived files to conserve disk space, but it isn't a problem to extract them.

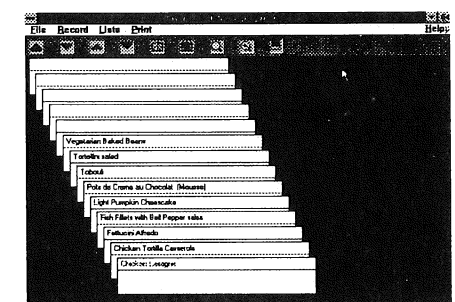
If you're not interested in fonts, you definitely might be interested in the utility programs also included on this disk. Pmode is a very simple utility to set a serial port to 19200 baud. This allows faster transmission of graphics data to your LaserJet printer. Pmode works on any Comm port recognized by the BIOS data area and it does not interfere with the features of the DOS Mode command.

Pamphlet is a printing utility to help keep your hardcopy printouts and listings neater and in a more manageable size. It lists a text file to the HP LaserJet in the landscape mode and places two pages side by side. These pages are not printed sequentially, but in the order required to create a small manuscript or pamphlet. It requires two passes of the paper through the printer and thereby prints four pages per sheet, front and back.

HPLAVEN is a font conversion utility that makes any font available for the HP LaserJet usable for desktop publishing with Ventura Publisher. GEMCAP is another utility on this disk which allows you to capture screen images from any other program and save them in .IMG image files. GEMCAP is a terminate and stay resident (TSR) program which is run from the DOS command line.

**BBUG 3333 FROM SCRATCH -  
THE RECIPE PROCESSOR**  
Version 1.11A

CLASSIFICATION \* Home/Cooking \*  
Windows \* Hard Disk \* VGA



**BBUG 3333 -Keep Your Recipes handy**

There have been several attempts to bring recipe programs to the personal computer. Most of those programs were doomed to eventual failure because they required more work than their potential users were willing to commit. All of that has changed with FROM SCRATCH, because someone finally got it right! Here's an easy to use program that makes keeping track of recipes so easy you'll feel as if you're cheating.

FROM SCRATCH does the basic job of

"holding" your favorite recipes until you want them and then provides the information you need whenever you want it. You don't have to memorize difficult commands or anything like that. All you do is either enter recipes (which is close to effortless) or look up recipes you want to use. The program uses dBase files and includes nutrition information.

The design of FROM SCRATCH is intuitive because the design of the program simulates a stack of recipe cards. Using the program is as simple as pointing the mouse pointer and clicking (unless you're going to type in information, then you do have to click away at the keyboard). The only limitation you face on the number of recipes you can track is the amount of free disk space on your hard drive. Also, there is no limit on the number of ingredients per recipe (this has been an ongoing problem with all of those other recipe programs which failed).

The beauty of this program is that it is basically a database structure so you can search for a recipe containing any part of an ingredient, key word, or even title. You also get a shopping list manager that sorts by category, so the list you print out will be in a logical order when you shop. A "starter" shopping list is included with the program to get you started. This is just one more touch of how this program was designed to show you how things work. That means you can learn what to do by seeing what's already been done. This is a program anyone can use and once you have a look at it, you'll definitely be using it all the time.

### **BBUG 3334 QUASAR SQL FOR WINDOWS Version 2.0S**

*CLASSIFICATION \* Database \* Windows \* Hard Disk*

The Quasar SQL Application Programming Interface (API) is a programming tool which enables you, as a software developer, to have full access to a modern, highly optimized ANSI standard SQL database manager known as the Quasar Database Administrator. Your programs, written in any language which can access dynamic link libraries, can also access the Quasar SQL API. These languages includes C, C++, Visual Basic, Pascal, and most assemblers. Any program which can access the Microsoft Windows environment can access the Quasar SQL API.

The Quasar SQL API can be a gateway to modern database technology development. With a little more than a dozen functions and only four data structures you can perform almost any database task. The Quasar Database Administrator is fully optimized and has been tested for maximum performance. The Quasar SQL API effectively takes care of complex tasks like parsing, query analysis, query optimization, and query tree construction.

### **BBUG 3335 PERSONAL TIME CARD Version 2.5**

*CLASSIFICATION \* Business \* Windows \* Hard Disk \* Mouse*

We all need to keep track of time and what better way to do so than with a program called PERSONAL TIME CARD. This program helps you track what you've done so you can get a handle on not only the amount of time, but

exactly what you were doing, when, where, and for how long. It's a great way to see how much time you're putting into certain projects. The end result with PERSONAL TIME CARD is that you now have a time management and analysis tool for you as well as anyone else who needs it. It requires a little extra effort on your part to make entries, but when you consider the benefits of being able to look back at any point to see exactly what you were (or weren't) doing, the importance of this program takes on its full dimensions.

You can easily keep track of your vacation time as well as the time spent during the day (or evening hours) working on different projects. PERSONAL TIME CARD includes regular and overtime entries, including Saturdays and Sundays. One of the most useful features in this program is that you can enter a description of what those projects were. This is not only ideal for time and billing, but also for time management studies to improve efficiency. Personal Time Card will print out all of this information and it will even backup your files for you.

Requires VBRUN200.DLL BBUG Disk # 9083

### **BBUG 3336 TIMEKEEPER & STELLAR WARRIOR**

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

TIMEKEEPER Version 1.4, is a clock program with 9 alarm settings. Each alarm can be given a message and/or a program to be run. Also each alarm can play back any WAV file provided you have a sound card and WIN3.1. TIMEKEEPER also has a feature that allows the clock to always be visible.

This program can be set up to run other programs daily, weekly, on a date in the future, mon-fri, etc.

Also included in this package is a file called SPIN.VBX. This file should go in the WINDOWS directory. Using the clock You can position the clock anywhere on the screen by dragging it. To bring up the Control Panel you simply double click on the clock.

The control panel has several options to choose from. All of the options take effect immediately so you can see the results of your actions without having to get in and out of control panel. All the settings are recorded immediately upon leaving the Control Panel via the OK button.

Requires VBRUN100.DLL - BBUG Disk # 9169

STELLAR WARRIOR Version 1.0, is a small arcade game for Microsoft Windows 3.x, that resembles the old Galactics style games. Your goal is to stay alive as long as possible and shoot all of the oncoming spacecraft. Use the arrow keys to move and the space bar to fire. Your ship will be destroyed if you are hit or if too many ships get past you. Each level lasts a set amount of time. The higher levels last longer and the ships come faster. Note: this program runs in protected mode only. Thus you must have a 80286 or greater microprocessor and run in Windows' standard or enhanced modes.

### **BBUG 3337 SDI2040 and STICK FIGHTER II**

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

SDI2040 Version 1.1 is an arcade game similar to the favorite "Space Invaders" game. With your laser cannon you must shoot marching columns of aliens coming down from space. You must avoid their missiles as well as prevent them from reaching the bottom of the screen. Occasionally a flying saucer will fly across the top of the screen and drop a bomb, which will create a gap that your gun will be unable to cross unless you destroy the falling bomb first.

STICK FIGHTER II Version 1.0, is based upon the "Street Fighter" arcade game theme, except this game is fought between stick figures. This game is for one or two players, or you can watch the computer play against itself. With your stick figure you can walk, jump, punch and kick. A "life" line is shown at the top of the screen, and once it turns all yellow from hits or kicks from your opponent, you're stick figure is dead. The graphics for the stick figures are quite primitive, but the game is very entertaining.

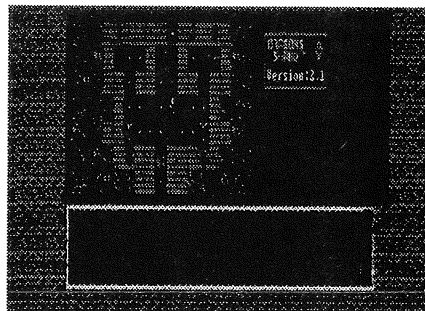
### **BBUG 3338 HUMONGOUS CAVES Version 1.0**

*CLASSIFICATION \* Games \* Hard Disk*

HUMONGOUS CAVES is a massive rewrite of the old text adventure game ADVENTURE (BBUG Disk # 0259) and is based on a Public Domain game Colossal Cave.

Your task, as the adventurer is to explore a tremendous cave to collect treasure, and meet a variety of monsters and solve different puzzles.

Complex commands can be entered and the game has an extensive vocabulary. It is believed to be largest text adventure game currently available on any microcomputer.



Try your luck with Dragons Shard - BBUG 3339

### **BBUG 3339 DRAGONS SHARD Version 2.0**

*CLASSIFICATION \* Games \* Hard Disk \* EGA/VGA \* Mouse \* Sound Card (opt.)*

Congratulations! You have just acquired your own personal copy of the DRAGONS SHARD role playing game. You are provided with an intricately drawn game, with beautiful coloring and smoothing. Simply the best on the shareware scene!

In this epic RPG, you play the part of a lone character, sent by his king to rid the kingdom of the evil monsters! This RPG features

superb detail, gorgeous bit tiled graphics and an absorbing story and plot to boost!

Explore huge dungeons, packed with treasure, and all sorts of hideous monsters. Search ruins and obtain some of the most powerful weapons on DRAGONS SHARD.

To gain experience in DRAGONS SHARD you have to get into some fights with hideous, blood sucking, brain draining, gut wrenching, (ohh, sorry) creatures of the world. When you do battle with these creatures and hopefully win, you'll gain experience and maybe get some gold for your efforts.

After a few battles you may have gained enough experience to advance a level. Upon this joyous occasion you will be rewarded with increased stats. To advance in levels you have to find the Elder that resides in Shreland. He has the insight to grant you this increase in stature.

So grab your sword, grimoire and enter the magical realm of DRAGONS SHARD, where the creatures are mean, where the magic is ancient and powerful and where only the wise and thoughtful survive! Play it to the max!

### **BBUG 3340 FUNGAL MAN GAME PACK Version B.2**

*CLASSIFICATION \* Games \* Hard Disk*

You are FUNGAL MAN, super-hero of the laboratory folks and idol of tens of people. In the thankfully not-too-near future, scientists will discover that fungus is the dominant source of energy in our universe. The terrible and dread 'fungal reactors' are far more powerful and potentially deadly than any nuclear reactor of our day. Unfortunately, the Anti-Fungus League has been sabotaging the reactors, hoping that they will blow up and kill many millions of people in an effort to demonstrate how dangerous the reactors are to human life. They have been spreading bioactive 'Fungal Blobs' over the countryside. If these blobs are not contained within 'Dampers,' they propagate, spreading terminal cases of acne throughout the human race.

Your job is to contain the blobs, as you are the only living human that can approach these multitudinous monstrous mounds of murky malevolent muck when they shoot zits a hundred feet.

FUNGAL MAN uses ASCII character graphics and has nine different scenarios, and you can create and save your own scenario or puzzle to solve. Each scenario you create is a screen which contains characters that represent strange things such as fungals, damper pods, antimatter, blasters, grabbers, hypers, land mines, and teleporters.

The basic object of the game is to maneuver all the slimy fungus blobs into the damper pods, without getting trapped or killed. FUNGAL MAN can offer a challenging mental exercise in not only trying to kill the fungal blobs, but also in creating your own puzzle game for other people to play and solve.

### **BBUG 9173 7-DAY COMPUTER LEARNING COURSE Version H.1**

*CLASSIFICATION \* Education \* L/Floppy/  
Hard Disk*

**DON'T SHOOT YOUR COMPUTER!** The 7-DAY COMPUTER LEARNING COURSE is the easiest computer course ever designed. If your computer is confusing to you, this is probably because no one ever explained DOS, the Disk Operating System.

DOS is the heart of your computer. Trying to use a computer without knowledge of DOS is like trying to build a house without a foundation. 7-Day teaches you how to use DOS in easy-to-understand, non-technical language (we speak English). This wonderful course will have you understanding your computer in one week (or less) by way of its hands-on approach.

In addition, 7-DAY will teach you about hardware, computer terminology, and frustrating things built into DOS just to confuse you. It's the best computer course you'll ever see.

This disk also includes the NOTABLE MUSIC COURSE which teaches you how to read notes on both treble and base scales.

### **BBUG 9174 ACECOMM Version 1.80 (Disk 1 of 2, also 9175)**

*CLASSIFICATION \* Communications \* Hard  
Disk \* Modem*

ACECOMM is a communications program especially designed for today's high speed modems. ACECOMM provides a default setup that is ready to run with most Hayes compatible modems.

ACECOMM supports a macro driven keyboard which features complete key redefinition. ACECOMM's macro language provides the user a powerful interface to the ACECOMM internal functions, as well as many computer services.

ACECOMM's terminal area provides a powerful yet simple to use interface. With ACECOMM's key-redef and macro language, complete control over any complex task is just a key press away.

ACECOMM supports user definable menus. Menus that can be made to display and offer user definable functions. Menus that are available as popup menus at any time from the terminal area.

ACECOMM supports an internal point mail system which uses the EMSI handshake protocol.

Internal Zmodem is capable of sophisticated file name management decisions based on last modification time and file size. Rename, Resume, Overwrite, Skip Internal scheduler provides automated services for up to 5 different time schedules. Intelligent Auto Log On Technology is capable of detecting up, to 16 different log on sequences, and respond uniquely to each.

BBUG 9175 ACECOMM Version 1.80  
(Disk 2 of 2, also 9174)

### **BBUG 9176 EMPLOYEE MANAGEMENT SYSTEM Version H.1**

*CLASSIFICATION \* Business \* Hard Disk*

**REDUCE EMPLOYEE TURNOVER.** Employee turnover is extremely expensive. It reduces production and increases internal friction. Use the EMPLOYEE MANAGEMENT SYSTEM to:

**HIRE THE RIGHT PEOPLE.** Every job has its own "ideal personality". Would you place a quiet, thoughtful person out in the sales field, or does that job require a self-motivated go-getter? EMS evaluates the personality needs of any job according to your specifications. Then it will instantly tell you which of your applicants matches that job requirement.

**KNOW THE WORK PERSONALITY** of the applicant in a matter of minutes. Discover the positive work traits, decision making methods, stamina level, management methods, and performance characteristics of any employee/applicant in less than five minutes.

**KNOW WHAT MOTIVATES YOUR EMPLOYEES.** EMS tells the MOTIVATIONAL and DEMOTIVATIONAL factors for each employee. This will help the manager know how to motivate an employee, to make that employee happy, and also how to avoid demotivating that person.

**REDUCE ADVERTISING & INTERVIEWING COSTS.** EMS keeps track of all employees and job applicants so that when a position opens, applicants can be matched to the job immediately, without having to repeat the expensive hiring process.

The EMPLOYEE MANAGEMENT SYSTEM is an accurate and amazing answer to the task of hiring employees and then keeping them happy once they are hired.

### **BBUG 9177 LABRYNTH OF ZEUX Version 2.01**

*CLASSIFICATION \* Games \* Hard Disk \*  
EGA/VGA \* Sound Card supported*

You are Vince M. Louis, A famous theologist. You have uncovered and studied every mystical and religious item ever mentioned in legend. Except one - the magical Silver Staff of Zeux. Going on rumors and legends alone, you enter the mystical LABRYNTH OF ZEUX in search of adventure.

You have a variety of objects to grab, avoid, utilize, or dodge, depending on the object. Proceeding through the labrynth you must collect various objects, gems, gold, bombs and keys to open doors. Bonus points are awarded at the end of each level.

You will encounter many enemies - walker, bomb layer, builder, amoebas, spirits, chasers and lots of others. There are many dangers in the Labrynth - bombs and explosions, spikes, stalactites and fire/lava.

If you die, your score and items are reset to what they were at the beginning of the level. You cannot carry over bombs or keys to the next level, and high scores are saved from game to game.

### **BBUG 9178 TAMPER Version 1.20**

*CLASSIFICATION \* Games/Business \* Hard  
Disk \* VGA \* Mouse supported (HIGH  
DENSITY DISK)*

TAMPER is an all-new "board game," invented exclusively for computer. Throughout the

game, mysterious companies form on the game board. In a vicious scramble to get rich, you buy and sell stock. But watch out for the TAMPER! (Unless, of course, you TAMPER first.) Whether you play alone or with friends, this game is outrageously addicting! You know you're hooked when you can no longer control the urge to beat your best score.

Each player begins the game with \$5,000 in cash. At the start of the game, the game board is empty and no companies are active. Throughout the game, new companies form and attempt to secure a safe position on the game board. In time, certain companies grow and prosper, while others struggle and fail. Meanwhile, players buy and sell stock in the various companies, attempting to increase their net worth as quickly as possible.

Are you shrewd enough to turn \$5,000 into \$100,000 before anyone else? Can you spot an opportunity and pounce on it? Are you capable of cut-throat maneuvers to outwit an opponent? Then TAMPER—the game of “high-impact business”—is for you. But be forewarned! This is perhaps the most addicting computer game ever! You won't be able to put it down. Guaranteed! Join the ranks of those obsessed with this new gaming phenomenon. It's a risky world out there. Are you up to the challenge?

### BBUG 9179 SNAGIT Version 2.00.07

*CLASSIFICATION \* Utilities \* Windows \* Hard Disk*

SNAGIT is a Windows documentation tool. With SNAGIT you can place great looking screen shot and images into your documentation. One of SNAGIT's key features is its full support for Windows dynamic data exchange (DDE). With DDE SNAGIT may be integrated with any application that supports DDE. Included with the commercial program is a macro that demonstrates the ease with which SNAGIT may be integrated with Microsoft Word for Windows.

SNAGIT is a new product which has gone through extensive beta and quality testing. SNAGIT is a fully functional “try before you buy” version.

BBUG 9180 WINDSOCK SRM Version 3.30

*CLASSIFICATION \* Utilities \* Windows \* Hard Disk*

WINDSOCK SRM keeps track of Windows resource heaps and the usage of Global (System) memory. The resource heaps monitored are the GDI heap and the User heap. For Windows 3.1, the Menu and String heaps are also monitored.

System resources are displayed in two forms: using bars to show the percentage of each resource used, and as a histogram. These displays are in two sizes, small to monitor resources without using too much screen space, and large to display more details. When the SRM is reduced to an icon, resource usage is tracked within the icon.

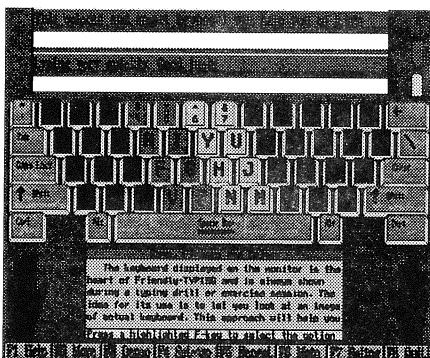
The SRM has an extra button when it is maximised which allows the resource usage history of the system to be reviewed. This option includes ‘Resource accounting’ which records the number of GDI objects which exist at any time and documents task starts and

finishes. There is also an option which allows resource usage to be written to a log file.

### BBUG 9181 FRIENDLY TYPING & SPELLING Ver.2.0 (Disk 1 of 2, also 9182)

*CLASSIFICATION \* Educational \* Hard Disk \* CGA/EGA/VGA*

The keyboard displayed on the monitor is the heart of FRIENDLY TYPING & SPELLING and is always shown during a typing drill or exercise session. The idea for its use is to let you look at an image of actual keyboard. This approach will help you to keep your eyes off the real keyboard. This is extremely beneficial and will form special relationships between your finger placements on the real keyboard



*Teach yourself to type with the Typing Tutor*

and the image of a simulated keyboard on the screen.

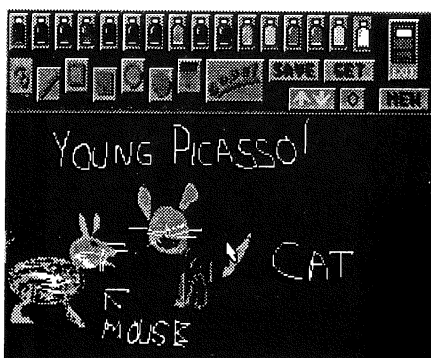
Colors play very important role to teach you the correct finger placement. Each finger and the corresponding key have the same color. It will help you to learn typing very quickly. This method is extremely effective!

The screen display consists of four elements. The first is an exact image of the main typing area of the keyboard you have selected when you started Typing or Spelling from Main Menu. The second is a text panel which occupies the upper part of the screen. It used to display the word groups, sentences and drills you have to type during exercises. The third are hands which occupy the bottom part of the screen. Each finger has a different color when you type a letter. The key and the corresponding finger have the same color. The forth is a clock.

BBUG 9182 FRIENDLY TYPING & SPELLING Ver.2.0 (Disk 2 of 2, also 9181)

### BBUG 9183 YOUNG PICASSO Version 3.0

*CLASSIFICATION \* Educational \* Floppy/*



*Hard Disk \* VGA \* Mouse*

YOUNG PICASSO is a drawing/painting program for young children. Designed to be easy and fun to use. Most of the features are self teaching and thus require little explanation. Your child can use this program with very little supervision.

The best feature of YOUNG PICASSO is that it is fun to use.

### BBUG 9184 ANIMATED CLOCK Version 3.0

*CLASSIFICATION \* Educational \* Hard Disk \* EGA/VGA \* Mouse supported*

ANIMATED CLOCK is a program for children from pre-school through third grade that teaches them to tell time in a variety of ways.

This life skill program helps them convert digital time to analog time and vice-versa. Difficulty levels can be selected to provide practice in increments of hours, half-hours, 15 minutes, 5 minutes and one minute. Animated rewards “pop out” of the cuckoo clock's doors for each correct answer, and 10 correct answers are rewarded with a full-screen silly animation.

Graphic help is given as needed to help the student learn the skills. Keyboard and mouse support are provided!

### BBUG 9185 COMPUTERISED CHRISTMAS CARDS Version 1.0

*CLASSIFICATION \* General \* Hard Disk \* EGA/VGA*

This Christmas why don't you wish your friends, family, and coworkers a Merry Christmas using semi-animated, musical computer greeting cards. You can select from three exciting color cards, personalize them, save them to a floppy disk, and send them to those who have access to an IBM/compatible computer EGA or better. The card also plays 10 Christmas carols. Everyone will enjoy receiving this unique greeting. Those who receive an COMPUTERISED CHRISTMAS CARD will want to show it over and over again.

When you register COMPUTERISED CHRISTMAS CARDS you get Computerised Birthday Cards absolutely FREE! Computerized Birthday Cards allows you to chose from 3 semi-animated, musical cards. You personalize them with your birthday wishes and then the program copies the files that make up the card onto a floppy disk.

Here is a money making idea! Why not use Computerised Christmas and Birthday Cards to create personalized computer cards as a service to people who do not have computers. Even people who do not have computers know someone with a computer who would enjoy getting a computer card.

### BBUG 9186 TALKING NUMBER MACHINE (Disk 1 of 2, also 9187)

*CLASSIFICATION \* Educational \* Hard Disk \* EGA/VGA \* Mouse supported*

TALKING NUMBER MACHINE clear digitized voice to say numbers from 1 to



9,999,999,999,999. Displays interesting number facts with accompanying graphics.

Enter numbers as digits, write numbers as words, have the computer speak or write numbers, and count by increments of 1 to 10. Program utilizes both mouse & keyboard.

**BBUG 9187 TALKING NUMBER MACHINE**  
(Disk 2 of 2, also 9186)

### **BBUG 9188 TALKING TIME TUTOR** (Disk 1 of 2, also 9189)

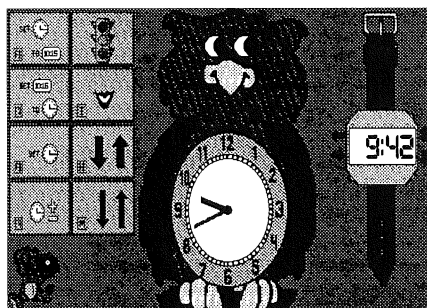
*CLASSIFICATION \* Educational \* Hard Disk \* EGA/VGA \* Mouse supported*

TALKING TIME TUTOR will have your child telling time in no time! Your child will hear the time spoken using high quality digitized speech.

TALKING TIME TUTOR provides a variety of different time activities each with three skill levels. Activities include setting the analog clock to match the digital clock, setting the digital clock to match the analog clock, setting the analog clock to the spoken or written time, and setting the analog clock to a future or past time. Additional features are provided to entertain your child as he/she learns. Each analog clock has it's own animation routine. For example the eyes in the owl clock move back and forth. The colors of the wrist watch may be changed. A bear on the screen tells time-related jokes or asks your child questions about time.

Isn't it about time you invested in TALKING TIME TUTOR for your child?

**BBUG 9189 TALKING TIME TUTOR**  
(Disk 2 of 2, also 9188)



*Teach your toddlers to tell time with TIME TUTOR*

### **BBUG 9190 CALENDAR/ INFORMATION MANAGER** Version 1.1

*CLASSIFICATION \* Business \* Hard/Floppy Disk*

CALENDAR/INFORMATION MANAGER is a straightforward and intuitive program that will assist you in managing personal information. It does this by providing:

A calendar / scheduler. Storage of names and addresses. Storage of quick (brief) notes. A calculator.

CALENDAR/INFORMATION MANAGER provides a wide variety of support functions to help you create, maintain, view and print the data that you need on a day-to-day basis.

When did you last change the batteries in your smoke detector? Do you already have something planned for next Wednesday?

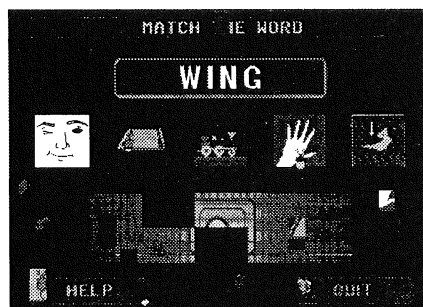
What birthdays are coming up next month? What is the name and phone number of the plumber who did such good work for you?

Get control of this information by storing it with CALENDAR/INFORMATION MANAGER!

### **BBUG 9191 ANIMATED WORDS** Version 1.0

*CLASSIFICATION \* Educational \* Hard Disk \* EGA/VGA \* Mouse supported (HIGH DENSITY DISK)*

ANIMATED WORDS is a spelling program for children from pre-school through first grade. The child is helped to match a word with it's picture. When the word is correctly matched, pieces are added to a puzzle; after five correct words the puzzle becomes animated.



*BBUG 9191 ANIMATED WORDS*

50 words and 10 animated puzzles provide variety. The program is enhanced with the use of nearly 100 digitized sound samples of a human voice. SoundBlaster, AdLib (and compatibles), Covox Speech Thing, and the PC Speaker (using commercial quality Real Sound) are supported. Both keyboard and mouse support are provided!

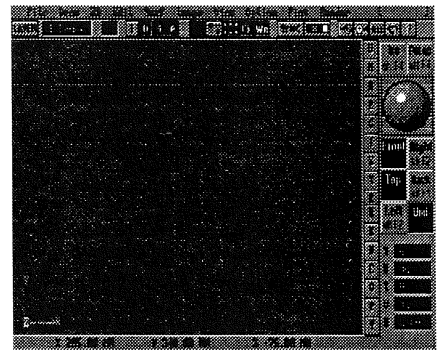
### **BBUG 9192 ORCHIS Version 1.0**

*CLASSIFICATION \* Business \* Hard Disk \* VGA \* Mouse*

ORCHIS (Org Chart Imaging Software) is a simple but powerful tool for creating organisation charts, menu trees, decision trees, or diagrams of any tree-like hierarchy. The intuitive graphical user interface provides easy access to a wide variety of charting options.

ORCHIS supports horizontal, vertical, and double column chart types, mixed types in one tree, multiple trees in one chart, assistant nodes, drop shadows, chart titles, and much more. Properties (including type face, type size, color, and line weight) can be controlled for the entire chart, for one branch or level, for an individual box, or even for a single line of text. ORCHIS also provides WYSIWYG display, background printing, scaleable fonts, and complete on-line documentation.

ORCHIS supports hardcopy output via LaserJet, DeskJet, PostScript, and dot matrix printers, and graphical file output in the PDL, PCX, and EPS formats, so that charts from ORCHIS can be used in most word processors, publishing packages, and painting and drawing programs. ORCHIS charts are stored in a simple ASCII file format, making it easy for programmers to create compatible utilities.



*Test your drawing capability with PROTOCAD 3D*

### **BBUG 9193 PROTOCAD 3D** Version 2.00

*CLASSIFICATION \* CAD \* L/Floppy/Hard Disk \* EGA/VGA \* Mouse*

PROTOCAD 3D is a New! Fast 3D CAD/Rendering program from Trius. With ultrafast Z-buffer technology combined with camera positioning this program produces amazing renderings.

In combination with StarFlic, PROTOCAD 3D can produce flic file animations.

Features include: True Vision TGA output. Trackball interface for camera positioning. DXF Import & Export.

### **BBUG 9194 THE PHONE CENTRE Version 1.3**

*CLASSIFICATION \* Communications \* Floppy/Hard Disk \* Modem (optional)*

THE PHONE CENTER is a unique telephone number database/dialer program. It can have up to 1000 Phonebook entries. It allows you to have a prefix of up to 30 characters and each telephone number can have up to 30 characters. This should be sufficient for just about any PBX or non-AT&T carrier. It also allows you to enter a 39 character note along with each Name and Number entry. In addition, the program provides call logging for automatic storage of each name, number, and time you make a phone call.

The following is a list of unique features you'll find in THE PHONE CENTER:

AREA CODE SEARCH provides an instant search window that allows you to look up all the area codes for each state or province. It also provides for a reverse search that allows you to enter an area code to find out what area it applies to.

CALCULATOR, this one is not so unusual, but it is a pretty useful feature to have. In addition, it's a multiline calculator so it has some added utility.

ZIPPY CALENDAR displays a calendar of the current month.

QUICK MEMO provides a window for taking notes during phone calls. Any notes you take can then be sent to the printer.

LOG VIEWER allows you to conveniently view the log file at any time from the main program.

DOS SHELL allows you quickly exit to DOS if you need to use any DOS functions while in THE PHONE CENTER.

MANUAL DIAL presents you with a telephone keypad that you can use to dial a number



directly from the keypad.

ENTRY FINDER allows you to quickly find any Name or Number stored in the program database. This function makes the program much easier to use when there are a lot of entries to search through. Also, it can identify what name goes with those "Mystery" numbers we all have in our heads.

HANGMAN GAME is really the most unique feature of the program. How many times have you been kept on the phone while the other person droned on and on. Well, in times past you were forced to doodle or just look at the ceiling. Now you can do something almost as productive, you can play Hangman! The game has been written without sound effects so that it will be harder for the droner to tell what you are doing. This version has about 60 puzzles.

### BBUG 9195 WIZART Version 1.0

**CLASSIFICATION** \* Utilities \* Windows \* Hard Disk

WIZART is a Windows fun program that creates designs easily. With WIZART you can have fun creating graphic and unique ScreenSavers like Computer Graphics.

So, you're not an artist. Well WIZART is for you! You control the designs - you can gyrate and splash dazzling color which Auto-Magically become your one of a kind in dynamic animated Screen Savers.

WIZART races around your selected course splashing colored objects of any ilk. Result is hypnotic patterns with pizzazz! Widener showcases them as Screen Savers. Destined to be a Windows Classic.

For the Non-Artist there is NO drawing, tracing or outlining with WIZART. If you are creative, the program follows a "Spirograph TM" course. Laying down shapes and lines (dots, dashes or multi-colored ribbons) of varied thickness on any color background.)

WIZART is unique, there is no similar programs (not even close) in the marketplace. There's nothing available for easy creation of attractive design art for windows. No other program allows for complete built-in capability for total ScreenSaver creation! You see and enjoy your creative art!

All this and it is easy to use!

Requires VBRUN200.DLL BBUG # 9083

### BBUG 9196 PRINTER'S APPRENTICE Version 5.8

**CLASSIFICATION** \* Printing \* Windows \* Hard Disk (HIGH DENSITY DISK)

PRINTER'S APPRENTICE is a font management utility for the Windows operating environment. It helps you manage all your TrueType and Adobe Type 1 fonts by printing font inventory sheets, character charts, ANSI charts, keyboard layouts, and specimen sheets.

It was noted as the \*BEST\* Windows font utility by PC Magazine and also received accolades from PC/Computing, PC Week and Computer Shopper and features one of the

sharpest interfaces around.

Requires VBRUN300.DLL BBUG Disk # 9170

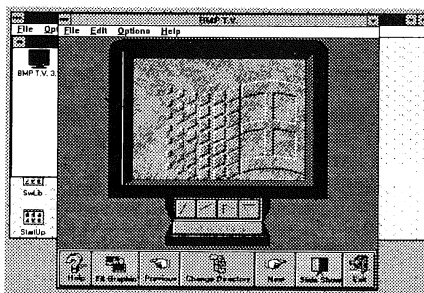
### BBUG 9197 BMP T.V. Version 3.1

**CLASSIFICATION** \* Utilities \* Windows \* Hard Disk (HIGH DENSITY DISK)

Tired of your old wallpaper in Windows and you would like to change it? How do you do it, simply? The answer is obvious with BMP T.V.

BMP T.V. is a useful utility which will let you view many graphic files before deciding which one you would like to use as your desktop's wallpaper.

When you start BMP T.V. your current wallpaper will be displayed on the "T.V." screen. If you have no wallpaper loaded, a



default picture will appear on the screen.

BMP T.V. includes on-line help. BMP T.V. is easy and fun to use. Just experiment. As easily as you can load your new wallpaper, you can also remove it with just one click! Pressing the 'shift' key and clicking on the "Load as Wallpaper" button and the button will change to "Remove Wallpaper" and your wallpaper has vanished.

Requires VBRUN300.DLL - BBUG Disk # 9170

### BBUG 9198 PC & MODEM COMMUNICATIONS TUTOR Version 1.2

**CLASSIFICATION** \* Education \* Floppy Disk \* Colour Monitor \* Mouse

Did you ever wonder how your PC modem talks to another PC? PC & MODEM COMMUNICATIONS TEACHER is loaded with informative text, and multimedia.

Discover how modems work. Watch data flow from transmitter to receiver. Learn about asynchronous communications, RS-232 Protocol, and Electronics Industries Associations standards. Take Computer Aided Exams and Quizzes. Discover how to analyze Transmission Traffic using the "Break-out Box" to solve modem communications problems and more....

### BBUG 9199 AMAZING BOOKKEEPER Version H.2

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

The AMAZING BOOKKEEPER is a very easy-to-use bookkeeping system that will help you track your personal or business finances.

Reports include Balance Individual Account, Trial Balance, Profit and Loss Statement (income statement), Balance Sheet, and List of Transactions. The registered version brings you the ability to perform customized reports and departmentalisation, as well as integration with our AMAZING CASH REGISTER system. The AMAZING BOOKKEEPER is designed to be the easiest ledger program you'll ever use.

Also includes DREW'S AMORTIZATION SYSTEM which is an easy to use program that figures the true cost of loans as well as future value of investments. Take a tranquilizer before you use it; the results tend to cause heart failure.

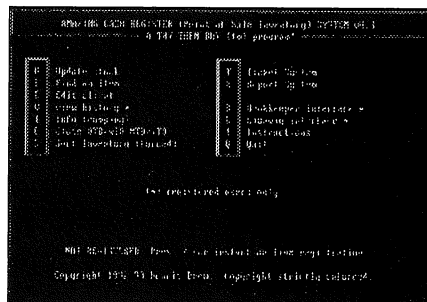
### BBUG 9200 AMAZING CASH REGISTER Version H.3

**CLASSIFICATION** \* Business \* Hard Disk \* Printer

AMAZING CASH REGISTER (ACR) allows you to keep real-time track of inventory, write sales tickets, keep track of client information, sales tax and produce terrific reports.

If used as a front-counter ticket system, it allows the use of a cash drawer and light-pens/bar code readers. It is ideal for the businessman who has wanted a sales ticket / inventory system, but has been put off by the complexity and high prices of other systems.

ACR can be interfaced with our AMAZING BOOKKEEPER package for a fully-functional bookkeeping system.



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**All orders must be prepaid**

# STOP PRESS

## Presenting two new - SPECIAL - games

### BBUG 9201 MYSTIC TOWERS

CLASSIFICATION \* Games \* Hard Disk \* VGA/SVGA \* 386/486 \* Sound Card (HIGH DENSITY DISK ONLY)

Your evil ancestor, Baron Lazarus, built the Lazarine Towers, and filled them with sinister monsters. In each Tower, you must seek and destroy the Wizard's Monster Generator (using a Greateor Bomb) as well as kill all the monsters. Both weapon and tactical spells can be fired using the Lazarine staff you carry.

Each Lazarine Tower has an Apprentice and Wizard mode version with different floor and room layouts. Practice Apprentice mode to hone your skills killing monsters and using various spells, without complicated room puzzles or tasks. Choose Wizard mode for a completely different challenge. Tough monsters, hidden doors, combination locks, mazes and more...

When you have destroyed the Generator and all monsters you may collect a large red key to progress to the next Lazarine tower. Watch your health, food, drink and Life-force meters.

**MYSTIC TOWERS** stars the one and only Baron Baldric.

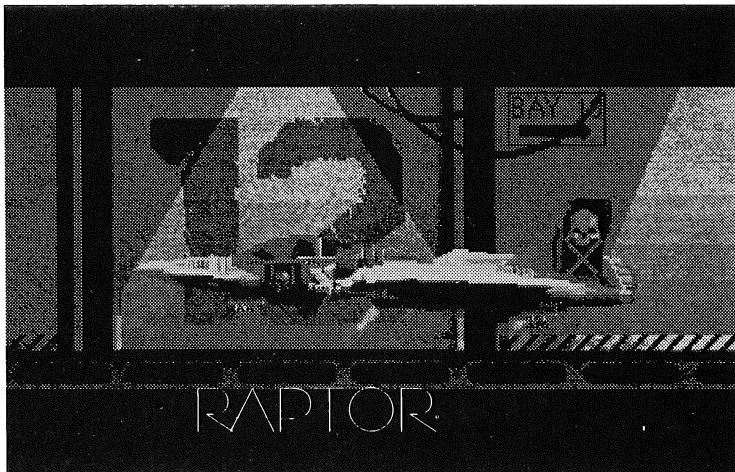
Full Registered Version of Mystic Towers containing 12 games is available from the Software Library for the special price of **\$45.00**.



### BBUG 9202 RAPTOR - CALL OF THE SHADOWS! (Disk 1 of 2, also 9203)

CLASSIFICATION \* Games \* Hard Disk \* VGA \* 386/486 \* Sound Card (HIGH DENSITY DISK ONLY)

The BEST IBM shooter ever made! A fast paced slugfest, with a pulse-pounding sound track, and jaw-dropping VGA animation & cinematics. In the future as a mercenary flying the super-tech RAPTOR, you'll be sent on interplanetary missions to knock off top competitors of MegaCorp. Battle against hordes of relentless enemies. Spend the bounty you receive from their demise to expand your devastating arsenal, which can be upgraded with 14 hard core weapons!



\* Ultra-detailed, smooth scrolling VGA graphics. \* Up to 16 ship upgrades can be bought from Harold's Emporium between waves. \* Explosive cinematics. \* 27 killer levels, each with at least one unique boss ship to destroy. \* Incredible soundtrack, supports all major sound cards, 8 channel digital FX! \* Huge variety of graphics, locations, enemy ships, sound effects, etc. \* Built-in context sensitive help, plus a self-running demo. \* Killing for cash was never so much fun!

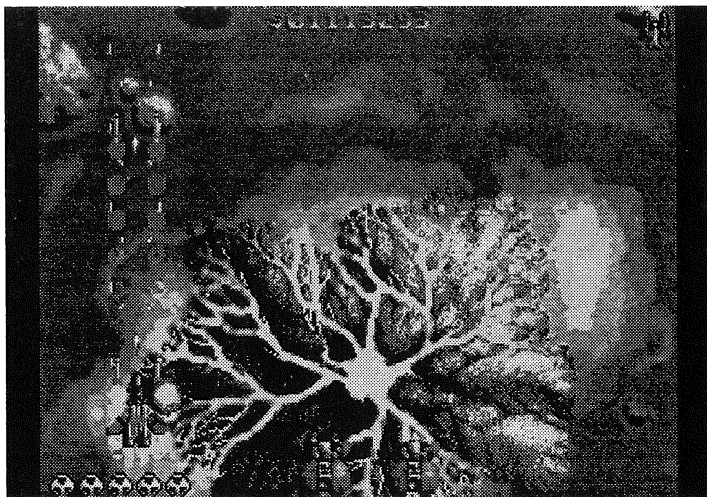
RAPTOR sets the new standard for PC shooters. This game will do for shooters what Wolfenstein did for 3-D games.

Incredibly smooth VGA graphics and animation are only half the story. The heart-pounding music in RAPTOR will leave you breathless, especially if you have a high-end sound card like the Roland or Wave Blaster. (RAPTOR supports the Midi music format, which provides very high quality music for PC games.) All other major sound cards are also supported!

The addictive quality and replay value of this game is unreal. Discover secrets, find the bonuses, and battle the boss ships that appear at the end of EVERY WAVE! With each ship and ground target you destroy, you'll earn more cash to increase your ship's technology for the next wave. You'll be driven to kill and destroy—but then, it's in your blood.

**RAPTOR.** This ain't no dinosaur game!

Try the Shareware version first and then buy the Registered Version for **\$45.00** from the Software Library. Get all the levels.



# Games Review

A definitive review by The Ferret

## SIMCITY 2000

Publisher.....Maxis  
Developer.....In-house List  
Price.....\$80  
Recommended.....486, 8Mb, SVGA, Mouse  
Sound Card Support....All major cards  
Release Date.....February 94

**\*\*\*WARNING\*\*\*** This game is addictive. If you are someone who likes to stay up until 2 in the morning than this is for you.

Maxis, one of the worlds greatest strategy gaming groups have just made their latest in the long line of Sim-games, following SimCity, SimEarth, SimAnt, SimLife and SimFarm. As usual the object of the game is to build something, from ground up. Again, it's a city but there is one minor difference. This time it's in **THE FUTURE**.

The installation is really easy. All you do is specify which drive you want to put the game and define soundcards and video drivers.



SimCity 2000 makes you the Mayor of a city, with total control over its construction. Before you start you have to build the groundwork for your city with the terrain editor. You can build mountains or valleys, rivers or deserts. I recommend that you design a nice flat piece of land to start off with. Once you have finished click on "done". You are then brought to the game screen.

A window comes up asking you which difficulty level you would like and what year you would like to start. There are 3 difficulty levels, (easy-\$20,000,

medium-\$10,000 and hard-\$10,000 bond). I always choose easy and also select to start in the year 2050 because more technology is available.

You must add a power plant first. You can choose from wind power, solar power, nuclear power or even fusion power, but they are expensive so choose wisely. Now that you have power you need to put in roads so that the Sims (the people in your city) can travel. Put in schools, police, hospitals and parks so that your popularity level will rise. Then you have to designate areas for the people to live in - residential, industrial and commercial. Put a road and power line through these areas and before you know it Sims will move in.

There is a budget screen where you can set up campaigns to legalise gambling, ban nuclear energy and even create a neighborhood watch to lower crime. If you are running out of money you can establish bonds, (borrow money from the city) which you have to pay back. There are even digitised graphics of people who give comments about certain areas of funding.

Build seaports and airports to aid trading. Add trees and rivers to raise population and if that's not enough, look underneath your city and you'll find a complex structure of pipes and tunnels just waiting to be connected. The options are limitless, and I have only begun to scratch the surface of the possibilities of this game.

Once you have established a well-equipped city you may then want to play around with it for a while. You can create disasters ranging from minor riots to major fires and tornadoes, or you may even want to release the terror of the year 2000 - a giant alien spaceship which randomly vaporises parts of your booming metropolis!

The graphics are outstanding in isometric 3-D SVGA. The sound is brilliant with over 60 sampled sounds. The music is great too but gets repetitive after a while as there are only 6 tunes to satisfy. The 160 page manual is a bit too much but if you want to skip reading it there are built-in tutorials. Will you prove a wise leader or will ultimate power corrupt you?

The BEST PC game out and I think it will remain so for a very long time. 97%

# ASSOCIATED CLUBS DIRECTORY

Club Name	Centered in	Telephone	Contact
Coffs Harbour Computer User Group	COFFS HARBOUR	066-538283	Janell Rose
Gold Coast SIG (of Brisbug)	GOLD COAST	075-710113	Joanne Ellis
Dalby PC Users Group	DALBY	076-621381	Peter Allan
Beaudesert Computer Club	BEAUDESERT	075-411050	Bernie Williams
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STOP

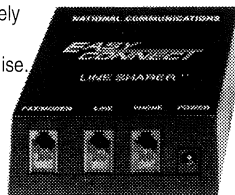
## ATTENTION ALL SMALL BUSINESS OPERATORS New Technology – Share A Line and Save \$445 in First Year

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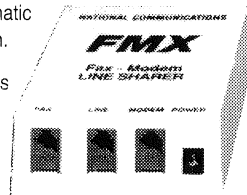
**RING MASTER**  
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### FAX - MODEM LINE SHARER

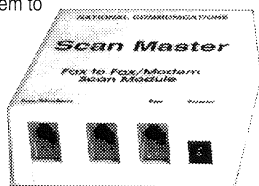
Now you can connect your Modem to your Fax Line for fully automatic Bi-Directional operation.

Or operate two Modems on one line.



### FAX – FAX / MODEM LINK

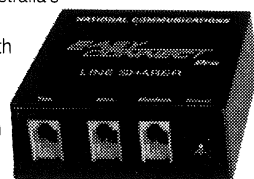
At last, you can now interface your Fax with your Fax/Modem to provide Document Scanning to Your PC Hardcopy Print to your Fax.



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Automatic Voice, Fax and Modem on One Line EASY-CONNECT, Australia's leading Line Sharer. Now also Available with Automatic Modem Capability

Also provides Scan Facility (Fax - Fax/Modem Link)



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WARRANTY  
30 DAY MONEY BACK  
GUARANTEE



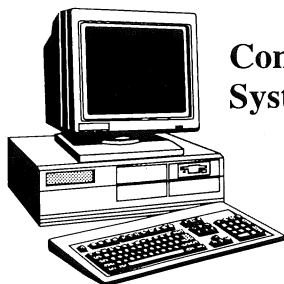
# BRISBUG HELP LINES

The following members have generously offered to give telephone assistance on the topics listed. Please be sure to observe the restrictions on times specified by each person. This service is not intended to serve as on-going training or a substitute for reading the manuals, or for not having manuals. It is for assistance with particular difficulties and for general advice such as when considering becoming involved in that topic.

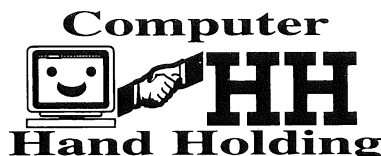
New offers of help are always welcome, and there are some topics absent from the list. If you would like your name listed for a particular topic, please ring Lloyd Smith on 281 6503 (9am-1pm, 2-4pm Mon-Fri.)

Accounting	Ian Haly Fred Griffin	870 1463 (075) 38 4731	After 5.30pm & W/E	Meta5	David Shaw	870 3633	9am-9pm All days
As-Easy-As	Dan Emerson	288 6070	Evenings	Modems	Graeme Darroch	209 1999	6-9pm & Weekends
AutoCad	Geoff Harrod	378 8534	Evenings, Weekends	Multi-user DOS	David Shaw	870 3633	9am-9pm All days
C	Geoff Baker Ian Haly Danny Thomas	290 0974 870 1463 371 7938	6-90pm Weekdays After 5.30pm & W/E 6-9 pm and Weekends	New Users Help	Graeme Darroch	209 1999	6-9pm & Weekends
C++	Geoff Baker	290 0974	6-9pm Weekdays	Novell Netware	Dan Emerson	288 6070	Evenings
Clarion	Ray Creighton	354 1107	Evenings & Weekends	Open Access 2	Cec Chardon	870 1812	Evenings
Clipper	Don Anderson Dan Emerson Mike Theocharous	881 2432 288 6070  824 1450	Evenings Evenings  Anytime	OS/2	Alan Gibson	207 2118	6.30-9.30pm
CodeBase	Ian Haly	870 1463	After 5.30pm & W/E	Paradox 4 Win	Geoff Dancer	294 6976	Evenings
Communications	Ron Lewis Graeme Darroch Len Krawczyk	273 8946  209 1999 (075) 91 2524	8am-5pm Weekdays  6-9pm & Weekends	Pascal	Steve Cann	245 4453	Weekends
Dataflex	Tony Obermelt	287 5534	Mon - Sat After Hours Weekends	PostScript	Danny Thomas	371 7938	5-9pm Mon-Fri W/E
dBase	Dan Emerson Mike Theocharous Bob Boon Sylvia Willie Neil McPherson	288 6070  824 1450 209 1931 393 3388 (075) 97 1240	Evenings  Anytime 8am-5pm Weekdays Evenings After 6pm	PowerBase	Mike Lester	275 1742 (343 5703 After Hours)	Weekdays
DBXL	Ian Haly	870 1463	After 5.30pm & W/E	Project Management & Planning	Brian Doyle	355 1328	9am-9pm All days
Desktop Publishing	Joanne Ellis	(075) 71 0113	Anytime	Quick-Basic 4.5	Harry Strybos	288 5145	4-7pm Weekdays
DisplayWrite 4	Mike Lester	275 1742 (343 5703 After Hours)	Weekdays	Quicksilver	Ian Haly	870 1463	After 5.30pm & W/E
DOS	Ron Lewis	273 8946	8am-5pm Weekdays	R-Base	Tony Luck	818 4060	9am-5pm All days
Environment Sensing	Dan Emerson	288 6070	Evenings	Spreadsheets	Sylvia Willie	393 3388	Evenings
Forth	Danny Thomas	371 7938	5-9pm Mon-Fri.	SQL	Cec Chardon	870 1812	Evenings
Fortran	Cec Chardon Rob Adamson	870 1812 266 8353	Evenings Evenings	SW Radio	Drake Drakeford Bill Harder Frank Norris	 (075) 37 1993 (075) 96 3562 (075) 35 5241	 Anytime 6-7.30pm All days
Fox/FoxPro	Leon Percy	808 1570	Evenings	System Manager	David Shaw	870 3633	9am-9pm All days
Genealogy	Rob Adamson Colin Cunningham Bob Gurney John Bedford Martin Bond Ted Sansom Jemma Ussher	266 8353  263 3005 355 4982 (075) 72 2410 (075) 94 1315 (075) 36 8210 (075) 31 1672	Evenings  Evenings 8am-8pm Mon-Fri. Anytime Anytime	True Basic	Bob Gurney	355 4982	8am-8pm Mon-Fri.
Hardware	Ron Lewis Mark Mullins John Ellis Len Krawczyk Col McLaren	273 8946 841 5511 (075) 71 0113 (075) 91 2524 (075) 91 1768	8am-5pm Mon-Fri. 8am-5pm Mon-Fri. 5-8pm Mon-Fri.	Turbo Pascal	Bill Harder Neil McPherson	(075) 96 3562 (075) 97 1240	Anytime After 6pm
Help!	Dan Bridges	345 9298	7.30-10.30pm & W/E	Utilities	Neil McPherson	(075) 97 1240	After 6pm
				Viruses	Dan Bridges	345 9298	7.30-10.30pm & Weekends
				Windows	Bernard Speight Graeme Darroch	349 6677  209 1999	6-9pm  6-9pm & Weekends
				Wordstar	Neil McPherson	(075) 97 1240	After 6pm
				Wordstar 2000/4	Bob Boon	209 1931	8am-5pm Mon-Fri.
				Xenix	Paul Watts Mike Lester	290 3707 275 1742 (343 5703 After Hours)	Mon-Sat A/H & Sun Weekdays

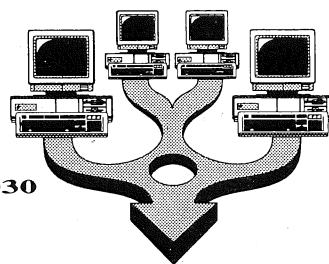
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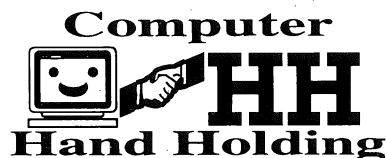


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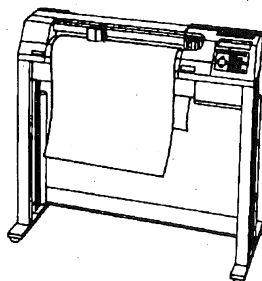
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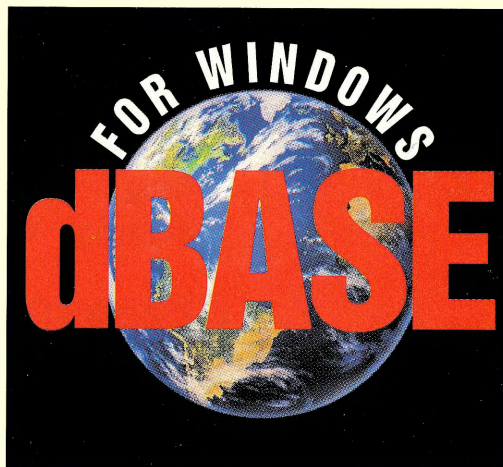
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