

# Significant Bits

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**Official magazine of the Brisbug PC User Group Inc**

**Volume 8 No 6  
May 1993**

**\$ 3.95**

*This Month's meeting*

**Sunday 16th May**

**BORLAND**

*presents  
1:30pm*

**Language Update**

*Lunchtime Special*

**MicroSoft**

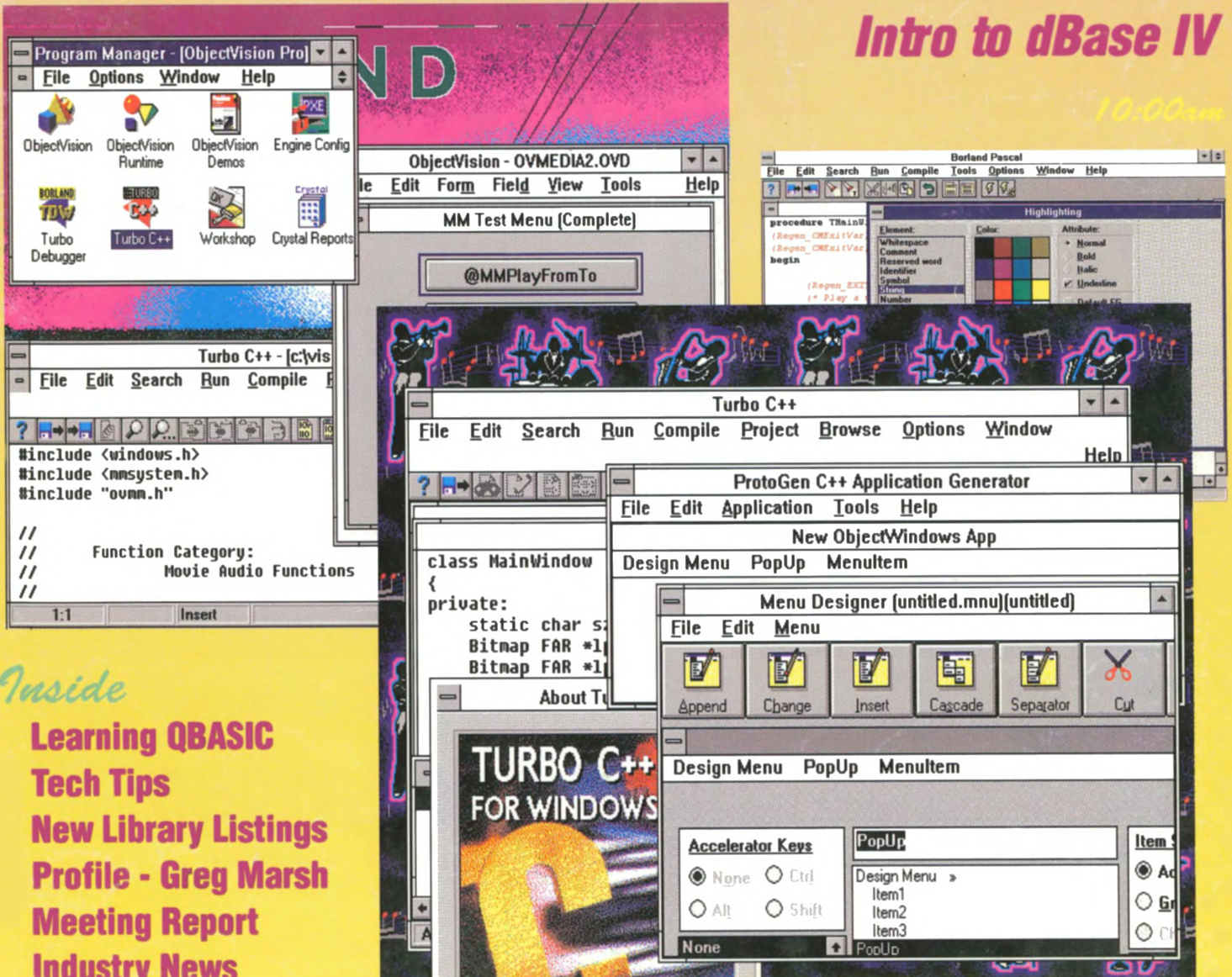
*Noon*

**Windows NT preview**

*New CLASS*

**Intro to dBase IV**

*10:00am*



*Inside*

**Learning QBASIC**

**Tech Tips**

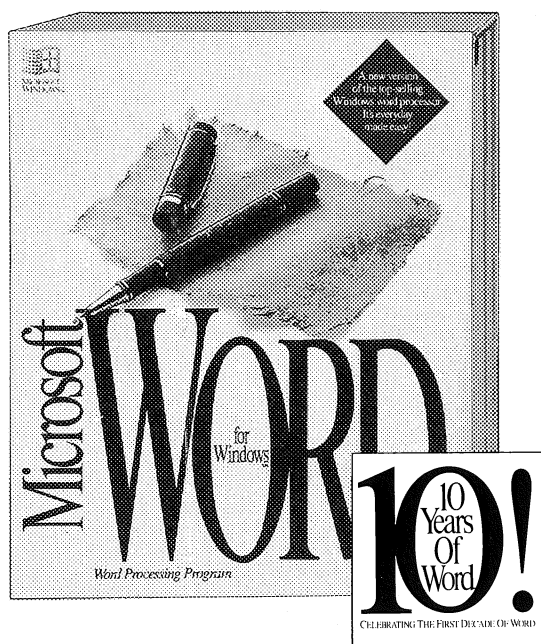
**New Library Listings**

**Profile - Greg Marsh**

**Meeting Report**

**Industry News**

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Brisbug thanks Trevor Payne and Queensland Business Magazines for providing the colour separations used to print the front cover and inside colour pages

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The Brisbane group for users of PC-type computers  
PO Box 985 Toowong, Qld 4066 Tel:274-4108

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Chief Editor: F.N. (Chip) Karmatz  
Associate Editor: Ron Lewis, Geoff Harrod  
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Contributions always welcome and needed! Preferably on disk (any sort), or modem upload to Brisbug BBS ("Stack Overflow" file area)  
Deliver disks, artwork or copy to:  
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## 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 2300 copies are printed of each issue and distributed throughout Australia and overseas. Artwork should be full size, paper bromide, film (right-reading emulsion down) or laser print. Postscript print or EPS files can be accepted by arrangement via modem. Brisbug does not typeset ads other than classifieds. Text only ads 1/6 or 1/12 page can be FAXED. The layout for these must be at the editor's discretion and are accepted without proofs. All sizes are given as height x width in mm. Artwork must not exceed stated sizes.

## 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
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Special positions:			
Full page RH side, 1st 20 pages .....	\$285		
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## 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. 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 John Burgess, Trimedia, 99 Gregory Terrace, SPRING HILL 4002, Tel 8319266 Fax 835 1045, or Chip Karmatz tel-FAX (07) 847-2244 or Ron Lewis (07)273-8946, FAX (07)273-8954.



# From the Engine Room

## We're Officially Homeless



Management challenge-of-the-month is the official advice from the Bardonia Professional Development Centre that their facilities will be unavailable to us as of the 30th September, due to the Education Department's decision to sell it by tender.

Since we moved to Bardonia in mid-1990 it has been (and continues to be) a magnificent facility, ideally suited to our needs for professional standard lecture and classroom areas. An added bonus has been the unique bushland setting so close to the city and the ability to buy refreshments on-site. It is perhaps a sad indictment of the Education Department's lack of entrepreneurial skills that they cannot make a profit on hiring such a gem, and the abysmal foresight of their political masters who have *allowed* them to sell it. Their actions can probably be best likened to the family who sell their refrigerator, to buy beer, on the pretext that they couldn't work out the thermostat settings to cope with the summer. Once again the economic rationalists are being allowed to dissipate our heritage, donating it to private enterprise, who will no doubt turn it into sorely-needed townhouses.

This turn of events has accelerated our investigation of alternative venues which was already in its early stages. The capacity of the main theatre at BDPC is now inadequate for our more popular main speakers, and we will need a bigger auditorium if we are not to turn members away from presentations. Other options, such as concurrent presentations were under consideration, but not popular, as they force members

to choose. All suggestions on this dilemma are welcome, although the thought of one prominent member, to meet twice a month, was not welcomed by this scribe.

The rapid growth of the Junior Group is also taxing our resources. The functioning of the JG is currently under committee review with an aim of fitting it more closely to the expectations of the Juniors and their parents. The most pressing requirement is for more adult involvement, particularly in the Skills Presentation and Tutoring areas. If you can contribute, we'd like to hear from you; teaching skills and a rapport with youngsters is much more important than in-depth computer knowledge.

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## Program for Sunday, 16th May

Classes	10:00 am	12:00 JUNIOR GROUP	PRESENTATIONS
NEW USERS - John Tacey		12:15 ORIENTATION TALK	
NOT-SO-NEW USERS - Ron Lewis		1:00 CLUB MEETING	12:00 WINDOWS NT
ADVANCED - Rex Ramsey		3:00 SIGS	1:30 BORLAND LANGUAGES
NEW USER TRAINING SESSION		<b>AFTERNOON CLASSES</b>	
INTRO TO dBASE IV <b>** NEW **</b>		3:00 ENVIRONMENT	
C++ Geoff Baker		NEW USERS	
xBASE <b>** NEW FORMAT **</b>		TECH CHAT FOR NEW USERS	
			<i>Presentations are in the Main Theatre, check the notice board for any late changes to other venues</i>

# TechTalk

## TECH TRENDS & READING MATTER

**THE WINN L ROSCH HARDWARE BIBLE**, 2ND ED, BRADY PUBL, CARMEL, INDIANA, is a massively detailed explanation of personal computing. It has 53 indexed pages for references, 39 pages of content listings and has 23 chapters on everything you ever wanted to know about computers—expansion buses, Pentium, SVGA, CPUs and clock doublers. A first rate all-purpose book for any topic on hardware or software.

**INSIDE WINDOWS NT**, HELEN CUSTER, has to be from Microsoft Press. This is not a technical book, but one that describes the development of NT from the time of its birth as an offspring of OS/2. However, it still covers all the technical elements of NT, including technically advanced areas such as multitasking and multithreading. It covers NT's structure, internals of the Executive and the Kernel, subsystems, and tells how NT manipulates virtual memory, all clearly illustrated. It is not a "how to" write an NT application book, rather it tells about NT as an operating system. If Microsoft hadn't closed out its book operation in Australia, the price would be in the \$30 range for 385 pages. So you can expect to pay somewhat more from one of the Australian computer book suppliers, or else order it directly from Microsoft USA.

**ALGORITHMS IN C++**, by ROBERT SEDGEWICK, ADDISON-WESLEY, is a technical book, a newly revised textbook. And it is intended for programmers. However, with that stated, non-programmers will also find the book interesting in that the principles of all algorithms are explained in the first part of the book. An overview of fundamental concepts such as data structures, recursion, stacks, lists, queues and trees is given in the first section of the book. Next he categorises the six basic groups of algorithms—searching, sorting, string processing, geometry,

graphs and general mathematical operations. Code snippets are included throughout the book for those at a programmer level, but there are also diagrams and illustrations for those who aren't, but want a basic understanding of algorithms. Has 672 pages and is priced around \$75.

John C Dvorak is a Ziff-Davis computer magazine journalist. His and co-author Nick Anis' book **DVORAK'S INSIDE TRACK TO DOS & PC PERFORMANCE**, OSBORNE MCGRAW-HILL is 879 pages in paperback and priced around \$60. While everyone else seems to be concentrating on Windows or GUIs, Dvorak explains how DOS provides a foundation for all those GUIs. It has the usual but well told history of microcomputing and Bill Gates' first product Traf-O-Data, and is a who's who in the computer industry. Once beyond this, the book covers topics such as advanced memory management, menus and directories. The book comes with a disk of 70 utility programs. While the book lists all the DOS commands and switches from all versions, it is light on explanation, reading more like a cryptic HELP file.

### Children's computer books

Let's not omit children's books. A truly innovative series developed by Ziff-Davis is AlphaKids activity books. The books are under \$30 each and come with software programs that disguise PC basics as fun and games. For example, **FUN WITH COMPUTERS** is a coloring book that teaches shapes and colors. **TIC TAC TYPE** teaches touch typing, **PC PICASSO** is a paint book and **DataMania** is a database builder. **BUILDING WITH BASIC** explains programming concepts and **WINDOWS FOR KIDS** uses Windows accessories to create an electronic playground.

**PARENTS, KIDS & COMPUTERS: AN ACTIVITY GUIDE FOR FAMILY FUN AND LEARNING**, ROBIN RASKIN AND CAROL ELLISON, RANDOM HOUSE ELECTRONIC

PUBLISHING covers this year's favorite children's programs, ie, Carmen Sandiego, The Playroom, and the Children's Writing & Publishing Centre. More than a reference book, it is a family activity book, in which one can personalise desktops, calendars clocks, cardfiles, and painting. Around \$30.

**PRIDES' GUIDE TO EDUCATIONAL SOFTWARE**, BILL & MARY PRIDE, CROSSWAY BOOKS, WHEATON ILLINOIS, 607 pages describes and ranks 750 PC and Mac programs, for young people from pre-school to college. For instance, you can pick the best program on stars for a four year old, a puppet show for an eight year old, or a remedial language CD-ROM for a high school student. Should be in the \$30 range.

**IMAGE LAB**, Tim Wegner, Waite Group Press, Corte Madera California, is aimed at computer enthusiasts who are interested in pixel-based graphics. The book comes with a disk of shareware that provide a hands-on approach to the introduction of computer generated images. Wegner provides the theory in his book and you are expected to put the theory to practice in five of the shareware programs. You learn how to create special effects and filters or to render realistic objects. Priced in the \$60 range.

**THE DESKTOP COLOR BOOK**, VERBUM BOOKS, from the editors of Verbum magazine, is 64 pages and sell for under \$20. It is fully illustrated in color and provides detailed explanations of color modelling, additive and subtractive models of image editing, vector and raster drawing, and a color glossary. When Pantone or Kodak or QMS provide you with a promotional brochure on their color scanners or printers, this book can help you demystify the terms used and put the product in perspective.

One of the best biographies I have read in a long while is

**GATES: HOW MICROSOFT'S MOGUL REINVENTED AN INDUSTRY—AND MADE HIMSELF THE RICHEST MAN IN AMERICA**, STEPHEN MANES & PAUL ANDREWS, DOUBLEDAY. It's a factual accounting of how Bill Gates got started in computing, and tracks his industry machinations and visions right through to the present. It lays bare the strategies of the various players from 1974 to 1989—Apple (including the Bill-Gates-Steve Jobs

clashes), IBM, VisiOn (the first to develop a graphical desktop for the PC), Xerox, and Quarterdeck. It provides great insights into the internal politics of Microsoft, the successful promotion of vaporware (promote first and produce later) and how Gates led his teams of ragtag programmers.

Likely the largest category of computer books are on productivity. One that is different and has a humorous approach is **PC HOUSEKEEPING: MAXIMIZING YOUR PC**, James G Meade, MIS Press, New York. Usually, illustrations are used to show how complex operations are performed. Not in this book. It uses cartoons, ie disk caching showing a baseball catcher with a ball in his glove. The best or worst pun is why UMBs, Upper Memory Blocks are not called DOS UMBs, because that would be a DUMB acronym. For novice computer users only, and only if you want the housekeeping disk that goes with it.

**The Pentium according to Intel**

Intel has its inhouse publication, Micro-computer Solution. The March\April issue has a preview of the Pntium. You can get a copy by contacting Intel Australia, PO Box 1486 Dee Why NSW 2099. It announced shipment of production versions mid-April, but ,ostly to large US customers like IBM and Compaq. Intel is claiming the Pentium is five times as powerful as it 33-MHz Intel DX CPU, with some applictions running ten times faster. It is offered in 60 and 66 MHz versions. It uses an 0.8 micron BiCMOS process and a superscalar RISC architecture. It has two five stage execution units and can process two instructions in a single clock cycle. It features two 8K on-chip caches, improving floating point performance, plus using a 64-bit burst-mode external bus. Other advanced design includes branch prediction, 256-bit internal buses and write-back caches. Beyond that, Intel says it is designed so that it is upgradable. Wow! No prices mentioned, but the US PC mags say it costs 5-10 times that of a 486 chip.

**DOS booster**

There's another DOS booster about called QueryDOS, a mixture between 4DOS and DESQVIEW. It's aimed at user groups and Backus-Naur, the Canadian developers claim it is what DOS 7 would be if there is one. Claims it can make 4 subdirectories

at once, wipe out read onlys, rename all the data directories on a drive at one stroke, has graft, prune, move, list and merge merge commands, plus 35 others not in DOS. The claim is that you can move or list just .BAT and .TXT files and move several selected files with a single command. We're getting a copy for evaluation and review. Priced at \$49.95.

**Borland/WordPerfect alliance**

Borland and WordPerfect have announced a "strategic alliance." It is to share technology. What it means to their product users is integration of their software products. The first package to result is Borland Office for Windows, which combines the use of a word processor, data base and spreadsheet by including the Windows version of WP5.2, QuatroPro and Paradox. No prices mentioned in the news release.

**Windows NT**

Microsoft shipped its third preliminary release of Windows NT to 75,000 cutomers and developers last month. It has also shipped its Beta version of NT for the server. The results of the final testing will take through June to evaluate and the changes incorporated, an MS source said. That is when Microsoft will be making its presentation to Brisbug. Production quantities are expected to ship in July. Additional enhancements in the latest test version include 32-bit application support, DOS application support, integration for these applications with one set of fonts and printer drivers, complete dynamic data exchange (DDE) and object linking and embedding (OLE) functionality between 16 and 32-bit applications. Local file system performance is up to 11 times faster under Windows NT.

**Buyer survey**

Based on 1,000 respondents, a Channel Marketing Corp survey showed that most PC buyers came to the conclusion that they regreted not adding more capacity to their machines at the time of purchase. At that time, they stuck with the "sale price". Six months after purchase, they shopped around for more memory, larger hard disks and better quality monitors. The conclusion was that memory-hungry applications demanded more RAM, and 4 Mb was a minimum. Hard disk minimum should have been 100 Mb.

**Price Trends**

Trends in hard drive prices from March 92 to March 93:

200 Mb	-33%
100 Mb	-24%
80 Mb	-21%
40 Mb	+ 2%

Trends of non-interlaced monitors for the six months ended February 93:

14-Inch	-7%
15-Inch	-5%
17-Inch	-1%

Trends of Video Cards for the six months ended February 93:

Non-Accelerated	No Change
Accelerated	-%5
S-3	-2%

Trends of Systems for six months ended February 93:

386SX-25	-1%
386-33	-1%
486SX-25	-2%
486-33	-1%
486-33 EISA	-1%
Notebook (386SL-25)	+32%

**Brisbug wishes to thank Ken Boyle of**

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# Minutes of the April Meeting

## BRISBUG GENERAL MEETING - MINUTES 18/4/93

With an injured Secretary sitting in the audience (car accident - broken hand) and a substitute Secretary (better looking - Graham Darroch) taking notes down front, the President of Brisbug opened the April General Meeting at 1-03 pm.

### Confirming old decisions

He welcomed both continuing and new members (as he is wont to do every meeting) and then suddenly a sense of "deja-vu" hit the crowd! Ron pointed out that the "Justice Dept" (now called the Department of Consumer Affairs) had rejected our submission for the changes to our Constitution passed at our Annual General Meeting! It appears that changes must be submitted on a "Form 8" (which is one more than a form 7) and must be accompanied by \$9-50 "handling fee". It must also be submitted within 30 days of the acceptance of the changes by Brisbug's members. We missed this deadline and so the motion published on page 14 of the April issue of Significant Bits had to be voted upon to enable re submission. The motion?

"That this meeting confirms the action of the Annual General Meeting in passing (as amended) the two notices of motion covering changes to the Constitution regarding Membership."

The motion was moved by Chris Raisin (who raised his LEFT hand) and seconded by Bernard Speight. It was unanimously carried.

### Appointment of an Auditor

Another legal matter - the appointment of an auditor (an omission at the Annual General Meeting!). It was moved by Bernard Speight and seconded by Chris Raisin that D.C. Neilson & Co (164 Brisbane Street, Ipswich) be appointed as Brisbug's auditor for the 1993/1994 year which ends at the AGM in 1994. This motion was again carried without dissent.

Various reports were then presented.

The Treasurer (Max Kunzelmann) was out of town on a training course with his work (NOT in Switzerland as some were worrying about!) and so Ron gave an abbreviated Treasurer's report.

Ron then continued on with the magazine report. This lead to several suggestions from our members (all pleasant ones!) One was a request that the magazine show "coming events" at *FUTURE* meetings, not just the current month's events. (The problem with this is that sometimes presenters cancelled due to unforeseen circumstances.) One of the members stated that the magazine is now of a VERY high standard and the magazine committee deserved a round of applause. This the members agreed with, judging by the slapping of mitts that ensued. (This seems to be happening every meeting!)

Speaking of the magazine, Ron asked members not to forget that they are entitled to a free advert in any magazine (provided the ad is of a private, non-commercial nature and is infrequent - ie. not published on a continuing, magazine after magazine basis).

Paul Marwick gave a BBS report which was brief but included the all important news that there is now a FOURTH line (in effect the same as line 3 - OS2 intensive) on (07) 870-0653.

The SIG report from Bernard Speight gave the audience all the "ins and outs" of the Special Interest Groups meeting both today and at various places between now and the May meeting.

As usual, details will be "old hat" by the time they are published in the May Magazine, so this Secretary prefers to leave them out of the minutes.

Ron Kelly gave his usual informative "Education Report", the main points of which were the new dBase class (dBase III+) and the combining of Chris Raisin's NUTS group with Ron Kelly's own New User Group for today only.

Question and Answer time followed - it was brief since time was "getting on" (aren't we all??) and Ursula Walker, technical expert from Symantec in Sydney, was chomping at the bit to present Norton Utilities version 7. That being the case, the meeting closed at approximately 1-34 pm. and Ursula "did her thing". Norton's Utilities is certainly a fine product and the crowd seemed to be impressed by the professional presentation and the great give-aways.

## MD-CMS

# TOMBSTONE CLEARANCE

The MD-CMS storage catacomb (a place of myth & legend) requires a clean-up.

We have discovered, under a thick layer of dust, boxes with strange markings, relics from past ages, shrouded in time. These creaked open to reveal treasures from a bygone era.

- ◆ Some with damaged cases
  - XT'S, 286'S, Printers, Monitors, Modems
- ◆ Superseded software versions
  - Tracker, Dos, Word, Framework, Nortons
- ◆ Long extinct accessories
  - Motherboards, expansion cards, drives

To aid the keen treasure hunter in his bid for the ultimate treasure, we are having a bargain hunters bonanza sale on Saturday, 15th of May.

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# Computer Sensing of the Environment

*Dan Emerson's afternoon class on using your computer to monitor the environment has proved very popular. Here are the notes from his first session.*

In this age of technology we still make every day decisions without full information. We rely on information we can observe, gut feeling and what people tell us. All three methods can be horribly wrong, and the decisions we make can have disastrous or expensive consequences.

Technology provides a means of extending our ability to gather data. Advances in scientific understanding have been made with extra-human sensing. Understanding of disease has been expanded by use of the microscope, chemistry by the beam balance, and astronomy by the telescope.

### PCs as an aid to decision-making

Many homes have a personal computer. This tool has an enormous potential to aid us in decision making. Not only can the computer sense the environment, but it can store the information and has the analytical capacity to make sense of it. For instance, imagine that you want to install insulation in your house in a cost effective manner. An experiment could be run. Small quantities of different types of insulation (say 1m by 1m could be purchased. A heat sensitive resistor (A) could be placed in the roof cavity to monitor temperature and another (B) attached to the underside of the ceiling to measure ceiling temperature (insulated to reduce thermal pollution from the room ). The computer could be set to measure and store the temperature at ten minute intervals for the twenty four hours. Materials could be compared by analysing the results.

How about recording the temperature changes in a chemical reaction, sampled at ten times per second?

There are many ways of measuring environmental conditions.

I have been attempting to use a computer for environmental interfacing for several years. My efforts have been hampered at different times by having to shell out

several hundred dollars for a card, or being beaten by my lack of understanding of electronics.

A breakthrough occurred towards the end of last year when Ross Garrad, a member of the Commerce/Computing department at Bremer State High School (who is completing his Masters Degree in Physics, specialising computer control of telescopes) mentioned that the games port on the P.C. has two analog ports and two one bit digital switches. He bought in a sheet giving the programming interrupt information and a Pascal program to read the ports.

*So: the games port was a possibility!!* Action at last; into the computer store, \$50 for a joystick, out with the screw-driver and the multimeter. It is the newest thing I have ever pulled apart (and it still works).

**Inside a joystick is simplicity itself ... two resistors mounted perpendicular to each other, two switches to fire the guns...**

Inside the joystick is simplicity itself. There are two variable resistors (potentiometers) of about 200 k.ohms each mounted perpendicular to each other. A system of levers set these according to the position of the hand grip. Two switches fired the guns. A couple of components gave a repeat facility to the guns.

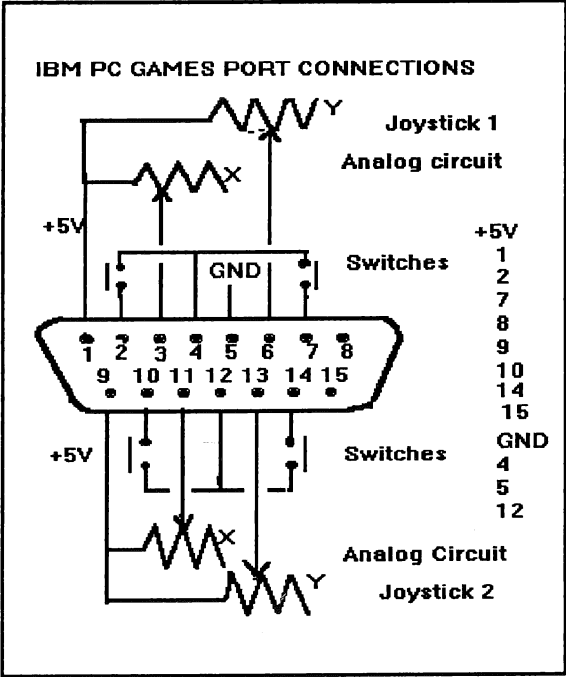


Figure 1. Showing the electrical connections to an IBM-compatible Games Port

### How to interface

What is needed to make an interfacing system?

Some type of sensor is needed to convert the environmental conditions into electricity (a transducer). In some cases the transducer can be connected directly to the port. Preferably, an electrical interface would be placed between the transducer and the computer input. The interface amplifier can set zero points and alter the sensitivity and range of values that the transducer measures.

A typical thermistor (heat sensitive resistor) can measure from below freezing point to over 200 degrees centigrade. We may only be interested in a small range, from 10 degrees to 40 degrees. Coupled directly to the computer input this range would only create a few bits change in the data byte. However if we amplify the output from the thermistor then the temperature range we are interested in

could be made to create a big change in the data byte.

Shock horror, computer interface, amplifiers, electronics, expense.....!!!! Don't give up yet. I have been attending a T.A.F.E. beginners electronics course (18 hours duration) and the lecturer, Pat Andersen is in the process of designing a suitable circuit. There are a handful of components and the cost should come in at under ten dollars. He has indicated a willingness to come in one Sunday and tell us all about it. Then the soldering irons come out. We will be allowed to use his circuit design. I recommend the lessons if you want to find more about practical electronics and build some circuits.

Multiple sensors?

How many sensors can be run from the computer. The average computer with one games port has access to two analog to digital ports and two one bit ports. The analog-to-digital ports are suitable for measuring varying states. The two switches (the guns) can record on/off states only. This translates to two analog sensors and two digital sensors. To double that to four of each type of port, install a two joystick games port. Cost is about \$30. Make certain you can disable the existing games port on your i/o card before shelling out the dollars.

How does the Games Port work?

How does the games port work? Each analog port measures the resistance of the sensing device and converts it to a digital bit value somewhere between 0 and 255 (one byte). The pins are 1 and 3 are the inputs for port 1, and 1 and 6 for port 2. Pin 1 is supplied with +5 volts by the computer.

On the games port of my computer the bit output for the resistance input are as follows.

Input Resistance ohms.	Output Bit k. value
0	6
1	7
5.6	12
10	17
12	20
18	28
27	41
33	47
47	66
100	127
150	192
190	230 (estimated )

You don't need to understand the details of the working of the Bios interrupt that reads the ports, but if you are curious, study the diagram of the register list of the C.P.U. and read on.

The Central Processing Unit is the chip with the language instruction set built in. Registers in the C.P.U. store and operate on bytes of data.

The games port is read when software issues a BIOS interrupt. The interrupt procedure is an instruction built into the 80X86 chip. When the INT command is issued BIOS or DOS software routines are executed and carry out certain functions. A parameter is passed which instructs the C.P.U. chip of the address of the particular interrupt routine. Further parameters are stored in registers of the C.P.U. to instruct the C.P.U. on which parts of the interrupt routines to run.

Reading the Games Port

Reading the games port is carried out when part of the 15H interrupt is executed. The function 84H is the specific routine within the 15H interrupt. Sub-function 0 reads the switches. Sub-function 1 reads the analog ports. To execute the reading of the switch ports, 84H is moved to the AH register of the C.P.U. 0 is moved to the DX register. INT 15 command is executed by program software. The BIOS routine executes, looks at the byte that represents the state of the switches and returns that value to the AL register.

Carry flags are set. The byte in AL (like all bytes) is made of 8 bits. The state of four of these bits indicate the state of the each switch. Bit 1 indicates a depressed switch (short) and 0 indicates an open switch. The bits are

- bit 7 : First joystick switch 1
- bit 6 : First joystick switch 2
- bit 5 : Second Joystick switch 1
- bit 4 : Second Joystick switch 2
- carry flag=1 indicates disabled joystick.
- carry flag=0 indicates enables joystick.

The analog ports are read by executing Interrupt 15H, function 84H, sub-function 1. 84H is placed in register AH, 1 is placed in register DX and interrupt 15H is called. The routine examines the byte registers of the games adaptor's analog ports writes them to the C.P.U.

The registers in the C.P.U. holding the analog port representations are

- AX : first joystick analog port 1
- BX : first joystick analog port 2
- CX : second joystick analog port 1

```
' ***** 'Written By Dale Whitnall   March 1993
'                               in QBASIC
' *****
CLS
LOCATE 10, 1
PRINT "PRESS ANY KEY TO QUIT"
DO      LOCATE 1, 1
        PRINT "Analog Input 1"
        LOCATE 2, 1
        PRINT STICK(0)
        PRINT "Analog Input 2"
        LOCATE 4, 1
        PRINT STICK(1)
        PRINT "Digital Input 1"
        LOCATE 6, 1
        IF STRIG(0) = -1 THEN PRINT "ON " ELSE PRINT "OFF"
        PRINT "Digital Input 2"
        LOCATE 8, 1
        IF STRIG(4) = -1 THEN PRINT "ON " ELSE PRINT "OFF"
LOOP UNTIL INKEY$ <> ""
```

Figure 2. A BASIC program to show the state of the joystick ports



DX : second joystick analog port 2  
carry flag state 1 indicates no  
joystick  
carry flag state 0 indicates the  
joystick present.

Modern languages examine the C.P.U.  
and then package the data in more  
accessible forms.

Basic has some procedures that do all of  
the dirty work of looking of looking in  
dark corners of the C.P.U., getting the info  
out and putting it in your program. Year  
9 student, Dale wrote the Basic routine  
listed in Figure 2 at the end of the BRISBUG  
session. Functions STICK(1), STICK(2)  
read the analog ports and STRIG(x) reads  
the switches.

The Pascal program in Figure 3 uses a  
more generic routine that can be used to  
read any interrupt.

The 15H interrupt is used to handle the  
games port. The Pascal Intr(), function  
which calls the Bios Int(), uses a pre-  
defined record structure called Registers.  
In the program below, a variable Regs is of  
this Pascal pre-defined record type Registers.  
The record Regs inherits the group of  
fields, AX, BX, CX and DX which represent  
the word (two byte) of information  
stored in each of the C.P.U. registers.

A second set of fields  
AH, AL, BH, BL, CH, CL, DH and DL represent  
single bytes in the C.P.U. registers.  
AX = AH + AL (H & L represent high and  
low byte) C.P.U. states are stored in the  
above fields. Values can be placed in the  
fields and dumped into the C.P.U..

Re-examine Figure 3 for a view of the  
C.P.U. The process goes like this:

To initiate the reading of the port, \$84H  
and 0 are placed in the Regs record. The  
function INTR is called with the interrupt  
parameter 15H and the Regs record.  
Intr(\$15H, Regs).

The contents of Regs are written into the  
C.P.U. and INT 15h is activated. The  
Interrupt 15H, Function 84H, sub-function  
1 is executed.

Ports are read, results are written to the  
C.P.U. and then Pascal writes the C.P.U.  
registers back into record  
REGS.AX, BX, CX, DX.

Fields AX, BX, CX and DX hold a byte  
each representing the positions of the four  
analog ports of the two joysticks.

In the code below the process outlined  
above occurs. A user defined function  
Byt2Bin is used to represent bytes on the  
screen in their binary (bit) form, eg 0F to

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10000000. Users can write their own functions similar to Basic STICK() function using the Pascal language.

Type one of these up and see if it works.

The computer is charged up and ready to read the games port. We need an input.

Next step: make investment of \$10 at Dick Smith and we will build the components into a games port break-out board. (Diagram 1). This will allow experimentation with the games port. We can connect sensors directly or build trial circuits to amplify the sensors.

A DB15 jack which plugs into the games port of the computer leads wires from the circuit strip board. A wire connects each of the 15 pins to a strip on the circuit board. Order these 1 to 15 and number them. Cut through the row of copper strips and isolates the 15 outputs to the computer from the rest of the board. Use jumper wires to bridge the gap and group the inputs as desired. A 1K resistor or a led (light emitting diode) and a 470 ohm resistor must be placed between lines 4 and 7 (others work as well). The computer looks for a resistance to determine the presence of a games device.

Will it work? A thermistor placed across an analog port will register a change of about 10 digital bits when held in the fingers. A brief encounter with a flame will make a dramatic change. A 200 k ohm potentiometer (volume control) will swing the digital range from 0 through to 255.

Thanks to the Brisbug member who phoned in and let me know that line 2 that I had indicated as common earth for the analog ports was actually +5V. He referred me to the back of the Dick Smith Catalogue for a diagram. Please speak up if I give out inaccurate info. I'm new at this too.

## ADDENDUM

At the last meeting, Peter Wyer presented a BASIC routine which opened a text file 'data1.pot' then went into a loop which read the clock for time and the games port and wrote the data to the file. Then the file was closed.

This is shown here as "READPORT.BAS"

```
PROGRAM Display_Games_Port_States;
{*****
Displays values of games ports Games Ports and saves them
in an array Turbo Pascal 5.0 D.Emerson (interrupt reading
procedures supplied by Ross Garrad.)
*****}
```

Uses Crt,Dos;

Type

```
Array_Result=array[1..10000,1..2] of byte;
bit_str=string[8];
```

var

```
Result_Array : Array_Result;
Regs : registers;
i,n:byte;
x:integer;
```

```
{*****
Function Displays Byte as Bits
OF -> 1000000
*****}
```

Function byt2bin(numb:byte):bit\_str;

Var

```
i,remainder,divisor:integer;
nits,bits:string[8];
Begin
{***Clear array***}
for i:=1 to 8 do bits[i]:='0';
divisor:=256;
bits:='00000000';
{****convert to binary****}
for i:=1 to 8 do
begin
divisor:= divisor div 2;
if numb-divisor >= 0 then
begin
bits[i]:='1';
numb:=numb-divisor;
end;
end;
byt2bin:=bits;
```

end;

```
{***** MAIN PROGRAM LOOP*****}
```

BEGIN

```
x:=0;
{*****Write Screen*****}
clrscr;
GotoXY(35,1); Write('Games Port States');
GotoXY(1,12); Write('Analog Port 1 ');
GotoXY(1,14); Write('Analog Port 2 ');
GotoXY(20,10); Write('Decimal ');
GotoXY(30,10); Write('Binary ');
GotoXY(1,20); Write('Bit Switch Byte');
GotoXY(40,11); Write(' ** ');
GotoXY(30,23); Write('..keypress to stop....');
```

*Continued over*

## READPORT.BAS

REM \*\*READS TIMER AND GAMES PORT, WRITES RESULT TO DISK\*\*

REM \*\*\*\*\*PETER WYER\* 18/04/93\*\*\*\*\*

OPEN "o",#1,"a:\data1.pot"

t= timer

For a = 1 to 10

Print a Reading\$ = STR\$(TIMER-t) + " " + STR\$(STICK(0))+

" " + STR\$(STICK(1))

PRINT #1, reading\$

SLEEP (1)

NEXT

In a typical run, this program produced the results:

0	140	109
1.050781	141	109
2.027344	140	65
3.019531	139	17
4.007813	82	85
5	16	90
5.988281	87	92
6.980469	128	91
7.96875	140	91
8.949219	140	91
9.9375	141	91

Columns one represents elapsed time of reading, two and three the port values. Peter ran the results into a spreadsheet. Sensing interval can be altered using the value in the *SLEEP* function.

The samples can be increased by altering the loop values.

```
REPEAT
{****GET Analog Port Values****}
Regs.AH := $84; Regs.DX := 1;
Intr($15, Regs);
{Gotoxy (1,10);writeLn(' ');}
{*****Display Analog Port Results*****}
{***in decimal****}
GotoXY(20,12); Write( Regs.AX:4);
{***in binary****}
GotoXY(30,12); Write(Byt2Bin(Regs.AX));
{***in decimal****}
GotoXY(20,14); Write( Regs.BX:4);
{***in binary****}
GotoXY(30,14); Write(Byt2Bin(Regs.BX));

{****Store results in an Array****}
Result_Array[1,x]:= Regs.AX;
Result_Array[2,x]:=Regs.BX;

{*****Get Results for Digital Switches*****}
Regs.AH := $84; Regs.DX := 0;
Intr($15, Regs);

{*****Display Digital Switches*****}
GotoXY(20,20); Write(Regs.AX:4);
GotoXY(30,20); Write(Byt2bin(Regs.AX));
{***loop counter***}
x:=x+1;
UNTIL (KeyPressed) or (x>9999);
END. { Display_Games_Port_States }
```

Figure 3. A PASCAL program to monitor the Games Port

CONSTRUCTION PROJECT

(Computers and Environmental Sensing)

Next meeting (MAY), we will be building games port break-out boards.

I will bring 5 sets of soldering stations and multi-meters.

We will need about - five computers along to test the boards. - more soldering irons and multi-meters - extension cords and multi-outlet power boards,

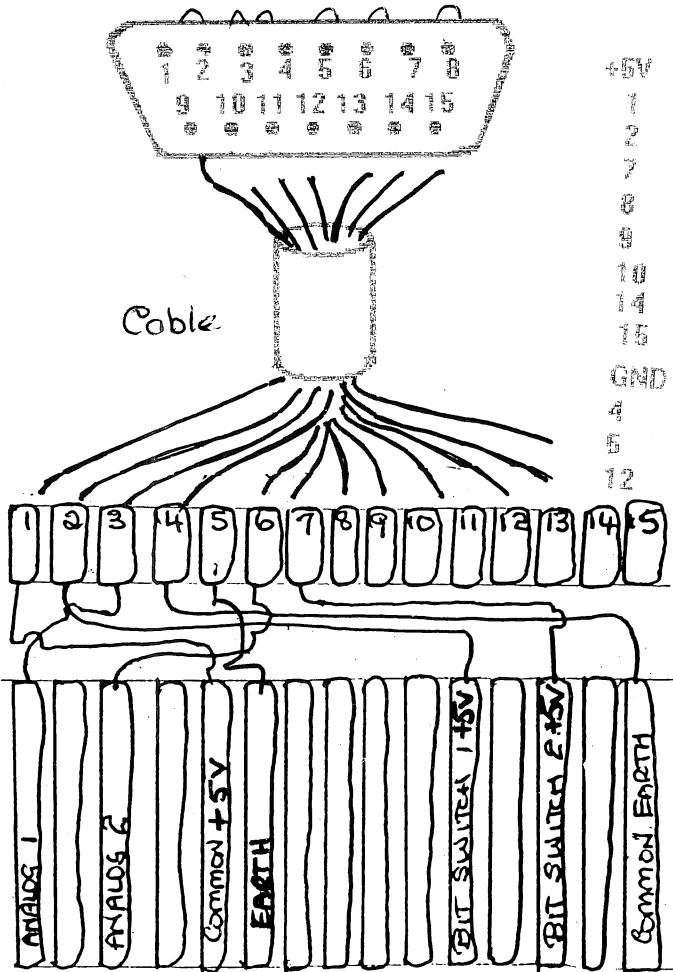
You will need a D-15 pin male games port jack, a couple of meters of 15 line cable, a printed stripboard (at least 15 strips), a thermistor (heat sensitive resistor), a 200 k trim potentiometer, connecting wire, solder

The lot will cost you less than or about \$10

If you want me to bulk buy, phone me by thursday night of the week before the meeting :07 288-6070 Evenings.

Dan Emerson

games port viewed from the back of the computer



ANALOGUE INPUTS DIGITAL SWITCH INPUTS

Figure 4 (right). Showing the Games Port wired to the interface board



# Windows Sound System

Sylvia Willie

## What is it?

Microsoft claims Windows Sound System is 'the new productivity resource that enables you to add the richness and impact of sound to your daily work:' business audio, not for entertainment like other sound systems. In line with this, the Sound System is not truly Multimedia PC (MPC) aware and does not include any compatibility with even the most widely available MPC systems.

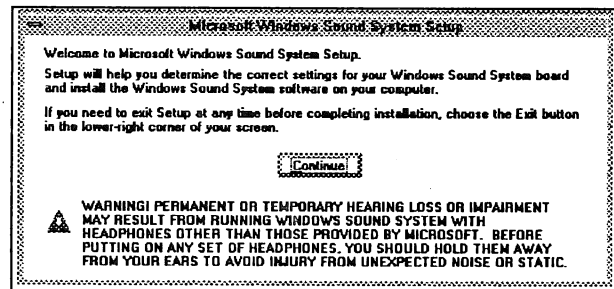


Figure 1. An apt warning if you have teenagers

The Sound System consists of a sound board, microphone and headphones along with software to drive it all. There is a warning on most pages

I connected some very inexpensive cd/walkman speakers to the headphone port, and avoided the problem. While speakers would be a problem in an open plan office, I prefer them to headphones.

I have been using SoundBlaster Pro with a CD-ROM for about 6 months and have found headphones 'confining' since I'm not working with continuous audio for most applications.

## Where did it come from?

The Sound System was made available to Brisbug for evaluation by Craig Spender in Microsoft's Brisbane Office.

## What equipment do you need?

The basic requirements are still fairly high. You need at least a 386SX/16 with an EGA adaptor, 256K of extended

memory with 2Mb recommended an 8 or 16 bit expansion slot and Windows 3.1. What they don't say is you also need nearly 9 Mb of hard disk for the entire sound system programs plus 300 K in the Windows directory.

A minimal installation would require 263 Kb in Windows and 524 Kb in the Sound System Dir.

The Proofreader in Excel with sound requires 1506 Kb. Windows Libraries 45 kb and with stored sound 1506 kb. Guided Tour: 1419 Kb; Voice Pilot: 3240 Kb; Sound Applications: 575 kb includes Soundfinder 96 Kb, Music Box 89 Kb and Quick Recorder 391 Kb.

The machine I have it on is a 486DX/33 with 8Mb memory and a SVGA screen. The card is in a 16 bit slot. Hard disk space is not at a premium so I installed all the software and demos.

## Installing it

Installing the board was quite straightforward and I found the instructions more than adequate. Because I put the board in

a recently purchased machine, I was able to let the installation program choose the direct memory access (DMA) channel, the interrupt level (IRQ) and the I/O address. I have been using SoundBlaster Pro with a CD-ROM for some time in another machine. I didn't try running them both in the same machine nor did I try changing boards. I expect it would have required a lot of time balancing the system to avoid clashes. That warning message (see Figure 1) is everywhere.

The software installs from within Windows by selecting the Run option from Program Manager. There are also instructions for running setup from MS-DOS.

## Embedding sound in a document

The Sound System can be used to embed voice clips in any document which will accept OLE such as Excel and MS Word. It is transferred via the clipboard. Wordperfect for Windows does not support OLE so I couldn't try it in a text document. However, I was able to embed a sound in a PowerPoint presentation.

## Controlling your computer with voice pilot

I trained the voice pilot to my voice on the

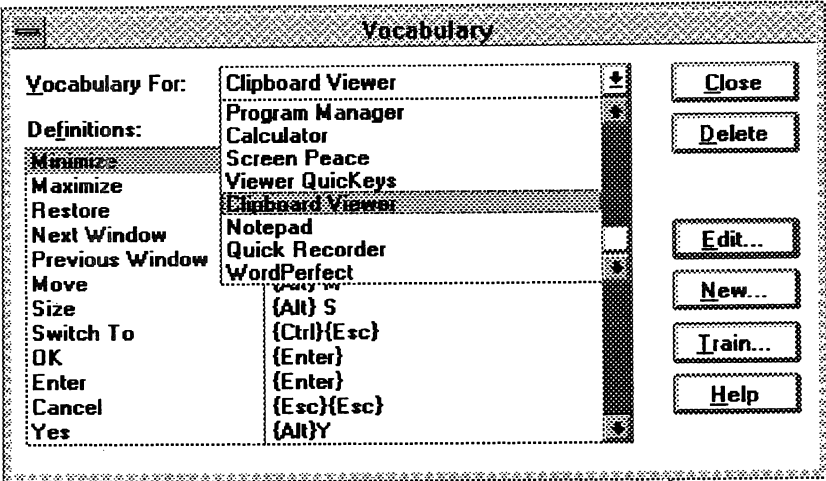


Figure 2. Setting up the hardware and software

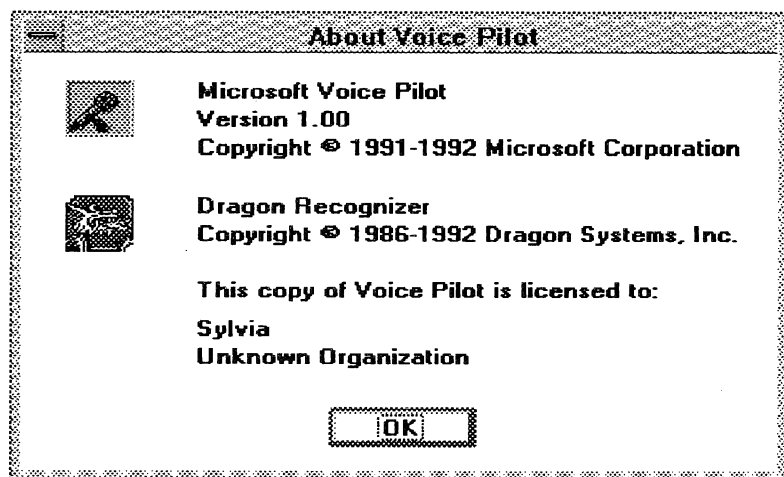


Figure 3. Showing the Description Screen for Voice Pilot.

250 words it knows about. As you move from one application to another, the appropriate selection of words are activated and speaking into the microphone allows you to try to make things happen. While it was an interesting exercise, my patience would be greatly enhanced by having 2 arms in a cast. Anything less than that and you would quickly move to the keyboard or the mouse. A totally silent environment would also help. The background noise of others talking or a TV or stereo affects the system.

No amount of training on the word minimise ever resulted in Voice Pilot recognising it. My favourite blunder was interpreting the word 'HELP' as 'Next Window.' In fact, Next Window is a real favourite with the system. Perhaps the next versions will provide a system able to recognise a higher proportion of the words.

It is possible to add additional words to the system to trigger your own macros, however, with current voice recognition problems, I think I would rely more on the keyboard or mouse.

## Using it with Excel or Lotus 1-2-3

Installation. The Sound System has to be present before Proof can be setup from Excel. You can do a custom setup to add Proof to Excel (and I assume to Lotus 1-2-3 in the same way) if you are already an Excel user.

Proofing your numbers. This is the part I like the best. If you have ever had to proof a large table, you know it requires someone to read what has been entered and someone else to read the original data.

With the Sound System, the computer takes the role of 'someone to read what has been entered.' The voice is female and I found it/her very understandable. The system can read numbers or words, but the number of words is highly limited. The numbers are done very well and would clearly be useful when proofing tables. The major drawback is that the system does not proof the formulas. When entering a formula, only the resulting value is read out.

Proofing words. There are very few words which the system knows. Commonly occurring ones such as Total and Sum are there. It is possible to add more words to the dictionary and even to use a personal dictionary. A cell containing B10 can be read out. Unfortunately this ability cannot be applied to formulae.

The system is said to have Vocabularies for the following other packages:

Aldus PageMaker Lotus 123 Micrografx

Designer MS Excel MS Mail MS Money MS Project MS Publisher MS Works Norton desktop for windows MS PowerPoint Wordperfect for windows MS Word for windows MS Write File Manager Program Manager Actual vocabularies are dependent on the active programs as the list matches what you get if you <alt> <tab> through the list of active programs. When you load another program, the dictionary for that application loads.

As indicated before, I didn't find the Voice Pilot particularly useful. For those of you who think mousing is slow, ... at least you and the machine both agree where the mouse arrow is.

## Miscellaneous

Listen to your CD's If you have a CD player installed, Sound System will play music for you. Volume adjustments are very easy, as is right to left balance.

## Set up SoundScape screen savers

You can set up your screen saver (You do have one? If not you risk etching your monitor.) to a blank screen and the chirping of birds. Different. I think I'd rather have something visual with the birds ... maybe a photo/drawing as each one sings.

## Assign sounds to system events

If you would like a Ta Dah to tell you when Windows has loaded (useful when you're out there making the cup of coffee), the Sound System will play it for you. Sounds

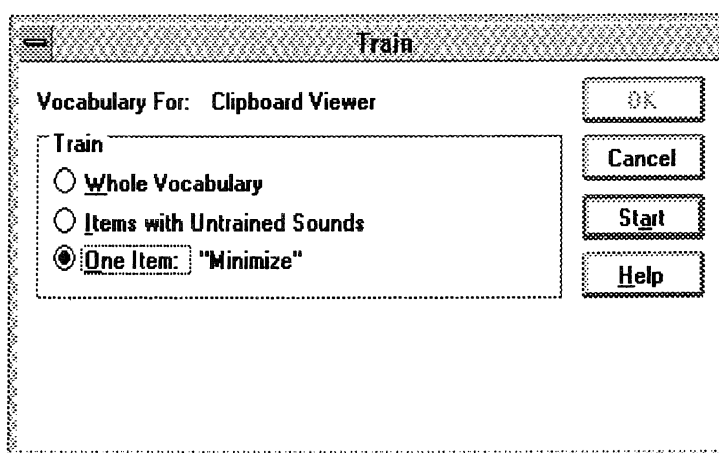


Figure 4. Showing the Vocabulary Training Screen

in conjunction with system events are easily added in the same way as with any other sound card, from the sound icon on the Windows control panel.

Conclusions

Windows Sound System is an interesting product and gives us some hint of the developments in computing in the next half decade. The concept of document proofing is valid and needs to be extended. The major problem with this product is its reliance on sound capture to 'read' a document. Good algorithms for synthesis of vocabularies based on pronunciation rules have existed for some time. While this leads to 'computer speak' in the case of words which are particularly atypical, it does facilitate enunciation of a wide variety of words, who documents, without prior training.

When the sound system is put on the entry point—beeps When SS put into formula

mode—reads out values When inputting—reads out values But the Proofreader does not read out formulas.

Proofing of spreadsheets requires much more than just a set of values (as useful as

that may be). The captured words are already there; the system needs to respond to the request to show formulae by reading those rather than the values which result from them.

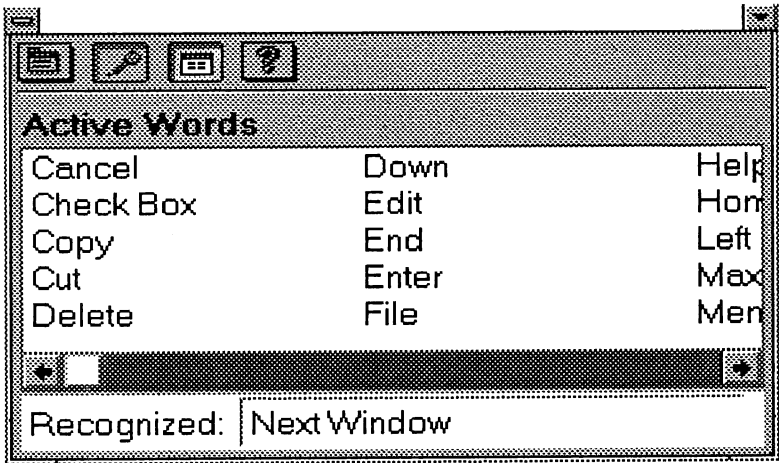


Figure 5. Command training in action.

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# pcANYWHERE for Windows

Ian Adcock

## The NORTON pcANYWHERE for Windows.

How can one classify pcANYWHERE? As the box states it is a communications tool for windows. However after my short review it turns out to be a fantastic connectivity tool for everyday use. Anyone who has cause to communicate with another PC can make use of at least one part of this program. On the road users can access the power of the home or office PC with four clicks of a mouse. I admit I'm a bit of a hack when it comes to software, so my main criteria is how easy it is to use straight out of the box.

The first thing to read is the licence agreement. SYMANTEC are to be applauded for the ability to use the one copy for two connected computers. The same applies to a network, however if the copy is installed on a server and other PC's are using it then each must have a licence (the software even checks it out).

## Installation

Installation is a cinch. Using the usual windows ways and means, the only choice is if you need to be a host and want full screen DOS support. The next question is to name your computer. *How about tiddles?* After it is finished you must reach for your thinking cap if you want to connect error-free. Knowing a little about modems and networks would help, as some of the settings are slightly technical. As I mentioned, ease of use is a big point, but we did have trouble getting a Netcomm M7F working straight away. Lack of Australian modem drivers on the install disk is as big black mark against SYMANTEC as we all should be using Aussie modems. To illustrate this point one of the test modems came with program support allowing 52,700 bps transfer rate.

## Getting it together

Our connections were by null modem cable and modem. Network support is a large part of the program and is very

configurable. It provides support for all the major protocols and gateways. You, as a host, have complete control over all user privileges, allowing access to any or all of your files and directories.

To actually connect is very simple indeed. Select the means of connection e.g. cable and then call a host, or if you are acting as a host select the means and click on wait. Modem and network are the same. You should edit the settings first, to make sure that you are getting the best out of the connection as possible. If you were a salesman on the road away from the support ease of use is a great selling point, one which pcANYWHERE has fulfilled.

## Application

Once connected it is awesome for a novice to see you in control of another computer across the room and indeed across town by modem.

What pcANYWHERE enables you to do is control another computer as if the programs reside on your own pc. Write a letter, draw pictures, look through and edit databases as if they were your own. In

fact any program on the host can be used for whatever purpose you require (privileges allowing). The upside to this is only one copy of the program or file is required or updated at one time. This is all achieved through a terminal window which holds a copy of the other screen. It then gives you the ability to minimise it and carry on working while data is transferred. The host can run unattended, but with an operator an interactive, on-screen, chat mode can be evoked. This allows real time communication when running the program for transfers.

Transferring files brings another dimension to the term "drag and drop". Bring up the on-screen menu and select file transfer which evokes its built in file manager. From this you can use it like windows file manager to create, delete and manage files on the host hard drive. When you want to transfer simply drag a file from your hard drive directory to the other and away it goes. All the major file transfer protocols are provided. Calling an online service is a selection of a menu icon. If you use the same modem, the settings carry over which makes it usable immediately. Just type in

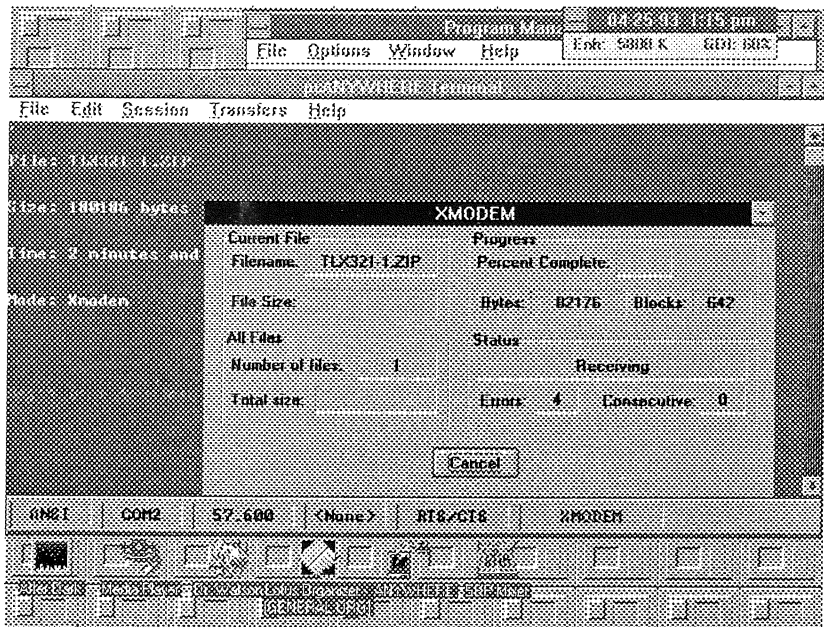


Figure 1. Showing the main control screen for pcAnywhere

the phone number and press call. A phone book is available to store names, numbers and phone settings for that particular service. Script writing is an option, available to make log-ons and menu manoeuvres easy.

**The Good and Bad**

I hope to have conveyed how easy, versatile and powerful this program is to use. However all programs have strengths and weaknesses.

pcANYWHERE has a few stumbling blocks to work around.

As I mentioned earlier we had trouble communicating through a Netcomm M7F thus reducing the time spent exploring the many avenues this program leads.

The terminal window is not scaleable when communicating with a BBS.

As everyone is aware, Windows is a resource hog. Trying to squeeze all that data down a thin piece of copper wire even running with two high speed modems is no easy task. Consequently this program is so *slow* compared to a desktop machine running the same programs. Even on a 386-40 with 8mb of ram and a Actix graphic engine 32 accelerator screen redraws are sluggish. As it turned out it is much easier to navigate with the keyboard than a mouse.

Full screen DOS support is a very good idea.

All in all The NORTON pcANYWHERE is an extremely versatile and easy to use tool for all your connectivity needs. If you are on the road and would rather update the original copy of a database this makes it so simple. Or to place an order, just dial up, the records can be adjusted immediately and an the goods dispatched. As most people hate bringing work home, this program allows any you to carry on as if you were still at work ( is that good or bad! ). Of course this test just scratched the surface of what is a very powerful program. **Highly recommended.**



Figure 2 . pcAnywhere allows you to run programs remotely as though they were on your own computer

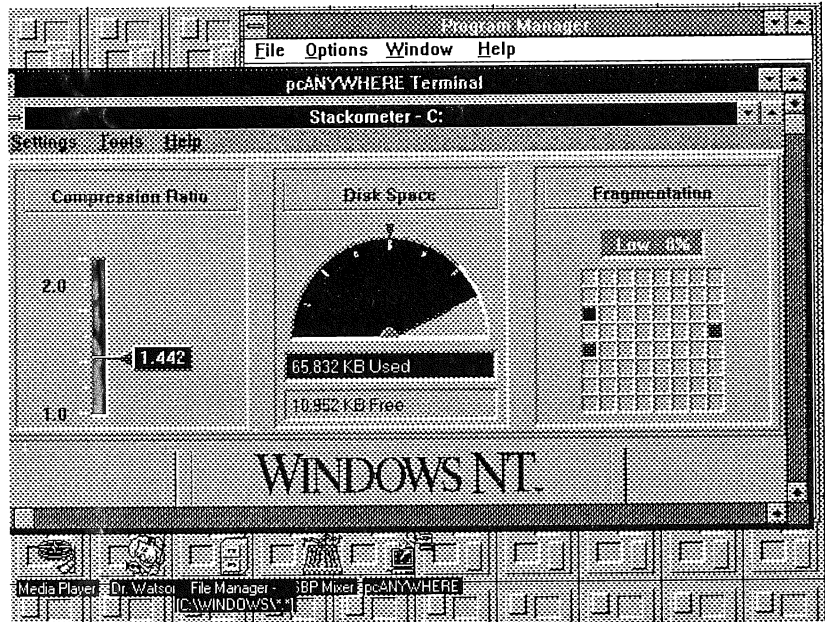


Figure 3. Future needs have been anticipated

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# Arrow Accounting - A Review

Daniele Saunders

## An Australian -owned Vendor

The Arrow suite of accounting software has been developed to create a sophisticated package which satisfies the needs of both the novice and the feature hungry user.

In only two years since its release, Arrow Research Corporation has approximately 1,500 sites in Australia, Chile, New Zealand and the South Pacific. It has an extensive dealer network to service these sites. Arrow is a proudly Australian-owned company which supports the Advance Australia Foundation by attaching the distinctive green and gold kangaroo to their products.

The product is written in Dataflex, a 4GL, allowing flexibility to increase the number of users on system. Providing a wide variety of choice in hardware configurations, Dataflex is ported to approximately 400 different platforms including DOS, Novell, Lantastic, Xenix, Unix and OS/2.

## General Features

The software is quickly and easily installed. Menus are simple and consistent throughout the product. There is an on-line screen sensitive help facility, as well as a very good prompt line help which guides the Arrow user at every point throughout the system. A reasonable manual is also supplied.

Arrow provides a powerful and easy to use series of the pop-up windows and search facilities called Dataview. The consistent use of function keys and menu structures also helps to improve the user-friendliness of the software.

All processing is on-line except for posting to General Ledger, which is batched under user control. As database indexes can be corrupted by power supply problems and unstable operating systems prior to an update to General Ledger or a period-end procedure, it is important to run a System Auditor routine checks for out-of-balance accounts and corrupt data. If

problems are encountered, a report lists the areas needing attention. Utilities are provided which enable end-users (with minimal guidance) to correct the situation themselves.

Current and future transactions are catered for in all modules, and General Ledger allows for prior-period transactions as well. All transactions can be retained for up to seven years, depending on the storage capability of the hardware system being utilised. All masterfiles in the system have an extensive notes facility, enabling additional history to be established on the customer or employee, for example.

Multiple branches and departments can be catered for in the structure of the General Ledger account code. An optional module allows for multi-company processing to occur. An optional security module is also available if required. An export facility is available for linkage to Solution Six, Paxus and Cee Data (soon to be released). By providing your accountant

with direct access to your data, he can review income and expenses, make necessary adjustments to reflect statutory reporting requirements and make more timely recommendations on how to improve your bottom line. The data transferred to your accountant's system reduces the time required to re-enter the transactions, providing more time to evaluate the information. Eventually the time savings should lead to reduced accounting fees and more timely management information.

## Modules

Most cash transactions occur through Cashbook, which then integrates back to Debtors, Creditors and General Ledger. Multiple bank accounts are catered for. Bank reconciliations are simple and effective.

The General Ledger module uses a four digit code and a two-digit subcode/department code. The system can be established

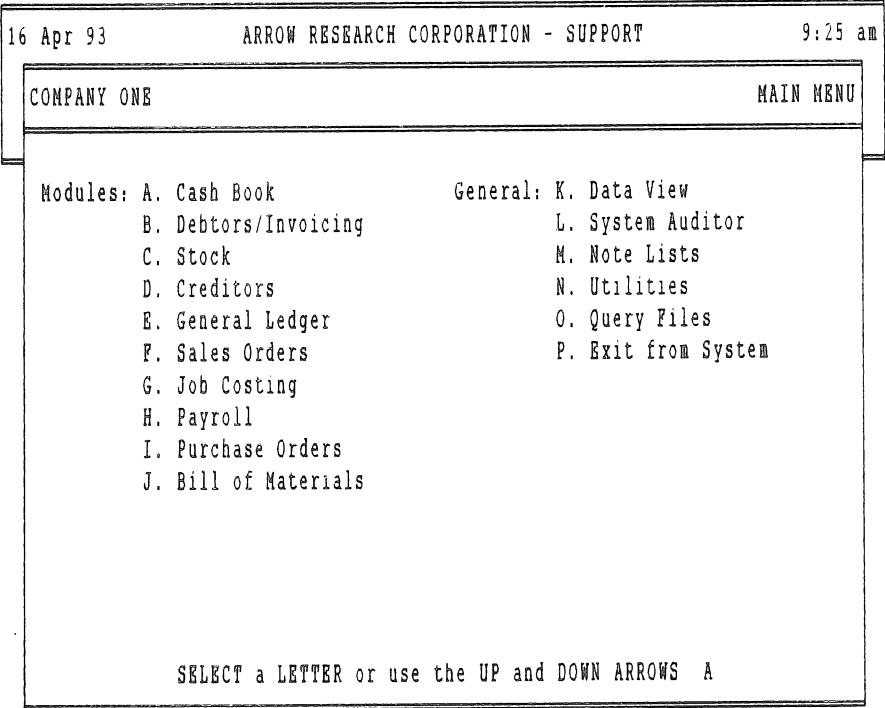


Figure 1. Showing the Arrow main menu screen

for one to thirteen periods per year; budgets can be maintained for last year and next year along with the current year; and account titles can change as account balances move from debit to credit. General Ledger comes with standard Profit & Loss and Balance Sheet reports; a simple, powerful report writer allows customised reporting as well. A Funds Statement is also provided for statutory reporting, if required.

The Debtors module caters for a combination of seven day, fourteen day and monthly debtors. All accounts are aged according to the terms code established for the cus-

tomers. Wholesale and retail sales tax are catered for, as are open item and balance forward accounts. Standard invoicing text can be established with a value, and automatic invoicing is possible if required. this is a very useful feature for organisations that issue regular invoices for the same items. For example, a school can use this facility to issue invoices for each term at the press of a button. The major weakness of the debtor's module is the limited sales analysis facility provided as standard. This has been addressed by providing an optional advanced sales analysis module if required.

The Creditors module caters for both open item and balance forward accounts. The Prescribed Payments Scheme is catered for. Batch cheque printing is available, as is the ability to "hot-print" cheques.

The Stock module groups stock into categories for reporting purposes. An alternate stock code is also included. Three user-defined selling prices are available; and the system provides for standard, average and last costing in stock. There is an optional special pricing module to provide greater pricing flexibility if required.

A new module is Bill of Materials, which works with Stock to provide extra flexibility in small to medium manufacturing businesses. Used with the Sales Order module, finished goods can be created "on the fly".

The Sales Order module provides the ability to issue a quotation, and when accepted, easily convert to an order. Backorders are catered for. Once stock becomes available, automatic allocation of stock is possible. When used in conjunction with the Purchase Order module, backorders can be immediately converted to a purchase order.

The Job Costing module integrates with

markup pricing, and automatic freight calculation by weight.

### Summary

Arrow is aimed at small and medium business. It provides a high level of functionality, often exceeding the features offered by much more expensive products aimed at large organisations. Arrow offers a feature-rich suite of modules which are comparatively inexpensive to buy. It is easy to use and requires minimal training and support.

Hardware requirements vary with the number of modules and the amount of history being retained. A four module system comprising the General Ledger, Cashbook, Debtors and Stock would require about 10-15Mb of disk space. Dataflex, and therefore Arrow, will only run in base memory, so good memory management is important. A minimum of 520K available memory is required for efficient operation. All standard reports from Arrow print on 80 columns.

COMPANY ONE				ENTER DEBTOR INVOICES			
Invoice... 100020 EVERYTHING SHOP				Price.. 1 Discount.. 0.00			
* [Stock/Income]	Quantity	[Price]	Disc%	Disc	Tax%	Tax	Amount
S GLASS002	1.00	56.00					1120.00

Figure 2. Showing the Arrow Accounting invoice entry screen

Notes....	SECOND GRADE GLASS	OnHand...	1120.00
Descn....		Unit....	
Price 1..	Price 2...	Price 3..	

Enter the CODE for a STOCK, INCOME, TEXT or BLOCK TEXT line (N to INSERT)..

Figure 3. Showing the Stock Control screen

Finally, it is important to remember that the accounting software chosen should fit your requirements as closely as possible. This overview of Arrow's features is designed to assist you with the information you can use in selecting essential features to your own operations. Next month I will demonstrate how and why the Advance Australia Foundation and other users chose Arrow, plus some of the ways the product's features are being used to improve the way the users do business.

Daniele Saunders and Partners are an accounting systems consultancy. Daniele can be contacted on the following telephone numbers: 07 371-1717 or 018 889-412.

# TIPS, HINTS, & TRICKS COLUMN

*Readers still like "how to do it" items, despite there being numerous magazines having such columns, so we're continuing this as a regular column for Brisbug PC users. It's also a chance for readers to send in their favorite how to's. If used, your reward will be a gift from Brisbug. You can also request an answer from this column for shortcuts or solutions to problems on any widely used applications which you find clumsy or baffling.*

*Send to: Editor, Significant Bits, PO Box 985, Toowong, Queensland 4066.*

*Contributions should be on floppy disk in ASCII text and printed out. (Some have sent them in Word Perfect and WINWord formats also. That's fine as long as these formats are identified in a cover note.)*

## INKJET REINCARNATION

Like inked ribbons, inkjet cartridges respond to spirits. If you have a nearly full inkjet that has sat idle for a week or so and the face has dried. Take a cotton swab dipped in spirits and wipe it across. Then take a dry swab to clean it off. Then prime the cartridge with a pin. Wipe away the ink and reprime.

## BACKUP

Tape and disk are all right for backup, but if stored for a long period, and if not temperature or humidity controlled, they tend to lose their data. Disks are a bother because it takes so many to match one hard disk. Floppies are also slow. The alternative is to use another hard disk, which can be active—already in place under your main drive. This is fine with a tower, but what about with a small footprint case? Easy—use a hard card. That is most cost effective in the long run. Current discounted prices should be around \$3 per

Mb on a 240Mb card and about \$6 per Mb on a on an 80 Mb card.

## SPACED OUT

Everyone eventually fills his hard disk, even after disk-doubling. Most memory is used for graphics programs, as you well know. So, if you wish to cut out kilobytes In Windows, BMP formats can be changed to PCX formats by using Paint. The can save about one third to one half of the original size of the file in large files. There's another option, which this writer stumbled upon. Convert WordPerfect, Word, WP for Windows, etc. to text files. DOS text or ASCII files take up considerably less space. For example, in Word Perfect 5.1, a file with one graphic and five text pages took 13,938 bytes. When reduced to text, it took 6645 bytes, a savings of almost 210 per cent. A straight text file, a two page letter, of 4031 bytes was reduced to 1961 bytes, a savings of more than 200 per cent. If the file is left in the word processor subdirectory after deleting the original, the file can be called back in its original format with a minimum of fuss.

Under Windows, the savings is not as dramatic, but still substantial. A document of 12530 bytes was reduced to 9256 bytes, a savings of 35 per cent. Here, if format is essential, one can make a template for restoration of the file. But one would guess that recalled text files just need to be readable. Pure text files don't need a template and are restored to the original format in WinWord, at least in every instance this writer tried out.

WordPerfect 5.1 has an efficient cut and paste function. But have you ever tried to cut a section from one document to paste into another? The problem lays with the enter key. Any time the enter key is hit in the process, the cut portion is pasted into whichever document you are in. But it can be done with your mouse. First, "block on" the section you wish to move. Go to edit and cut. Then click on file and exit.

Press F5 to list documents. Now you can hit enter to show the list, because you are in the WP shell. Use your cursor to select the file to you want to insert your text into, then press 1 to retrieve. Use your cursor to point to where you want to insert your text, then hit enter and the text is in place.

## Less RAM cram.

You can get the same amount of RAM memory out of DOS memory manager from EMM386.EXE as the commercial products if you are using a 386 system, by borrowing unused video memory and transferring it to conventional memory. (The following assumes you have a boot disk in case your system freezes.)

Use *DOSEDIT* to open your CONFIG.SYS file. Underneath the

DEVICE=C:\DOS\HIMEM.SYS statement, write

```
DEVICE=C:\DOS\EMM386.EXE 384
RAM I=BA00-BFFF I=E000-EFFF
DOS=HIGH,UMB
```

this is designed for SVGA users not using Windows. Users with VGA can get more memory by replacing BA00 with B700.

If you use Windows, eliminate the first include (I=) statement to avoid a hangup. If you are using Windows 3.1, its EMM386 program is newer and superior to DOS 5s, not DOS 6s, so you can decide which to use.

For Windows 3.1 users, add the following to your [386Enh] section if your SYSTEM.INI:

```
EMMExclude=D000-EFFF
```

This exclude statement in Windows rather than your CONFIG.SYS keeps the WINDOWS EMM386 driver from using this area. It then allows other device drivers that were in conventional memory to move into upper memory.

*Scott Statland.*

*More overleaf*



## Windows—Helping HELP

Add bookmarks to Help topics you frequently consult so that you can read them in one step. Choose Bookmark, and define from the HELP window menu bar. Type a name to identify the topic, click OK. To find that topic later, just select bookmark from the Bookmark menu. Help notes are cryptic. Add your own notes to help topics that took you a while to figure out. Do this by Choosing Edit, Annotate, type in your comments, then Save. Windows puts a paper clip icon next to the title to indicate it's been annotated. Click on the paper clip to read, edit, or delete. Sometimes you want a print out of the help topic for easy reference. If so, click on File, Print Topic with formatting. Or choose Edit, Copy and get unformatted text on the clipboard. Select the text you want from the text window and click on Copy. Paste it into another document and choose the format or font you want.

*Roderick Nelson.*

## HANDY MEMORY DISPLAY

If you use DOS 5's *MEM/C* command regularly but find it inconvenient because you can't scroll up or down once it is on the screen, try this batch file which is a combination of the *MEM* command and Vernon Buerge's *LIST.COM* which is available from the Library if you're not already using it. My batch file reads -

```
@ECHO OFF
```

```
C:\MEM\C\L /S
```

Of course, I have renamed *LIST* to *L* and it is in my *PATH* statement, otherwise I would have put the subdirectory name in front. Likewise, *MEM* being in the DOS subdirectory is already in my *PATH*.

*Geoff Cobham.*

## BATCH FILES AND PKZIP

No one with a DOS operating system can live without batch files. However, they do occupy a lot of disk space, at least 2 Kb, even when a file is only 20 bytes long. This means that typically 30 batch files totaling about 2.5Mb will occupy some 60 Kb of disk space. Then they are disk intensive, requiring a separate disk read for every line.

There is a way of dealing with both conditions. If a RAM disk is installed, all files in your directory called BATCH can be copied to it using the *XCOPY* command in *AUTOEXEC*. This leaves the C drive read/write head in peace and everything works faster. For ramdisk segments of 128 bytes the same 30 batch files now occupy 4.5 Kb.

Back on the hard disk the files are still there. They can be compressed by *PKZIP*. Then all files with the .BAT extension can be deleted. This leaves just one .ZIP file in the batch directory occupying 1/10th of the former space. The entry in the *AUTOEXEC* should now look like:

```
C:\PATH\PKUNZIP
```

```
C:\BATCH\BATCH_PK D:
```

where BATCH\_PK is the name in this example of the compressed file. On booting, these batch files fly into the RAMDISK at an amazing speed.

To add a batch file or edit one, the simplest way is to expand them: log on to the BATCH directory and issue *PKUNZIP \** and all will reappear as they always were. *PKZIP* and *DELe*te when ending the session.

*Geoff Cobham*

## More on Centring WordPerfect lines

Two WordPerfect macros were published in the April issue that centre a group of lines after you have typed them.

A quicker way is to simply {BLOCK} the relevant text, then press {Centre} i.e., Shift-F6. It asks "[Just:Centre] No (Yes)" and you press 'Y'. {Reveal Codes} will now show [Just:Centre] and [Just:Full] codes bracketing the blocked text. You don't really need to make it a macro.

You can do a lot of things like this when blocked text is highlighted. I suspect just about any function that generates a paired set of on/off codes will put that set around the blocked text if {block} is active. You can also spell check a marked block by pressing {Spell} or save the block by pressing {Save} etc etc. See the 'Block, define' section of the manual for a full list.

## Wide (and tall) screens in WordPerfect.

If you have a SVGA card that provides oddball TEXT modes you can use these in WordPerfect. First you may have to use {Setup:Display:Text} and select 'Auto-select', though I think that is the default. Then just use the utility program that came with your video card (probably called *VMODE* or something like that) to select the text mode you want before you run WP. WP auto-senses the number of rows and columns when it starts up and uses them without a qualm.

I routinely use the 40x100 mode that is available on my TSENG chip based Orchid Prodesigner as it has a very nice font style. It also works with the 44x132 text mode but that is a bit small for my monitor and has an ugly font.

However, for some reason WP does NOT auto-sense the (ugly) 60x80 VGA mode - to get that you have to select it specifically from within WP via {Setup:Display:Text}.

If you cannot get this to work check the 'Text Screen Type' section of the Manual - you may have to load a video driver for your card: these are files with a .VRS extension. There are also two command line switches that can get around problems with weirdo text modes (See Appendix 'N' in the manual). The '/ss' switch lets you specify the number of rows & columns (eg WP/ss=40,100), and the '/f2' switch is supposed to handle some of the more bizarre cards.

Some other programs will also auto-sense the number of rows & columns you are using (eg the popular LIST program, 4DOS, and the VEDIT editor), others will only accept the standard VGA 60x80 mode. Experiment - if it doesn't work you will probably just get garbage on the screen and have to exit the program blind (or just RESET). I put my VMODE switches in batch files that change modes and then run the relevant programs. In 4DOS I can check how many columns I currently have from within the batch file and avoid unnecessary switching - long live 4DOS! I also have batches called '100' and '80' to switch modes quickly from DOS.

*Ken Grimes, Hamilton, VIC*

# DOS 6 Revisited

*Rex Ramsey, who reviewed a Beta-copy of DOS 6 last month, takes a look at some improvements to the release version*

By now many members will have tried DOS 6, so I thought that a further article on the subject would be appropriate. A few letters to the editor describing your experiences and opinions of DOS 6 would help all of us in its use.

## Dblspacing partitioned drives

The translation from the Beta version to the official upgrade required a program from Microsoft to enable the conversion to the new doublespace to take place. As I did not feel like waiting, and my Beta version kept reminding me that it was out of date and 'what about a new version?' - the trusty *FDISK* came out and my C drive became a single DOS partition again.

DOS 6 loaded easily and, as suggested, the drive was *DblSpaced* after DOS 6 was loaded. Then Windows 3.1 was loaded. Win 3.1 promptly gave itself a 26Mb swap file for the installation and installed easily. About another 90 megs of programs were loaded and I noticed that loading was slightly slower to the doublespaced disk than to D drive which I had left in its normal state. Roughly the same amount of programs was loaded and C drive took about 25% longer to load than D.

When I looked at C drive the Win 3.1 swap file was corrupted, as expected. This file was deleted and then I drive, *Host\_For\_C*, was enlarged from 2 megs to 10 megs. After that the permanent 8 meg swap file was set from the Control Panel, Enhanced Icon, and has worked without fault. C drive was then defragmented from the *DblSpace* menu and the whole thing took about 1 hour 15 minutes. C drive went from 202 megs to 324 megs capacity.

D drive was *dblspaced*, and automatically defragmented, in about 50 minutes. Since then both drives have worked without any problems. Compression ratios were approximately 1.7 to 1 on each drive. H drive *Host\_for\_D* had 2 megs free space, D drive went from 84 megs to 141 megs.

I did notice that, if a lot of small files, such as Icon, Batch or TrueFont files were

loaded, the time taken to load was longer than that for a bigger file which was about the same size as their combined sizes.

## DblSpacing floppy drives

The next thing to try was *dblspace* floppy drives. 5/14, 1.2 meg disk came out at 2.18 meg, with G as a host for B and a 3.5, 1.44 meg disk became a 2.64 meg with F as a Host for A.

If you do a *DIR* on an unmounted disk it shows *READTHIS.TXT* size 350 bytes and 0 space left. The only problem with *dblspaced* floppies is that each floppy must be mounted from the *DBLSPACE* menu before it can be used. This includes replacing one *dblspaced* disk with another. In contrast, *SuperStor* automatically mounts drives A and B detects the type of disk inserted in the drive. This is much easier to use than *DBLSPACE*, particularly from windows, as *DBLSPACE* will only run from DOS (not the DOS prompt from Windows.).

During one *DBLSPACE* session the default directory was wiped clean when the inserted disk was full. I could not get this problem to repeat. Maybe a one off,

caused by operator error? If you try a 360 K disk message reads

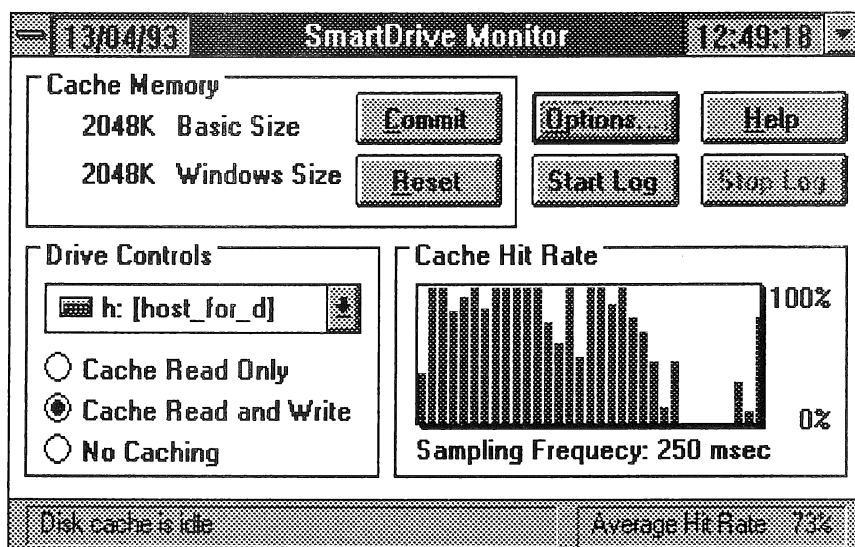
*dblspace* requires 1.1 megs free space.

and *dblspace* reverts to the DOS prompt.

Now that your drives are *dblspaced*, how can you tell the effectiveness of the compression. Type *DIR/C* and each file is listed with compression ratios and the overall ratio is shown at the bottom of the directory listing. Using wild cards and the */S* switch as well can give you details of the compression ratio for all \*.*EXE* files on your hard drive partition as an example.

The *DEFRAG* program works from the DOS prompt, but if you want to *defrag* a *dblspaced* drive do it from *dblspace* menu line, it is much quicker.

The *BACKUP*, *UNDELETE* and the virus checker work well from DOS and Windows. The *BACKUP* and *RESTORE* programs require a peek at the manual as they are not quite as self evident as *UNDELETE* and the virus checker to operate. *BACKUP* shows the expected back up time, number of disks required before starting and shows time taken and compression ratio as well as revising the



*SMARTMON* is used to monitor the performance of the *SMARTDRV* cache and manually force-flush it.

number of disks required during operation. It takes about 45 to 60 seconds to copy a meg of data to the backup floppy. *RESTORE* takes slightly longer, but both show actual disk time and operator time. That is any delays caused by the operator in changing disks etc is noted separately.

Using SMARTMON.EXE

This files comes with DOS 6 and when loaded in windows gives the user a chance to change the read/write state of SMARTDRV as well as flushing the cache. This program can be iconised and kept on top during windows so that it is available at any time with the usual double click (or should that now be *dbl* click?

CHOICE - branching CONFIG files

I tried *CHOICE* in a batch file, combined with a menu config.sys file and it worked as described in the manual and on line help file.

SmartDrive Monitor Options

Cache Hit Rate

Sampling Frequency (in msec)250

Histogram Display Intervals30

Log File

File Namesmartmon.log

☒ Automatic Stop (in minutes)120

Drive Control

☐ Save Setting in DOS Batch File

File NameC:\AUTOEXEC.BAT

OKCancelHelp

SMARTMON is set up from a drop-down Window, and is self-stopping

On-line Help

The on line help file is much better than DOS 5, but if you want a hard copy then with my printer there are no margins so it is difficult to set up in manual form. However, if you save it as a file from the file options, then that file can be handled in Word 2 or Write to give margins and paginations for a do-it-yourself manual to

supplement the main manual and online help. Hopefully Microsoft will produce a DOS 6 Resource Kit with more information for the 'power' user. The only minor difference I noticed was that SuperStor could not be loaded high on the 286 otherwise it worked OK. This may be due to an error in upgrading DOS 6 and I will look into that later.

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# Microsoft's Windows Printing System

by Ralph De Vries

## HP LaserJet 4 envy

When, some months ago, Hewlett Packard, released their series IV LaserJet printer with its higher resolution (600 x 600 dpi), I started to drool, but stopped in a hurry when I thought about the state of my bank balance, plus the fact that I already own a LaserJet IIIP which has only printed some 6000 sheets in 18 months, and thus I would have a great deal of trouble convincing my better half that my printer is worn out.

## Enter the WPS

When I recently had the opportunity to see a proto type of Microsoft's Windows Printing System for HP Laser printers Models II and III in action, I decided there and then that I had to have one of these. The Printing System consists of a cartridge which slips into the font expansion slot, as well as a collection of 79 True Type fonts on disk, and also appeared to offer some very nice additional features which would make my LaserJet IIIP a better and faster printer - still not as good as a LaserJet IV, but getting a lot closer!

Late in May my order arrived - I paid \$218 for the package, which I considered a reasonably good buy, as the RRP is \$315. If you also consider that the two True Type font packs, which are included with the package, will probably sell for about \$150, then the actual cartridge offers remarkable value. However, if you are not in need of extra True Type fonts, the question of value for money becomes a lot more problematical, as I will try to explain....

## The promise of SPEED

What really got me interested, when I saw the Printing System demonstrated, was the speed with which it printed, compared with the standard LaserJet printer driver - it appeared to be at least 50% faster. However this is compared against the standard printer driver, which is supplied with Windows 3.1. Late last year however a new printer driver for the series III laser printers was released, and this little beauty is quite a bit faster than the original HP driver. So when I installed my Printing System on my system (I own a LaserJet IIIP), I did my comparison testing between the Printing System and the HPPCL5MS printer driver (which I downloaded from Brisbug's Bulletin Board), in both cases with Print Manager turned off, and found that, at best, the Printing System was no more than 5% faster.

This was certainly a disappointment, as I had no need

of the True Type fonts, so for me the expenditure of the Printing System cartridge becomes a lot more problematical. However all is not lost, as the new printing system offers some additional benefits which cannot be found in the existing HP printer drivers, be they old or new ones.

## The Setup Menu

Look at the Setup Menu; Notice how neatly everything is laid out here, but in the upper left corner there is the new option to print a multi page document in either collated or non-collated form, as well as the amount of copies required. Apparently this option overrides

similar options in application menus.

The Options Menu offers us the capability of printing on both sides of a sheet of paper (manual duplexing), while taking into account on which side you wish to bind the document. Notice too that there is a scaling option on this menu.

## The Graphics menu

The Graphics Menu offers us a variety of half toning options, as well as brightness and contrast control. It has to be admitted that certain scanning software and graphics packages also offer some or all of

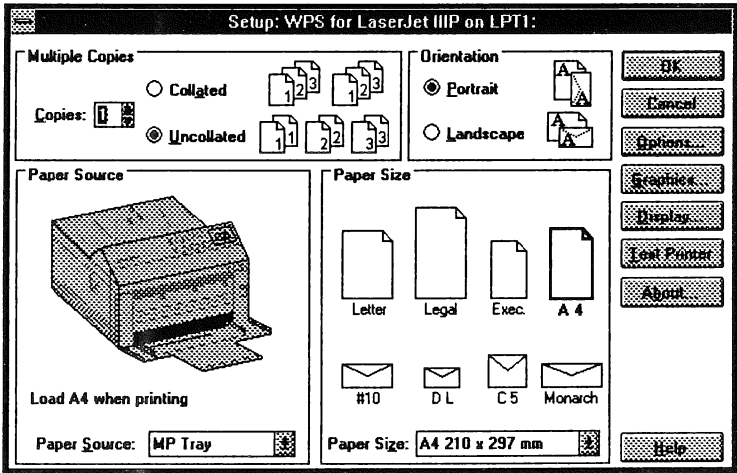


Figure 1. Showing the Windows Printing System setup menu

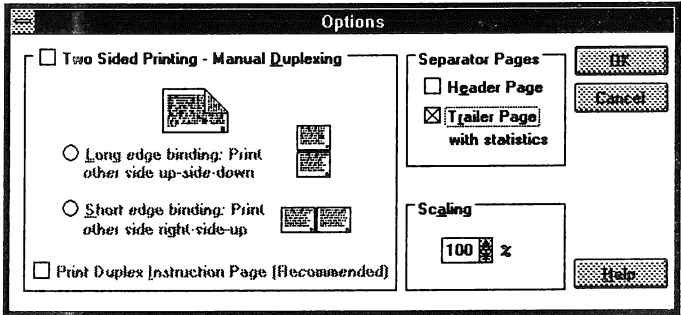


Figure 2. Showing the Options menu

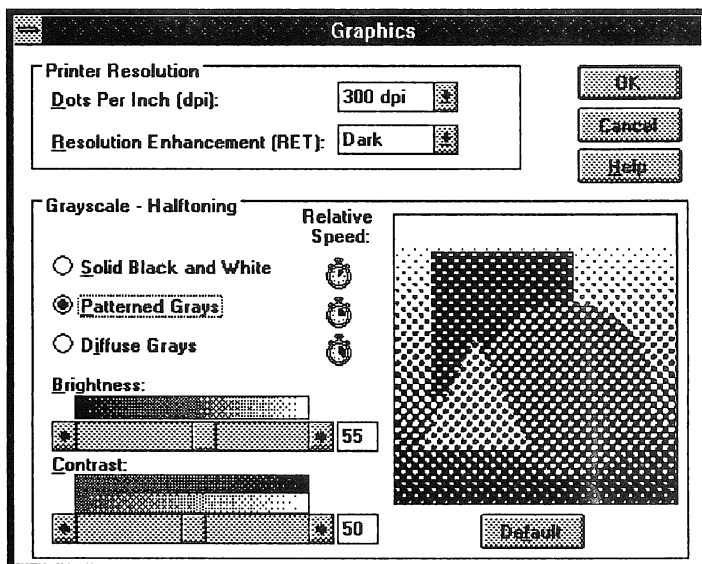


Figure 3. Showing the Graphics Menu with its range of Half-toning options, Brightness and Contrast controls.

It was rumoured that installing the Microsoft Printing System would take the place of installing additional memory in your printer which is normally necessary to print graphics. This is not so - on page 33 of the manual (quite a good one) it is spelled out that, when printing graphics with less than 2 MB of memory, your printer may, in some cases, go down to a lower resolution to print the more memory intensive graphics; hence extra memory is still required if you intend to print graphics.

It has to be stressed that the Microsoft Printing System only works with the HP series II and III printers, although rumour has it that it may possibly also work with some HP clone laser printers. However be advised that Microsoft make no such claims, so you have been warned.

#### NOTE

The MicroSoft Printing System only works with HP series II and series III printers, although rumour has it that it will work with some clones

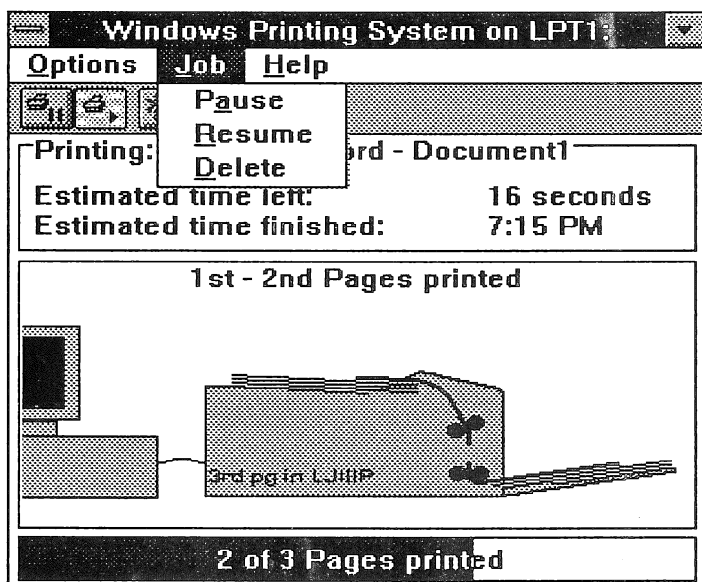


Figure 4. Showing the Status Window which displays the current print status, with voice-over

If, like me, you own one of these older HP printers, and it's far from worn out, you must take a good hard look at this system; you may well come to the conclusion that it is a worthwhile investment, particularly if you don't own many TrueType fonts. The collection supplied with this system (designed by Agfa, Bigelow & Holmes, and Monotype) consists of Microsoft's first True Type Font Pack, as well as their HP True Type Font Pack, and offers a fine collection of fonts, and may well convince you that the Microsoft Printing System is worth the money asked for it.

#### Some afterthoughts

I recently installed an HP Deskjet 500 printer on my son's Windows based PC system. I decided to ignore the printer's own built in fonts and only use True Type fonts. The owner of the printer is a very happy man, and rightly so. Most people would take the output for laser printer output. At about \$700 I can thoroughly recommend the HP Deskjet 500, if a laser printer is beyond your means.

Unless you have to have access to a Postscript printer, I would advise Windows owners to stick with True Type fonts, as the fonts themselves, as supplied by Microsoft and other reputable companies, are considerably cheaper than PostScript Type 1 fonts, such as those used by the Adobe Type Manager system.

Note that we are talking about professionally designed fonts, not shareware fonts, where you take pot luck when it comes to quality.

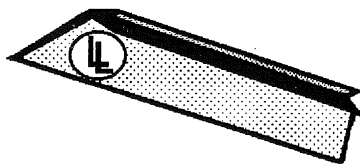
Note again that I am not attacking the printing quality as produced by the ATM system, which is every bit as good as True Type. I am merely looking at the economics of one system against another, and for most users True Type will than be the preferred option.

these options, but, to have these additional controls available from the Printing System when printing the output from a word processor or graphing package, is a decided plus when these applications include graphics.

These options are all pluses in favour of the Printing System. In addition you have the more dubious benefits of additional windows which advice you of the status of the current printing job, with voice annotations via the speaker.exe file

which again is supplied with the system. The sound 'quality' (or lack of it) is dependant on the quality of your PC speaker. Perhaps the American voice who tells you that "Printing started", or "Feed paper" gets you down after a while, but if these options are too much of a good thing you can at least turn them off. I rather like them, particularly if you have walked away from your computer and 'the voice' warns you off a paper jam or a printer error.





# Lindsay's Letter

Lindsay Bates

**W**elcome to another edition of the Letter! And thank you for your calls. They really do help. We never really have much of a break in the computer world, do we? If a month goes by without too much happening, it's not long before it's on again for young and old.

First we've had the release of DOS 6, with all its new goodies. Next we can expect Windows NT, and the new Pentium CPU from Intel. And there's scarcely a month goes by without a new software package is released by someone. All of which means we have to fork out some extra cash - if not sooner, then later. Those who despair about that, well, maybe they're not true computer-heads; for one of the things many of us love about PC's is that something new is always happening.

I hope there's something for you in the Letter - if not, my phone number is at the end. Just give Nettie or me a buzz and let us know what you'd like. Have a really wonderful month!



- ♦ Do you sometimes get just a little flummoxed by the wads of new technology hardware in some of the commercial mags? Me too. It's all so high-falutin' and new-worldish, and it seems to come at you in a mind-numbing stream.

But I thought I picked up something interesting recently. It was about the new bankcard-sized PCMCIA cards that are beginning to be used in smaller hardware devices.

## Practical Computing for Established and New Computer Users.

PCMCIA cards are plug-in, and one of the ideas currently uses the card's Execute in Place (XIP) ability to run software straight from the card. The program can run from flash memory on the card, meaning it's nano-second fast and no actual computer RAM need be used. Nicely sidesteps the need for tortoise-speed floppy-drives too! As we're inexorably moving towards an era where we'll all be using smaller computers, this ability to plug-and-play or plug-and-load sounds like something that could well take on.

- ♦ Microsoft is striving hard to get all bases covered with one form or another of Windows.

MS say that Windows 3.1 is the medium for individual computer users (workstations), while Windows for Workgroups is for computers on a network (clients). The forthcoming Windows NT is for power-users they say, and, in a special format, for network file-servers.

But the software giant isn't stopping there. Now it's aiming at putting versions of the Windows GUI technology into things like alarm clocks and other home appliances.

- ♦ Notebook computers are slowly becoming more and more competitive with their larger desktop cousins. Increasingly they're becoming available with a decent range of CPU's, including the faster ones. Now they're also being supplied with decent capacity hard-drives. And you can connect them to a network (gives you easy access to printers and other peripherals).

Most importantly, they're becoming available with *colour* screens - with resolution and clarity better than desktops - but without it costing an arm and a leg.

Notebooks have got a lot going for them. The next 12 months or so is going

to be interesting. I repeat my prediction that they'll really begin to sell when colour-screen versions become competitive in price.

- ♦ Have you thought about getting that CD-ROM or Multimedia Kit? More and more we're going to see new programs supplied on CD-ROM. I've even seen more exotic programs than most of us use available only on CD!

Let's face it, it's just too easy to install from CD-ROM to continue supplying on floppies. The whole program fits on one CD, it's much faster than via floppy, and best of all, you type SETUP - then walk away.

- ♦ Meantime, if we don't have enough space on our hard-disk (and haven't yet found the dollars for a CD-ROM) disk-compression systems have finally come of age with the introduction of DOS 6.

This version doesn't insist we use disk-compression, but it's going to make a lot of users think twice about staying out of this now not-so-new technology.

The bonus is, like the MSBackup and Anti-Virus, it's free with your copy of the new DOS - especially while it's still at its recommended introductory price of \$99.

- ♦ The "How's that Again?" Department. Not that long ago, I caught a quickie that reported IBM and Canon teaming up to produce the world's first notebook with a built-in printer.

A printer in a notebook?? I found myself thinking: I know IBM's in a lot of trouble, but I did think Canon were still okay... Since then, however, this amazing notebook + bubble-jet combo has been released in Australia.

There's no question we're now miniaturising more and more quickly in the PC world. This is going to affect how we use our computers - and it will affect us all sooner than we think.



- ♦ *Quote of the month (from Australian Personal Computer):* "His[Orville's] theory is that there's a virtual conspiracy, or VIRCON, dedicated to the destruction of all good things; virtual because it's happening accidentally through the combined incompetence of all the whizz kids who create things like computers without properly thinking them through."

- ♦ Did you see the one about the 1930 party question posed by mathematician Frank Ramsay: "What is the minimum number of people you need to invite to a party to be sure there are at least four people who know each other and at least five strangers?"

It was such a strange question that I first checked to see if it was April 1st! In any event, a chain of computers were apparently set to find the solution, and it reportedly took 11 years to come up with an answer of 25 (no, not 42)! There's just one teeny problem with all this apparently. Seeing no one on the planet knows the answer, it's not possible to be sure that 25's right!

- ♦ It's been reported that Microsoft has been publicly accused of not telling software developers the whole story about how programming code works within Windows. Microsoft have denied it, of course. If correct, this would have given MS a decided advantage with their own Windows programs like Word and Excel. Good trick if you can get away with it.

- ♦ *Shades of things to come?* A leggo-block computer sounds like a good deal to me. The notebooks of NEC's new UltraLite range are composed of components that click apart, and so essential bits can be upgraded whenever needed.

Apparently you don't even need a screwdriver, nor any mechanical expertise. You can even upgrade the mono screen for a colour display.

I haven't seen prices for the upgrade bits. Most upgrade paths that I've ever seen suffer from one major problem:

you don't know what to do with the replaced bit, and so the whole deal becomes too expensive. Nonetheless, it's an interesting idea that should catch on.

## New Hardware



Here are a few woopsies from the new DOS 6:

1. **MEMMAKER.** I ran this program to maximise memory, and it really messed up for me:

- (a) It stripped LH (loadhigh) from in front of my network file in AUTOEXEC.BAT. This meant it (they) loaded into conventional memory - making 60K less conventional memory available after running MEMMAKER! I really see no excuse for doing this, especially without telling you.
- (b) It then stripped >NUL from the ends of a number of lines in A.B. This meant that all of a sudden these files started giving all their messages at bootup - a situation that could be *extremely* confusing and upsetting for many users.
- (c) During installation it placed a MEMMAKER line at the end of AUTOEXEC.BAT. I've already spoken about this "add it to the end of A.B" fetish that a lot of installation programmers seem to have.

Because I run into a menu (or Windows - I have two choices) at the end of A.B, my final menu line effectively blocked it off. Result: after it's 2nd (or was it the 3rd?) reboot it failed to run the MEMMAKER line, which appears to clean up MEMMAKER when it's finished. So it *didn't* clean-up. Meaning that every time I rebooted, MEMMAKER gave a message to say it wasn't finished!

Should this happen to you, copy down the line at the end of AUTOEXEC.BAT, then run it exactly as is from the command line.

Eventually I got MEMMAKER to do it all correctly. Lo and behold, it couldn't do any better than the original DOS 6 installation - which had made an amazing 64K extra memory available under my specific setup (yours will be different)!

These MEMMAKER experiences may indicate that users *NOT* conversant with the intricacies of DOS, CONFIG.SYS and AUTOEXEC.BAT may well choose to accept DOS 6's installation as is, and give MEMMAKER a miss.

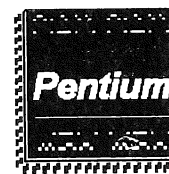
2. **SMARTDRV.** One part of the manual states that the disk-caching system SMARTDRV should be added to the end of AUTOEXEC.BAT. NOT a good idea. Well, not for many users anyway.

If, like me, the end of A.B takes you straight into your menu system or straight into Windows, then as for MEMMAKER above, that's it: effectively SMARTDRV will never run! That's okay if you already have a disk-caching system. If not, I can tell you that trying to run Windows without SMARTDRV - well, you'd have to see it to believe it!

Secondly, if you have any sort of complex bootup procedures in A.B. they will be dramatically slowed with no disk-cache to speed their activity.

The good news is that hopefully SMARTDRV is *already* added to your A.B for you. But if you ever have to do it manually, put it near the beginning rather than at the end of A.B.

## New Hardware



**THE  
PENTIUM  
IS  
COMING!**

*The new super-fast Pentium is on the way this year - or so they say. When it arrives, who will buy it and what will it do that we can't already do?*

Intel's newest CPU (which could have been called the 586, but isn't) is reportedly not too far off its release date. There's no question it's going to be *f-a-s-t*, man - mighty FAST. And - to start with at least

- with a price-ticket closely matching it MIPS.

So initially it's probably going to find itself in more business computer networks than in the 3rd bedroom-cum-office at the end of the hall. The big question is, does it really matter?

As things presently stand in the computer world it's not of too much concern whether you have a 386, 486 or the up-coming Pentium running your DOS or Windows programs. They all do about the same job. In fact, it's pretty-much a matter of pay more and you get more speed - and that's it.

There's no question the Pentium is going to put more raw speed at our fingertips than most of us could even imagine, *but* . . . (there always has to be a but, doesn't there)!

The but is the company that this at-the-very-cutting-edge-of-new-technology CPU will be keeping. Let's look at some of it.

## 64-BITS, OR 16?

The Pentium may be speeding its data round in its gizzards using 64-bit words, but that's going to take one heck of a (brand new) mother-board to effectively handle. Sadly, the computer industry always seems to be overly concerned about the number of pennies it can ship it's PC's to us for.

So it's more than likely we'll see the Pentium seated firmly on an EISA or even an ISA main-board, with it's mish-mash of old 8-bit, 16-bit and 32-bit technology. Can you imagine how much that will prune off the new chip's zero to one hundred times?

Next, it's likely that the Pentium will be driving an IDE hard-drive like you already have in your 386 or 486. Combine this oh-so-slow technology with a slow main-board, and the exhilarating speed of the thoroughbred in full flight has now been reduced to the slow trot of a draught-horse.

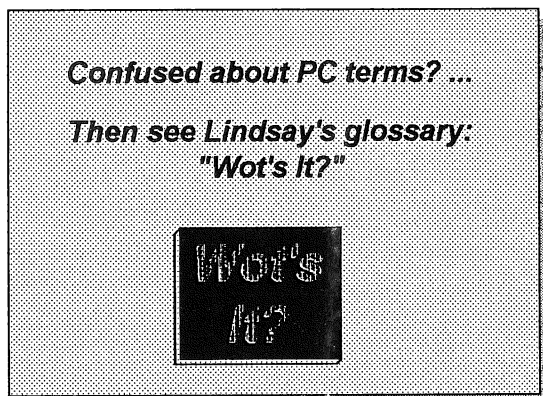
It's true that the industry is currently trying really hard to get 32-bit local bus technology into our computers, in order to run the monitor and hard-drive at some sort of decent speed.

Trouble is the Pentium - to even halfway do justice to it's raw internal speed - needs a 64-bit bus right through. And

(probably prohibitively expensive) 64-bit monitor cards; and 64-bit cards for the hard-drive also . . . No, scrub that.

We *do not* need a hard-drive at all. We need some form of electronic memory (maybe like flash cards - which we already have, but thus far the industry seems to think they're too dear) to do away, once and for all, with the dreadful speed reductions caused by our current mechanical hard-drives.

What's clear in all of this is that chip-maker *extraordinaire* Intel is currently



about 1,000 light years ahead of the rest of the hardware industry.

All I can hope is that the next 12 months will see some better decisions from the corporate computer board-rooms, bringing things like fast electronic memory into the Pentium-based PC, and doing the exercise of producing a decent mother-board that will do justice to the new chip's capabilities.

Without things like this, the Pentium will be *f-a-s-t*, man, mighty FAST - but the rest of the computer will reduce it's speed, at best, to a fast walk.

## Education



*One of the more difficult tasks for the computer user is to keep up with the terms being used in the computer world. Here are some for PC's running DOS as the operating system.*

## THE COMPUTER FAMILY

*Desktop Computer.* Separate computer, screen and keyboard.

*Notebook.* Portable computer, small enough to fit in briefcase, all-in-one, usually battery driven.

*Laptop.* Similar to a notebook but larger. Basically Laptops are older technology.

*Workstation.* Sometimes means a single-user desktop computer, but may also refer to a networked computer.

## NETWORKED CGMPUTERS

*Network.* Cables connect each computer to other computers on a network. Mostly these cables connect to a network card inside the computer.

*Slotless Network.* A network for two PC's, connected via serial or parallel port cables. No cards are required, hence the term 'slotless'.

*Server.* Computer on a network (usually a desktop) which other computers have access to. They do this to be able to use its resources. There may be a number of servers on a network.

*Client.* Computer on a network that other computers do not have access to. Instead it will access a server's resources as needed.

*Peer.* Computer on a network that's been configured to be a server and a client, thus making it equal with other peers on the network. It can share its resources and access the resources of other peers and/or servers.

*Peer-to-Peer.* Peer computers connected in a network.

*Workstation.* Client computer on a network; the term may also mean an individual computer not on a network.

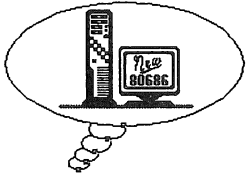
*File Server.* Same as server, but usually a dedicated machine that shares its files and peripherals with a number of clients.

## PERIPHERALS

*Keyboard, Tactile.* Generally a keyboard where the keys gives a metallic click when pressed. Often considered a typists' keyboard.

*Keyboard, Non-tactile.* Generally a keyboard where there's no metallic click when keys are pressed.

## The Market



### WHAT'S SELLING

*One of the major tasks confronting the computer user is what specifications for the computer. Here's a brief round-up of what the market is saying.*

#### 1. RAM MEMORY

Some people are still putting 4Mb RAM Memory into their computer these days. However, users are increasingly going for 8, because more and more we're needing this much memory to efficiently to run modern programs. The good news is that most mainboards allow you to upgrade from 4 to 8 just by plugging in the extra RAM (sadly the same does not apply to upgrade 8Mb to 16).

#### 2. THE MONITOR

A 14" colour, Super VGA monitor is still the industry standard, and is perfectly satisfactory for the average user. While most people do NOT need it for current programming, increasingly buyers are specifying a Non-interlaced monitor (see *Lindsay's Letter*, Feb '93). For this reason, more sellers are bundling the NI monitor with their systems for no additional cost.

#### 3. THE CPU

Not for a long while - or maybe never - has the industry been quite so volatile, with people choosing a wide range of CPU's to suit their computing needs.

The 386SX-33 is about the "least" computer you can buy these days, and can certainly be considered an entry-level computer for today's programs.

Many will spend the extra \$100 or two and go up to a 386DX-40 - still one of the best-value systems around, while those who consider that the 386 has just about had its day are specifying a 486.

486's are selling extremely well. While many people decide that a 486SX-25 is a great way to go (low price but it is still a

486), others again outlay the extra hundreds for a 486DX-33.

Faster 486's like the DX-50, the DX2-50 and the newer DX2-66 are selling in fewer numbers, commensurate with their higher price-tags.

#### 4. THE COMPUTER CASE

Not all that long ago it seemed that the market discovered the *Mini-Tower*. It's been around for ages, studiously ignored by most buyers. Suddenly it's come of age. The *Desktop Case* is still chosen by some, while fewer spend the extra to get a *Medium-tower*.

#### 5. THE FLOPPY-DRIVES

While the more compact and more convenient 1.44Mb format is being favoured by more and more people, the fact is that there are still an awful lot of 5 1/4" diskettes still around. Thus most purchasers today are putting *both* floppies in their machines (3 1/2" and 5 1/4"), enabling them to read and write to 360K, 720K, 1.2Mb and 1.44Mb diskettes.

#### 6. THE MOUSE

A *Microsoft-compatible* 3-button mouse is being specified by nearly all computer buyers. It doesn't add to overall cost much at all, and it's not really an option any more with modern programs.

#### 7. A MODEM/FAX MODEM

More and more people are discovering how useful a *modem* or *fax/modem* (card or external unit) can be. The modem allows you to log on to local Bulletin Boards (or boards around the world for that matter).

There you can ask questions and receive answers, download programs, read informative matter, and so on. Those who choose to get a fax modem have the added advantage of being able to send and receive faxes from their PC.

#### 8. MULTI MEDIA

There's no doubt that we're all going to hear a lot more about CD ROM's and Sound Cards. Already numbers of computer users are choosing to add a Sound Card to their PC; or go the whole hog and do it all at once.

Typically, 'all at once' will be a *Multimedia Upgrade Kit*, comprising CD ROM Drive, Sound Card, programs and drivers, various CD's, and often Stereo Speak-

ers as well.

It's especially good value if you can convince your supplier to install it for you as well: once installed you really do have a new world, literally at your finger-tips.

#### 9. THE SOFTWARE

If the hardware you buy has to be what you need for your specific situation, the software is much more so. With hundreds and hundreds of programs to choose from it can be a daunting task, but just about everyone starts with the basics.

It's perhaps somewhat surprising how many people purchase a copy of *DOS 6* and a copy of *Windows 3.1* with their systems. The advantage of doing it this way, of course, is that you nearly always get the software at a nice discount, and sometimes it's installed for you as well.

Also on basics, more and more people are discovering that *Microsoft Works 2 for Windows* is a great way to get a combination Word-Processor, Spreadsheet, Database and Draw program at an incredibly cheap price.

#### 10. THE PRINTER

The printer isn't an option so much as a necessity. *Dot-matrix printers* have been around a long time, but are still the cheapest. Many purchasers buy a low-end 24-pin, knowing that Windows will still produce text + graphics for a really professional look.

Those with a few more dollars move up to an *ink-jet* or *bubble-jet*, with resolution comparing favourably with the more expensive Laserjet.

*Lasers* are the dearest to buy and the dearest to run, but even though their price has reduced greatly, mostly they're still bought by corporate purchasers.

#### 11. OTHER HARDWARE

*Tape Backup Units* have been dropping in price in recent time, and some purchasers are choosing to install this with their system, but this is still far from common.

Also uncommon is *networking two computers*, but look to this growing in popularity as homes, as well as businesses, get to have two or more computers.

## Education



### A WINTER'S TALE

I've done a survey of the *ATTITUDE* of John and Sally Citizen to using a computer. The results didn't really surprise: both John and Sal believe you buy the new computer, take it home, plug it in - and it will immediately start producing it's magic.

Magic like - doing the books for you. Well, it will, won't it? WON'T IT?? Perhaps it may be illuminating to follow John as he makes his first computer purchase (WARNING: some of the following may bring back painful memories to some).

John actually bought a quite good hardware package. This was much more by good luck than good management - the firm he went to just happened to have a special package deal that was reasonably well put together.

"I can do the books on it, can't I?" he asked the salesman, who nearly did himself a mischief enthusing about the 15Mb of "all sorts of wonderful programs" they supplied on the hard-disk, including, he assured John, a spread-sheet.

"And Sal will be able to do letters to the kids down South, right?" Clearly John was trying hard to reassure himself here.

"No problem," the world's friendliest salesman responded; there was definitely a "quite good" word-processor in amongst the 15Mb he affirmed. That "in amongst" was later to return to haunt John for quite some time.

Back home, John reckoned he'd managed to get everything plugged in to the right place, and tingling with considerable inner excitement, he switched on the power. After a short time, on screen he had a little flashing thingy beside a C>.

It did look like the thing was working, though he was mildly concerned at the black and white display, as he was sure he'd paid for a colour screen. His concern increased as he considered what to do next, and nothing he tried seemed to achieve anything, anyway.

We mercifully draw a veil over the events of the next few hours (it was *not* pretty, not pretty at all).

Sadly, those hours soon extended into days, and then to weeks. On the desk in the spare room was this brand new, fancy computer that John had bought - expecting to do the books, Sal to write a few letters - and he to play a few games, of course ("yep, piles of games," were on disk, he'd been assured).

Trouble is, it was just that: a brand new (well, not so brand new by this time), fancy computer. It did **NOTHING** like he wanted it to do, and expected it to do. It

***It did NOTHING like he wanted it to do, and expected it to do. It was a piece of hardware that, no matter what he tried, seemed to go nowhere.***

was a piece of hardware that, no matter what he tried, seemed to go nowhere.

And he had tried. He tried to read the manuals - sparse as they were - and that didn't help. He rang the store and his now not quite so friendly salesman, and they were even less help.

Sal asked Joan up the road, but even though Joan used computers at work, all they got from her were a vague wave of the hand followed by even more vague suggestions about trying this and that.

John then contacted Peter, a sometime friend from the tennis club. Now Peter *did* know computers, man, did he know them. But after an hour on the phone, listening to Peter speak in a language that resembled English, but clearly wasn't English, the Citizens were still no further advanced.

However, some progress of sorts was being made. By this time John knew that the store had *not* configured his computer. He didn't really understand what "configured" meant, but was given to understand in no uncertain terms that he had **NOT** paid them to do that.

When pressed about what it *would* cost to do the configuration, the fast becoming

the world's most *unfriendly* salesman seemed to be saying that they didn't have time to do such mundane stuff.

John had also established that he did indeed have many, many shareware programs on disk.

He'd even figured out how get a look at the names of the files there. Somewhere in amongst them were his spreadsheet and word-processor. For John and Sal, these may as well have been on the far side of the moon.

John eventually got his computer configured and bought some software which he had installed on his disk. He set about learning how computers work and how to use his.

Like so many of us, despite his quite horrific start, he can be expected to become a quite proficient computer user in time, doing his books on the spreadsheet and giving Sal some time to do her letters. He can even expect to be able to play the odd game or two . . .

The good Citizens had learnt - the hard way - that if you don't start right, it's going to be awful hard to continue.

The good news at the end of the day is that ***in all of the things you need to do and learn, we, at Brisbug, will always be there to do our very best to help you.***

*Have a terrific month and I'll see you next time!*

**Lindsay Bates**

Ph: (07) 808 9441 after 11am.



# OZ-E-Mail -

## A First Look at National E-Mail

*John Massey*

### What's OZ-E-Mail

The heart of the system is a client/server relationship between your personal computer and the OZ-E-Mail host server. A mail communications manager (OCM), links your computer(client) with the host server to provide the access to the OZ-E-Mail applications. Users should be familiar with MS DOS and have a basic appreciation of the concepts of terminate and stay resident programs (TSRs).

OCM and selected client applications can run concurrently on line and as TSRs over other DOS based programs. The program needs about 1.2 Mb of hard disk space and OCM about 17K of RAM as a TSR. A setup program for OCM sets the baud rate, comm port identity, pulse or tone dial, modem initialisation string and dial up number for the service.

A detailed reference manual is supplied with the communications package. It is well laid out but requires patience and persistence to read and digest. It is well worth the effort of sitting down with pencil and paper and pulling out the salient points before delving headlong into the program. Attention is drawn to the load sequence of the TSRs and the conflict with communication ports under Windows.

Since this is a first look at the basic communications package running on a single client to server host connection, I'll leave the integration with a LAN based client system to our LAN experts for comment.

**Client System** (Your Personal Computer) To use OZ-E-Mail, the client must connect to the system, enable file transfer between client and server systems and identify the client to the server system.

**OCM** This is the client - server communications utility. OCM dials up the server via your modem and establishes a connection with the server.

**FTSR** FTSR is a file transfer utility to enable file transfer between your personal

computer and the host server.

**LOGON - LOGOFF** LOGON identifies the client system to the host system and provides access to the server applications.

A simple batch file is a convenient way to load OCM, FTSR and LOGON.

**Server Applications** (OZ-E-Mail Applications) The server applications may be used individually as terminate and stay resident programs (TSRs) or accessed from the shell program HYPRBASE.

**HYPRBASE** A shell program to log on and run server applications and view information from news services via hyper text based "windows".

**FILEFIND** A search program and utility searches by file name, file date, limited to all or selected libraries, or key word searches, the operand "OR" is used for multiple key word searches.

**USERMAN** This application manages the client system; password, personal account details, fees and transaction history, and incoming/outgoing mail

**DS** A utility to provide access to the user database.

**CB** Provides access to a chat type, on-line session, user to user.

**PCMAIL:** PCMail is the E-mail part of OZ-E-Mail. It provides options to store mail on server system, down load to a nominated system or output to a fax. Down load mail to your system, compose messages to send or redirect to an out tray for future upload to the server system.

The output includes E-mail with PCMail to any host system mailbox, any LAN based system running MHS compatible or Microsoft mail, international E-mail to any MCI subscriber, Fax to any national or international subscriber, and letters to any national/international address. PCMail may be used in off-line mode to compose, read or delete messages and queue messages for transmission at the next logon.

The focus of the service is E-mail but access to News, a Shareware library,

Games line and CB line is provided. Local call access is available in Brisbane and the system operates on a fee-for-service basis with the user paying only for those services that are accessed. Transaction fees are charged for specific services like downloading Shareware programs.

The cost for connect time to the system is \$2 per hour (with a pro rata rate). As a guide, E-mail is charged at a base rate of \$0.10 per 1000 characters and Fax charges are around \$1.00 for a two page fax from/to Brisbane. Yes, you can send a fax from your system to a dedicated fax machine.

As the title states, this is a first look and as such only an overview of the service is presented. Rather than introduce more variables into the evaluation, I selected to run this DOS program as a pure DOS program. A Windows version of the communications program will be released later this year.

Communications Software is available from OZ-E-Mail Level 1 McDonnell Douglas House 39 Herbert Street St. Leonards NSW 2065 (008 805 874)

### Editor's Note:

Brisbug has been offered space on the OZ-E-Mail system as a service provider. That is, we can have our own area with information on Brisbug, articles from SigBits, shareware, and any other information we want to put up for public access.

Your committee considers we should take up the offer, which will cost us nothing (except time and hard work on the part of the area manager), and indeed will return us a share of the revenue generated by the public accessing our area.

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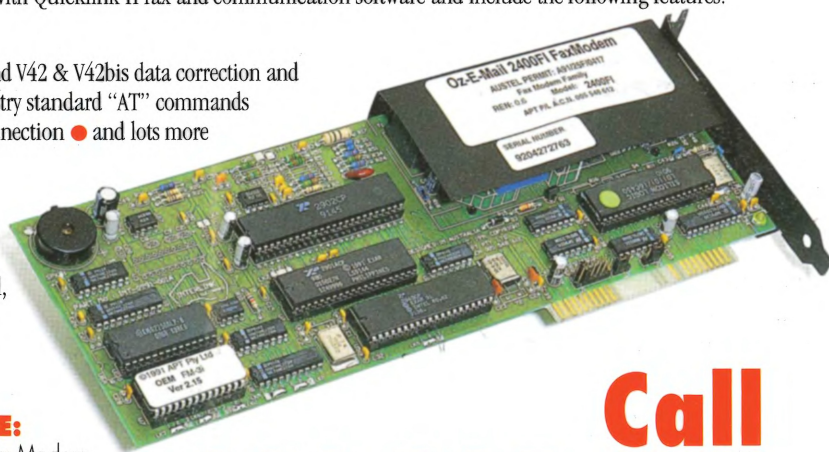
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## Club Activities

# A Colourful, Musical, Remote



*Greg Marsh, surrounded by computer, keyboards, video gear, demonstrates the real potential of the PC for MultiMedia.*

As soon as he started to set up, you could sense Greg Marsh's presentation was going to be unusual.

Who could not be impressed by a pair of sky-blue speaker boxes each 1.5m tall to supplement the PC's inbuilt 4cm one. Then two MIDI-keyboards, a video camera, CD-ROM, and somewhere, lost in the crowd, a 486 to drive the whole show.

Greg demonstrated his musical training and talent with "Music Box", which, by use of MIDI technology and wave lookup tables, can produce hi-fi true instrument sounds without wiping out a hard drives space every three minutes. His grand finale, incorporating live video, embedded sound and text in a PC-based, rather than pre-recorded on CD, was an experience to remember. Poor bloody president had to follow that with a general meeting!

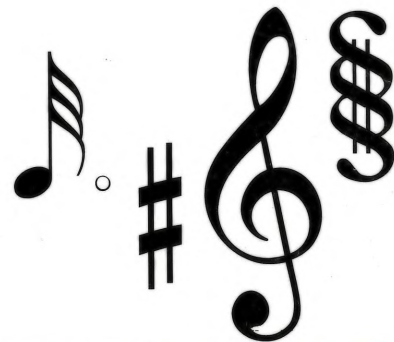


*Need true, blazing colour printed output on a limited budget? Phil Argent (left) and Peter Harten (below) of Practical Peripherals Corp demonstrated the Primera thermal wax transfer printer in the foyer*





# Control, Sunday



The Main Event saw the return of a familiar friendly face, Ursula Walker, of Symantec Corp, who had flown in from Sydney specially to present PCAnywhere for Windows, and Version 7 of the ever-popular Norton Utilities.

PCAnywhere, beloved of consultants for its ability to remotely take charge (and even remotely install itself on) of a client's computer, has had a facelift and a number of added features, and is now available for Windows. It can also create a more than passable local network by connecting two computers by null-modem cable.

Despite the continuing addition of features to DOSes, "Nortons", as it is affectionately known, has continued to prosper, and keep "one-ahead" of the others in the features stakes. An interesting new addition to the international version of NU7 is file encryption. The original algorithm available on the USA version was so good the US Dept of Defence placed an export embargo on it. The code has been rewritten to avoid use of DOD algorithms, but according to Ursula, is still as effective. Our thanks again to Symantec and Ursula for a most professional presentation.

Meanwhile, elsewhere in Bardon PDC (almost said elsewhere in Gotham City), Les cathcart and his keen band of younger PCers were learning the intricacies of archiving, library catalogs, and general matters-PC.

The Junior Educational Group (to give it its formal name, continues to prosper,

*The Junior Education Group attracts about 40 young people on meeting Sundays.*

*Here Convenor, Les Cathcart is explaining the intricacies of archiving to the group*

Photos : Chip Karmatz



*Ursula Walker presents PCAnywhere*

but badly needs some extra involvement from senior club members to help widen the scope of presentations to maintain interest. The hands-on family session is proving most popular, and extra tutors are

currently sought (all offers to Ron Kelly, please).

Again we had a bumper crowd, to the point where we are testing the capacity of BPDC, and need to look at bigger venues.





## Profile

# Greg Marsh - Mr MultiMedia

\*\*\*\*\*

### GREG MARSH MIDI AND ALL THAT JAZZ

Computer presentations these days can be as exciting as film previews. "When the lights go down in the theatre at a Brisbug presentation, it could be a sight and sound fest, with a cinematic 3D screen and stereophonic sound, says Brisbug member Greg Marsh. "The days of a talking head behind a podium and a microphone have disappeared with the onslaught of multimedia, the combination of sight, sound and animation. It isn't just kiddie games and CD-ROMs any longer. Multimedia is becoming the medium of the business world."

Presenter Greg Marsh just proved this as he held a rapt Bardon Theatre audience for more than an hour at the Brisbug April meeting, while he demonstrated how to mix sight and sound, recorded and synthesised music.

"There's a major distinction to make between MIDI devices and sound cards designed to support games programs," said Marsh. "The focus on MIDI is to create realistic musical instrument sounds for the recording industry. This same technology, together with CD ROM, provides accessibility to high quality music and sound effects for use by the multimedia producer."

While Greg is not currently using CD ROM in his work, he is impressed by the range of products becoming available.

This includes digital movies, ie, the Beatles "Hard Day's Night" now on the market—or create your own digital movie. Then there's 'drag and drop' (with a mouse) animation, video capture for graphic frames, or 'point, click, drag, drop and presto an interactive multimedia presentation. Commercials can be created with storyboard graphics with easily edited animation figures. Called imaging, new devices can scan printed matter or capture full colour video images. Even colour separations can now be done for desktop publishers.

Long time broadcasting producer/administrator, video producer and jazz musician Greg Marsh recognised the potential of multimedia about two years ago, when he first added MIDI to the range of audio-visual products he uses in his audio-visual production and hire company. It was a way to meld his love of music and recording with his business.

At that time Greg was expanding his musical horizons by learning to play the Arabic Aoud (Lute). What, you may ask, has such an ancient instrument got to do with computer music? Greg's partner in life, Gloria Malouf-Marsh, is of Lebanese



*Greg Marsh in familiar pose at his keyboard*

nine different instrument sounds at once and it was MIDI equipped.

As a result of having this technology at hand, Greg began producing jazz and pop musical arrangements by "playing-in" all the parts to the sequencer. This was tedious, due to his limited keyboard ability. This prompted him to purchase a Midi interface for his PC and software (Band-In-A-Box) which could produce reasonable five part (drums, bass, piano, guitar & strings) backing arrangements from the chords to any tune. Arrangements may be made in any of a number of musical styles. The program could then write the arrangement to a standard MIDI file and, when exported to any sequencing/editing program, could be further enhanced by such things as adding additional instruments, editing existing tracks and adding melody lines.

Greg was always interested in music, having studied classical guitar at the Queensland Conservatorium of Music. From his late teens he began playing semi-professionally as a folk musician and, in later years, went on to play jazz at festivals and

*Greg's work currently includes digital movies and "Drag-and-Drop" animation, video capture for graphic frames and interactive multiMedia*

extraction and plays piano. Greg needed an accompanist and the accompanist needed an electronic keyboard. After looking around for a suitable instrument they purchased a Roland D20 keyboard/synthesiser. Not only could this keyboard make the required Middle-Eastern sounds but it had an on-board sequencer that allowed the recording and replaying of



clubs. In the other half of his life, he was a founding partner in 1978 in Parimar Productions, an audio-visual and film production company. In 1981 Greg became the Manager of Brisbane's Radio 4EB. During his nine year stint with the station, he also lectured in current affairs TV production at the then Queensland Institute of Technology and, for four years, provided news and current affairs stories to SBS Television.

## 4EB buys an ICL

He remembers his delight when, in 1983, Radio 4EB, paid \$15,000 for an ICL computer which ran CPM, had a hard disk capacity of 5 Megabytes and an operating speed of 4.7 Megahertz. This, whilst laughable by today's standards, was Greg's introduction to the sheer power of computing. His use of the computer, at that time, was limited to word processing, spreadsheets and data-base.

It was at the radio station that Greg first worked with the computer as a musical tool. During production, he was able to synchronise, record and mix music which comprised a combination of live musicians and MIDI generated synthesised instruments provided by studio clients.

This was an extension on the well established practice of multi-track recording where each instrument in an arrangement is allocated a separate track on the tape recorder (4, 8, 16, 24, track recorders). The computer technology to manipulate MIDI instruments was readily available for Atari and Macintosh computers at this stage. It was to be some years before this same technology was to become available on the PC.

*Cont'd over*

## The Multimedia PC (MPC)—Making It on Your Own

Upgrading now, more likely than not, means adding multimedia to your 386+ system than adding any other components or peripherals. Mainly, it isn't terribly functional like e-mail or a laser printer. It just lets you jazz up your PC with sensory media—sound music, animation and TV. The right selection of hardware and software let you run futuristic home and business applications, interactive presentations, training and tutorial programs that make dull talks come to life. You can make your stereo speakers scream with sound effects and embed your voice in a spreadsheet or see animation in a resizable window.

In 1991, Microsoft led the charge to set standards for MPC—the minimum being a 386 machine with 4Mb of RAM, a VGA monitor, Windows 3.1 (or Windows 3.0 with Multimedia Extensions), a sound card and a CD-ROM drive. For anyone wishing to go that way, multimedia kits are readily available for an entry price of about \$650. Their advantage is that installation can be done by yourself or a local dealer and be relatively free of certain interrupt headaches if you buy non-integrated components. Cables and connectors are included when you buy a kit. Also kits usually come with several CD-ROM disks, such as educational games, interactive encyclopaedias, atlases or histories.

One multimedia application that is in Windows 3.0 and not in 3.1 is Music Box, which allows you to control your audio CD player, type in track numbers and hear songs in whatever order you choose. Windows 3.1 lacks joystick drivers and a sound reference in the WIN.INI file, thus installation of your sound card is not automated. Instead, you have to do this through the Windows drivers. (There are also several available DOS-based multimedia applications that don't require Windows.)

The base system is a lot quicker with a 386-33 than an SX, with 6 Mb of RAM, a 256 external cache, a super VGA graphics accelerator card and at least a 150 Mb hard disk, plus mouse and joystick. If you are going to do any photo, audio or video editing, add more of the above plus a video card capable of 24-bit colour. A MIDI keyboard is required if you are going to be a Greg Marsh and write your own music, use a camcorder to shoot video and a video-capture board, the video blaster.

### CD-ROM Drives

You will need an MPC CD-ROM drive, the disks of which hold about 650Mb of data or 70 minutes of music for use with text databases, video or animation. (Note that Greg Marsh does his recordings without a CD-ROM at this point, but is about to add one.) The drive must offer a minimum of 150K of continuous transfer rate (most

*Continued over*

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"Likely ninety per cent of the music one hears on radio today is a mix of live and synthesised instruments," said Marsh. "The beauty is that composers and arrangers may prepare much of the material on computer, prior to engaging a recording studio with the attendant high hourly cost."

Greg is now creating total multimedia presentations for business clients, the most recent being for Smorgon Fibre Containers. This was for a continuous running large screen presentation at the recent Castlemaine open day at Milton. Greg showed part of this presentation to the Brisbug April meeting.

Clients range from chemical and cosmetic companies to heavy metal and manufacturing industries. Greg's services include scripting, background music composition and production, videographing and editing, plus voice-over (a broadcast technique). All components are then brought together on the PC.

Multimedia presentations, used with a live presenter, have the potential for creating more of an impact than any other medium to date, says Marsh, and that's why business organisations are migrating to this new medium.

When will this potential become reality?

"Technically, at this point," says Marsh, "computer multimedia doesn't match other presentation media in quality and flexibility. However, Multimedia has one great advantage. A speaker can integrate different facets of a multimedia package into his or her presentation, creating a synergistic effect."

Notwithstanding his reservations about the current state of multimedia technology, Greg is firmly convinced that it is the way of the future. He believes that within two years the business presentations' world will be revolutionised ..... he intends to be part of that revolution.

shareware programs, ie. ClockMan plays several bars of monophonic ditties along with choices of several animated displays. You can set an alarm to play a certain file on a certain date at a specified time.)

The three basic sound card types are monophonic, stereophonic and the Musical Instrument Digital Interface (MIDI), which can run from \$200 to \$1500, with various hybrids that plug into serial and parallel computer ports. They should provide audio and graphics.

The most important difference of these three grades is the sampling process, which is the A-to-D or the D-to-A conversion. For sound cards, they are 11,22 or 44KHz, with sampling sizes being 8,12 or 16 bits. Low cost monophonic boards sample at 8-bits and up to 22KHz. This would be the equivalent to an AM radio sound. High level sound cards use a 16-bit sample with a 44KHz rate, the quality of the typical CD player. (See the Microsoft Sound Card review in this issue. It uses a 16-bit sample-size and the 44 KHz sample rate.)

Some sound cards have integrated CD-ROM controller circuitry, so that you need only one slot for both your controller and sound card. In addition, you may wish to buy special speakers or a microphone to add to your sound card. The speakers must be magnetically shielded or remote from your PC, otherwise interference results. As for a microphone, inexpensive ones are available from Dick Smith or Tandy.

Tech note: A MIDI file requires only 1/1000 the space of a .WAV file. It contains instructions for recreating music in a synthesiser chip. When you play a .WAV file and MIDI file together, the controller directs the MIDI data to the FM synthesis chip, which reproduces music using two or more waveform operators that modulate each other at frequencies to produce musical tones. The tones are then converted to analog sound and sent to the mixer chip, where it is mixed with the .WAV file.



## Video

*Impractical!* The MPC spec doesn't have a good video standard. Because digital video takes up an enormous amount of space on a hard disk, compression has to be used. One second of high quality video, for example, takes up 50Mb of disk. However, Microsoft has come up with the AVI (Audio Video Interleave) standard, which will allow software makers to produce CD-ROM disks that show full motion video, not the jerky animation that you see today. The AVI-based software will likely hit the market this year. But unless you want to add a laser disk to your configuration, there's no way to add full video to your presentation.

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# Learning QBASIC - Part 10

Dan Bridges

The aim, this month, is to consolidate your understanding of DOS interrupts by making extensive use of them in the QDIR directory listing program. QDIR has the following features:

\* All disk and directory information is supplied by DOS INT 21H functions (not by the kludge of executing a DOS DIR and redirecting the result to a file and then using sequential file reading and string manipulation to get the information back into QBASIC).

\* Sorting by Filename (default), Extension, Date, Size, Reversed and Unsorted. In the normal direction sort orders the directories are at the top of the display.

The Extension Sort also aligns the extensions to enhance visual scanning.

By Name (default)

QDIR.BAS	24,412	1-03-93	23:55:02
QDIR_ONE.ALT	27,756	28-02-93	5:21:26

By Extension

QDIR_ONE.ALT	27,756	28-02-93	5:21:26
QDIR.BAS	24,412	1-03-93	23:55:02

\* User-defined colours for each line based on extension (a la 4DOS). For example: Directories in Bright Green, COMs & EXEs are Yellow, various types of archives are in Cyan.

\* As well as totalling the size of the files matching a filespec, the final summary

also includes disk space occupied (with a wastage percentage due to cluster size), free disk space and total disk space (I operate on many different HDs/Partitions both at work and on clients' machines and both 4DOS DIR and DOS DIR don't show total disk space).

\* Good Performance compared to professional designs. While some assembler routines in the sorting department would be of assistance, the program's performance, as is, is quite good.

The following timings are taken on a second invocation so the system's disk cache is being accessed rather than the hard disk. This concentrates attention more on program performance. All directory listing programs will have about the same

overhead from the HD overhead on an initial invocation.

The timings refer to a QuickBASIC-compiled version. Both QuickBASIC INTERRUPTX and the QBASIC-compatible INT21 versions were tried.

TIME TO EXECUTE "DIR" COMMAND			
Sorted by Filename	QDIR	4DOS	DOS 6
(compiled in QuickBASIC)			
Standard Video Handling	7.8	7.5	8.7
In a DESQview Window	4.4	3.6	5.6

Figure.1 Time Comparision (in seconds) of a Directory Listing containing 294 files, sorted by name.

A listing of 14 files sorted by the default filename takes about 1/10 of a second which appears faster than either MS-DOS 5's COMMAND.COM or 4DOS.

A listing of a large utility directory (294 files) gives QDIR a better workout. See Figure 1, below.

The timings for more than about 20 files (without use of the "P" Pause switch) will be affected by the scrolling speed of the video system. This can be clearly seen by comparing the timings when the same test is performed while running DESQview. Being a multitasker, DV imposes some CPU overhead on the program compared to stand-alone operation. However DV provides its own superior video scrolling routines and alleviates this bottleneck to some extent. The tests were performed with an EGA card (Mono was quite a bit faster). The video BIOS in all tests was loaded into shadow RAM.

Figure 2 shows QDIR in operation.

## Practicality

The major difference between QDIR and DOS & 4DOS comes in the area of error handling. While QDIR handles nonsense and nonexistent filespecs with aplomb, it locks up if you issue "QDIR A:" without a floppy in A: drive.

QDIR is really only practical as a compiled program written in QuickBASIC. This is due to the lack in QBASIC of the COMMAND\$ function which returns what was typed after the program name. This means a filespec and any switches can not be read into the program directly. While it is relatively easy to get a program's command line with DOS INT 21, Function 62H (Get PSP Address - Offsets 80H to FFH in the Program Segment Prefix contain a 128 character command line string plus terminator) the problem is that QBASIC won't start if it sees a filespec or unrecognised switch after "QBASIC /RUN QDIR".

It is possible to pass a filespec and switches

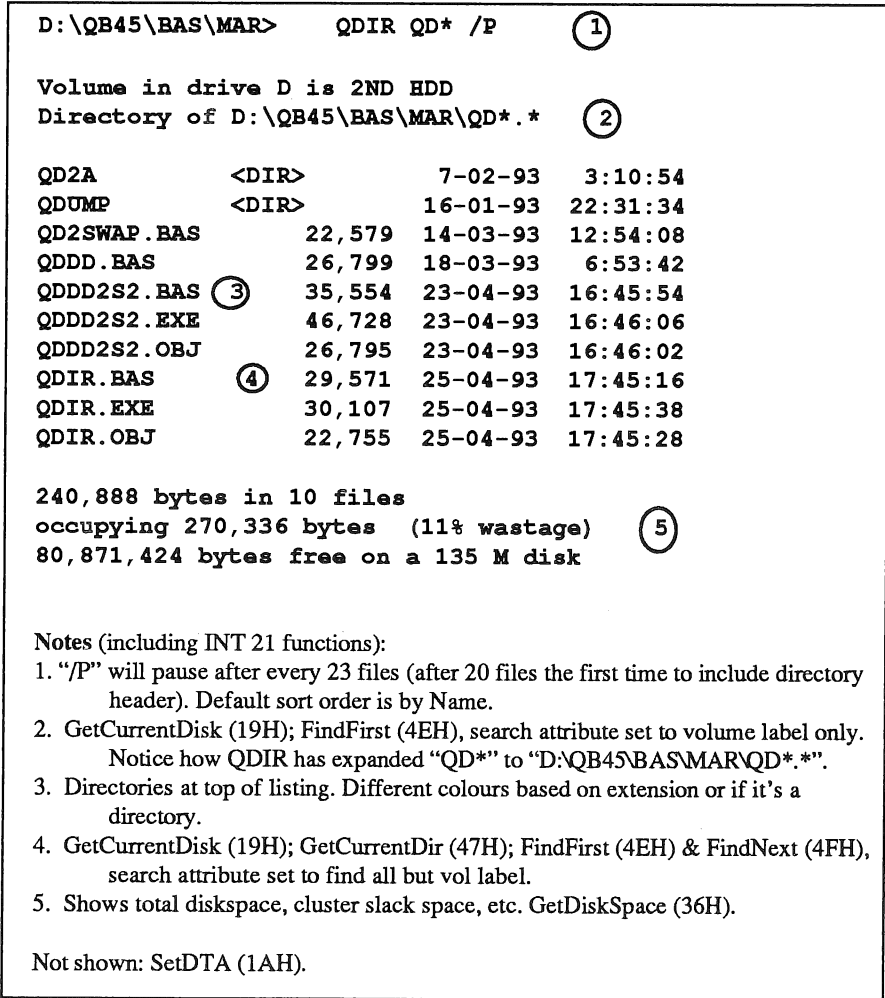


Figure2. Example of QDIR in use.

INTCODE.BIN

into QBASIC via the environment and read it using the ENVIRON\$ ("environmental variable") function. However the problems under DOS of the temporary lack of environmental space in a batch file and the time taken in QBASIC to load and parse the program tends to discourage such efforts.

Considered in total, QDIR, although critically flawed in the "drive not ready" department, provides plenty of examples of INT 21H use and demonstrates what a complex task it is to interpret a filespec the way other command interpreters do.

Figure 3 lists the INT 21H functions used in QDIR.

Even if you don't intend to create QDIR, I'd strongly suggest that you perform the DEBUG/QBASIC exercise mentioned later so as to develop a good understanding of how a file's Date and Time are stored.

In the last instalment of this series (Feb 93) we used GET to read a binary file called "INTCODE.BIN" into a fixed-length static string to provide the missing ability to invoke interrupts in QBASIC. This time the routine has been internalised as DATA statements and has been made specific to just INT 21H. While DATA statements are somewhat wasteful of DGROUP space (a limited area in QBASIC's memory map) and there is the initial overhead of reading in the routine, in the case of invoking INT 21H many times, as when processing 294 files in a directory, it ends up being fractionally faster than QuickBASIC's more generalised INTERRUPTX command.

Program Overview and Development

All interrupt functions mentioned in this article are services of INT 21H. QDIR

works by using the FindFirst function (4EH) to return the first file that matches the supplied filespec. Subsequent calls using FindNext (4FH) find the other files matching the filespec (one file per call). Finally there are no more files found and the Carry flag is set (bit 0 in the Regs.Flag byte).

Each file's particulars are returned in a 43-byte buffer area referred to as the DTA (Disk Transfer Area). The default DTA is at offset 80H in the PSP (Program Segment Prefix - a 256-byte memory block created when a program loads). 128 bytes starting at offset 80H of the DTA is also the area that holds a program's command line so using this as the DTA will obliterate the command line. This can be overcome in a QuickBASIC program (which has the COMMAND\$ function to read this region) by first setting a variable to store the result of a COMMAND\$ function call before invoking any function that uses the DTA. Instead, in this program I've used the SetDTA function (1AH) to set an alternative address for the DTA so that there will be not possibility of the command-line being clobbered.

The file information stored in the DTA after the FindFirst call or after each subsequent FindNext call is then separated in the FillArray subprogram and transferred to a dynamic array called File() and holds composite variables of DTAType (a data type created in lines 17-24).

In an earlier design the array was initially sized to hold just 1 file. A subprogram called TwoPass then made 2 passes through a directory. The first pass just determined the number of files matching a filespec. Then the array was redimensioned to the exact size required and a second pass of the directory was made to fill the File array.

In the design presented here only one pass of the directory is performed to fill the array. The array has been presized to hold up to 2,000 files. It is globally shared since many subprograms make use of it and I wanted to reduce the number of subprogram parameters being passed.

The sorting algorithm used, an assembly routine to speed up comparison of elements in the File array and a description of various sorting methods deserve a separate article and will be presented next month.

Program Operation

After creating the empty 2,000 element File array the program calls the CommandParsing subprogram. This component splits the command line into filespec and switch parts, based on the location of the first slash. It then calls PathNameParsing. If no specific sort order is supplied, sorting will default to sorting by filename, with directories first.

FindFirst will handle general wildcard expansion (although in this design I've expanded ".." so that the displayed filespec will be more informative) but FindFirst will not handle a missing filespec (if just "QDIR" was used) or a directory name without a filespec ("QDIR C:\DOS"). So the variations possible in a valid pathname/filespec have to be catered for in the PathnameParsing program.

After generating a full pathname/filespec (PathNameParsing) and assigning the SortOrder variable based on the combination of command switches given (in Switches) execution moves to the OnePass subprogram which repeatedly invokes the Dir subprogram to find the matching files. Here FindFirst provides the first matching file and FindNext, in a loop, returns subsequent files until it runs out of files. After each successful find the FillArray subprogram splits up and decodes the returned 43-byte string (DTAContents\$) into filename, extension, time/date, attribute and size and then loads this information into the File() array.

After all the particulars of matching files have been stored, operation moves to the DisplaySequence subprogram. The first part of the sequence (StartOfDisplay) shows the Volume Label of the specified drive (if a label exists) and the expanded pathname/filespec. If no filespec was supplied (just "QDIR") the current directory on the current drive is shown. Invalid filespecs, such as issuing "QDIR .." from the root directory, are handled. (Interestingly, DOS returns an "invalid directory" message when this happens while 4DOS returns the contents of the root directory again.)

The next stage of the display process is to sort the File array based on the sort-order specified. This topic is held over to next month. The program will function with an empty Sort subprogram.

After sorting, the file details are shown by the Display subprogram. This uses the

Function	Registers Before Interrupt	Afterwards
Set DTA Address	AH = 1AH DS:DX points to DTA loc.	-
Find First Matching Directory Entry	AH = 4EH CX = attributes(s) to match DS:DX points to filespec (in ASCIIIZ format)	Error: Carry Flag set AX = error code No Error: DTA contains first matching file info
Find Next Matching Dir Entry	AH = 4FH DTA holds info from a previous FindFirst/FindNext	Error: Carry Flag set AX = error code No Error: DTA contains nextmatching file info
Get Current Dir	AH = 47H DL = Drive Number DS:SI points to loc of empty 64-byte buffer area	Error: Carry Flag set AX = error code No Error: Buffer contains current dir
Get Current Disk	AH = 19H	AL = Drive Number
Get Disk Free Space	AH = 36H DL = Drive Number	Invalid Drive Num AX = FFFFH No Error: AX = sectors per cluster BX = unused clusters CX = bytes per sector DX = total clusters on disk

Figure3. Summary of INT 21H Functions Used in QDIR.

ExtensionColours subprogram to colour-coordinate the various display lines based on a file's extension. Display also ensures that filenames such as "." (current directory) and ".." (parent directory) are not followed by a "." filename/extension separator but instead have "<DIR>" following (as do other directory names).

The Display program also calls ToStringWithCommas to show filesize with commas every 3 digits to improve readability. The ConvDate\$ and ConvTime\$ functions are used to completely decode a file's date/time. (The details are stored in the File array as encoded numbers to reduce storage space.)

A running total of actual disk-cluster usage is kept by calls to SpaceOccupied which uses INT 21H Function 36H

(GetSpace) to accurately determine this.

On to the final stage of the display process: EndOFDisplay. This subprogram shows the total size of files displayed, the disk space they occupy, the percentage of disk space that is "wasted" due to cluster space not being fully used, disk free space and total disk space. The total disk space is shown as either Kbytes (2^10) or Mbytes (2^20) depending on whether or not the drive is less than 3,000,000 bytes. This is done to improve readability and is designed to suit up to 2.8M floppies. Free disk space could also be shown in this manner, if you preferred.

Another version of this program incorporated the "/C" (Cluster space) switch to display individual filesize as disk space used with the abbreviated notation of

- A. Substitute Current Drive and/or Directory if these are missing.
- B. If the pathname contains 1 or more “.” then evaluate them.
- C. If last character in filespec ends in a “\” treat it as a directory specification ie. “FILESPEC\\*.\*”
- D. If filespec contains a wildcard (“\*” or “?”) then:
  - D1. If filespec contains a “.”, leave as is.
  - D2. If no “.” then append “\*.\*”.
- E. If filespec contains a “.” then:
  - E1. If last character is a “.” drop this off and append “\\*.\*” and then try for a directory name match i.e. “FILESPEC\\*.\*”  
If that fails treat it as “FILESPEC.”
  - E2. If “.” is in another position then determine if it’s a directory with an extension. If it is, append “\\*.\*”.
- F. If filespec doesn’t contain a “.” then:
  - F1. Try first for a match as a directory name (“FILESPEC\\*.\*”).
  - F2. If it isn’t a directory name then treat it as “FILESPEC.\*”

Figure.4 DIR Parsing Interpretation Rules.

Offset		Size	Description
Hex	Dec	(bytes)	
00H	1	1	Search Drive Number
01H	2	11	Expanded filespec of files to find (no “.”)
0CH	13	1	Attribute Search Mask
0DH	14	2	Position in Directory Listing
0FH	16	2	Cluster No of Search Directory
11H	18	4	Unknown
15H	22	1	Attribute of found file
16H	23	2	File Timestamp
18H	25	2	File Datestamp
1AH	27	4	File Size
1EH	31	13	Filename + “.”+ Extension + ASCII(0)

Note: The Decimal values listed are counted from 1 (not 0) to assist their use in the BASIC MID\$(String, Start, Length) function.

Figure.5 Layout of the 43-byte DTA (Disk Transfer Area).

“1,071M”, “19M1” (19.1M - used when filesize was above 1M but less than 100M), “56K”, “4K5” (4.5K - 1.4M FD’s have 512-byte clusters), but in an effort to reduce the complexity slightly this has been omitted here (as was the more memory-efficient TwoPass procedure). Attention now turns to specific subprograms.

PathNameParsing

This is probably the most complex section of the program. The first step is to investigate how COMMAND.COM’s parsing operates and then design a work-a-like. To do this, create a suitable directory/file structure on a blank, formatted floppy in A: by issuing the following commands at the DOS prompt:

```
COPY C:\AUTOEXEC.BAT A:\
COPY C:\AUTOEXEC.BAT A:\FILE
COPY C:\AUTOEXEC.BAT
      A:\FILE.1
MD A:\LEVEL1.1
MD A:\LEVEL1
MD A:\LEVEL1\LEVEL2
FOR %X IN (B.1 A C.X) DO COPY
C:\AUTOEXEC.BAT A:\LEVEL1\%X
```

Now issue the following DOS commands and note down any characteristics on how DIR interprets a filespec:

```
1 C:
2 CD\
3 DIR
4 DIR ..
5 DIR A:
6 DIR A:LEVEL1
7 DIR A:\LEVEL1
8 A:
9 CD \LEVEL1\LEVEL2
10 DIR ..
11 DIR ..\..
```

4DOS and Novell also allow extended parent directory addressing eg. “...” = “..\.”, “....” = “..\..\.” etc.

```
12 DIR ..\?
13 DIR ..\*.
14 DIR \FILE
15 DIR \FILE.
16 DIR \FILE\
17 DIR \F?LE
18 DIR \F?LE\
19 DIR \L?VEL1
```

Based on these experiments, and mindful of the fact that given a directory name (without “\\*.\*” following) the FindFirst function will only return the directory name, not its contents, a set of parsing



rules can be deduced. See Figure 4.

The PathNameParsing subprogram incorporates these rules. An important consideration is determining if a given filespec matches one or more filenames or just a single directory (compare the behaviour of Test 7 versus Test 14). The easiest way to do this is to test the status of the subdirectory file attribute bit (bit 4 in the file attribute byte). (How the value of this byte is derived is described later.) This is done by ANDing the attribute byte with 16 (2^4). If the result is True then bit 4 is set.

The best way to get to grips with the working of the parsing section inside the QBASIC program is to try out various pathname/filespecs from different directories. (You can change the current directory inside QBASIC by issuing CHDIR "pathname" in the Immediate Window. You can also use SHELL "A:" to change the current drive inside QBASIC - You can't do this with CHDIR.)

You can quickly get to the subprogram by pressing F7, when you have the cursor on line 1805, to execute to this point (or set a breakpoint at this location with F9) and then use F10 to follow the major operational path of the subprogram (without detouring into any associated subprograms or user-defined functions). If the current drive and/or directory is implicit in the pathname/filespec the program uses Functions 19H (Get Current Drive) and 47H (Get Current Directory) to convert the original filespec to a more meaningful one.

For QBASIC users, after stepping past any line that begins with "Filespec\$=", I'd suggest jumping down to the Immediate Window (F6) and issuing "? FileSpec\$". You can then reissue this later on by using the Up Arrow while in the Immediate Window.

If you have QuickBASIC, set variable watches (Shift-F9) on DTAContents\$, FileSpec\$, CurDir\$ and Remainder\$.

### The Contents of the Disk Transfer Area

The DTA is a 43-byte memory area then contains file data after calling a INT 21H function that uses the DTA as an data output area.

Figure 5 shows the format used to transmit a file particulars when using the FindFirst and FindNext function.

To see what this means in the real world we will breadboard the SetDTA, FindFirst and FindNext functions in DEBUG which, unlike QBASIC, has direct support for interrupts.

First, place another blank, formatted floppy in A: and give the following DOS commands (using a batch file would be advisable so that the file timestamps will be very close to the TIME set value):

```
DATE 31-12-2040
TIME 16:30:40
ECHO 34567> A:A.FIL
ECHO 3> A:BBBBBBBB.FIL
```

Figure 6 (overleaf) shows the DEBUG script file you should create and the resultant printout when it was run. The printout was created by redirecting DEBUG's output to a printer.

The file attributes for use in the search mask are shown in Figure 7. In this example we want to see all files on the floppy (2 in this case) except for any volume label. (The Volume Label is a type of "zero-length" file - a directory entry that has no corresponding FAT entry i.e. it uses no clusters.) If we wanted to find all files every bit (bits 0 - 7) in the attribute mask would set, resulting in a attribute byte value of 255 (FFH). The Volume Label attribute is bit 3 which has a value of 8 (2^3) so to deselect this we place a value of 255 - 8 = 247 (F7H) in the CX register before performing a FindFirst/FindNext.

The attributes are stored at DTA offset 15H. As you can see at the bottom of the printout both files have an attribute byte value of 20H (32 decimal) which means that only bit 5 (2^5) - the Archive bit - is

set. The next 2 bytes (1 word) hold the encoded Time value. Because a DEBUG display has the higher byte on the RHS, when we write this in standard notation the encoded time of A.FIL is 83D4H. This is in hex format. To convert it to an integer, in QBASIC's Immediate Window type:

```
? VAL("&H83D4")
```

This returns -31,788. The reason it's negative is that integers in BASIC are stored in a word so there is a span of 65,536 values (2^16). However integers are also signed, and the highest bit (bit 15) indicates if the integer is positive or negative. This means the signed integer range is -32768 to +32767 (zero has to be included). Now if we try and express a value greater than 32,767 but less than 65,535 as a BASIC integer it comes out negative, as in this case. This is taken care of in the FillArray subprogram by adding 65,536 if the number is "less" than zero. In the Immediate Window try:

```
? 65536 + VAL("&H83D4")
```

That gives 33,748. Since this is greater than 32,767, to store it in the File() array, FTime in DTAType is a long integer.

The time encryption formula is (Hours \* 2048) + (Mins \* 32) + Secs\2. This means that the Secs are stored only in increments of 2 seconds.

There are 30 2-second increments required to span 0-59 seconds. This can be stored in 5 bits (bits 0-4 in the encoded word). To extract this from the word we AND it with 31 which has bits 0-4 set, so only these bits will survive after the AND

File Attribute Mask		
Bit 7	(128)	Unused
Bit 6	(64)	Unused
Bit 5	(32)	Archive
Bit 4	(16)	Subdirectory
Bit 3	(8)	Volume Label
Bit 2	(4)	System
Bit 1	(2)	Hidden
Bit 0	(1)	Read-Only

Figure7. Individual Bits In The File Attribute Byte.

FIG 6.

```
C:\>          DEBUG <INT21.SCR >PRN

F100 L0 0      ; Fill the full segment (10 is shorthand for this) with ASC 0.
A100          ; Start assembling at offset 100H.
MOV AX,1A00    ; Move 1A00H into the AX register. This sets a new DTA address.
MOV DX,200     ; The new DTA offset is 200H in the current segment.
INT 21         ; Perform the interrupt thus setting a new DTA address.
MOV AX,4E00    ; Now put 4E00H (FindFirst) in AX.
MOV CX,F7      ; Set attribute spec to find everything except vol label (bit 3).
MOV DX,300     ; Get the file spec from a ASCIIZ string starting at offset 300H.
INT 21         ; Perform the interrupt to find the first matching file.
MOV AX,4F00    ; Set up AX for a FindNext (this is a follow-up to a FindFirst).
INT21          ; Perform the interrupt to find the next matching file.
              ; A blank line while in assembly mode will end assembling.
E300 "A:*.*)"0 ; Offset 300H contains the filespec to find.
              ; ASCII 0 signifiys the end of an ASCIIZ string.
G=100 113      ; Execute the commands from offset 100h up to, but not including
              ; offset 113H. Stop here and perform a register dump, showing
              ; next command to be executed.

D200 L2A       ; Dump at offset 200h (the new DTA) for a length of 2AH bytes
              ; (this is a length of 43 bytes counting from 0).
G=113 118      ; Execute the code to perform the FindNext follow-up.
D200 L2A       ; Check the new contents (details of the 2nd file) of the DTA.
Q              ; Quit.
              ; Leave a blank line after "Q" before saving scriptfile.
```

```
-F100 L0 0
-A100
10CF:0100 MOV AX,1A00
10CF:0103 MOV DX,200
10CF:0106 INT 21
10CF:0108 MOV AX,4E00
10CF:010B MOV CX,F7
10CF:010E MOV DX,300
10CF:0111 INT 21
10CF:0113 MOV AX,4F00
10CF:0116 INT21
10CF:0118
-E300 "A:*.*)"0
-
-G=100 113

AX=0000 BX=0000 CX=00F7 DX=0300 SP=FFEE BP=0000 SI=0000 DI=0000
DS=10CF ES=10CF SS=10CF CS=10CF IP=0113 NV UP EI PL NZ NA PO NC
10CF:0113 B8004F MOV AX,4F00
```

```
-
      FILE ATTRIBUTE      TIME STAMP
-D200 L2A
10CF:0200 01 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F F7 00 00 00 .????????????....
10CF:0210 00 00 01 00 00 20 04 83 9F 79 07 00 00 00 41 2E .....y....A.
10CF:0220 46 49 4C 00 20 20 00 00 00 00 00 00 00 00 00 00 FIL. ....
-G=113 118
      DATE STAMP          FILE SIZE
```

```
AX=0000 BX=0000 CX=00F7 DX=0300 SP=FFEE BP=0000 SI=0000 DI=0000
DS=10CF ES=10CF SS=10CF CS=10CF IP=0118 NV UP EI PL NZ NA PO NC
10CF:0118 0000 ADD [BX+SI],AL DS:0000=00
```

```
-D200 L2A
10CF:0200 01 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F F7 01 00 00 .????????????....
10CF:0210 00 00 01 00 00 20 D5 83-9F 79 03 00 00 00 42 42 .....y....BB
10CF:0220 42 42 42 42 42 42 2E 46-49 4C BBBB.BFIL
-Q
      FILE NAME & EXTENSION
```

Fig.6 A DEBUG Script (INT21.SCR) and Subsequent Session (As A Printout) When It Was Run. Don't Include Comments In Scriptfile.

and then multiply the result by 2 since every value stores a 2-second increment. In the Immediate Window enter:

```
? (33748 AND 31) * 2
```

In the formula, Mins is multiplied by 32. This is so minute storage will start on bit 5 ( $2^5 = 32$ ). The minutes span is again 0-59, but since every minute rather than every 2nd minute needs to be stored we need 6 bits ( $2^6 = 64 = 0-63$ ). These are stored in bits 5-10 in the encoded word. To extracting the minutes in the Immediate Window type:

```
? (33748 \ 32) AND 63
```

The first step here to divide (using integer division for speed) the word by 32. This is equivalent to stripping off bits 0-4 so that bits 5-10 are now bits 0-5. (Every time we divide-by-2 we lop off a bit from the RHS.  $32 = 2^5$  so 5 bits need to be lopped off). Now that we have the bits we want in the lowest position we AND them with 63 to extract only the lowest 6 bits.

Because the first 11 bits are needed for minutes and seconds, the hours value is stored starting at the 12th bit (bit 11) so we integer divide by 2,048 ( $2^{11}$ ) to strip off bits 0-10.

```
? 33748 \ 2048
```

The span of Hours is 0-23 requiring another 5 bits which brings us up to full usage of the Time word's 16 bits. To have stored seconds in 1-second increments would have required 17 bits in all which would have been very wasteful.

So the timestamp of A.FIL is 16:30:40. Because of the slowness of floppy access the timestamp of BBBB.BBBB.FIL is 16:30:42.

In a similar fashion Date is encoded. The encryption formula is ((Year - 1980) \* 512) + (Month \* 32) + Day.

The storage requirements are:

Day.

Span = 1-31. 5 bits. Bits 0-4.

Month.

Span = 1-12. 4 bits. Bits 5-8.

Year.

Span 0-119 (1980-2099. Limit imposed by DOS). 7 bits. Bits 9-15.

The Date word starts at offset 18H. The numeric value of A.FIL's 799FH is:

```
? VAL ("&H799F")
```

That is 31,135. To decode this use:

```
? 31135 AND 31 'Day
```

```
? (31135 \ 32) AND 15 'Month
```

```
? (31135 \ 512) + 1980 'Year
```

In this example they return the date of 31-12-2040. Based on the previous discussion of decoding Time I'm sure you have little difficulty understanding how they were derived.

The first date that has an encoded value greater than 32,767 is 1-1-2044 so I haven't bothered going to a long integer for the Timestamp whereas with the Timestamp it is a necessity (16:00:00 or later exceeds 32,767).

The date is a double word that starts at offset 1AH and, by using a long integer, QDIR can handle a filesize up to a positive value of 2,147,483,647. *Note that with these two files the sizes are 7 & 3 bytes respectively even though we only echoed 5 & 1 characters when creating them. This is because ECHOing adds two extra characters: a Carriage Return and a Line Feed.*

### How does FindNext know where to continue searching?

So far we've looked at the DTA as an output area for file info. However it is also an input area in the sense that the file search specification, file attribute search mask, last directory entry found etc. is stored in part of the DTA for use by FindNext. The information I've seen for the use of the DTA is out of date (the layout must have changed in either DOS 4 or 5) but I've managed to work most of it out.

The byte at offset 00H stores the search drive number (here "01" for A:) while the next 11 characters store the search filespec (without "." separator). In the case of "A:\*.\*)" the "\*" characters are expanded to 11 "?" characters. In the case of "A:\*.FIL" it would be "?????????FIL".

For our next example, alter INT21.SCR so that the E300 (Enter at memory offset 300H) line becomes:

```
E300 "C:\CONFIG.SYS"0
```

Figure 8 shows the result of the second runthrough. Notice how each part of the search filespec is fixed-length. CONFIG" is followed by 2 space characters (20H). Notice also how the byte at offset 00H is 03H for C: drive.

The byte at offset 0CH stores the search file attribute setting. Here it's F7H. The word starting at offset 0DH holds the position in a directory listing of the last found filename. In the case of our earlier example A.FIL was the first root directory entry (since counting is from zero it was shown as "00" while BBBB.BBBB.FIL was "01"). If we were performing a "\*.\*)" search in a subdirectory the first two entries would always be "." and "..". In the case of the second example 60H indicates that CONFIG.SYS (the only file found that matches the filespec) is the 97th entry in the root directory. (Remember that the names of subdirectories coming directly off the root are entries as well.)

The advantage of being able to communicate the last find's position in a directory is so that if another FindNext was performed DOS knows to search later than 60H in the directory for another match.

So far we've only been dealing with files in the root directory. The word starting at offset 0FH is the number of the cluster that stores the start of the directory to search. In the case of the root that's always 00H. In the case of \DOS on my system it's 6EH (cluster 110 - that's also what's shown by Norton DiskEdit). Knowing the cluster a directory listing starts on is equivalent to specifying its name.

As to what the next 4 bits mean (offsets 11H-14H) I have no idea. I know that their value alters when I boot under DOS 5 as compared to DOS 6.

One final point. Referring again to Figure 8, note that CONFIG.SYS was searched for twice. Compare the status of the Carry bit (bit 0) in the Flags section. The first time it's shown as "NC" (No Carry) because the search was successful. However in the second search there are now new matches found so it appears as CY (a Carry has occurred).

Figure 9 has the complete QDIR program listing (with a dummy Sort subprogram).

QuickBASIC user's should use the "/L" switch to load QB.LIB for CALL ABSOLUTE support (eg. "QB QDIR /L /CMD A:\*.\*)").

They should also use COMMAND\$.

### Conclusion

By this stage you should have developed a good understanding of how to use INT 21. Next month we turn our attention to vari-

ous means of sorting the files in the listing.  
One interesting speed-up technique to be  
presented uses an assembly language rou-  
tine to quickly compare the contents of 2  
memory regions.  
You should find it interesting.

Fig.8 Summary Of DEBUG Script Session Using  
"C:\CONFIG.SYS" As The Filespec.

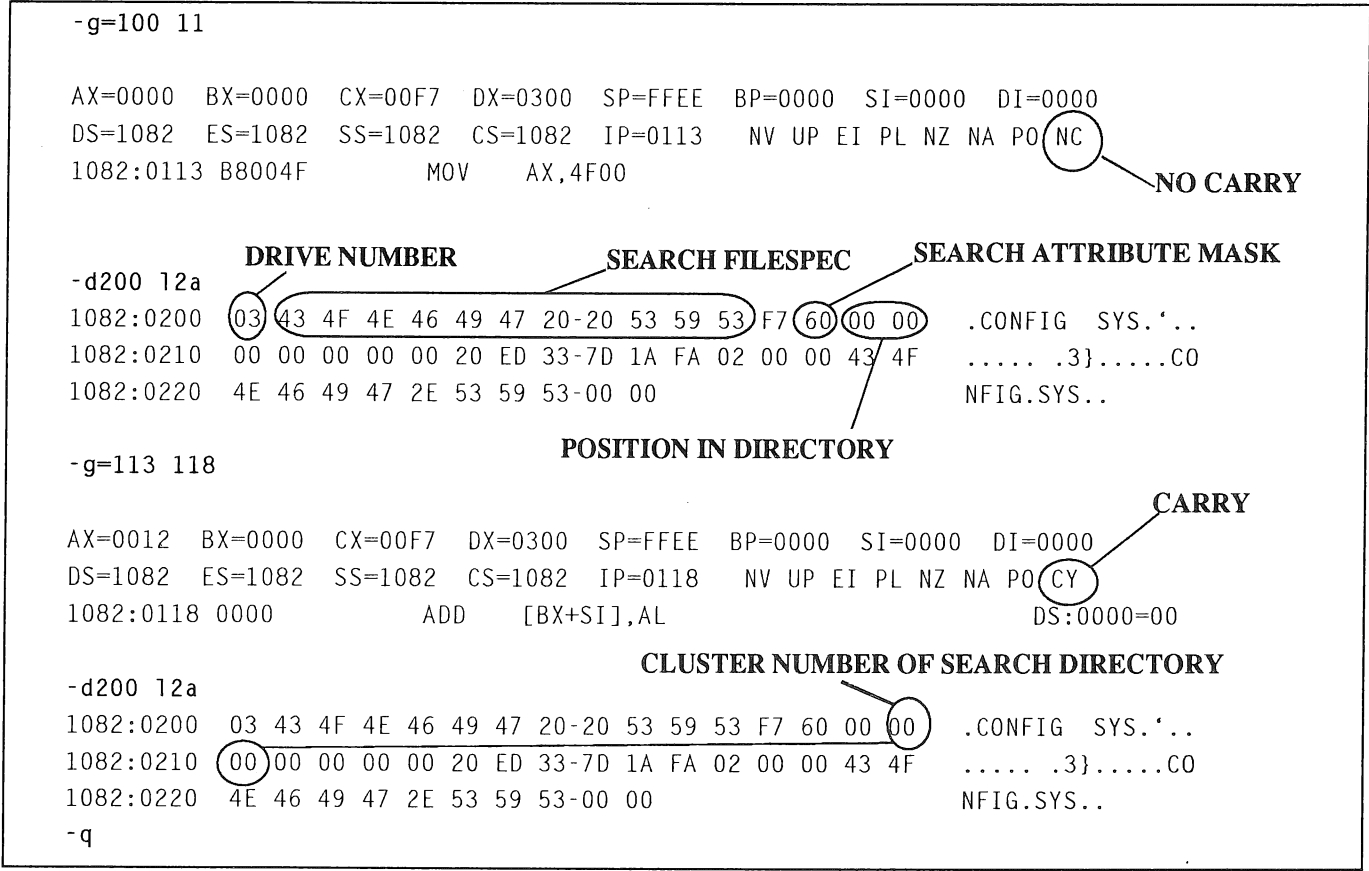


FIGURE 9.

The listing of Dan's QDIR program.

Note: This file is available from the BBS and also Brisbug Library

```
0001 DEFINT A-Z
0002 ' QDIR.BAS by Dan Bridges. Combining the work of Dave Cleary
0003 ' (QB4x DIR$ function - QBWNS202.xxx) and Brent Ashley (using
0004 ' assembler routines in QBASIC - see QBWNS301.xxx)

0005 TYPE RegTypeX
0006     AX AS INTEGER
0007     BX AS INTEGER
0008     CX AS INTEGER
0009     DX AS INTEGER
0010     BP AS INTEGER
0011     SI AS INTEGER
0012     DI AS INTEGER
0013     Flags AS INTEGER
0014     DS AS INTEGER
0015     ES AS INTEGER
0016 END TYPE

0017 TYPE DTAType
0018     FName AS STRING * 8
0019     FExt AS STRING * 3
0020     FAttrib AS INTEGER
0021     FTime AS LONG
0022     FDate AS INTEGER
0023     FSize AS LONG
0024 END TYPE

0025 DECLARE SUB CommandParsing (FileSpec$, SortOrder%, Paging%,
                                DriveNumber%)
0026 DECLARE FUNCTION ConvDate$ (OrigDate%)
0027 DECLARE FUNCTION ConvTime$ (OrigTime%)
0028 DECLARE FUNCTION CurrentDir$ (DriveNumber%)
0029 DECLARE SUB Dir (FileSpec$, DTAContents$, AXRegister%)
0030 DECLARE SUB Display (DriveNumber, FileSpec$, NumOfFiles%, Paging%,
                        TotalFSize%, TotalSpaceUsed%, TotalFree%, DriveTotal%,
                        SortOrder%)
0031 DECLARE SUB DisplaySequence (FileSpec$, NumOfFiles%, SortOrder%,
                                Paging%, DriveNumber)
0032 DECLARE FUNCTION DriveNum% (FileSpec$)
0033 DECLARE SUB EndOfDisplay (TotalFSize%, TotalSpace%, NumOfFiles%,
                            TotalFree%, DriveTotal%)
0034 DECLARE SUB ExtensionColours (Extension$, IsDir)
0035 DECLARE SUB FillArray (DTA$, FileNum%)
0036 DECLARE SUB GetVolLabel (DriveNumber%, VolLabel%)
0037 DECLARE SUB HelpScreen ()
0038 DECLARE SUB Int21 ()
0039 DECLARE FUNCTION IsItADirectory1% (FileSpec$)
0040 DECLARE FUNCTION IsItADirectory2% (FileSpec$)
0041 DECLARE SUB PathNameParsing (FileSpec$, DriveNumber%)
0042 DECLARE SUB Pause (Lines%, NumOfFiles%)
0043 DECLARE SUB OnePass (FileSpec$, NumOfFiles%)
0044 DECLARE SUB Sort (SortOrder%, NumOfFiles%)
0045 DECLARE SUB SpaceOccupied (DriveNumber%, FSize%, DiskSpaceUsed%,
                            TotalFree%, DriveTotal%)
0046 DECLARE SUB StartOfDisplay (FileSpec$, DriveNumber%)
0047 DECLARE SUB Switches (Remainder$, SortOrder%, Paging%)
0048 DECLARE FUNCTION ToStringWithCommas$ (FSize%)

0049 DIM SHARED Regs AS RegTypeX
0050 DIM SHARED File(1 TO 2000) AS DTAType
0051 ' Space for the parameters of 2000 files.

0052 CONST False = 0, True = NOT False
0053 ' INT 21H functions used in this program.
0054 CONST SetDTA = &H1A00, FindFirst = &H4E00, FindNext = &H4F00
0055 CONST CurrDir = &H4700, CurrDisk = &H1900, DiskSpace = &H3600
```

```

0056 COLOR 15
0057 CLS
0058 FileSpec$ = "c:*.*)" ' With QuickBASIC use: FileSpec$ = COMMAND$
0059 CALL CommandParsing(FileSpec$, SortOrder, Paging, DriveNumber)
0060 CALL OnePass(FileSpec$, NumOffFiles)
0061 CALL DisplaySequence(FileSpec$, NumOffFiles, SortOrder, Paging,
    DriveNumber)
0062 COLOR 7, 0

0063 ' INTCODE.BIN
0064 DATA 55, 8B, EC, 83, EC, 08, 56, 57, 1E, 55, 8B, 5E, 06, 8B, 47
0065 DATA 10, 3D, FF, FF, 75, 04, 1E, 8F, 47, 10, 8B, 47, 12, 3D, FF
0066 DATA FF, 75, 04, 1E, 8F, 47, 12, 8B, 47, 08, 89, 46, F8, 8B, 07
0067 DATA 8B, 4F, 04, 8B, 57, 06, 8B, 77, 0A, 8B, 7F, 0C, FF, 77, 12
0068 DATA 07, FF, 77, 02, 1E, 8F, 46, FA, FF, 77, 10, 1F, 8B, 6E, F8
0069 DATA 5B, CD, 21, 55, 8B, EC, 8B, 6E, 02, 89, 5E, FC, 8B, 5E, 06
0070 DATA 1E, 8F, 46, FE, FF, 76, FA, 1F, 89, 07, 8B, 46, FC, 89, 47
0071 DATA 02, 89, 4F, 04, 89, 57, 06, 58, 89, 47, 08, 89, 77, 0A, 89
0072 DATA 7F, 0C, 9C, 8F, 47, 0E, 06, 8F, 47, 12, 8B, 46, FE, 89, 47
0073 DATA 10, 5A, 1F, 5F, 5E, 8B, E5, 5D, CA, 02, 00, 00

0100 SUB CommandParsing (FileSpec$, SortOrder, Paging, DriveNumber)
0101 ' Handles FileSpec and Switch separation.

0102 FileSpec$ = UCASE$(LTRIM$(RTRIM$(FileSpec$)))

0103 ' Switch separation from the filespec is based on the location
0104 ' of the first "/", so no spaces are necessary after filespec.
0105 IF INSTR(1, FileSpec$, "/") THEN
0106     ' Split the command string into FileSpec$ and Remainder$
    (switches).
0107     FileSpecLen = INSTR(1, FileSpec$, "/") - 1
0108     CommandLine$ = FileSpec$
0109     FileSpec$ = RTRIM$(LEFT$(CommandLine$, FileSpecLen))
0110     Remainder$ = MID$(CommandLine$, FileSpecLen + 1)
0111     CALL Switches(Remainder$, SortOrder, Paging)
0112 END IF

0113 CALL PathNameParsing(FileSpec$, DriveNumber)
0114 IF SortOrder = 0 THEN SortOrder = 1 ' Default sort order is by
    Filename.
0115 END SUB

0200 FUNCTION ConvDate$ (OrigDate)
0201 ' Converts an encoded date word to a DD-MM-YY string. Alter to
    suit.
0202 ' Date encoding = ((Year - 1980) * 512) + (Month * 32) + Day.

0203 Day$ = LTRIM$(STR$(OrigDate AND 31))
0204 Month$ = LTRIM$(STR$(OrigDate \ 32) AND 15))
0205 Year$ = STR$((OrigDate \ 512) + 80)

0206 Day$ = RIGHT$(" " + Day$, 2)
0207 Month$ = RIGHT$(" " + Month$, 2)
0208 Year$ = RIGHT$(Year$, 2)

0209 ConvDate$ = Day$ + "-" + Month$ + "-" + Year$
0210 END FUNCTION

0300 FUNCTION ConvTime$ (OrigTime&)
0301 ' Converts a time encoded word to HH:MM:SS.
0302 ' Time encoding = (Hours * 2048) + (Mins * 32) + Secs \ 2)
0303 ' Note: Seconds are stored in 2 second increments.
0304
0305 Sec$ = LTRIM$(STR$((OrigTime& AND 31) * 2))
0306 Min$ = LTRIM$(STR$((OrigTime& AND 2048) \ 32))
0307 Hour$ = LTRIM$(STR$(OrigTime& \ 2048))

0308 Sec$ = RIGHT$("0" + Sec$, 2)
0309 Min$ = RIGHT$("0" + Min$, 2)
0310 Hour$ = RIGHT$(" " + Hour$, 2)

0311 ConvTime$ = Hour$ + ":" + Min$ + ":" + Sec$
0312 END FUNCTION

0400 FUNCTION CurrentDir$ (DriveNumber)
0401 ' Returns current dir without leading \ or drive.
0402 ' Drive number is 0 for default, 1 for a, etc.
0403 ' Example: if current dir on D: is "\QB45\BAS\QBASIC" then
0404 ' "CurrentDir$(4)" returns "QB45\BAS\QBASIC".
0405
0406 Buffer$ = SPACE$(64)
0407 Regs.AX = CurrDir ' Int 21H, func 47H gets the current dir.
0408 Regs.DX = DriveNumber
0409 Regs.DS = VARSEG(Buffer$) ' Segment location of a dynamic string.
0410 Regs.SI = SADD(Buffer$) ' Offset location for a dynamic string.
0411 CALL Int21

0412 CurrentDir$ = LEFT$(Buffer$, INSTR(Buffer$, CHR$(0)) - 1)
0413 END FUNCTION

0500 SUB Dir (FileSpec$, DTAContents$, AXRegister) STATIC
0501 ' Uses FindFirst (Int 21H, Func 4EH) and then FindNext
0502 ' (Int 21H, Func 4FH). The resulting file's name, attrib,
    timestamp, datestamp, size is returned in an area of
    memory called the DTA -Disk Transfer Area. Each further
    invocation of FindNext returns the next file in the dir until it
    runs out. The Carry Flag (bit 0) in the Flags Register byte is
    set when this occurs and can be tested by ANDing with 1.

0508 ' Note: FindFirst won't expand "\DirName" to "\DirName\*.*)" , as
    the standard DIR command does, so this has to be handled in the
    parsing section.

0510 DIM DTA AS STRING * 43 ' The length of the DTA is 43 bytes.
0511 Null$ = CHR$(0) ' For use as the terminator of an
    ASCIIZ string.

0512 Regs.AX = SetDTA ' Int 21H func 1AH establishes the
    location of the DTA.

0514 Regs.DS = VARSEG(DTA)
0515 Regs.DX = VARPTR(DTA) ' DS:DX points to the location we're
    using for our DTA. It's the location
    of the fixed-length string called DTA.

0518 CALL Int21 ' Perform the interrupt.

0519 ' Check to see if this is First or Next. No filespec is used with
0520 ' a FindNext since it still uses the one given in the initial
0521 ' FindFirst command.
0522 IF LEN(FileSpec$) THEN ' FileSpec$ isn't null, so it's a
    FindFirst.
0523     FileSpecZ$ = FileSpec$ + Null$ ' Make FileSpec$ into an
    ASCIIZ string.
0524     Regs.AX = FindFirst ' Perform a FindFirst.
0525     Regs.CX = 247 ' Show all files except Vol Label.
0526     Regs.DS = VARSEG(FileSpecZ$)
0527     Regs.DX = SADD(FileSpecZ$) ' DS:DX points to ASCIIZ file
0528 ELSE
0529     Regs.AX = FindNext ' We have a null FileSpec$ so FindNext.
0530 END IF
0531 CALL Int21 ' Perform the interrupt.

0532 ' Return filename or null.
0533 IF Regs.Flags AND 1 THEN ' Carry Flag is set: No files
    found.
0534     DTAContents$ = "" ' Return null string.
0535     AXRegister = Regs.AX ' AX contains error code.
0536 ELSE
0537     DTAContents$ = DTA
0538 END IF
0539 END SUB

0600 SUB Display (DriveNumber, FileSpec$, NumOffFiles, Paging,
    TotalFSSize&, TotalSpaceUsed&, TotalFree&, DriveTotal&,
    SortOrder)
0601 IF NumOffFiles = 0 THEN ' Handles a drive with an empty root
    directory.
0602     CALL SpaceOccupied(DriveNumber, Dummy&, Dummy&, TotalFree&,
        DriveTotal&)
0603 EXIT SUB
0604 END IF

0605 FOR x = 1 TO NumOffFiles
0606     Filename$ = File(x).FName
0607     IF File(x).FAttrib AND 16 THEN
0608         IsDir = True
0609     ELSE
0610         IsDir = False
0611     END IF
0612     CALL ExtensionColours(File(x).FExt, IsDir)

0613     IF SortOrder = 2 OR SortOrder = 12 THEN
0614         ' Extension or reverse extension sort order.
0615         PRINT File(x).FName;
0616         PRINT TAB(10); File(x).FExt; TAB(14);
0617     ELSE ' Other sort orders.
0618         PRINT RTRIM$(File(x).FName);
0619         IF ASC(File(x).FExt) THEN
0620             ' Action if first character of extension is not ASCII 0
0621             ' ie. the filename has an extension.
0622             PRINT " ";
0623         END IF

0624         PRINT File(x).FExt; TAB(14);
0625     END IF

0626     IF IsDir THEN
0627         PRINT "<DIR>";

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0628 ELSE
0629     PRINT ToStringWithCommas(File(x).FSize);
0630 END IF

0631 PRINT TAB(27); ConvDate$(File(x).FDate);
0632 FileTime& = File(x).FTime ' Needed for QB45 compiler bug.
0633 PRINT TAB(37); ConvTime$(FileTime&)

0634 IF Paging THEN CALL Pause(x, NumOffFiles) ' Pause every 23
                                         display lines.

0635 TotalFSize& = File(x).FSize + TotalFSize&
0636 CALL SpaceOccupied(DriveNumber, File(x).FSize, DiskSpaceUsed&,
    TotalFree&, DriveTotal&)
0637 TotalSpaceUsed& = DiskSpaceUsed& + TotalSpaceUsed&
0638 NEXT x
0639 END SUB

0700 SUB DisplaySequence (FileSpec$, NumOffFiles, SortOrder, Paging,
    DriveNumber)
0701 ' Handles the invocation of the 4 subprograms that show the
    patname\filespec.
0702
0703 CALL StartOfDisplay(FileSpec$, DriveNumber)
0704 CALL Sort(SortOrder, NumOffFiles)
0705 CALL Display(DriveNumber, FileSpec$, NumOffFiles, Paging,
    TotalFSize&, TotalSpaceUsed&, TotalFree&, DriveTotal&,
    SortOrder)
0706 CALL EndOfDisplay(TotalFSize&, TotalSpaceUsed&, NumOffFiles,
    TotalFree&, DriveTotal&)
0707 END SUB

0800 FUNCTION DriveNum (FileSpec$)
0801 ' Either gets DriveNumber from FileSpec, if supplied as a drive
0802 ' letter, or uses INT 21H Func 19H (Get Current Disk) to get it.
0803 IF INSTR(FileSpec$, ":") = 2 THEN
0804     DriveLetter$ = LEFT$(FileSpec$, 1)
0805     DriveNum = ASC(DriveLetter$) - 64
0806 ELSE
0807     Regs.AX = CurrDisk ' Use function 19H.
0808     CALL Int21
0809     DriveNum = (Regs.AX AND 255) + 1
0810     ' Returned in AL so use AND 255 to mask AX to see only value
    in AL. Note: Function 19H (Get Current Disk) counts A:
    as 0 whereas Function 47H (Get Current Dir) calls it 1 (0
    is assigned to the the default drive). So I've added one
    to adjust the result of the above Function 19H operation
    to A: = 1 numbering.
0815 END IF
0816 END FUNCTION

0900 SUB EndOfDisplay (TotalFSize&, TotalSpaceUsed&, NumOffFiles,
    TotalFree&, DriveTotal&)
0901 ' Produces totals at the end of the file listing.
0902 PRINT
0903 COLOR 15, 0
0904 PRINT LTRIM$(ToStringWithCommas(TotalFSize&)); " bytes in";
0905 PRINT STR$(NumOffFiles); " files"
0906 PRINT "occupying "; LTRIM$(ToStringWithCommas(TotalSpaceUsed&));
    " bytes ";
0907 PRINT " ("; LTRIM$(STR$(CINT((TotalSpaceUsed& - TotalFSize&) * 100
    / (TotalSpaceUsed& + .05))))); "% wastage)"
0908 PRINT LTRIM$(ToStringWithCommas(TotalFree&)); " bytes free on a";
0909 IF DriveTotal& < 3000000 THEN
0910     PRINT CINT(DriveTotal& / 1024); "K disk"
0911 ELSE
0912     PRINT CINT(DriveTotal& / 1048576); "M disk"
0913 END IF
0914 END SUB

1000 SUB ExtensionColours (Extension$, IsDir)
1001 'Directories and different extensions determine the colour used.
1002 IF IsDir THEN ' Action if it's a directory.
1003     COLOR 10, 0
1004     EXIT SUB
1005 END IF
1006
1007 SELECT CASE Extension$
1008 CASE "EXE", ".COM": COLOR 14, 0
1009 CASE ".DOC", ".TXT", ".ME": COLOR 9, 0
1010 CASE ".BAT", ".BTM": COLOR 6, 0
1011 CASE ".DBF", ".DTF": COLOR 12, 0
1012 CASE ".CDX", ".NDX", ".IDX": COLOR 4, 0
1013 CASE ".ZIP", ".ARJ", ".LZH", ".SDN": COLOR 3, 0
1014 CASE ".BAS": COLOR 13, 0
1015 CASE ".OBJ", ".BIN": COLOR 5, 0
1016 CASE "": COLOR 15, 0
1017 CASE ELSE: COLOR 15, 0
1018 END SELECT
1019 END SUB

1100 SUB FillArray (DTAContents$, x)
1101 ' Separates the file information from the 43-byte DTA
1102 ' string and then stores this in the File() array.
1103 File(x).Fattrib = ASC(MID$(DTAContents$, 22, 1))
1104 ' CVI converts a 2 byte string to a number.
1105 Time& = CVI(MID$(DTAContents$, 23, 2))
1106 IF Time& < 0 THEN Time& = Time& + 65536
1107 File(x).FTime = Time&
1108 File(x).FDate = CVI(MID$(DTAContents$, 25, 2))
1109 ' CVL converts a 4 byte string to a long integer.
1110 File(x).FSize = CVL(MID$(DTAContents$, 27, 4))
1111 Null$ = CHR$(0)
1112 NullPos = INSTR(31, DTAContents$, Null$) ' Get the filename found.
1113 FileNameLen = NullPos - 31
1114 FullName$ = MID$(DTAContents$, 31, FileNameLen)
1115 ' It is an ASCII2 string starting at offset 31 of the DTA.
1116 DotPos = INSTR(FullName$, ".")
1117 IF DotPos THEN
1118     IF DotPos = 1 THEN ' Handles the "." and ".." subdirectory
        entries.
1119     IF INSTR(2, FullName$, ".") THEN ' If dots in positions 1 & 2
        File(x).FName = ".."
1120     ELSE
1121         File(x).FName = "."
1122     END IF
1123 ELSE
1124     File(x).FName = LEFT$(FullName$, DotPos - 1)
1125     File(x).FExt = RIGHT$(FullName$, FileNameLen - DotPos)
1126 END IF
1127 END IF
1128 ELSE
1129     File(x).FName = FullName$
1130 END IF
1131 END SUB

1200 SUB GetVolLabel (DriveNumber, VolLabel$)
1201 ' A quick dash to the DTA to read the root directory on the
1202 ' correct drive. In the root, only a file with a volume label
1203 ' file attribute is looked for.
1204 DIM DTA AS STRING * 43
1205 Regs.AX = SetDTA
1206 Regs.DS = VARSEG(DTA)
1207 Regs.DX = VARPTR(DTA)
1208 CALL Int21
1209 FileSpecZ$ = CHR$(DriveNumber + 64) + ":\*. *" + CHR$(0)
1210 Regs.AX = FindFirst
1211 Regs.CX = 8 ' Show only Vol Label.
1212 Regs.DS = VARSEG(FileSpecZ$)
1213 Regs.DX = SADD(FileSpecZ$)
1214 CALL Int21
1215 IF Regs.Flags AND 1 THEN ' No files found.
1216     VolLabel$ = "" ' Return null string.
1217 ELSE
1218     NullPos = INSTR(31, DTA$, CHR$(0)) ' Get the filename found.
1219     VolLabel$ = (MID$(DTA$, 31, NullPos - 31))
1220     IF INSTR(VolLabel$, ".") THEN
1221         ' A volume label can be 11 chars long because the extension
1222         ' part is automatically used when the volume name exceeds
1223         ' 8 chars. However the "." is not shown.
1224         DotPos = INSTR(VolLabel$, ".")
1225         VolLabel$ = LEFT$(VolLabel$, DotPos - 1) + MID$(VolLabel$,
            DotPos + 1)
1226     END IF
1227 END IF
1228 END SUB

1300 SUB HelpScreen
1301 ' Invoked if "/" or "/"H" is included in the switches.
1302 CLS : LOCATE 4: PRINT "QDIR Usage:";
1303 LOCATE 7, 7: PRINT "A Switch character is anything on the line
    after the first '/.';
1304 LOCATE 9, 7: PRINT "Recognised switches are: ";
1305 PRINT TAB(35); "N - sort by fileName"
1306 PRINT TAB(35); "E - sort by Extension"
1307 PRINT TAB(35); "D - sort by Date"
1308 PRINT TAB(35); "S - sort by fileSize"
1309 PRINT TAB(35); "U - Unsorted"

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1310 PRINT
1311 PRINT TAB(35); "P - Pause after every screen"
1312 LOCATE 18, 5: PRINT "Examples: QDIR /D"
1313 PRINT TAB(16); "QDIR /D /P"
1314 PRINT TAB(16); "QDIR /DRP"
1315 PRINT TAB(16); "QDIR /D R P"
1316 END ' Quit after showing the help screen.
1317 END SUB

1400 SUB Int21 STATIC
1401 ' Loads the INTCODE.BIN code once. After that, the binary file
    maintains the same offset location in DGROUP because the string
    is fixed-length.

1403 IF NOT Loaded THEN
1404     DIM IntCode AS STRING * 146 ' INTCODE.BIN is 146 bytes long.
1405     OffsetToIntCode = VARPTR(IntCode)
1406     FOR x = 0 TO 145
1407         READ Byte$
1408         POKE OffsetToIntCode + x, VAL("&H" + Byte$)
1409     NEXT x
1410     Loaded = True
1411 END IF

1412
1413 CALL ABSOLUTE(Regs, OffsetToIntCode)
1414 END SUB

1500 FUNCTION IsItADirectory1 (FileSpec$)
1501 ' Determine if a filespec matches a file or a directory.
1502 ' If a nonexistent directory spec is used it will exit silently.
1503
1504     CALL Dir(FileSpec$, DTAContents$, AXRegister)
1505     IF LEN(DTAContents$) = 0 THEN
1506         SELECT CASE AXRegister
1507             CASE 2: PRINT FileSpec$; " - File not found!"
1508             CASE 3: EXIT FUNCTION
1509             CASE 18: PRINT FileSpec$; " - No match found!"
1510         END SELECT
1511         SYSTEM ' Exit program.
1512     ELSEIF ASC(MID$(DTAContents$, 22, 1)) AND 16 THEN
1513         ' Subdirectory attribute is set. Won't work with root dir.
1514         IsItADirectory1 = True
1515     ELSEIF MID$(FileSpec$, 2, 4) = "\*.*" THEN
1516         IsItADirectory1 = True
1517     END IF
1518 END FUNCTION

1600 FUNCTION IsItADirectory2 (FileSpec$)
1601 ' Similar to IsItADirectory1 but if a nonexistent directory spec
1602 ' is used at this stage the program terminates with a error
    message.
1603
1604     CALL Dir(FileSpec$, DTAContents$, AXRegister)
1605     IF LEN(DTAContents$) = 0 THEN
1606         SELECT CASE AXRegister
1607             CASE 2: PRINT FileSpec$; " - File not found!"
1608             CASE 3: PRINT FileSpec$; " - Path not found!"
1609             CASE 18: PRINT FileSpec$; " - No match found!"
1610         END SELECT
1611         SYSTEM ' Exit program.
1612     ELSEIF ASC(MID$(DTAContents$, 22, 1)) AND 16 THEN
1613         ' Subdirectory attribute is set. Won't work with root dir.
1614         IsItADirectory2 = True
1615     ELSEIF MID$(FileSpec$, 3, 4) = "\*.*" THEN IsItADirectory2 =
        True
1616         ' For dealing with the root directory.
1617     END IF
1618 END FUNCTION

1700 SUB OnePass (FileSpec$, NumOffFiles)
1701 ' Handles invocation of the DIR subprogram and filling of the
    File() array. The first invocation is identified as a FindFirst
    by the presence of a filespec.
1704 CALL Dir(FileSpec$, DTAContents$, 0)
1705 IF LEN(DTAContents$) = 0 THEN
1706     CLS
1707     'color 15,0
1708     PRINT FileSpec$; " does not exist!"
1709     SYSTEM
1710 END IF
1711 CALL FillArray(DTAContents$, 1)
1712 NumOffFiles = 2

1713 DO
1714     ' Further invocations are identified as FindNext by a null
        filespec.
1715     CALL Dir("", DTAContents$, 0)
1716     IF LEN(DTAContents$) = 0 THEN EXIT DO
1717     CALL FillArray(DTAContents$, NumOffFiles)

1718     NumOffFiles = NumOffFiles + 1
1719 LOOP

1720 NumOffFiles = NumOffFiles - 1
1721 END SUB

1800 SUB PathNameParsing (FileSpec$, DriveNumber)
1801 ' Handles FileSpec$ = "", ".", ".." (will cope with an attempt to
    access a parent directory of the root), "*.bas" (and other
    standard wildcards), "..\*.bas", "c:", "c:*.*", "c:..",
    "..\dirname" and "..\dirname\*.bas" (also with drive letter
    included), "\dirname", "dirname" and "dirname\".

1805 DriveNumber = DriveNum(FileSpec$ ' Used by the CurrentDir$
    function.

1806 Drive$ = CHR$(DriveNumber + 64) + ":"
1807 ' Adds drive letter if missing.
1808 IF INSTR(FileSpec$, ":") = False THEN
1809     FileSpec$ = Drive$ + FileSpec$
1810 END IF

1811 ' Adds current directory if a relative pathname was given.
1812 IF INSTR(FileSpec$, "\") <> 3 THEN
1813     CurDir$ = CurrentDir$(DriveNumber)
1814     IF LEN(CurDir$) THEN ' If not root dir.
1815         FileSpec$ = LEFT$(FileSpec$, 2) + "\" + CurDir$ + "\" +
            MID$(FileSpec$, 3)
1816     ELSE ' If root dir.
1817         FileSpec$ = LEFT$(FileSpec$, 2) + "\" + MID$(FileSpec$, 3)
1818     END IF
1819 END IF

1820 ' Handles "." in filespec.
1821 DO
1822     IF INSTR(FileSpec$, "..") THEN
1823         IF NOT MoreThanOneLoop THEN
1824             CurDir$ = CurrentDir$(DriveNumber)
1825         END IF
1826         DirLen = LEN(CurDir$)
1827         IF DirLen THEN ' Action if not root dir.
1828             FirstDotDotPos = INSTR(FileSpec$, "..")
1829             IF LEN(FileSpec$) - 1 > FirstDotDotPos THEN
1830                 ' Action if something follows the first ".." in the filespec.
1831                 Remainder$ = MID$(FileSpec$, FirstDotDotPos + 2)
1832             ELSE
1833                 Remainder$ = ""
1834             END IF

1835             IF INSTR(2, CurDir$, "\") THEN
1836                 ' Action if at least one "\" character in CurDir$.
1837                 FOR x = DirLen TO 1 STEP -1
1838                     IF INSTR(x, CurDir$, "\") THEN
1839                         CurDir$ = MID$(CurDir$, 1, x - 1)
1840                         FileSpec$ = Drive$ + "\" + CurDir$ + Remainder$
1841                         EXIT FOR
1842                     END IF
1843                 NEXT x
1844             ELSE
1845                 ' Action if no "\" in CurDir$.
1846                 IF LEN(Remainder$) THEN
1847                     FileSpec$ = Drive$ + Remainder$
1848                     CurDir$ = ""
1849                 ELSE
1850                     FileSpec$ = Drive$ + "\"
1851                 END IF
1852             END IF
1853         ELSE
1854             CLS
1855             LOCATE 12, 15
1856             PRINT "Use of '..' in this circumstance is invalid since "
1857             PRINT TAB(17); "this would be above the root directory of "; Drive$
1858             SYSTEM
1859         END IF
1860     ELSE
1861         EXIT DO
1862     END IF
1863     MoreThanOneLoop = True
1864 LOOP

1865 ' Add "*.*" to end of FileSpec$ if it ends in "\".
1866 IF RIGHT$(FileSpec$, 1) = "\" THEN
1867     FileSpec$ = FileSpec$ + "*.*"
1868     EXIT SUB
1869 END IF
1870
1871 ' Check whether filespec contains a wildcard.
1872 IF INSTR(FileSpec$, "**") OR INSTR(FileSpec$, "?") THEN
1873     IF INSTR(FileSpec$, ".") = 0 THEN FileSpec$ = FileSpec$ + "*.*"
1874     ' The above line treats a wildcard filespec without extension
1875     ' as "FILESPEC.*"
1876     EXIT SUB
1877 END IF

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1878 ' Check for presence of "." in filespec.
1879 IF INSTR(FileSpec$, ".") THEN
1880 ' Check if last character is a "."
1881 IF RIGHT$(FileSpec$, 1) = "." THEN
1882 IF INSTR(3, FileSpec$, ".") = 3 THEN
1883 ' Handles silly filespecs like "a:\.*.doc".
1884 FileSpecTemp$ = LEFT$(FileSpec$, LEN(FileSpec$) - 1) + "*,*"
1885 ELSE
1886 FileSpecTemp$ = LEFT$(FileSpec$, LEN(FileSpec$) - 1) + "\*,*"
1887 END IF
1888 ' The LEFT$/LEN combinations above drop the "." off the end
1889 ' of FileSpec$ and then adds either "*,*" or "\*,*".
1890 IF IsItADirectory2(FileSpecTemp$) THEN
1891 ' Yes, "FILESPEC\*,*" returns a subdirectory attribute.
1892 FileSpec$ = FileSpecTemp$
1893 EXIT SUB
1894 END IF
1895 ' To get to here "FILESPEC." must not have been a directory name
1896 ' so leave it as is.
1897 ELSE
1898 ' There must be a "." in a position other than the end.
1899 ' This could either be a filespec or a directory name that
1900 ' has an extension.
1901 IF IsItADirectory1(FileSpec$ + "\*,*") THEN
1902 ' "FILESPEC\*,*" returns a subdirectory attribute.
1903 FileSpec$ = FileSpec$ + "\*,*"
1904 END IF
1905 END IF
1906 EXIT SUB
1907 ELSE
1908 ' Filespec does not contain a "." but it could still either be
1909 ' a filespec or a directory name.
1910 IF IsItADirectory1(FileSpec$ + "\*,*") THEN
1911 FileSpec$ = FileSpec$ + "\*,*"
1912 ELSE
1913 FileSpec$ = FileSpec$ + ".*"
1914 END IF
1915 END IF
1916 END SUB

```

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1900 SUB Pause (Lines, NumOffFiles)
1901 ' Pause every 23 filenames. The first time Pause is called
1902 ' it will only be after 20 filenames because of the presence
1903 ' of the Display Header (Volume Label and Filespec).

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1904 IF (Lines + 3) MOD 23 = 0 THEN
1905 COLOR 7, 0
1906 PRINT " Press any key...";
1907 DO ' Loop waits for any keystroke. If Ctrl-C is pressed
1908 ' while the program is paused, the program will abort.
1909 Temp$ = INKEY$
1910 IF Temp$ = CHR$(3) THEN END
1911 LOOP UNTIL LEN(Temp$)
1912 PRINT
1913 END IF
1914 END SUB

```

```

2000 SUB Sort (SortOrder%, NumOffFiles%)
2001 ' A standard Shell sort for speed.
2002 ' Held over until next month.
2090 END SUB

```

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2100 SUB SpaceOccupied (DriveNumber, FSize%, DiskSpaceUsed%,
TotalFree%, DriveTotal%)
2101 ' On a 8K clustered disk, a 1 byte file occupies 8K of disk space
2102 ' while a 10K file uses 16K etc.
2103 ' Note on Drive numbering here: 0 = default drive, 1 = A:, etc.

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2104 Regs.AX = DiskSpace ' INT 21H Func 36H gets disk space.
2105 Regs.DX = DriveNumber
2106 CALL Int21 ' Perform the interrupt.

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2107 ' AX is sectors/cluster, CX is bytes/sector.
2108 ClusterSize% = CLNG(Regs.AX) * Regs.CX
2109 TotalFree% = ClusterSize% * CLNG(Regs.BX) ' BX is num of
clusters free.
2110 DiskSpaceUsed% = ((FSize% + ClusterSize% - 1) \ (ClusterSize%)) *
ClusterSize%
2111 IF Regs.DX < 0 THEN
2112 TotalClusters% = CLNG(Regs.DX) + 65535
2113 ELSE
2114 TotalClusters% = Regs.DX
2115 END IF

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2116 DriveTotal% = ClusterSize% * TotalClusters%
2117 END SUB

```

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2200 SUB StartOfDisplay (FileSpec$, DriveNumber)
2201 ' Shows Volume Label and expanded Pathname.
2202 CALL GetVolLabel(DriveNumber, VolLabel$)
2203 IF LEN(VolLabel$) THEN
2204 PRINT "Volume in drive "; CHR$(DriveNumber + 64); " is ";
VolLabel$

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2205 ELSE
2206 PRINT "Volume in drive "; CHR$(DriveNumber + 64); " is
unlabeled"
2207 END IF
2208 PRINT "Directory of "; FileSpec$
2209 PRINT
2210 END SUB

```

```

2300 SUB Switches (Remainder$, SortOrder, Paging)
2301 ' Sort and Page switches. Valid usage is "/D", "/DRP", "/D /P",
2302 ' "/D R P" etc.

```

```

2303 IF INSTR(1, Remainder$, "?") OR INSTR(1, Remainder$, "H") THEN
CALL HelpScreen
2304 IF INSTR(1, Remainder$, "N") THEN SortOrder = 1 ' FileName
2305 IF INSTR(1, Remainder$, "E") THEN SortOrder = 2 ' Extension
2306 IF INSTR(1, Remainder$, "D") THEN SortOrder = 3 ' Date
2307 IF INSTR(1, Remainder$, "S") THEN SortOrder = 4 ' FSize
2308 IF INSTR(1, Remainder$, "R") THEN SortOrder = SortOrder + 10
2309 ' Reversed
2310 IF INSTR(1, Remainder$, "U") THEN SortOrder = 100 ' Unsorted
2311 IF INSTR(1, Remainder$, "P") THEN Paging = True
2312 END SUB

```

```

2400 FUNCTION ToStringWithCommas (FSize%)
2401 ' Converts a long integer to a right-aligned string, padded to
2402 ' occupy 11 char positions, with commas after every 3 charac-
ters.

```

```

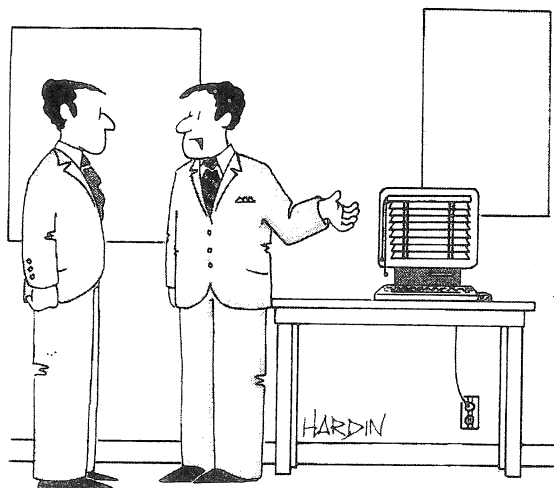
2403 FSize$ = LTRIM$(STR$(FSize%))
2404 FileLength = LEN(FSize$)
2405 SELECT CASE FileLength
2406 CASE 4 TO 6
2407 FSize$ = LEFT$(FSize$, FileLength - 3) + "," +
RIGHT$(FSize$, 3)
2408 CASE 7 TO 9
2409 FSize$ = LEFT$(FSize$, FileLength - 6) + "," +
MID$(FSize$, FileLength - 5, 3) + "," + RIGHT$(FSize$, 3)
2410 CASE ELSE
2411 END SELECT

```

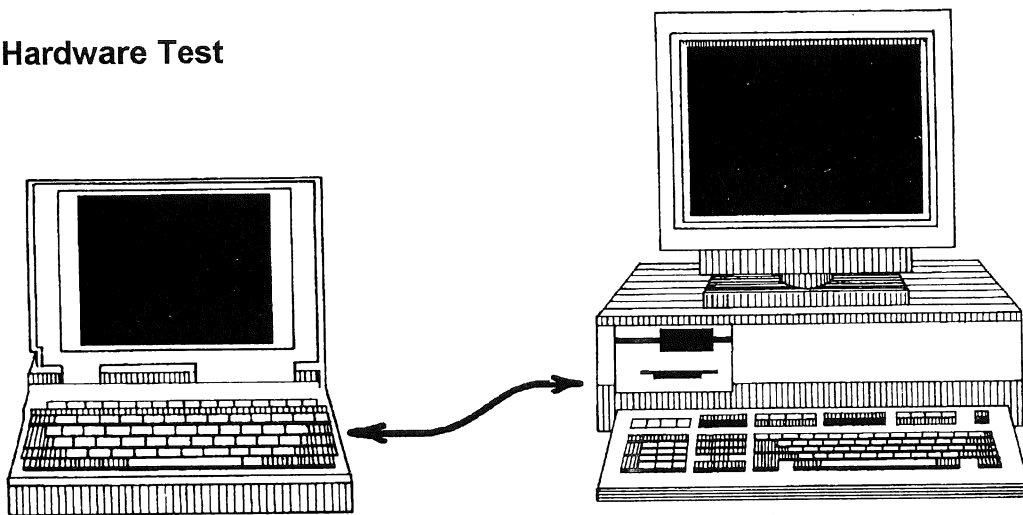
```

2412 ToStringWithCommas$ = STRING$(11 - LEN(FSize$), " ") + FSize$
2413 END FUNCTION

```



**"We're beta-testing a new screen saver for Windows."**



# NETWORKING 2 COMPUTERS - SIMPLY

- Lindsay Bates

*Here's the report on the second of the Networks I've looked at to connect two home (or small-business) computers.*

Before beginning, I'll share with you some of the things that have come out of my first report on slotless networking:

1. When sitting at your computer, connected to the remote computer, to be realistic, no, you really cannot actually run the remote computer itself from where you're sitting.

For example, if, on your computer, you run a program from the remote's disk, this program is actually running in *your* RAM on your computer. You do 'use' the remote computer to run its disk, sure, but that's about all.

If you have a LAN that will connect modems (as Lantastic Z will, below), this may give you a little more control over the remote computer - but that's another story.

2. Yes - provided everything's connected and set up correctly - from your chair you can run the printer connected to the remote computer; and the remote could also run *your* printer.

About all you need to do is go collect the hardcopy when it's finished (as far as I know, no one's working on a network to 'flow' this right back to you!)

3. Yes, you certainly can run many Windows programs via the network.

Because of slower transfer of slotless LAN's you need to consider that the more complex the program the longer it may take to run.

As an example, I tried File Manager and it took about 15 seconds to load for me from the remote, as did Write; but Paintbrush took only a second or two.

Many users will find the most convenience from running the application program from their own computer but load from, and save to, the program's files on the remote machine.

4. Yes, a slotless LAN is a great way to learn how networks work; and to develop programs that will run across a network!

In fact, many of the slotless versions act exactly the same as the full-blown version. So you can play to your heart's content - knowing that you're not messing up the office server's files, or interfering with the operation of your colleague's workstation!

5. Yes, connecting a notebook and a desktop via the slotless network does make great sense. It's cheap, and simple enough to use once installed: just plug into a free port and you're away. It gives both computers access to the printer, and files and programs can easily be transferred between them.

## LANTASTIC Z v4.1

Now to the second network I tested.

Compared to the WEB Pairware LAN, Lantastic Z's 2-station slotless LAN is an even cheaper solution to networking two

computers. With the Z you can do this via serial port, parallel port or modem.

Besides the obvious use - and advantages - of connecting two home or small-business computers, or portable to desktop when you return indoors, with this LAN you can even connect your notebook (or laptop) to a desktop that's *already* on a full-blown Lantastic LAN (but the notebook will be networked only with the desktop).

Lantastic's solution gives the added advantage of being able to connect via parallel port as well as serial. And with the serial, the cables will connect to 9- or 25-pin ports - a very thoughtful touch by the supplier.

While I didn't do actual speed tests on parallel vs. serial connection, figures I've seen indicate that parallel should be quite a bit faster.

For this reason alone my advice to most people would be to connect via parallel port. But as it stands, many will probably choose to save a dollar by using the slower serial connection - simply because they already have the 2nd serial port (COM2) on their computer.

If this port is already in use (e.g., for a modem), there are good reasons NOT to go for a 3rd serial - like avoiding potential hazards of conflicts with COM1 and COM2 as I reported last time with the WEB Pairware Network.

```

D:\LAN startnet s
SHARE installed
AI-LANBIOS Serial port driver V3.01 - (C) Copyright 1989 ARTISOFT Inc.
----- Serial port driver installed -----
Adapter Independent AI-LANBIOS(R) v3.02 - (C) Copyright 1992 ARTISOFT Inc.
AI-LANBIOS Serial port drive V3.01 - (C) Copyright 1989 ARTISOFT Inc.
----- AI-LANBIOS(R) installed -----
LANTastic (R) Redirector v4.01Z - (C) Copyright 1992 ARTISOFT Inc.
International version.
----- LANTastic Redirector installed -----
LANTastic (R) Server v4.01Z - (C) Copyright 1992 ARTISOFT Inc.
International version.
----- LANTastic Server installed -----
Waiting for server PC2 to come online. Press <Esc> to abort retries.

```

Fig. 1. Lantastic Z will patiently wait for you to start the other computer.

Best for many will probably be to fit a second parallel (LPT2) for \$20 or \$30. Ask your supplier to configure it to LPT2 for you. Plug it into any free slot inside the computer (turn everything off first), and you're ready to start.

## INSTALLATION

First you plug the supplied cable into the ports of each computer, then run the software to install the program onto the hard-drive of each. For us, initial installation proved much easier than we experienced with the earlier LAN.

Probably some of that can be put down to things always being easier second time round. That notwithstanding, installation seemed to work pretty well for us once we got the hang of how to input desired changes.

To ensure the PATH statement didn't get too long, once again we chose to install to C:\LAN, rather than C:\LANTASTIC as suggested. We also called each machine a Server not a Workstation, as servers can share their resources with all other PC's on the network.

## STARTING THE NETWORK

We chose to call the two computers PC1 and PC2, but you could use your names, or whatever. Starting the network then involves running a file called STARTNET.BAT (Fig. 1). This file is configured for you during installation (but see how to use COM2 or LPT2, below).

If you're using a serial connection, at the command line you type STARTNET S (or P for parallel; or M for modem) to start the network.

STARTNET will want you to start the network on both computers at once - it patiently waits till you go start the re-

mote computer as well (by typing STARTNET S on it).

Networking two computers doesn't mean you can no longer use them as stand-alones: if you don't want or need to be networked for the session, don't start the network. Both computers will then be as normal.

But even when the network is running, you can still use your computer normally. About the only difference you'll notice is that when the remote happens to be accessing your drive, because this is slower *slotless* networking, everything will likely slow down markedly for you during that period.

Once both PC's are on the network, to see what's cookin' at any time (and change parameters for the session) just type NET, and follow the instructions (Fig. 2).

Lantastic-Z will configure the drives on the other computer so that they become drives on your computer (and similarly on the remote computer). In the illustration you can see Drives A to G are the local (PC1) drives, while H to L are remote drives on PC2.

So to have access files on Drive C of the

remote computer, I would type J: at the command line to change to that drive, then DIR. If you use a program like XTREE or Windows File-Manager, you'll find the 'new' drives there for you, too, no problem.

While on the remote's hard-drive, you can also run selected programs there - 'selected' because not all programs will run across a network. However, if you find one that won't, maybe the network's an easy way to copy it to your machine to run from there.

As I said for the WEB Network (and also above), you'll find that simple programs run quickly enough across a slotless network, but running complex programs (and loading large files) may take time.

This is because serial/serial or parallel/parallel communication is not as fast as the network cards used by full-blown networks. But Lantastic Z will do the job for many people, and you can always go card-based later, if you wish.

## A FEW GLITCHES

So the network was up and running for us in reasonably short order. Well, until we tried to run Windows in Enhanced Mode, that is. Then - exactly as for the WEB - it clobbered the network and failed dismally!

Was it that we'd forgotten to configure Windows for the LAN? No, we'd done that (note: doing this configuring for running Windows across the network is *essential* and is not all that difficult).

Once again, as for the WEB software, we got good support from the distributor. Once I installed a special Enhanced Mode

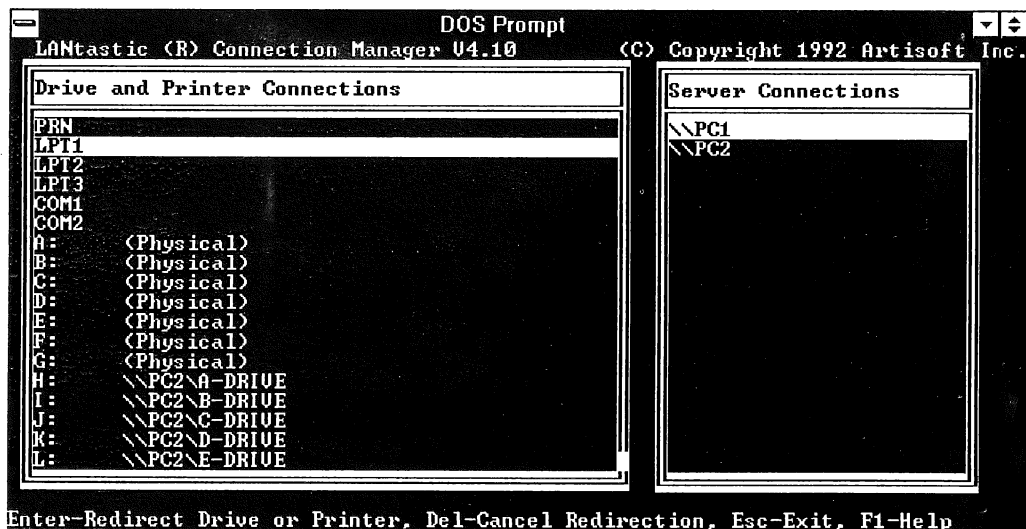


Fig. 2. You can easily access all local drives - and all drives on the remote computer as well.

driver, all was well. Unfortunately this information was not given with the manual; it should have been.

Despite this glitch, we were still feeling it was the easier of the networks to install. Unfortunately the 'easier' bit didn't last.

On reinstalling the software to Drive D all sorts of difficulties arose. Firstly, the network wouldn't logon properly for us from Drive D. Eventually we figured out that you have to first change to D Drive, *then* logon. Good grief.

Next the two computers wouldn't logon to each other at all. Over an extended period just the odd word was spoken . . . was beginning to think that networks didn't amuse me, not at all.

It was all to do with COM1 and COM2. Install does a pretty good job all round - EXCEPT for checking the port you're connected to.

With a serial connection the software defaults to COM1. In one way, that's silly enough in itself. But then Install promptly ignores this: not only does it not give you an option to set the port, it just ignores the whole deal!

When I was calmer I had a think about this. I reckon that most people using this

LAN will have had at least one computer already in use. And that computer most likely will have a mouse and a printer. Meaning that COM1 is used, and LPT1 is used.

So when Install does its default, let's face it, it really messes up. 'Cause when the blankety thing won't talk to the other computer, it could be all sorts of things - and Murphy's Law says you're going to check out all of *them* before thinking about the port setting.

So, if you use this slotless LAN, you've been warned: watch out if you install to other than Drive C; ring the distributor to find how to setup if Windows Enhanced Mode doesn't work; and most of all, do remember that you'll probably have to set the port in STARTNET.BAT.

### PRODUCT DETAILS

Despite the above, we still felt that this LAN would be easier for the average user to install.

You just need to remember that the whole network deal is a totally new ball-game to most - the manuals, for example, are set out pretty clearly, but for the average computer user there'll be an awful lot of new stuff to digest.

All in all, the advice given re the WEB network of getting someone experienced to install for you, well, that advice still stands. If you *do* choose to have a go at it yourself, expect some pain - but a lot of high satisfaction if you eventually succeed.

And there are further bonuses. First, *knowledge*: you'll then know what networks are and understand a lot about how they work. Secondly, *enjoyment*: for those who enjoy computers, networking two computers together really is a lot of fun.

Recommended retail price of Lantastic Z is a low \$149. For this you get full manuals, software, and cables ready to connect to parallel or serial ports (you may like to check on the length of the cabling that will be supplied to see it's long enough for your requirements).

It has the advantage over the WEB offering in that once we got it properly configured, it seemed to run happily for us under DOS and also all Windows modes.

All up, we felt that Lantastic Z is a great way to introduce yourself to networking.

My thanks to *Digital Solutions Pty Ltd* for the copy of Lantastic Z and for their ready help with installation.

Lindsay Bates Ph: (07) 808 9441

## SIG NEWS

### South Side SIG

6th April 1993. The meeting was held at Gary McMinn's home and although there was no formal agenda every one present made a contribution to a very lively discussion was went on until late in the evening. Several members had some problem or other and someone else seemed to have the answer. A very enjoyable meeting.

4th May 1993. This meeting will be over by the time you read this report. Hopefully we will discuss high speed modems and Xtree for Windows V 1.5. These items depend on suppliers sending the presenting members their ordered products in time. The normal, any problems or news

will follow.

1st June 1993. This meeting will be held at 31 Esplanade Street, YERONGA. Phone Sid Waugh on 848 3350. Items to be discussed include modems and more on DOS 6.

### Pascal SIG

Last month's meeting of the Pascal Sig was well attended and informative. Several members displayed their programmes, and we had an informative demonstration of Borland Pascal for windows. This month's meeting promises to be equally interesting as John Back will return with a rewritten version of his programme ASMPAINT. Contact: Steve Cann

### Accounting SIG

Congratulation to Ewan Perry for his excellent demonstration of "Classical Accounting" which for scope and value-for-money must be rated amongst the best available and which we can recommend to anyone in need of a complete accounting information package

The stock control, bill of materials, and production planning features would improve the quality of management information required for factory day-to-day operations.

Account and Plus as well as C-A-S-E accounting from Brisbug library will be demonstrated at our meeting.

### Gold Coast SIG

Next meeting May 18th, at 7pm on Genealogy at Broadbeach Senior Citizens Club, Gold Coast Highway, Broadbeach. Phone 075-710113

# Typing for DTP

Geoff Harrod

*This is intended as a guide for typists called upon to type material into a word processor for ultimate use in a desktop publishing system. It also contains useful information for general word processor use.*

Most typists these days are familiar with at least one word processor system, and are quite happy using it. However, not all have been thoroughly trained in the use of the software, as it is quite practical to teach yourself or pick up the techniques as you go. As a result, many typists have adopted working techniques that they carried over from manual typewriter use. For most tasks, these techniques serve quite adequately, but they often give rise to unnecessary labour when documents need to be extensively revised, and cause quite severe problems for anyone who has to accept their document files for use in a desktop publisher. The following notes are mostly designed to guide typists preparing documents specifically to be used in a DTP system, but there are also notes on some aspects of general word processor use.

I assume most users will realise that every word processor stores text in its own unique file format. Document files are not transferable between different brands of word processor, although word processors are now beginning to have built-in file conversion facilities.

## Word processing techniques

The main areas that cause problems in normal word processor use are indented paragraphs and bulleted or numbered paragraphs. I have found many documents that had these features typed by means of typing several spaces or pressing the tab key at the start of each line. This seems to produce the desired result quickly and easily at the time, but if the document later needs even slight revision, the reflowing of the paragraph between the margins causes gaps to appear within the text as the former left indent spaces get carried into the body of the reformed paragraph. Then the typist has to laboriously delete the offending gaps and type in new indent spaces.

It may seem like more trouble the first time it is typed, but it pays to use the word

processor's indent feature or mark that group of paragraphs and alter the margins. Exactly how to do it depends on the particular word processor. For bulleted or numbered paragraphs the system usually has some means for either setting a left indent from the normal margin with no indent for the first line, or changing the left margin for the selected area with a negative margin for first lines.

Similarly, for centered or right aligned headings etc, it is much better to use the systems alignment commands rather than type in enough spaces to place the text as desired.

It should not need to be said that the enter key should only be pressed at the ends of paragraphs or lines that must be kept as separate lines. Never use the enter key to force words to the next line or make a right indent. Use the special key provided to override hyphenation or use the special non-breaking-space key to avoid line breaks happening where not wanted, or for a right indent, mark the block and set a suitable right margin.

For lists with leader lines, such as to prices, if the word processor has a leader facility in its tabs options it is better to use that than to type a lot of dots.

In the case of tables of data, you should always use the special tables facility if the word processor has one, or else use tabs to align the columns rather than multiple spaces. If the system allows tab stops to be easily set for a marked block of text, then it is better to place just a single tab between columns and set stops to suit the columns.

If you are using a proportionally spaced font this technique is essential. In a text-based word processor such as on DOS, you can line up the text columns on screen with spaces easily enough but when printed it will be all wrong unless tabs are used. In a graphic-based word processor such as on Windows or a Macintosh it will be obvious as you type and you may be able to adjust the number of spaces to get the columns to look almost

right but tabs are the only way to get perfectly aligned columns.

## Typing for DTP

That's about all I want to say regarding normal word processor use. The following relates to typing material in a word processor for DTP use. Quite often in business the component bodies of text (called "stories") to be printed in a desktop published production, are typed separately by various typists and then imported into the DTP program by someone else.

Most good DTP programs can accept text data files from a number of different word processors, but that doesn't mean that the DTP system can easily use a word processor document file created for printing nicely direct from the word processor. The DTP operator will usually have to spend some time re-forming the document as received, and that can be quite a time consuming operation. If the typist originally typed the document to be printed directly from the word processor and the same document is now being reused, then the reformatting work is perfectly acceptable, but if the typist is being asked to type the text specifically for importing into DTP, then it is desirable for it to be typed in a suitable format initially. Doing so not only saves a lot of time for the DTP operator, but also for the typist as well.

The following refers to typing in a word processor, as typists mostly do. Text for DTP can also be prepared with a simple ASCII text editor such as Q-Edit, DOS-5's EDIT or the editor within X-Tree. In fact, I prefer it to be done that way, but professional typists generally prefer to use the word processor with which they are conversant.

If using a text editor, most of the same notes apply, except that you have to leave a blank line between paragraphs so that the system can distinguish lines that are within a re-flowable paragraph. In ASCII, you press enter twice whenever you would press it once in a word processor.



Typists are so used to formatting text to look nice when printed that they do it without even being asked to. But when typing for DTP, the layout will be done by the DTP program's facilities and it is a hindrance to have it done in the text document.

## Main points to observe for DTP:

- ✚ Ignore all indents, centering etc. Type everything flush left right up against the left margin..
- ✚ Do not use right justification. Type everything flush left, ragged right.
- ✚ Do not type a blank line between paragraphs. Just press enter once. Do not press enter within a paragraph. Let the lines auto wrap.
- ✚ For numbered indented paragraphs, type a single tab after the numeral (even if it seems to leave too big a gap on screen) and let all subsequent lines auto wrap to the normal left margin. This also applies to bulleted paragraphs on some DTP systems, but see later.
- ✚ Type all headings flush left, normal font, not bold.
- ✚ Type everything in the default font and point size including headings.
- ✚ It is OK to use italic and bold for selected groups of words where needed for emphasis, but do not make headings bold.
- ✚ Avoid text that refers to "the above picture" or similar. Use references to "Fig 4" etc, so that the picture can be inset over two or more columns whenever practicable.

Picture captions can be embedded in the text at about the right places but should be set off with blank lines or something so that the DTP operator can find them easily, as they are certain to need cutting out and pasting into the picture frames.

- ✚ If there are any passages that are intended for "sidebars" or boxed panels, type them as separate files. Give all the related file names that begin with the same letters.
- ✚ Provide any graphic pictures as separate files, rather than incorporating them within the text if your word processor allows that.

## Bullets

Bullets are often a difficulty. Typists generally use a lower case letter 'o' or a star or a hyphen. Some use a full stop which is not a good idea. In DTP it will usually be desired to use a symbol font for the bullets, and the operator will most often have to change the typist's bullet characters. Check with your DTP operator for what they would prefer you to type for bullets. It is best to type a tab after the bullet character.

Some DTP systems, like Ventura, have special provision for bulleted paragraphs and it is best not to type the bullets at all in the text file. For Pagemaker 4.0 I find a lower case 'q' is good if the *Wingdings* True Type font or *Zapf Dingbats* Postscript font is to be used for the bullets. Here I have used a \* character with the *Monotype Sorts TrueType* font.

## Tables

For tables, place a single tab between columns even though they will not all line up on screen. Tables with multi line text wrapped within the columns is a bit of a problem and is often better typed directly into the DTP system. If the word processor has special table support and the DTP system fully supports it then it may be OK to type the tables using the table facility.

Either way, it is usually better to type tables as separate files since the body text is usually set in columns in a DTP production and tables usually need to be typeset as an inset panel that the body text wraps around. That is more easily done if the table text is in a separate file.

Often a convenient way of typing text tables for DTP is in a spreadsheet program rather than a word processor. Some DTP systems can import Lotus or Excel files, or else you need to save the spreadsheet data as comma delimited or tab delimited. Check with your DTP system.

## Price lists

Price lists and similar can be typed like a table, but if just a single column, the simplest way is to type one tab after the description, immediately followed by the price, then press return for the next line. Don't worry that the prices don't appear lined up on the word processor screen. The DTP operator will set a tab stop located to suit and will add a dotted leader as part of the tab.

## Filenames

Check what filename extensions the DTP system expects for various types of file, and name your files accordingly. Generally the DTP system uses extensions to indicate different file formats. WordPerfect is unusual in not having a default extension and many WP users never add an extension to the filename. That makes extra work for the DTP operator. Usually they expect WP5 for a WordPerfect 5.1 file.

## Program code listings

It is highly desirable to type the program code in separate files to the explanatory text as the program lines will usually be too long for the normal text columns and it will need to be placed in a separate panel.

It is best to copy the code from the real program files rather than retype it, as it is very easy to introduce errors and so much program code has no meaning to most typists, has strangely spelled "words" and a plethora of punctuation marks, and every punctuation mark and space is vitally important.

Since the line breaks are important, program code usually has to be set in a panel that runs over two or more columns of body text, hence the need for a separate file. Also, because of the importance of every space and character, it is highly desirable to set it in a monospaced font in the DTP system, as otherwise the important commas and semicolons etc tend to be hard to distinguish. To preserve the line breaks, each must have a hard return.

Ventura, in particular, can wreck havoc with program code because it recognises certain characters as control code enclosures, and those characters occur frequently in program code. The main problem is < > and @ in Ventura, and they need to be doubled in the text file to get recognised for what they are supposed to be instead of being interpreted as controls. Pagemaker does not have those problems.

Many typists will not encounter all the above situations. If the primary points are observed DTP use will be greatly simplified, everyone will be happy in their work and it will get done quicker.



# Education News

During the past few months your 1993 committee has concentrated on both expanding your choice of educational services and a choice of programed time slots.. With the assistance of member lecturers volunteering their time and expertise, and for this assistance we are very appreciative, this is now starting to take shape.

Eleven (11) Educational Courses and 'Need to Know' Services Groups will be available for club members at our May monthly club meeting.

## Future Planning

An Educational Services Sub-Committee to organise a program of weekend educational courses has held its first meeting and a tentative program has been put together with courses to commence possibly July or August.

## The Junior Group

Any member who is a parent or is associated with young people from say the age of 5 or 6, up to 14 to 16 would appreciate that their computer knowledge and application varies considerably. This application cannot be simply judged by the date of their birth. Some 7 or 8 yearolds can develop and retain computer skills much better than many adults.. Likewise some 10 to 14 yearolds who have not had the opportunity to develop computer skills would have considerably less skills than some 7 or 8 yearolds.....

And there lies one of Brisbug Committee's management problems...

It is just not practical to parcel all juniors into one room and say presto 'We are going to teach to all xyz'...

Brisbug Committee is strongly of a decision that although Brisbug is a social club it is not a child minding group, and the way to go is not just to gather the juniors into one room for the club day and just play games or whatever...

Brisbug is also an educational club..... and the committee has decided that that is where part of the answer lies...hence the

decision in February this year to establish The Junior Educational Group at the same time closing the Junior Special Interest Group..... Since the establishment of Junior Education we have become aware of the varying skills level of this group.

Beginning with this month's Junior Educational Group's Lecture, students attending this lecture will wear a name tag....

Les Cathcart will issue students with name tags and these will be worn while attending class. Les will collect these name tags when the lecture is finished and re-issue the following month.

Only juniors attending the lecture and therefore wearing a name tag will be allowed to remain in the lecture room.

Les will still be the resident lecturer of this group but instead of lecturing the group for the whole period, he will ask senior club members who have a substantial degree of computer skills and who have the ability to teach junior members of the club to take the group for an hour or so, a different senior member each month....

## For the more experienced juniors.

At the April club meeting I spoke with seven of our more experienced juniors. During this discussion one request was for a junior QBasic Course. It is not practical to rent additional space or ask lecturers to give their time for what would be a very small group... I regarded this group of 7 not as juniors but as young adults with regards to their computer knowledge. To this group and to any young club members who have a computer understanding .... enhance your skills and attend one of the following courses.

Our lecturers are quite happy to have young club members attend their courses providing they have the necessary computer understanding to keep with up with the course.

## New User Course recommences May

John Tacey's six lesson course to New users starts again this month.

## Education Services for Country Members

During the next few months action will commence to supply a program of educational services to those members who are unable to benefit from the educational services which are available at club meetings.

It will be a few months yet before this program takes shape..... This is just my way of saying 'You are not the forgotten cousins'. You are very much part of Brisbug. I will report progress development of this program by way of SIGBITS

## MAY CLUB MEETING

## PROGRAMED TIME FOR LECTURES

### NEW USERS

COURSE: GETTING TO KNOW YOUR COMPUTER

Courses to choose from :

John Tacey ..... Room S5  
10.00am to 12.00pm

Lesson 1.

Protection, Organisation, Commands etc.

Chris Raisin.... Room S1

3.15pm to 5.00pm

Lesson 2 of the NUTS Course.

Dan Emerson..... Room

10.00am to 12.00pm

COURSE: INTRODUCTION TO dBASE 4

### NOT SO NEW USERS

Ron Lewis..... Room - Main Auditorium

10.00am to 12.00pm

Topic : Building your own computer

### ADVANCED

Courses to choose from :

Rex Ramsey - Room S4

10.00am to 12.00pm

Examining Programs and Converting from BASIC to DOS...

Brisbug members who are interested in this subject area and have been unable to attend previous lectures will be pleased to know that Rex has structured his lectures to allow for ample revision . This will ensure new course members will not be disadvantaged.

Geoff Baker — Room S8  
10.00am to 12.00pm  
Review of 'C' .... Introducing 'C++'

In preparing the change from 'C' to 'C++',  
Geoff has found the need to dwell a little  
further with 'C'

Leon Percy - Room S1  
10.00am to 12.00pm  
Topic : xBase...

Leon and Dan Emerson, together,  
launched this course at the April Club  
Meeting.

Dan Emerson - Room S17  
3.15pm to 5.00pm  
Lesson 3 : Information retrieval using  
the microcomputer.

This month's lecture will be the third of  
four lectures.

### The Junior Educational Group

Les Cathcart - Room S17  
12.00pm to 3.00pm  
Topic : Lloyd Smith will demonstrate  
how to install the Brisbug Software Library  
Catalogue, how to use the programmes  
'Lookfor' and 'List'... The Junior Group  
will also be taught how to use 'P K ZIP'.

### NEW MEMBERS ORIENTATION GROUP

12.15pm to 12.45pm

Prospective new members will meet in the  
courtyard, or if the weather does not per-  
mit, we will meet in the foyer. This meet-  
ing is very informative and will give you  
some idea of what makes Brisbug tick....

A separate meeting will also be held after  
3.15pm in Room S1... We will demon-  
strate, using a computer, how to extract  
and then operate your library catalog from  
your Hard Disk... You will also be advised  
on how to order software, program Kits  
and associated equipment and materials  
from the software library.

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**Please refer to notice board in the foyer  
on meeting day for additional Brisbug  
Education Information**

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*Ron Kelly Education Services Co-  
Ordinator ( 07 ) 399 5406, 7pm to 9pm,  
weekdays*

## Details of dBase Courses

In response to the needs of the range of  
members who attended last month's  
lecture, two groups will be formed.

### Beginners Group.

Presenters will be Raman Vasram  
(Teacher, Gap High School) and Dan  
Emerson (Teacher, Bremer State High  
School).

The focus will be on dBase 4, Version  
1.1 (distributed free by Borland at the  
Brisbug meeting last year)

I am hoping to attract some below 18  
olds in this group. It will be useful for  
assignment preparation for high school  
and tertiary students and for budding  
professionals.

The beginners group has two types of  
people in mind; there are the new data-  
base application programmers and those  
who want to use dBase as a personal  
computer productivity tool, integrating  
dBase data with spreadsheets and  
wordprocessors as part of the PC arsenal.  
The group would include corporate,  
government, small business and high  
school and tertiary students users who  
want to store, analyse and present  
information.

Why learn dBase? dBase is a useful PC  
tool because, - tables to store data can be  
created quickly - table design can be  
modified to suit a new need without loss  
of data - millions of records can be  
stored - a built in applications generator  
can be used to quickly create menus,  
data input forms and reports and labels.  
- universal data format: dBase tables are  
read and written to by many other appli-  
cations, and thus provide a common  
data storage for sharing information  
between work applications. - it is a good  
medium for transmission of data be-  
tween organisations - dBase is a stable  
product and data loss rarely occurs. -  
data can be imported from mainframes  
and used at leisure. - dBase supports  
security, multiusers and data encryption.

### Scope of the course.

The course will cover table creation,  
indexing and ordering of indexes,

queries, exchanging data (importing  
data into a spreadsheet, creating a dis-  
tribution table and graphing it), cross  
tabulation of data, commands and func-  
tions, indexing, database design (nor-  
malisation of multiple table databases)  
, relating tables, the applications gen-  
erator, SQL command set and an intro-  
duction to programming in the dBase  
language.

The dBase programming language has  
much in common with other languages  
including - program flow structures  
such as if statements, do loops - memory  
variables of string, logical, numeric  
and date types - arrays and data files -  
standard procedures, functions and user  
defined procedures and functions Expe-  
riences with dBase language will be  
a good introduction to structured  
programming.

### Advanced Group.

An advanced xBase group (catering for  
dBase, Fox-pro, Clipper and other  
dBase systems).

Presenter will be Leon Percy, a  
professional Fox-pro programmer.

The group is for those who have expe-  
rience with the language and want to  
learn how to develop a database appli-  
cation using the dBase programming  
language.

Required experience You need to know  
how to create and edit tables, be famil-  
iar with the command and function set,  
be very familiar with indexing and  
ordering indexes and relating tables  
(databases) and forms construction.

This course is designed to run on from  
where last year's Brisbug dBase course  
left off.

The proposed lectures will revolve  
around the development of a database  
application; a new Brisbug member-  
ship database. Clients (Lloyd and oth-  
ers), be interviewed, the tables, relations,  
forms and reports mapped on paper and  
discussed with the clients, and then the  
application will be developed through  
the programming stages to become a  
working application.

*Dan Emerson*

# NEW ADDITIONS TO LIBRARY

MAY 1993

## **BBUG 9003 WHEEL OF LUCK** Version 1.1

*CLASSIFICATION \* Games \* Windows \* Hard Disk*

After playing other "Wheel of Fortune" games in DOS, you can now try your luck with WHEEL OF LUCK under windows.

WHEEL OF LUCK is a game similar to the TV game show 'Wheel of Fortune'. Settings can be changed and preferences saved to disk. Sound is supported through Windows MCI, if a sound board is installed.

Enter more than one player and the countdown timer is automatically activated (it doesn't make sense to time yourself). You get 10-seconds to decide if you want to spin the wheel, buy a vowel or guess the phrase. If you choose to spin the wheel, you get 10-seconds after the wheel stops to pick a letter. If you choose to buy a vowel, you get 10-seconds to pick a vowel. If you choose to solve the phrase, you get 30-seconds to pick the missing letters. Be aware that once you've picked a letter, you can't go back if you make a mistake!

## **BBUG 9004 THE BILL DRAWER** Version 1.12

*CLASSIFICATION \* Accounting \* Windows \* Hard Disk*

THE BILL DRAWER is designed to help you pay your bills in a timely manner. Unlike "chequebook" programs, which assume you know what you want to pay, THE BILL DRAWER helps you organize your bills by their due date, then gives you powerful features to review, select and write cheques for only the bills you desire.

There are many features to help you analyze both your unpaid bills and expenditures, like: Recurring Bills, Cash Requirements Reporting, Expense Categories, Company Statistics, Cheque Register and Supporting Detail, Account Reconciliation, History Reporting, and much more.

## **BBUG 9005 FEET - INCH CALCULATOR** Version 3.1

*CLASSIFICATION \* Building Utility \* Windows \* Hard Disk*

FEET - INCH DIMENSIONAL CALCULATOR is designed for people involved with construction such as: contractors, architects, engineers etc. in mind.

The program is a calculator for dimensional numbers (found on a tape measure or blueprint). It simplifies arithmetic of numbers in a feet-inch-fraction of inch format. Numbers are simultaneously displayed in both decimal and feet & inches.

Installation is simplified with the included Windows setup process program.

The program is extremely useful for AutoCad for Windows.

## **BBUG 9006 THE INCREDIBLE MACHINE**

*CLASSIFICATION \* Games \* VGA \* Hard Disk \* Mouse \* Sound Card*

Greetings fellow inventors, puzzlers, and gamers!! Welcome to the wacky and wondrous world of "THE INCREDIBLE MACHINE". This interactive demo version lets you get a taste of the game to see for yourself if you want to buy the full version.

For this interactive demo, there are only eight puzzles, but in the real version there are over 100 puzzles. The goals of each puzzle are described on the Control Panel. In each puzzle there will be some parts that are already positioned on the playfield.

This demo version does not support PC speakers, it does support most major sound cards.

## **BBUG 9007 CONTROL 3 AND PRINTVIEW**

*CLASSIFICATION \* Utilities \* Floppy Disk \* CGA/EGA/VGA*

CONTROL 3 Version 7.1, is a short and fast program that performs all commonly used file management operations with a minimum of bother and from the conven-

ience of a multi-menu environment. For the first time, display and control THREE drives or directories on screen simultaneously.

Features include: Built-in no-nonsense editor and text file viewer. Colour coded directory lists, automatically associates certain files with applications execute, copy, delete, rename, sort, make and remove directories, view and print text files, shell to DOS, touch-up file dates and times, search your entire hard disk for lost files, change file attributes, change disk volume labels, delete and copy whole directory structures complete with any contained files, file encryption, find and display strings of characters within both text files AND executable files, move effortlessly through directories and between drives, proportional disk space indicator, backup/update copying feature.

Uses expanded memory or hard disk to make the most use of your memory. Can work in conjunction with your favorite directory tree program (like Norton Change Directory, or ACD) for impressive results.

PRINT VIEW Version 1.1 is a simple program for previewing the expected page layout when a plain ascii text file is printed. You can make sure everything looks right before you waste a lot of time and paper with printing. Requires an EGA or VGA system.

Both programs by Kevin Solway of Brisbane.

## **BBUG 9008 EXECUTIVE ADDRESS BOOK** Version 2.03

EXECUTIVE ADDRESS BOOK is designed for both business and private use. It prints and maintains professional address book and if required a Rolodex file.

Unscramble your address old book. EXECUTIVE ADDRESS BOOK is formatted for 3 3/4" x 6 3/4" pocket secretaries to fit Day-Timer, DayRunner, etc. organizers. Page space maximized to keep books as thin as possible. Up to nine different sections in three different styles. Five phone numbers: Office, FAX, 800, Home, Other.





## GAME OF THE MONTH

**BBUG 9009 MAJOR STRYKER Version 1.3**  
(Disk 1 of 2, also 9010)

**BBUG 9010 MAJOR STRYKER**  
Version 1.3 (Disk 2 of 2, also 9009)

*CLASSIFICATION \* Games \* EGA/VGA*  
*\* Hard Disk \* Sound Card \* Mouse*

In the not-so-distant future the calamity of World War III led to eventual world peace. But it did not last... Earth was invaded by alien marauders—the Kretons. Earth's united military force, still depleted after the mighty onslaught of WWII, was not nearly sufficient to repel the numerous Kreton attacks.

It was discovered that the Kretons had used a wormhole to invade our region of space from their home worlds. And with that knowledge Earth called into action Major Harrison Stryker, hero of WWII, to travel back through the worm hole and destroy the Kreton's home world headquarters.

With almost no chance of success, you accept the mission...

Major Stryker is the first Apogee game with "triple-parallax scrolling", adding to the illusion of depth and danger. Your mission is to pilot a high-powered, armored space ship through dozens of stunning scenarios, such as space stations, lava caves and alien cities.

Exciting features include: Ad Lib music and Sound Blaster digitized effects. EGA/VGA high-speed animated graphics. Cinematic sequences. Unlike any other Apogee game yet. Full of bonuses and secrets to discover. Save and restore up to 10 games. Play with joystick or keyboard. Exciting demo mode.

If you're into action-filled, heart pounding shoot 'em ups, then Major Stryker is your ticket to adventure.

## SOFTWARE LIBRARY NEWS

Lloyd Smith

### SELF EXTRACTING PROGRAMS

Commencing with new disks placed in the library this month, all new programs which need to be archived (compressed) will be able to be extracted directly from the floppy disk to a drive and directory as selected by the user.

When you type the file name, you will be asked to select drive and sub-directory where you want the extracted files placed and you must follow the instructions or the self-extracting program will attempt to extract to the floppy disk.

BRISBUG PC USER GROUP INC. SOFTWARE LIBRARY  
SELF-EXTRACTING PROGRAM

[PROGRAM NAME]

WARNING: THIS PROGRAM IS A SELF-EXTRACTING ARCHIVED PROGRAM.

The program is self-extracting and will expand itself from this floppy disk onto a drive and into a sub-directory as selected by the user. The program will create a new sub-directory, and extract all files to it automatically.

To activate this feature you must follow the directions as set out below:

PROGRAM C:\DIRECTORY <ENTER>

Note: Any drive can be selected and the choice is entirely up to the user. If the above step has not been followed, answer <N> to the question below, and run the installation again and follow the directions, otherwise answer <Y> to continue.

CONTINUE WITH THE INSTALLATION ? Y-N

You must enter PROGRAM (Name) C:\DIRECTORY (Name) and press <ENTER>.

The program will create a directory on the drive specified and will extract all files to that directory. You may even extract the program to a high density floppy disk if you have a second disk drive.

Each disk also has a WARNING.TXT file on the disk similar to the file below.

W A R N I N G !  
SELF-EXTRACTING PROGRAMS

SOME OF THE FILES CONTAINED ON THIS DISK ARE SELF-EXTRACTING COMPRESSED PROGRAMS. AND CAN BE EASILY EXTRACTED AND INSTALLED ON YOUR HARD DISK BY FOLLOWING THE INSTRUCTIONS ON THE MONITOR. SELF-EXTRACTION OF THESE FILES CAN BE RE-DIRECTED TO ANOTHER DISKETTE OR SUB-DIRECTORY OF A HARD DISK FROM THIS FLOPPY DISK BY ENTERING THE NAME OF THE PROGRAM FOLLOWED BY THE DRIVE, AND THE SUB-DIRECTORY WHERE YOU WANT THE EXTRACTED FILES PLACED.

(EG. "PROGRAM NAME" C:\ or D:\SUB-DIRECTORY NAME - <ENTER>  
BRISBUG

It is hoped that these changes to the library will make handling of self-extracting files easier for all users. Older programs will not be changed to this newer method unless upgrades are received.

*Continued over*

**BBUG 9011**  
**Version 1.14**

*CLASSIFICATION \* Educational \* Hard/  
L/Floppy Disk*

EQUALIZER provides students the practice needed to develop the self-judgment and the sense of responsibility required to learn at higher levels of thinking.

EQUALIZER, an interactive program, lets one person experience in a few hours what TRAINER, a test scoring program, does with a lecture class of 120 over a six week period. Students can create and maintain test banks of better quality than those supplied by textbook companies. Teachers can edit questions into instructional questions files or into real tests. Three levels of thinking (Tourist, Pupil, and Student) are operationally defined (they have to be when in a computer program): The random guessing Tourist, the concrete Pupil, and

the formal, self-correcting, problem-solving Student.

Students can create and review at three levels of thinking test banks of better quality than those supplied by textbook companies. Teachers can edit questions into instructional question files or into real tests. Sample question files are included.

**VIDEO REVIEW** lets students report what they know or can reason by selecting questions they can answer with confidence during cram, practice and test modes. Each question is presented as short answer or fill-in-the-blank for Students followed by the multiple-choice answers for Pupils and Tourists. A progress trend line (graph) and a score based on quantity and quality are displayed.

TEST WRITER allows students to work as equals with teachers at the higher

levels of thinking needed to write high quality multiple-choice test questions from class notes, readings, and observations. It too begins at the lowest level of thinking: copying. Question and test writing are carried out by short specific tasks or assignments: Create or Copy, Select and Edit, Print Cram Notes, Format and Print Tests, and Select by Key Terms. Writing begins with a paragraph, a statement, or, a question stem that makes sense to the writer plus an acceptable fact or condition as an answer. A fully developed question can contain two right and four wrong answers. The wrong answers are outside acceptable boundaries by the desired amount of discrimination.

**BBUG 9012      GRAPHIC  
WORKSHOP FOR WINDOWS  
Ver. 1.1      (Disk 1 of 2, 9013)**

**BBUG 9013 GRAPHIC WORKSHOP  
FOR WINDOWS Ver. 1.1 (Disk 2 of  
2, 9012)**

*CLASSIFICATION \* Desktop Publishing*  
*\* Hard Disk \* Windows*

GRAPHIC WORKSHOP is a program for working with computer bitmapped graphic files. It will handle most of the popular file formats. GRAPHIC WORKSHOP is a simple, menu driven environment which will let you perform the following operations on files.

**GRAPHIC WORKSHOP** will - View them, Convert between any two formats (with a few restrictions), Print them, Dither the colour ones to black and white, Reverse them, Rotate and flip them, Scale them, Reduce the number of colours in them and do colour dithering, Sharpen, soften and otherwise wreak special effects on them, Crop them down to smaller files, Adjust the brightness, contrast and colour balance of the colour ones, Capture Windows screens or portions thereof.

Using GRAPHIC WORKSHOP, you can have your image files in the formats that your software recognizes, all without keeping track of numerous funky utilities. In addition, using the halftoning and dithering facilities of GRAPHIC WORKSHOP, you can convert full colour digitized photographs for use as superb black and white clip art, suitable for inclusion in your documents.

*Cont'd from page 57*

## GAMES KITS

Unfortunately, final preparation of the NEW Games Kits is not complete at the time this magazine goes to press, so I cannot give you details of titles of individual games in each kit, but there will be a selection of Card Games, Arcade Games, Adventure Games, Role Playing Games and Childrens Games. There will be at least 2 kits of each type available, and all will function on EGA/VGA monitors. Members attending the May meeting will have details of each kit posted in the Library area, and lists of contents will be published in the June Magazine. All Games Kits \$10.00 each.

Locating good games for CGA and Mono is becoming quite a problem, but there will be games kits available for these users in the future.

## DISK COPY PRICES

5 1/4" DISKS \$ 4.00 each

3 1/2" DISKS \$ 5.50 each

**POSTAGE - Normal Rates -**

	up to 8 disks - \$ 3.00
	over 8 disks - \$ 5.00

*Address all orders to:*

Brisbug Software Library, 95 Station Road BOOVAL QLD 4304

Orders may be placed by phone - (07) 281 6503

**Monday to Friday 9 am to 1 pm -2 pm to 4 pm.**

**Credit Card Orders - \$25.00 minimum**

GRAPHIC WORKSHOP will handle image files of any size your computer has enough memory to work with. GRAPHIC WORKSHOP will drive your monitor and printer through the Windows hardware drivers. If you have screen and printer drivers for Windows, you have them for GRAPHIC WORKSHOP for Windows.

**BBUG 2945      DCOM**  
**Version 4.01      (Disk 1 of 2,**  
**also 2946)**

**BBUG 2946      DCOM** Version 4.01 (Disk 2 of 2, also 2945)

*CLASSIFICATION \* Utilities \* Hard Disk*

DCOM - The Directory Commander - is a file manager for the experienced user who can appreciate a few unique bells and whistles. One of its funner features is that it displays the executable file names in a different color than non-programs when presenting a list of files. DCOM also includes the ability to make macros and use them to create a pseudo-menu system. And the built-in editor lets you easily draw lines and boxes.

Other features most users are used to purchasing separately include an alarm clock, activity log that records program usage, a keyboard lock that prevents unauthorized use of your system, a screen saver, a print spooler and full mouse support.

And then like many other file managers, DCOM lets you "tag" or specify groups of files to be copied, deleted, renamed, or moved. It lets you view or print text files, view a graphic representation of your directory structure, and move to different directories and drives from it. And you can execute the program from within DCOM, and use it as you own computing environment.

**BBUG 2952      ARCHIVER**  
**FOR WINDOWS      Version 1.10**

*CLASSIFICATION \* Archive \* Windows \* Hard Disk*

ARCHIVER is a program that works as a shell for the archiving utilities which means that to use this program, you also need the utilities on your hard drive. It does provide all the other features of Windows, the file selectors, dialog boxes, buttons and program launch features.

The program is very self explanatory making its documentation almost obsolete. There is nothing hidden levels deep under menus... everything is up front, on the screen. File selection and decompression is a snap and the advanced features of the compression programs are available as simple check buttons instead of long, arcane descriptions of switches.

**BBUG 2953      DELUX YAHT**  
**Version 1.1**

*CLASSIFICATION \* Games \* Floppy Disk \* EGA/VGA \* Mouse Supported*

DELUXE YAHT is a very fast moving version of the famous Yahtzee dice game. Up to four people may play, each trying to obtain the highest score. Players throw five dice and try to match certain combinations (all sixes, full house, straights, etc). Different points are awarded for different combinations, and the player with the most points after the last throw wins! The computer rolls the dice and you choose the combinations.

Old Yahtzee players will enjoy this version because the program tracks the scores on-screen with a score sheet that looks like the original paper version. Deluxe Yaht is easy to use, and great fun for adults and children.

**BBUG 2954      C\*GEN**  
**Version 2.1A      (Disk 1 of 3,**  
**also 2955, 2956)**

**BBUG 2955      C\*GEN** Version 2.1A (Disk 2 of 3, also 2954, 2956)

**BBUG 2956      C\*GEN** Version 2.1A (Disk 3 of 3, also 2954, 2955)

*CLASSIFICATION \* Business \* Hard Disk \* Printer*

For a successful business, it is essential to discover what is important to your customers and how your services and products are perceived.

C\*GEN allows you to easily design a customized and fully computerized customer and/or market research survey using a database of 430 questions covering 20 topics. Your own questions (both multiple-choice quantitative and open-ended qualitative) and topics, introductory text, and demographic questions can be included as well.

The surveys, which are designed by you, can be conducted interactively on the phone or with questionnaires. Custom reports and graphs with trend analysis and breakdowns by demographic categories can be produced.

C\*GEN can also be used to computerize your organization's existing surveys or to develop other types of surveys (Market Research, Training Needs Assessment).

**BBUG 2957      ADDRESS**  
**MANAGER      Version 1.1B**

*CLASSIFICATION \* General \* Windows \* Hard Disk*

When you need to keep a complete list of names, addresses and phone numbers, either for business or social use, you want something that is uncomplicated, yet sophisticated. ADDRESS MANAGER is just what you need and with a simple interface. 3D alphabet buttons are displayed across the screen and stay depressed when you click on them. Your address list is then displayed in alphabetical order.

Once you have a database of names and telephone numbers, you can dial any of the numbers by clicking on the name. ADDRESS MANAGER will even accommodate for you the dial "9" for an outside number, automatically add prefix characters, or strip out 1-plus-area codes for local numbers.

Other features include an array of colors, fonts, and type sizes for both the presentation screen and printed output, and the ability to add names easily to the database, to print envelopes on an HP Laserjet Printer, and to import existing data from other applications.

**BBUG 2958      EASY\*GEN**  
**Version 2.1A      (Disk 1 of 3,**  
**also 2959, 2960)**

**BBUG 2959      EASY\*GEN** Version 2.1A (Disk 2 of 3, also 2958, 2960)

**BBUG 2960      EASY\*GEN** Version 2.1A (Disk 3 of 3, also 2958, 2959)

*CLASSIFICATION \* Business \* Hard Disk \* Printer*

EASY\*GEN allows you to easily design a customized and fully computerized employee attitude survey using a database of over 500 questions covering 41 topics. Your own questions (both multiple-choice

quantitative and open-ended qualitative) and topics, introductory text, and demographic questions can be included as well.

The surveys, which are designed by you, can be conducted interactively on a PC or with questionnaires. Custom reports and graphs with trend analysis and breakdowns by demographic categories can be produced.

EASY\*GEN can also be used to computerize your organization's existing surveys or to develop other types of surveys (Employee Attitudes, Training Needs Assessment, etc.).

**BBUG 2961        FONTS**  
**GALEORE #1**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The First of a collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: Black Cancery, Caligula, Classic Heavy, Cloister\_Black, Graphic Light, Postcrypt, Architect and R S Alison.

**BBUG 2962        FONTS**  
**GALEORE #2**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The second in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: Futuri-Black, Parisian, Pixel\_Screen\_Font, RSAndromeda, RSCanaith, RSCaveman, RSCharleiChan, and RSChasline.

**BBUG 2963        FONTS**  
**GALEORE #3**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The third in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: RSChitown, RSCuneiFont, RSDaytona, RSDeusex, RSEIGarrett, RSFlintFont, RSFutaruBold, RSFutura, RSGordon, and RSGraphicLight.

**BBUG 2964        FONTS**  
**GALEORE #4**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The fourth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: RSHeidelberg, RSJacksonville, RSKathlita, RSLaserLondon, RSSlantInf, RSSStyle, RSTimesMirror (written as if you're seeing the letters in a mirror), RSToulouselautree, and PSToyBlock.

**BBUG 2965        FONTS**  
**GALEORE #5**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The fifth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: DavysDingbats, Howards, Howard\_Fat, Paradox, and RSCode39.

**BBUG 2966        FONTS**  
**GALEORE #6**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The sixth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: RSClassicRoman, RSLowerEastSide, RSLowerWestSide, RSMacHumaine, RSManzanita, RSMiamiNights, RSMoroma, RSNewGarrett, and RSParkHaven.

**BBUG 2967        FONTS**  
**GALEORE #7**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The seventh in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: RSOswaldGrey, RSPhoenix, RSPixie, RSPlaybill, RSPoloScript, RSRichard Murray, RSRiverside, and RSRudelsberg.

**BBUG 2968        FONTS**  
**GALEORE #8**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The eighth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: RSSansSerif, RSSharkTooth, RSScarface, RSStFrancis, RSStymie, RSTempus, RSUpperEastSide, and RSUpperWestSide.

**BBUG 2969        FONTS**  
**GALEORE #9**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The ninth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: Lemiesz, LoopDeLoop, MaidStoneScript, Middleton, PCOrnaments, RansomNote, and ReliefDeco.

**BBUG 2970        FONTS**  
**GALEORE #10**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

The tenth in this collection of ten diskettes full of fonts to be used with Windows and Adobe-type Manager installed. They can be used by Postscript and LaserJet printers. Fonts included with this disk are: Albattross, CarawayBold, CartWright, CSD-Black, and FrankTimes.

**MEMBERS CLASSIFIED**

**FOR SALE**

Total Peripherals 386SX-16Hz, 1 Mb RAM, 40Mb HD, 5.25 FD, 14 inch VGA Multiscan Monitor, extended keyboard

**\$1200**

John Thompson

300-1256

**BBUG 2971      MICROLINK  
FOR WINDOWS Version 0.9**

*CLASSIFICATION \* Communications \* Windows \* Hard Disk \* Modem \* Mouse*

MICROLINK FOR WINDOWS is a Windows communications program that is not only easy to use, but also sports a clean layout, attractive buttons that do what's expected, "Zmodem" file transfer protocol, and relatively understandable configuration options.

**BBUG 2972      AGGRESSION  
and AFRICAN DESERT  
CAMPAIGN**

*CLASSIFICATION \* Games \* EGA/VGA \* Floppy Disk \* Mouse*

AGGRESSION Version 1.0, is a board game that combines some of the aspects of checkers and backgammon. Like checkers, each player's game pieces start at opposite sides of the board. You alternate moves, and each player tries to be the first one to get all their pieces to the other side. You can surround an opponent's game piece and return it to its starting place. Play against a friend or the computer. A fun game with sharp graphics.

AFRICAN DESERT CAMPAIGN Version 1.5B, puts you in command of the Allied or German armies in a World War II fight over the Suez Canal. In this game you're given an equal number of troops and equal amounts of supplies. You can split your forces, move your troops, and attack your opponent. This is a strategy-based game with limited graphic displays.

**BBUG 2973      CONQUEST  
Version 1.6**

*CLASSIFICATION \* Games \* Floppy Disk \* EGA/VGA \* Mouse*

CONQUEST has much in common with other "Conquer the World" games. Up to 8 players can play, any or all of whom can be computer controlled.

The goal is to defeat all of the opposing armies and occupy every territory on the Map. The game objective can be different depending on selections made in the game set-up menu.

CONQUEST is different from other games in this genre because of its point & click user interface and the strength of the rule-based algorithm used by the computer opponents.

**BBUG 2974      CALENDAR  
WISE Version 1.0**

*CLASSIFICATION \* General \* EGA/VGA \* Hard Disk*

CALENDAR WISE is a multiple subject planner/tracker that simulates a desktop blotter or popular write-on/wipe-off wall calendar. It appears on screen as large desktop calendar. Up to 100 different calendars allow you to keep unrelated planning separate.

Multiple calendars can be referenced at once to view or print together. Information is easily entered using recurring yearly, monthly, daily and weekly frequencies. Any item can be copied and pasted instantaneously. Reminders can be attached to an item. Items can be searched for and located quickly.

The format of the calendar can be quickly changed so that different numbers of weeks can be viewed. Text size can be changed allowing more information to be viewed. Calendars can be printed to printer or file. CALENDAR WISE can run on a network with unlimited users.

**BBUG 2975      THE  
ANCIENTS I - THE  
DEATHWATCH Version 1.2**

*CLASSIFICATION \* Games \* Hard Disk \* VGA/SVGA \* Mouse*

ANCIENTS I: THE DEATHWATCH is a fantasy role playing game similar to the games like EYE OF BEHOLDER and BARD'S TALE.

You can create and save your own characters. There are four classes and three races (elf, dwarf, human), as well as several face portraits (both male and female) for displaying your character on the screen.

The game a three dimensional viewing screen for exploring the town and the dungeon as well as a dialogue box for encountering other characters or special areas of the town and dungeon. The town has an inn, an equipment shop, guild, a temple, and a casino. All commands are performed by clicking the mouse on one of several screen icons or on a particular line of text in dialogue box - rarely will you ever need to touch the keyboard.

Weaponry, armor and the inventory of each character can be displayed and manipulated on the screen using the mouse. In combat the monsters are displayed on

the screen, and each character can attack, defend, use an item, cast a spell, or flee. Only magicians and friars can opt to cast spells. In the game your party of characters will be set on various missions, and clues will be given on the way. Games can be saved and then restored at a later date.

**BBUG 2976      CARPENTER'S  
DREAM Version 2.11**

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

CARPENTER'S DREAM is the construction program for contractors, carpenters, and homeowners. Use it to measure concrete, liquids needed, truck loads, deck material, spacing between posts and railings, stairs, windows, cross corner lengths, estimate for easy to complex roofs, math calculations and conversions, etc.

In short, CARPENTER'S DREAM has everything for residential construction as well as commercial and heavy industrial applications. Measurements are expressed in feet, inches, and fractions of an inch; and angles as pitch.

**BBUG 2977      CROSSWORD  
CLIPPER Version 1.0**

*CLASSIFICATION \* Desktop Publishing \* Windows \* Hard Disk*

CROSSWORD CLIPPER is a crossword puzzle layout tool for any Windows-based desktop publishing program. It is a companion program to the Crossword Creator program on disks #0819 and #1142.

As a Windows utility CROSSWORD CLIPPER lets you capture an image of a puzzle created in Crossword Creator and paste it in any Windows program through the use of the Windows clipboard. It's a work-around that makes Crossword Creator, Windows compatible.

**BBUG 2978      DAYO GUI  
POS Version 4.20G**

*CLASSIFICATION \* Business \* Accounting \* Hard Disk \* VGA \* Mouse*

DAYO GUI (Graphical User Interface) POS (Point of Sale) is a full-featured billing and invoicing application for any size business that produces invoices for each sale and needs an easy way to keep track of them. Its graphic user interface minimizes the amount of typing needed to enter sales. This can save time, and users



with little experience can more effectively use a computerized system.

DAYO keeps a database of your customers, an inventory of your products and their prices, and a blank invoice. Sales are quickly recorded by selecting the customer name from the database, and selecting the purchased items from another list. All this information is placed in the blank invoice on the screen, and the totals are calculated automatically.

This program is suitable for creating invoices, but can also be integrated with DAYO's inventory and accounts receivables programs to include those functions. A cash drawer can be opened if the program is connected to a serial or parallel port.

DAYO GUIPOS is by default a multiuser system, allowing almost unlimited numbers of users to have the ability to simultaneously invoice using this one program on a PC-based LAN/Network. It can, however, be run (like all DAYO products) as a 'standalone' application. Hundreds of features abound, with more added almost daily.

**BBUG 2980      WORLD  
EMPIRE      Version 9/91**

*CLASSIFICATION \* Games \* Hard/LI  
Floppy Disk \* EGA/VGA \* Mouse*

WORLDEMPIRE is a strategy game based on a time in the not too distant future when nationalism is on the decline.

The people of the world are tired of the weakened nationalist governments that are constantly bickering with one another over trade restrictions and border disagreements.

Up to four people take on roles of dictators and compete to conquer the world. Each player is given an equal number of armies, and takes turns moving them from country to country, attacking, and being attacked. An interesting twist of this game is that each dictator is assigned a politi-

cal ideology and, as you conquer countries, the occupants may be friendly or unfriendly. Friendly countries take less troops to occupy, and unfriendly countries can rebel and throw your troops out.

Your mission? Not less than to conquer the entire planet and institute a worldwide government under the auspices of your beloved ideology.

**BBUG 2981      SNOOP  
Version 1.0**

*CLASSIFICATION \* General \* CGA/  
EGA/VGA \* Floppy Disk*

SNOOP is the perfect practical joke for those curious co-workers who always seem to be more interested in your work than their own. When you're away from your computer you can display any of its fake letters, programs, or messages. When some snooping person touches your keyboard, a bright red flashing ALERT starts flashing guaranteed to startle the most fastidious snoop. Only by pressing the secret key can it be disabled. SNOOP also has holiday greetings, out-to-lunch signs, no smoking signs, and many others. All ready to catch the office snoop!

**BBUG 2982      WINDOWS  
REMINDER      Version 1.2E**


*CLASSIFICATION \* General \* Windows  
\* Hard Disk*

WINDOWS REMINDER is a useful personal scheduling program. It lets you

enter date, time, category, and type of appointments. Multiple entries can be added to create to-do lists. Appointments can be reviewed and printed out by time or category. Like your favorite alarm clock, WINDOWS REMINDER sounds an audible alarm, and even has a snooze function that will re-remind you at a later time. It can also launch a program when you are away from your computer.

Text can be easily imported or exported in ASCII files. It also supports DDE (Dynamic Data Exchange) as both a client and server, letting you easily exchange data with other Windows programs.

END



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# BRISBUG HELP LINES

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

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

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

Subject	Name .....	Phone	Days & times
4DOS	Chris Raisin .....	379-1415	Any time
	Dan Bridges .....	345-9298	Anytime
Accounting	Ian Haly .....	870-1463	After 5:30 & W/Ends
As-Easy-As	Dan Bridges .....	345-9298	Anytime
	Dan Emerson .....	288-6070	
Assembly	Scott Hendry .....	245-1330	After-hours
AutoCad	Geoff Harrod .....	378-8534	Evenings, W/E
C language	Danny Thomas .....	371-7938	Mon-Fri 6pm-9 & W/E
	Ian Haly .....	870-1463	After 5:30 & W/E
Clarion	Ray Creighton .....	354-1107	eve & W/E
Clipper	Chris Raisin .....	379-1415	Evenings
	Don Andersen .....	881-2432	after 7pm & W/E
	Dan Emerson .....	288-6070	
	Mike Theocharous .....	824-1450	Anytime
CodeBase	Ian Haly .....	870-1463	After 5:30 & W/E
Communications	Ron Lewis .....	273-8946	9am-9pm
Corel Draw	Scott Hendry .....	245-1330	After-hours
Dataflex	Tony Obermeit .....	2875534	Mon-Sat A/Hrs & Sun
dBase	Ian Haly .....	870-1463	After 5:30 & W/E
	Mike Theocharous .....	824-1450	Anytime
	Sylvia willie .....	393-3388	Evenings
	Bob Boon .....	209-1931	M-F 8am-5pm
	Chris Raisin .....	379-1415	Any time
	Dan Emerson .....	288-6070	Evenings
DBXL	Ian Haly .....	870-1463	After 5:30 & W/E
DisplayWrite 4	Mike Lester .....	275-1742	(343-5703 a/hrs)
DOS	Dan Bridges .....	345-9298	Anytime
Forth	Danny Thomas .....	371-7938	M-F 5-9, W/E
Fortran	Cec Chardon .....	870-1812	Evenings
	Rob Andamson .....	266-8353	Evenings
Fox/Fox-Pro	Dan Emerson .....	288-6070	Evenings
Genealogy	Rob Adamson .....	266-8353	Evenings
	Colin Cunningham .....	263-3005	9-9 all days
	Bob Gurney .....	355-4982	Mon-Sat 8-8
Hardware	Chris Ossowski .....	274-4144	9-9 all days
Help!	Dan Bridges .....	345-9298	Anytime
	Scott Hendry .....	245-1330	After-hrs
Meta 5	David Shaw .....	870-3633	9-9 all days
MS Word	Chris Raisin .....	379-1415	Any time

Multimate	Frank Mehr .....	397-3984	Anytime
Multi-user DOS	David Shaw .....	870-3633	9am-9pm
Novell Netware	Dan Emerson .....	288-6070	Evenings
Open Access 2	Cec Chardon .....	870-1812	Evenings
OS/2	Alan Gibson .....	207-2118	6:30-9:30pm
PostScript	Danny Thomas .....	371-7938	M-F 5-9 & W/E
PowerBase	Mike Lester .....	275-1742	(343-5703 A/hrs)
Project Management & planning	Brian Doyle .....	355-1328	9am - 9pm all days
Quick-BASIC 4.5	Harry Strybos .....	288-5145	4pm-7pm Weekdays
Q&A	Dan Bridges .....	345-9298	Anytime
Q-Edit	Dan Bridges .....	345-9298	Anytime
Quicksilver	Ian Haly .....	870-1463	M-F after 5:30 & W/E
R-Base	Tony Luck .....	279-3033	9-9 all days
Spreadsheets	Sylvia Willie .....	393-3388	Evenings
SQL	Cec Chardon .....	870-1812	Evenings
System Manager	David Shaw .....	870-3633	9-9 all days
True-Basic	Bob Gurney .....	355-4982	Mon-Sat 8-8
Unix	Paul Watts .....	892-2226	Mon-Sat a/hrs & Sun
Virus problems	Dan Bridges .....	345-9298	Any time
Windows	Bernard Speight .....	349-6677	6pm-9pm
WordPerfect	Geoff Tolputt .....	016-783111	Mon-Fri 9-6
Wordstar (all ver)	Neil McPherson .....	075-971240	A/hrs
Wordstar-2000/4	Bob Boon .....	209-1931	Mon-Fri 8-5
Xenix	Paul Watts .....	892-2226	Mon-Sat a/hrs, Sun
	Mike Lester .....	275-1742	(343-5703 a/hrs)

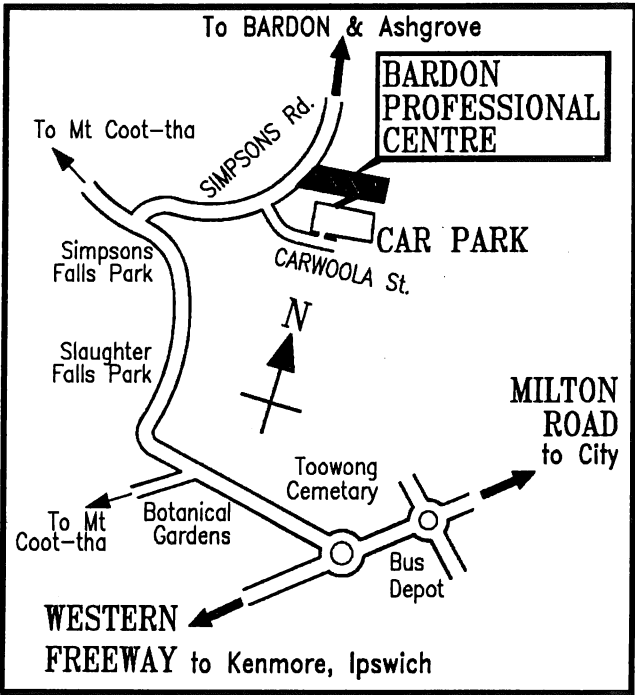
## MEETINGS

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

**BARDON PROFESSIONAL CENTRE**  
Simpsons Road,  
Bardon, Brisbane 10am to 5pm.

Brisbug occupies the main theatre and several other rooms. Please note that other groups are usually using the centre at the same time, and that parking is totally prohibited around the buildings and driveways, and the upper level car park is strictly reserved for staff and for exhibitors with specific prior permission.

There is a large car park off Carwoola Street with a footbridge over the creek and a pathway to the centre.



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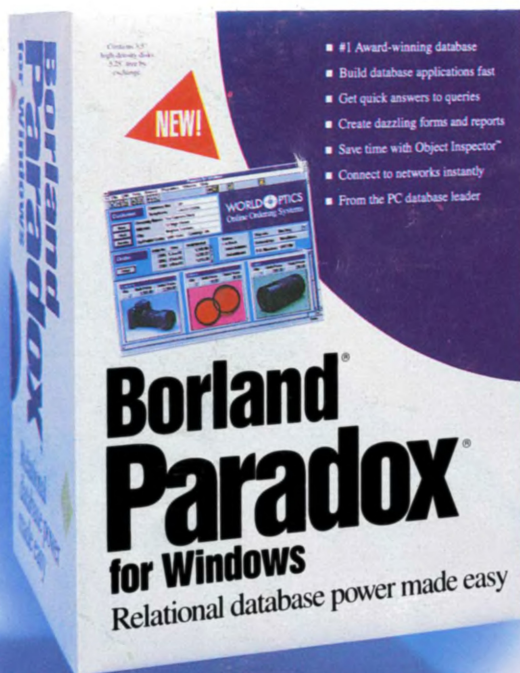
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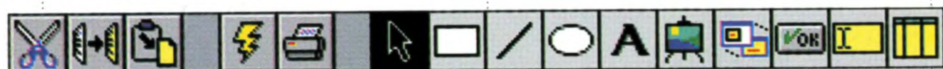
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Data Dependent...	
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▲ Object Inspector menus allow you to change an object's properties.

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