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Deadlines:

All material for publication in North Texas PC NEWS (articles and ads) must be received by the NEWS staff no later than the fourth Friday of the month prior to publication.

Articles:

Column width of articles is not critical, but please do not right-justify the copy. Article submission is preferred by modem (817-275-4109 or Startext 51563), or disk in ASCII format, unjustified. If you send a disk, please include a printed copy of the article to assure accuracy. Double spaced, typewritten copy is acceptable but must be received a week before the deadline.

Circulation:

North Texas PC NEWS circulation is 1012. Member distribution is 837; remaining copies are distributed to PC user groups around the country, and to advertisers, prospective members and others with common interests.

DEADLINE

Copy deadline for August PC NEWS is July 30th (mid week after the July meeting). If possible, please finish your articles before the 26th and bring them to the meeting.



July Meeting - 4th Saturday
August Meeting - 3rd Saturday
September Meeting - 2nd Saturday

Quote:

"This is a go-getting outfit. It puts out, month after month, a fine-looking newsy magazine (calling it a newsletter doesn't do it justice) full of material that is obviously of great interest to its members. Much of it deserves wider distribution, and some of it is either reprinted here in full (and properly credited) or serves to spark ideas for Monterey.

"The February issue carries reviews on software, an in-depth discussion of Intel's new (Fall, '85) 80386 chip, and exhaustive SIG information.

"On that latter subject, MBUG's special interest groups are limited only by members' offers to coordinate the efforts. NORTH TEXAS, for example, has sigs in APL, Artificial Intelligence, Business Applications, Genealogy, Programmers, and others."

The above article entitled "NORTH TEXAS PC NEWS" appeared in the March 1986 issue of M-BUG, the newsletter of Monterey Bay User's Group - IBM PC. It is reprinted here, not to brag, but to inform members of the high regard of the newsletter content by others. It is the consistent high quality of articles that you, the members, put out that is being applauded, not the "wrapper". Keep up the good work!

Table of Contents

Introduction to RS-232 - Final Chapter	1
Fred Williams	
Hardware Reset Modification - Warning	19
Russell Harris	
Software Reports	
Finance Manager II - Dick Gall	13
uLYNX TRACK BALL - Newton Hunt	17
BackEZ - Newton Hunt	18
Disk Toolkit - Stuart Yarus	23
Agenda	3
PC News Financial Report	11
Alan Kay Tapes	6
Room Assignments	24
Features:	
Nerd on the Street	7
Disk of the Month	16
SIG Reports	8
SWAP SHOP	14

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Introduction to RS-232

The Final Chapter

By Fred Williams

Well, this is it. The final segment. I am beginning to feel like I'm doing a TV mini-series! In this segment I will be covering null modem designs and some of the more common serial printer and plotter connections.

I would like to point out before we get into this, the actual application of our new-found knowledge, is that to perform the kind of work contained in this segment a few simple test instruments are highly recommended. You can make do without test equipment in most instances, but be forewarned that things can get extremely frustrating very quickly if you have no way of seeing what is going on.

One of the most important and least expensive pieces of test equipment is the RS-232 "Breakout Box". This piece of gear provides you with a very handy combination of jumpers, switches, and signal indicators. With just a breakout box and a few simple hand tools, you can do almost any RS-232 serial device interconnect job.

For more complex jobs involving communication protocol analysis a Data Line Analyzer or "data scope" is indispensable. But you will have a hard time justifying the expense to your spouse, as these start at about \$2000. A data scope provides you with CRT presentation of the actual data moving on the communication link along with some data storage and recall features which are provided for protocol analysis in addition to RS-232 signal monitoring. With enough Gee Wizzes and Oh Wows you can quickly push it over 20k bucks.

Well, on with the null modems. The null modem is used to connect two pieces of serial communications equipment together without the use of modems when modems would normally be required. An example would be hooking two personal computers together in order to transfer data between them. The two serial devices must be physically located rea-

sonably close together, as RS-232 cable length restrictions do apply when a null modem is used. If the distance between the two devices is too great, either "short haul" modems or regular modems must be used.

The simplest form of a null modem is a standard RS-232 cable with pin 2 (TD) and pin 3 (RD) swapped in one end of the cable. This causes any data that is transmitted by one device to be received by the other device and vice versa. As in all things technical, the simplest solution has a nasty habit of not working in all cases. Therefore I will give you the pinout for a "full house" null modem that will almost always work for asynchronous device interconnection.

Before I do though, you need to understand when to use a null modem and when not to use one. The null modem must be used anytime two like device types DTE to DTE or DCE to DCE (remember them?) are to be connected. If one of the devices has the option of switching device types, you should not need a null modem, merely switch one of the devices to the opposite type of the other device and use a standard RS-232 cable to connect them.

Figure 1 is the null modem wiring diagram. On the left hand side of the diagram are three columns of pin numbers. Each of these columns corresponds to the RS-232 connectors on the IBM PC product listed at the top of the column. The right hand column is the pin numbers as assigned on the "standard" RS-232 cable discussed in the previous article. The standard signal abbreviations used are:

PG	Protective Ground
DSR	Data Set Ready
TD	Transmit Data
SG	Signal Ground
RD	Receive Data
CD	Carrier Detect
RTS	Request To Send
DTR	Data Terminal Ready
CTS	Clear To Send
RI	Ring Indicate

I will use "NC" (No Connection) to indicate those signals which do not have a corres-

Continued on page 4.

Finally, a language worth leaving BASIC for.

If you crave more speed and power but don't want to leave the familiar territory of good old BASIC, we have great news for you. Microsoft® QuickBASIC Compiler Version 2.0.

It's compatible with your BASIC programs. And it's fast. Very fast. Existing BASIC programs will run up to ten times faster when compiled with Microsoft QuickBASIC.

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MICROSOFT®

Microsoft® QuickBASIC Version 2.0

July Program

Charles Kroboth, Program Chairman

9:00 AM, Auditorium

*** MICROSOFT ***

Alison Conn of Microsoft's Language Marketing Group will talk about two of that company's new releases. Quick Basic Compiler version 2.0 provides an integrated editor, compiler, and debugger to provide a complete programming environment. MSDOS C Compiler version 4.0 offers improved optimization, new memory models, and new utilities. It also includes CodeView, a window-oriented debugger. (Sound familiar Neil?)

10:15 AM, Auditorium

*** MORGAN COMPUTING * & * WESTLAKE DATA ***

Chris Morgan, President of Morgan Computing and past President of our group will be talking about Disk Toolkit. Disk Toolkit is a floppy and hard disk utility that goes beyond Norton's Utilities but remains easy to use. The new version 2.4 will be demonstrated and a special discount will be offered to club members.

The second half of the program will feature Dick Hodgkins, President, and Albert Nurick, Lead Programmer, of Westlake Data. They will be presenting PathMinder, a DOS command shell/disk manager that has received good reviews in the past year.

12:15 PM, Auditorium

*** GASP ***

Kent Cobb from Great American Software Products will also be showing their company's entry into the DOS shell market.

Open Showrooms at INFOMART March 15: MICROSOFT from 11:00 AM to 2:00 PM

DOOR PRIZES

9:00 Microsoft's QUICK BASIC COMPILER

10:15 Morgan Computing's DISK TOOLKIT
& Westlake Data's PATHMINDER

12:15 G A S P

Coming Next Month: **BORLAND**

RS-232 (continued)

ponding pin on one of the IBM product lines. Remember when connecting to the device at the other end it is best to insure the device connector pin assignments conform to accepted RS-232 standards, if possible. For those devices without a standard 25 pin "D-Shell" connector, you will need a pinout to insure proper connection or extreme patience and a good breakout box.

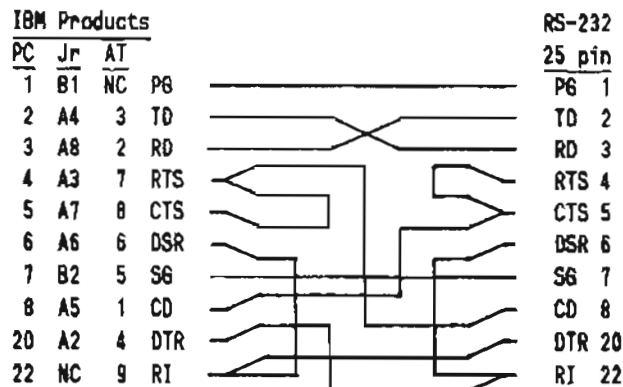


Figure 1
Null Modem
Wiring Diagram

The null modem wiring diagram shown in Figure 1 should cover all of the standard RS-232 signal requirements. For those instances where some of the signals are not required, no harm should be done if an indicated connection exists but is not required. The "NC's" shown in Figure 1 should not cause any unexpected problems, as those connections are not available when connecting to a standard modem.

The null modem works by "tricking" both devices into thinking they are connected to a standard modem when in actuality they are directly connected to each other through the null modem. Signal Ground (SG) and Protective Ground (PG) are carried straight through. Transmit Data (TD) of each device is connected to Receive Data (RD) on the other device. Connecting each of the Transmit Data (TD) signals to the other device's Receive Data (RD) causes the devices to send and receive data on the proper pins of their

connectors. The remaining cross-connections are for control lead signals. These are the signals that trick the devices into believing they are connected to a real modem. When a device asserts a Request To Send (RTS), the null modem returns an assertion of Clear To Send (CTS). Since a real modem would now send carrier to the remote modem, a lead is provided to assert Carrier Detect (CD) on one device when Request To Send (RTS) is asserted on the other device. Finally a cross connection between Data Terminal Ready (DTR) of one device with both Ring Indicate (RI) and Data Set Ready (DSR) on the other device permits the assertion of Data Terminal Ready (DTR) (indicating a willingness to transfer data) to show a call has arrived (assertion of both RI and DSR or DSR only) at the other device.

Null modems work for those devices which are of the same RS-232 type, either DTE's or DCE's. Naturally not all serial devices fall neatly into RS-232 device types based on their physical type. For instance all known modems are DCE's, I think, but there is where it ends. Some devices, like most computer systems, can be configured to be either a DTE or DCE. The next most common serial device class that is connected to personal computers is printer and plotter devices.

Printers and plotters can be either DCE's or DTE's and some are switchable. In addition to the DTE/DCE confusion, some printers can return a "buffer full" signal to the connected computer system when the printer's internal buffer is unable to receive any additional data. This buffer status signal also has no standard pin assignment. It does appear that many do use either pin 20 (DTR) or pin 4 (RTS) but quite a few use pin 11, RS-232 Supervisory Transmitted Data (STD), or pin 19 (RS-232 unassigned) as the buffer status signal. Still other printers and plotters either have no buffer control signal and must be "paced" to prevent buffer overflow or they use the widely accepted XON/XOFF protocol.

Serial devices which use XON/XOFF protocol for data flow control require no special control signal conductors in the connecting cable as data flow control is managed by the use of

RS-232 (continued)

special XON and XOFF control characters imbedded in the actual data streams. The use of XON/XOFF protocol is quite common for devices using the standard ASCII character set. By convention, [Ctrl-S], ASCII 19, is the XOFF control character and [CTRL-Q], ASCII 17, is the XON control character. It is therefore obvious that a connection that uses either [Ctrl-Q] or [Ctrl-S] as valid data cannot use the XON/XOFF protocol. When a sending device receives a [Ctrl-S], the XOFF character, from the receiving device, it immediately stops sending data. When the receiving device has cleared its receiving buffer and is ready for more data it sends a [Ctrl-Q], the XON character, to the sending device indicating that it is once again ready for more data. When the sending device receives the XON character, it resumes data transmission. This activity continues until all current data transmission requirements have been completed.

For a quick demonstration of the semi use of the XON/XOFF protocol try this. Use your MS-DOS TYPE command to list a rather long file on your PC's monitor. As the TYPE command is displaying the file on your PC's screen press the "Ctrl" key and tap the "S" key. Voila! XOFF! Now press any key to continue your TYPE command. The reason I said semi use of XON/XOFF is because of the any key to restart. True XON/XOFF protocol would not restart the TYPE command until you entered a [Ctrl-Q] key sequence. Also if you press any other key prior to the [Ctrl-S] sequence it will not work. Who knows why? I don't. I guess that's why we use [Ctrl-Num Lock].

Well I've been promising everything you need to know to connect some of the more common printers and plotters to your PC system. I would not take what I tell you with a grain of salt, but most of it is suspect for reasons you will soon see as this is what they call a "Grey Area". I am drawing it from another source. I have not personally hooked up a lot of printers and plotters, therefore I cannot verify with indepth experience the accuracy of the information. Anyway, that's what breakout boxes and Alka-Seltzer are for. If all else

fails, you might even try reading the manual! After all it was only written in Japanese and translated into English by an Italian.

I was going to use a somewhat questionable source for a specific printer and plotter connection list, but since bad information is worse than no information I will give a brief general discussion of the subject. I don't want to do what so many well meaning people do in this game, pass along a guess as fact.

As to how the printer should be connected to your system, I can give you some general guidelines. If the printer/plotter is a DTE device you should setup your serial expansion adaptor as a DCE. And if the printer/plotter is a DCE then you should set your PC adaptor to a DTE. If you are going to switch between a printer/plotter and a modem you should setup your computer as a DTE and if the printer is a DTE, in this case, swap pins 2 and 3 on one end of the printer's RS-232 cable.

One thing that must be pointed out is a major GOT'CHA! If the printer driver software or application software you are using does not recognize and honor the printer's buffer full signal or XON/XOFF, it will not matter how you hook up the printer's buffer full control signal. Unless the software honors the printer's signal, the software will continue to push data toward the printer no matter what the status of the printer's buffer. If this proves to be the case, you will have to set the baud rate to a speed that insures the printer will be able to keep up with the incoming data and live with it.

If the software does check for a control signal on one of the RS-232 pins, the printer's buffer full signal must be connected to that pin for proper operation. Some printers also may utilize other RS-232 signals for special purposes and those pins must be connected and the software must recognize them to take advantage of whatever wonderful printer functions they control.

I guess the best advice I can give is: READ THE MANUALS. If you got the printer for almost free at Harry's Hi Fi and Computer Store and it doesn't have the manual with it, ►

RS-232 (continued)

you get what you pay for. The best approach when no manual is about, is to first try to find one you can borrow. If no manual is to be found, breakout the "Classic" Coke (I prefer the stiffer stuff that comes in fifths) and the breakout box. You are in for a long night!

For those of you who have stuck with me, I hope this series of articles has provided you with some helpful information. There are many good reference books on the market that cover asynchronous data communication in greater detail than I have. One of the best books I have found for a very good introduction to the various aspects of data communications is "Technical Aspects of Data Communication", by John E. McNamara, published by Digital Equipment Corp. A great deal of this series was drawn from this one book. It is well written and easy to understand (if you are a technical type). I still refer to it frequently. But the best source for data communication savy is a lot of good old hardcore "Now what the is wrong?" experience. So, jump in there and give it a shot!

Fred

■

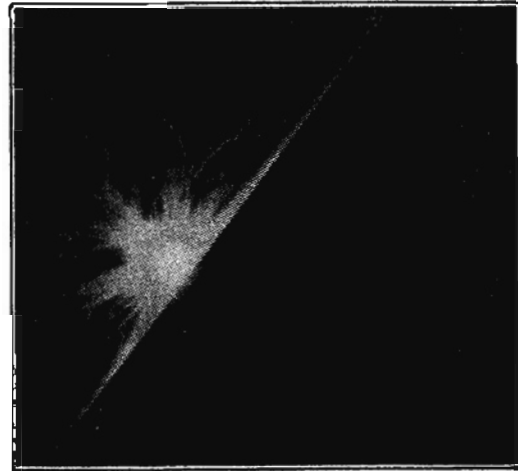
(Fred Williams is the owner of Systems Consultants, a data communications software development, network design, and consulting firm. He is the leader of the Communications Special Interest Group, and is a frequent contributor to North Texas PC NEWS. Ed.)

Alan Kay Tapes

When Alan Kay spoke at INFOMART at our May 10 meeting, he held the audience for over 2 and 1/2 hours. The event was recorded on videotape and professional copies are available for \$41.00. If you are interested in such a tape, please make out a check for \$41.00 to "A B C Tapes" and either bring it to the July 26 meeting or send it to me at 4537 Atlanta Drive, Plano, Texas 75075. Specify VHS or Beta format.

Stuart Yarus

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NERD ON THE STREET...

Hello North Texas PC User Group and friends. I would like to write a monthly column for our newsletter with emphasis on new computer products and companies, news about the reseller of those products, and anything else that comes to mind. If you find yourself anxiously waiting for the next installment, let our editor know and I'll try it again next month.

DILEMMA: Most computer retailers insist they charge more because they offer better support than discounters. When I bought my system I was computer illiterate and received questionable support.

In a recent survey conducted by Computer Retailer magazine, I noticed sales volumes have risen while number of employees has remained relatively unchanged. My guess is the quality of that staff is also unchanged as the knowledgeable sales people will probably move on to professions outside retail.

There are exceptions to every rule and one Straight Shooter in Dallas is Entre Computer on Arapaho Road. If you can afford to pay List Price and need someone that can and will answer your questions call Dave Brandenburg.

FUTURE COMPUTING: Have you ever wondered what a company does with all the money they receive from an acquisition or venture capital funding? Exhibit A: The Future Computing Building at Central Expressway and LBJ Freeway. Why did they close their doors last month? Could it be that they moved to plush offices from cheap, overcrowded space in Richardson next to a movie theater featuring last years kung fu movies. You don't need your name on a building to do good marketing research.

Fortunately for Portia, original owner of the Micro Store, she sold out to McGraw Hill in 1984. With a few million dollars in her back pocket, she has started a new venture to develop and market products for computerized homes. Intellisys Corporation has received a lot of publicity for it's futuristic play-house,

but Portia's husband Egil says there will not be anything for sale until next year.

OSCAR? The Excellence In Software awards were distributed recently by the Software Publishers Association (who?). It was even attended by ranking members of the copyright committees of the U.S. Senate and the House. Some of the winners included; Microsoft Windows - Product of the Year, Microsoft Excel - Best Business and Best Productivity Program, Lotus' JAZZ - Best Packaging, Deja Vu by Mindscape - Best Entertainment Product, and Aldus Corporation's PageMaker - Best New Use of a computer.

CLONES: What the world needs is a few more PC Clones. Businessland and Computerland are both ready to enter the private-label PC compatible market. Neither company was invited to IBM's last meeting of the Advisory Board. This panel discusses the directions to be taken by Big Blue and the absence of two of its largest dealers should prove interesting. Franklin Computer (the early Apple clone maker) and Apricot Computer are also about to jump into that market. I wouldn't expect IBM to sit idly by.

DEALS: AT&T and Innovative Software, Inc. have signed an agreement that will allow AT&T Information Systems to market Innovative's Smart Software System. Smart has been ported to UNIX and will be marketed by both companies. AST will be bundling Microsoft Windows with it's new Turbo EGA board. They had to add a high speed chip to the graphics board so Windows would run at a tolerable speed.

IBM: IBM is currently producing a one-million bit computer memory chip. It measures 7.7 millimeters by 10.5 millimeters and can store up to 1,048,576 bits of data.

TFTD: Thought for the day - If you did not attend Alan Kay's presentation at Infomart in May you missed a fantastic speaker. If you ever again have the opportunity to see him, it will be well worth your time.

Nnnnn

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Special Interest Program Reports

General Special Interest Group (SIG) News

- A reminder that any SIG news items for this newsletter must be received by noon of the last Friday of the month -- regardless of the date of the next meeting.

ADVANCED PROGRAMMERS SIG

Last month's meeting differed from most in that we had something of a topic rather than our usual unstructured free for all. James Rich gave us a short overview of his trip to the Microsoft Windows seminar in New York City. "I have seen the future."

This led to a discussion of the short and long term future of the various windowing environments. It would seem that Windows does not become a really viable product until one puts it on an AT-class machine with an EGA-class display; it should really come into its own on the '386 based machines with newer and even better display adapters. Microsoft is said to be working on something called "Future DOS" (aka DOS 5.0?) which will have many of the features of Windows built right into DOS itself. They are also working on the next stage above the EGA cards, the XGA, which will be to the EGA what that adapter was to the old Color Graphics Adapter. Windows-DOS may replace Unix as the "power user's" operating system of choice.

Rumors from several sources seem to indicate that the first 80386 based machines will be out this year; perhaps, as soon as August or September. The '386 chip is already selling for less than the '286 did before IBM announced the AT, and the '286 itself now costs almost as little as the 8088! The new machines will support (and require) more memory (and disk) than most of us ever expected to be able to sit on our desk. Some members expressed doubts that most single users could ever need that much power -- they were reminded that the same doubts were expressed about the PC-AT.

Also discussed were the official IBM patches to PC DOS-3.2 and other types of 'super-micros' such as the Connection Machine. Several members reported problems with older third party boards in 8MHz AT's. It seems that some of these boards are just not fast enough to keep up.

Carrington Dixon

APL LANGUAGE SIG

APL is the only computer language that was originally designed as a human-to-human notation!

The APL philosophy is to free the programmer from computer-imposed restrictions as much as possible and make programming more productive and more fun. For example, variables don't have to be declared - just assign a value to a name and let APL handle the creation of the variable, the assignment of storage, etc. Because of its power, APL is often mentioned in the discussion of 4th generation languages, and is becoming more and more popular in corporate information centers.

Come to our meeting and join the fun.

Jim Fiegenschue

ARTIFICIAL INTELLIGENCE SIG

The AI SIG is intended for both practicing professionals in Artificial Intelligence and for those who want to learn about AI. AI topics include: expert systems, natural language processing, speech, vision, planning, robotics, knowledge representation, heuristics, the Japanese Fifth Generation Project, MCC, and cognitive models.

AI-related products will be discussed, including both programming languages and expert system building tools. There are now several Prolog and LISP interpreters costing less than \$100, and a public domain LISP and Prolog.

Special Interest Program Reports

Specific topics for future meetings and projects include: real AI applications; bibliography of books, software, and training courses; Prolog programming; demonstrations of TI PC Scheme and Personal Consultant; and the role of AI in the Strategic Defense Initiative.

Jim Bender

ASSEMBLER SIG

Assembler is, in the final analysis, the most fundamental language for computers. Every type of compiler eventually produces machine language code. The Assembler SIG concentrates on the use of Macro Assemblers for the 8086-8088 family of computers. Usually a given group of instructions, with examples of their use, or algorithms that make particular use of them, is covered each month.

John Wolley

BASIC SIG

A special demo of the new Microsoft Quick Basic will be presented at 9:00, the same time as our regular meeting. I urge those interested in the BASIC language to attend this demo. The BASIC SIG will not formally meet, so that all BASIC programmers may attend this demonstration.

Herb Wilson

BUSINESS APPLICATIONS SIG

The objective of our current series on the use of batch files is to help non-programmer business users better understand what they (and the computer) are doing, so they can move beyond just limited use of certain application programs.

The level of interest continued to be high in June. After a brief vendor presentation of the LIPS 10 Laser Printer by a factory rep, we

kept on with the use of batch files. Lind Handlogen aptly continued where her father had left off in June. The Handlogens have been showing us their system, supported by voluminous handouts, and even shared it on disk, just for the price of a blank floppy.

Mark Bradley, a contract programmer, also helped by preparing a disk of batch file examples ... now if we can just find the time to study all this ...

Based on the level of interest, and assuming Linda's or Clarence's availability, we'll continue on the general subject in July. Time permitting, we'll discuss other items of interest to the group and answer questions on business applications.

Bruce Schubert

C Language SIG

"C" is rapidly becoming the most popular programming language for professional program development. Most of the really good commercially available programs are developed with the C language because it allows the programmer to access most of the features of the machine available to assembly language programmers. The availability of low cost and efficient compilers is making the language even more popular for the novice as well as the expert.

Come to the C language SIG meetings to obtain information on compilers, program editors, debuggers, and features of this popular language.

Sid Nolte

COMMUNICATIONS SIG

The topic for June's meeting was RS-232, the final chapter. The formal presentation was a discussion of various "Null" modems which are used to connect serial devices to computer

Special Interest Program Reports

systems without the use of modems. We also covered general guidelines for the connection of printers and plotters.

This month's presentation will be an introduction to Compuserve, which will be presented by a local Compuserve representative. Topics to be covered will include: what Compuserve has to offer, how to get on-line, operating tips, and how you can benefit for using the available Compuserve services and information.

As always we will have a general question and answer session following the formal presentation. All with questions are welcome; those with answers are even more so.

Fred Williams

DATAFLEX

Robert Grabowski

DOS SIG

Previously known as Beginners, the DOS SIG concentrates on every phase of the DOS command structure. It is open to members of other groups, who may be in the process of changing to MS- or PC-DOS.

John Hall

FRAMEWORK SIG

Still plowing our way thru the new menus... There is just an awful lot of new stuff there to learn and use. Last time we had a good look at the database and mailmerge functions. This month, we'll try to check out the spreadsheets area. If you are a new FW user or are considering becoming one, this is a great time to get started in the group.

Jim Janeway

GENEALOGY SIG

At the June meeting, a suggestion was made that in a future meeting we discuss what people do or don't like in our GENEALOGY programs.

Another member asked that we compare all computer programs that we know about, outlining the pluses and minuses of each. This will entail considerable work, but should be a valuable tool in letting members decide which program is best for them.

Joe Walker gave the June program. He discussed ROOTS II by Commsoft, a program written for the IBM. It is copy-protected, memory resident, requires 128K and costs \$200. A maximum of 4000 records can be entered, which could be a serious limitation. Memory usage is limited to 320K.

This program is oriented toward printing a book. After data is installed (and complete) a book can be printed, using the Pedigree Chart. It prints records for 4 or 5 generations of ancestors.

Data are validated as entered. You cannot put a death date before a birth date, for example. The program will not edit a name without other record information. There is no limit on the number of spouses, and up to 33 children can be listed for a marriage!!

The EDIT menu permits editing birth, marriage, children, parents, dates, etc. LISTS will list everyone in the database unless a key is specified. The SEARCH utilities are versatile and complete. FAMILY GROUP can trace a person through his parents, siblings, etc. and it will link records together.

A HELP screen is included, and the program has a graphics feature to make maps, family crests, etc.

Minnie Champ

Special Interest Program Reports

GRAPHICS SIG

This SIG is devoted to any and all means of programming and implementing graphic displays and applications on the IBM and compatible PC's.

Mike Durbin

LOTUS SIG

This SIG is just going into its second month, and is still in the process of determining members needs and wants

Susan Reyes

N-SQUARED ANALYSIS SIG

This SIG is devoted to the special investment programs known as N-Squared Analysis.

Greg Morris

SCIENCE/ENGINEERING SIG

Sam Levin discussed Turbo Prolog and its potential for artificial intelligence and expert systems, during the June meeting. Prolog offers the challenge to program as we think! Thanks to Sam for an interesting presentation.

Next month Dr. Dan Levine will discuss the use of mental models in describing choice processes. Dr. Levine is an international figure (honestly) and uses dynamical systems in Fortran as his vehicle.

This talk should open our eyes to using parallel processes and "mind-like" operating systems. All forward-looking programmers are invited.

In August Dr. Thomas Madron of NTSU will join us. He will talk about the problems of publishing in computer journals and will share his experiences.

Arlin Collins

TURBO PASCAL SIG

At the August meeting, representatives from Borland will be present. It is even possible that we will have a joint meeting with the Artificial Intelligence SIG. One of the things we will do in July is to prepare for the August meeting -- questions for Borland, etc. We will also continue our series on structured programming, and our special group for beginners.

Phil Chamberlain

UNIX SIG

This is a new SIG, devoted to the UNIX operating system. The precise direction it will take will depend on the interest of the attendees.

North Texas PC NEWS Financial Report 14 June 1986	
January - June 1986* (June Printing 1015)	
INCOME:	
Advertising, Labels	\$1592.80
Cash from Treasury	6200.00
BALANCE - Jan 1986	-175.22
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EXPENSES:	
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Print, Dist & Mail PCN	7400.49
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*Includes 6 issues PCN, Newsletter Exchange, PCN/StarText connection.	

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The only thing worse than filling in real estate contracts by hand is reading and interpreting them once you're done. All those little boxes, that hard to read print, the irregular line spacing, the king size sheets, the finding of the blanks. Sounds a little stone agey doesn't it? So we asked the Texas Real Estate Commission if we could reproduce them with our software. They said yes.....!

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- * Seller's Temporary Residential Lease

..... And, what the heck, for taking advantage of this introductory offer, a free investment analysis program to help you decide whether or not to buy/sell the property to begin with!

Here are some of the things you can do with this fully menu driven program:

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- * Make changes to one you just filled in
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System Requirements: IBM PC or compatible, 64K memory, any kind of printer.

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Software Report

by Dick Gall

FINANCE MANAGER II - GENERAL LEDGER

This newest version of the user-supported Finance Manager program is a simple, workable mini-bookkeeping system. Planned future modules will grow it into an integrated small business management system.

Hooper International created the original FM in 1981 for their own use on a 64K Atari 800. It was converted to IBM PC-format in 1983 and upgraded versions have been released 5 times with careful attention to user suggestions and ideas.

FM II adds program power and flexibility that should boost it to a leadership position among dedicated small business programs. The Borland Inc. label contained within the code of the main program module indicates that FM II is written in Turbo Pascal - which helps explain how the execution speed is achieved.

Minimum hardware requirements to run FM II are a PC, XT, or AT (or compatible), 80-column monochrome or color display, 245 KB memory, 2 floppy drives, and at least version 2 of DOS. Also useful but not required are a hard disk, printer, up to 640 KB of memory, and a Hercules graphics card.

Technically, FM II General Ledger is a menu-driven, double-entry (debits and credits) bookkeeping system. An appendix in the official documentation covers the required basic accounting principles and access to a textbook on accounting fundamentals is suggested. The basic capabilities required are planning a chart of accounts and matching debit and credit entries in recording business transactions. All this can be observed and studied in detail with the supplied sample FM data files and reports that can be automatically generated from them. One set of sample files is set up for personal (home) use, and the other is typical for a small business.

Though FM is menu-driven, the use of function keys to make menu selections means that users will be able to learn to zip to the desired point

of action with a few keystroke patterns. After prompting for the appropriate data file name, FM II presents its opening function menu, as follows:

FINANCE MANAGER II MASTER MENU

```
-----
ESC End/Restart Program
F1 System Utilities Menu
F2 General Ledger
F3 Accounts Payable
F4 Accounts Receivable
F5 Payroll
F6 Inventory
F7 Financial Utilities
```

Only F1 and F2 are available now. All the other entries point to integrated business management system modules that will be available later. The system utilities menu includes report headings, date and time format (international is also supported), printer setup sequences, display type, etc. Selecting the General Ledger item brings up the GL menu:

GENERAL LEDGER MAIN MENU

```
-----
ESC Return to Master Menu
F1 INPUT TRANSACTIONS
F2 Find/CHANGE Transactions
F3 REPORTS Menu
F4 CHART OF ACCOUNTS Menu
F5 Account Reconciliation Menu
F6 Utility Menu
```

The ease of finding and changing/correcting previously-entered transactions is one of the distinguishing features of FM II. Other new capabilities are sort options (input or date order), memory resident sort, capacity for up to 1,999 entries in the chart of accounts, full screen editing, support of 14"-wide printers, BCD math to avoid rounding errors, active accounts displayed at transactions input screen, and previous-data defaults that automatically enter repetitive data.

Data for multiple years can now be on-line in one disk file, including up to 20,000 transactions. A printer pause feature has been added, and program installation is simplified.

The copyrighted FM "evaluation copy" diskette is supplied as user-supported software and can be duplicated by user groups for dis-

tribution. The evaluation copy is fully functional except for the account reconciliation and graphs printing features. It also includes a 45-page, 117K-byte documentation file.

At first glance, FM appeared to be an "all business" program - firmly intent on getting the job done promptly and thoroughly. The real friendliness test was to put it up against my own simple "glorified checkbook" bookkeeping program that has evolved over the last 4 years. Initialization took one hour, including printing the manual, diskcopying the evaluation diskette to make a working backup, and an initial scan of the manual for the essential operational points.

Entering the chart of my 30 accounts and their initial balances took about 1 minute per, as did, on the average, putting in the 80 transactions that occurred during the first quarter of the year. Transaction input time decreased significantly as I learned to use defaults and the way FM handles transactions that involve multiple debits and/or credits. Result: FM was easy and quick to learn and use. But now comes the real difference - the REPORTS and BUDGETING features. FM produces a full set of reports, as can be seen from the reports menu:

GENERAL LEDGER REPORTS MENU

ESC Return to GL Main Menu
 F1 GENERAL JOURNAL
 F2 Account History
 F3 INCOME STATEMENT
 F4 BALANCE SHEET
 F5 Sources & Uses of Funds
 F6 Budget Variance
 F7 CHART OF ACCOUNTS
 F8 Budget Listing

The first report lists the individual transactions as entered. F2, account history, lists the transactions by account affected. F3 through F5 produce typical bookkeeping reports, and F7 lists the chart of accounts and initial account balances. All reports can be printed to the screen, to a disk file for further formatting and/or processing, and directly to a printer. F8 and F6 BUDGET reports tell the real story - of actual results versus the monthly by-account budget that FM supports.

Where appropriate, FM reports have a TRENDED option that compares month-to-month performance - for several months if desired - for an in-depth look at the direction of financial results and their root causes.

The evaluation copy diskette is available from Hooper International under the standard user-supported software procedure of sending in a blank, formatted diskette and an addressed, postage-paid diskette mailer. The suggested contribution is \$40 for the version that includes full on-diskette documentation and the graphics print functions. Options are a printed manual for \$10 and the account reconciliation module for \$15.

FM II can be ordered via credit card by calling Hooper International (24 hrs) at 206-256-6361. The address is P.O. Box 6009, Vancouver, WA 98668-6009.

Dick

SWAP



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INTRODUCING

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Recent surveys have revealed that, on the average, 3.6 persons have access to each computer used in corporate America. It might be four or five days before the victim discovers that their files are no longer available. When several people use a computer, or a single user operates more than two hours per day, there are two chances that a utility such as Norton's UnErase will recover the missing file(s) - slim and none! It is highly likely that the file's space will have been overwritten in the interim (an impossibility with *SafetyNet™*).

It is our belief that when one has accidentally erased a file their anxiety is high - and that's not the time to learn a new technology. With some utility's multi-layered menus, and the admonition that their system doesn't always work, anxiety becomes near panic and increases chances for additional operator error causing loss of the vital information forever!

SafetyNet™ requires the user to do three things: 1) Type "SN" at the > prompt, 2) Mark the files presented on the screen, 3) Press the Enter Key. That's it! No need to know about sectors, clusters, bits or bytes. No requirement to replace the first letter of each previously erased file - a simple, foolproof manner to end the panic which comes when files are accidentally erased.

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Disk of the Month

July 1986 DOM

PC OUTLINE version 1.01 is the July Disk of the Month. It is a shareware product -- the registration fee is \$49.95 plus \$5.00 shipping and handling. However, you can check it out for only \$2.00.

PC-OUTLINE is an outlining and planning program. It allows you to randomly enter information of almost any type (thoughts, plans, ideas, etc.) and then organize it into a hierarchical structure. Once in the hierarchical structure, you can view the information in many powerful ways. For example, using the hide/unhide feature, you can view just down to any level of detail in the outline that you want. With a single keystroke, you can go from viewing the lowest level of detail to a view that shows you only the highest, most important topics.

With another few keystrokes, you can print the outline, send it to a file compatible with your word processor, copy it into another outline, or paste it directly into your word processor.

PC-OUTLINE is particularly appropriate for list making. Tasks like making todo lists or planning a project are ideally suited for PC-OUTLINE.

Alternate DOM

The North Texas PC Club has ordered the latest copy of RBBS 1.14 computer bulletin board software from the Capitol PC Users group. We will have version 1.14C which was released on June 27, 1986.

We will make this software available as the alternate DOM if we get it in time to reproduce it. (I'm writing this on June 27 in order to get it into the newsletter.) It will be on 2 diskettes, so the cost will be \$4.00 for members and \$6.00 for others.

DISCLAIMER: The North Texas PC Users Group copies these programs as a service to the club and the members of the club. We try to test all the programs, but we DO NOT WARRANT THE PROGRAMS IN ANY WAY. YOU MUST DECIDE IF A PROGRAM IS SUITABLE FOR YOUR SYSTEM AND USE. If you ask, we will tell you what we know about any program, but the final decision to buy and/or use these programs is totally yours. We will gladly and without question exchange an unreadable diskette for one of the same program.

EXCHANGE: All members of the club are encouraged to contribute copies of public domain programs to the club library. For each new diskette of software contributed, you may select any diskette in the club library in exchange. The contributions will be reviewed before credit is issued at the next meeting.

MAIL ORDERS: At this time we will not be handling mail orders. The one exception we will make to this is if we are out of stock on a diskette at a regular meeting. For this service we will have a MINIMUM CHARGE OF \$2.00 FOR EACH DISKETTE. When we have more club members volunteer to help with DOM we might be able to extend this option.

PRICE: \$2.00 per diskette (if the program is on two diskettes the price is \$4.00)

CATALOG DISKETTES: Currently this is a two volume set priced at \$4.00. This has all of the readme files from each diskette in the club library.

MEDIA: DSDD 5 1/4" Formatted as 9 sector data diskettes. Public domain software only, standard full disclaimers.

AVAILABILITY: We will do our best to have all past diskettes at each meeting. DOM sales will begin at the DOM counter around 9:00, and continue until 10 minutes before the main meeting when we will close. We will then reopen after the main meeting and remain open until around 3:00.

IBM EXCHANGE NEWS LETTER: The EXCHANGE for the current month will be available at the DOM table AFTER the main meeting at no charge to paid up members of the NTPCUG. ▀

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Two Reviews by Newton J. Hunt...

uLYNX TRACK BALL
by Disc Instruments
a division of Honeywell

uLYNX (microLYNX) is a track ball designed for the 8088-86 machines. It is 8 5/8" x 3 3/8", using about half the desk space of a mouse. It interfaces between the keyboard and the computer using a special Y connector so there are no port or slot losses. It has three programmable buttons (up to 30 keystrokes each), the cursor speed can be set from DOS or from within a program as can the button assignments. Saving these configurations can only be done from DOS.

It comes with software, which need not be used for simple uses because there is an onboard ROM that provides four configurations; spread sheet, data base, word processing and graphics. ROM or Alternate Mode which can be accessed only at the DOS prompt. Ball speed and key assignments can be made but not saved.

There is a menu/macro writing function available to make applications programs easier. The purpose here is to augment the menus of any program to make them easier and less error prone. I am not sure how many levels it could contain but four or five would not be unreasonable. Changing from button assignment use to menu use can be done at anytime. Menu designing or writing is an advanced function requiring some programming skills.

The ball moves smoothly and easily. I have found it most useful in moving around in word processing and in a spread sheet. In some graphics applications I have found a mouse may have a more natural a movement.

The initialization software emulates a Microsoft mouse and the ball does work with Word and PC Paint and a host of other programs. The only one that it does not work with that I know of is Microsoft's Windows.

This is a well designed and finely crafted piece of equipment. The company plans were to have it available at the end of May. Retail - about \$195.00. Disc Instruments - 102 East Baker Street - Costa Mesa, CA 92626 - 800-824-3522.



BackEZ

BackEZ is a new set of backup utilities that I have been Beta Testing for two months now. I have found that I prefer it to other utilities I have seen because it is fast and the files are stored so that they may be used from the backup disk WITHOUT any modification. If the file was split between two or more disks there is a simple DOS copy procedure to concatenate file segments.

FASTBACK is faster to be sure, but the files are totally inaccessible except through a FASTBACK restore. For some the speed of backup and restore is most important and for that use I have no argument with the program. I have used it and do like it.

BackEZ will backup to any disk format, to tape or cartridge without regard to capacity.

I just completed a backup using BackEZ. It required 38 seconds to transfer data from a cache to a 360K disk and it required 18 minutes to backup almost 8 megabytes to 23 disks. I was not trying for a fastest possible by continuously having a disk ready in the unused drive and had to answer the phone twice. If you have used the DOS backup you can appreciate the difference in time.

BackEZ provides the options of selecting drives (source and target), complete or incremental backup, subdirectories or none, size of files to be chosen, date delimiter, backup disk title and number, modified files only (since last backup) and the ability to write scripts that control backup. Context help is always on line. You may look at the directory of the source drive at any time to help in writing scripts. Quite a range of options.

BackEZ uses impressive windows and color for information and display. It is quite friendly and with a little common sense it is difficult to get into trouble (like having enough formatted and numbered disks ready). The manual is clearly written and is helpful but not necessary except in the more complex functions available.

BackEZ lists the number of files on the source disk and the amount of bytes used and creates a thermometer type graphic to indicate how much has been done and how much remains to go.

You can switch target drives to go faster if you have two drives, you can format a disk without leaving the program and losing your place, you have the option of using verify (which will slow you down but may be important to some).

BackEZ writes an ASCII text log of backed up files and the disk number those files are on. This file can be read by a word processor or by a spread sheet if the extension is changed to fit. It then can be printed, sorted or any thing else you wish to do with it.

During restore using RestEZ you may look at the source directory so you can indicate those files to be Included and those files to be Explored by moving up and down the directory and marking the files appropriately. RestEZ works just as fast as BackEZ does.

BackEZ is now available for \$99.00 retail for the first copy and \$35.00 for each additional copy up to 99 copies for site licensing. You may contact Larry Toelle - 315 South EL Monte - Los Altos, CA 94022 - 800-847-2255.

Newton

(Newton is a Piano Tuner/Technician in Dallas.)

A N N O U N C E M E N T

Microrim has just announced a new product:

RBase System V

This program will be demonstrated at the Database SIG at the July meeting of the North Texas PC User Group

Russ Levinton

12750 Merrit Dr. Suite 300 LB20
Dallas, Texas 75251
214/770-4036

(The following article is taken from the July 1986 issue of HAL-PC Newsletter. It concerns the HARDWARE RESET article that we reprinted in last month's newsletter. Ed.)

HAL-PC member Russell Harris has expressed some grave concerns regarding the article in last month's Newsletter, which was reprinted from our DEX. The following article presents those concerns and a solution to what he sees as the problems. -Ed.

Hardware Reset Modifications Warning

by Russell Harris,
Houston Area League of PC Users, Inc.

The June 1986 HAL-PC Newsletter carried an article by Don Gentry, Palmetto PCC, describing installation of a hardware reset button on the IBM PC. The method Gentry used to reset the computer is simply to momentarily connect pins 11 and 13 of the 8284A Clock Generator and Driver IC on the motherboard. The modification as described by Gentry may result in damage to the power supply of the IBM PC, and in damage to an integrated circuit on the motherboard of the IBM PC/XT. This article will show why, in the opinion of the author, Gentry's approach is incorrect, and will show a method considered safer and more appropriate for installing a hardware reset switch on the IBM PC or PC/XT.

WARNING - Gentry's article states that the PWRGOOD line must be shorted to ground. The PWRGOOD line coming from the power supply must NOT - even momentarily - be connected directly to ground. Schematics in the IBM Technical Reference Manuals for the PC and the PC/XT provide the following information:

- o On both the PC and the PC/XT, the PWRGOOD line from the power supply is connected to pin 11 of the 8284A.
- o On the PC/XT, pin 13 of the 8284A is held always low by the output of an inverter (U22). U22 is a 74LS04.

- o On the PC, pin 13 of the 8284A is hardwired to ground.

IBM does not publish a schematic of the PC or PC/XT power supply, but physical inspection of the main printed circuit board within an IBM power supply reveals the following:

- o The collector of a PNP transistor, Q3, in the power supply furnishes the PWRGOOD signal.
- o The emitter of Q3 is connected directly to the 5 volt regulated bus, and the collector of Q3 is connected through a 680 ohm resistor to ground.
- o The PWRGOOD signal is carried by the orange wire (pin 1 of connector P1) from the power supply to the motherboard.

Operation of the power-up reset circuitry is as follows:

On power-up, once the power supply outputs have stabilized, the PWRGOOD line goes low momentarily. The PWRGOOD line is routed to the 8284A -RES input (pin 11), which is the input to a Schmitt Trigger. Whenever the -RES input goes low, the 8384A RESET output (pin 10) goes momentarily high, providing a reset signal to the rest of the computer circuitry.

When connecting a hardware reset switch to the PWRGOOD line, it is necessary to protect Q3 from excessive current when the switch is closed. In particular, the PWRGOOD line coming from the power supply must NOT - even momentarily - be connected directly to ground. Also, the PWRGOOD line must not be connected to any of the outputs of U22 - the output transistors in the integrated circuit will be subjected to excessive current, and may fail or be damaged, a safe and proper method of connecting a hardware reset switch to the IBM PC or PC/XT is as follows:

- 1) Cut the orange PWRGOOD wire between connector P1 and the power supply.
- 2) Connect a resistor (a 1K ohm, 1/4 watt resistor is fine) in series with the PWRGOOD line, where the line was cut. Now the PWRGOOD signal from the power

supply must travel through the resistor en route to the motherboard.

- 3) Attach a wire to the end of the resistor nearest connector P1. Run this wire to one terminal (the normally-open (NO) terminal) of a momentary-contact push-button switch (this will be the hardware reset switch). Now the PWRGOOD signal from the power supply must travel through the resistor en route to the hardware reset switch. The resistor provides current limiting for Q3 when the switch is closed.
- 4) Run the other terminal (the common (COM or C) terminal) of the hardware reset switch to logic ground. All the black wires coming from the power supply (including those connected to Pins 5 and 6 of Connector P1) are at logic ground; the wire going to either Pin 5 or 6 is a convenient place to connect the wire from the hardware reset switch.

The hardware reset switch resets the computer in the same manner as does the normal power-up reset, i.e., the system and memory diagnostic is performed prior to system boot. The only way (aside from the CONTROL-ALT-ERNATE-DELETE keys) to reset the system without going through the memory diagnostic is to modify the ROM BIOS.

A final note to those who have implemented Gentry's modification, and find that it appears to work OK. It is this writer's firm belief that the modification as described by Gentry is NOT good engineering practice, and will almost certainly result in the eventual failure of Q3 and/or U22.

Russell Harris is a mechanical engineer from Rice University. In addition to his activity with computers and electronics, he has experience with turbo machinery at Dow Chemical and with well control apparatus at Cameron Iron Works. He is currently a consultant in the field of technical documentation and programming.

■

THE COMPUTER OPERATOR

Feet winging, heart singing, he trots through the door
So happy to be midst the clatter and roar.
Computer and printer, the job as a whole
Is heaven to him, provides food for his soul.

No other, his Mother, his Kid nor his Wife
Receives such devotion, gives meaning to life.
To enter the centre is life's greatest joy
Providing a pleasure that surely won't cloy.

Pulsating, awaiting his gentle commands
The rig seems to recognise capable hands.
Confident, competent, he flits here and there
Getting things ready to go on the air.

Drives counted, tapes mounted, all ready to go
He pauses a moment, his features aglow.
Serenely, routinely he pushes the start
and its just about then that things fly apart.

One tape, then another, gives out whistles and screams
The printer goes mad, spewing paper in reams
The lights on the console give a fire-works display
And in momentary panic his feet turn to clay.
His heart begins pounding and surely must burst
As the whole crazy rig acts like something accursed.
For what seems an eternity but is only a flash
His feet feel bogged down in a glutinous mass
He's unable to move and unable to speak
As the Computer goes dead with a pitiful squeak.

Head ringing, eyes stinging, he goes for the switch
knocking down power on his beautiful witch.
Benumbed, feeling stunned, not yet able to guess
The calamitous cause of this horrible mess.

Traumatic, dramatic, the shock is profound
For fully a minute he utters no sound
Then waking, hands shaking, his temper gives way
And the curses start flying I'm sorry to say.

He curses the mainframe, the tape drives as well
He curses the card reader, consigns it to Hell
He curses the printer, he curses the punch
He curses the Console, and then on a hunch
He curses the program, and still quite untiring
He curses the Diodes, Transistors and wiring
He curses the present, he curses the future
He curses the day he first saw a Computer
At last, quite exhausted, he falls to the floor
Unable to utter one little curse more.

Bedevided, dishevilled, his face chalky white
Eyes bloodshot, tongue lolling, a pitiful sight
It's over, all over, the battle is done
Twixt Man and Machine the Computer has won.

Muttering, stuttering, completely insane
He mumbles this warning again and again
Idiots, Idiots, can't anyone see
That any time now you may end up like me.

Submitted by Mr. G.S. Elith
Lane Cove, N.S.W.

(The above is reprinted from The Newsletter of
the Australian Computer Society, September 1985.)

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SEPTEMBER 10, 1985
VOL. 2 NO. 36

THE NATIONAL NEWSPAPER OF IBM STANDARD MICROCOMPUTING

'PathMinder' Tool Handy for Making Hard Disks Easier



Our penchant for categorizing things, from music to politicians to social positions, carries over into our perception of software.

That's one of the reasons software publishers bemoan what they like to call "the bottleneck at retail". It's tough to get a new program in an established category onto the market; nearly impossible to get a new kind of program on the shelves.

Because sheep-like, we follow the same rats across the pasture to the old, familiar stuff.

That preference for sorting programs out into too few and usually ill-defined categories has meant we've seen a slew of often very different utilities lumped together into the "disk manager" and "DOS command shell" slots.

The market's perception (or misperception) of a program's natural habitat leads to confusion for buyers, and also means a few exceptional programs get buried under lesser but market-leading competitors to

whom they're only distantly related.

Finding a Winner

PathMinder, from Westlake Data, is a perfect example of such a winner—a power tool far better than anything like it on the market, but one which suffered from being second (or maybe fifth or eighth) of its kind to market. On the surface it looks like a DOS command shell; in practice, it's a sophisticated disk manager, a nearly indispensable tool for hard-disk users.

Bourbaki's *Idir* was the first "disk manager" utility I saw, and it was and remains a good product. But *Idir* suffers from a problem I find almost universal among command shells: After a while, you begin to find it tiring, and eventually find you don't use it much any more.

By contrast, *PathMinder* is so fast, convenient and useful that I use it constantly, and can no longer imagine trying to run a large-capacity hard disk without it. The program uses windows for lists of directories, subdirectories and files, and lets you move things among them quickly with a Lotus-like menu across the top of the screen. You can execute almost anything possible within the DOS command-set (except a single-step copy-and-rename operation) by simply hitting the first letter of the English-language term for what you want to do.

Because it's memory-resident, *PathMinder* runs lightning fast, because it follows the DOS rules, it runs with almost anything you can run on a disk.

The program is full of nice touches. A very good screen-oriented editor lets you clean up .BATs and add new floorplans

to your AUTOEXEC and CONFIG files without having to boot up your favorite plain-ASCII word processor or COPY COMMAND.

The .BAT-file copying and .BAT-removing capabilities of *PathMinder* are alone worth the price. You can erase groups of files, or move groups of files from any directory, on any disk, to any other—without playing Wildcard Roulette.

An encryption routine scrambles data very nicely. An applications-menu generator lets you hide *PathMinder* from the casual user, while delivering its power to his screen. A user log tracks who used the computer for what, how long and for whom.

I don't know DOS like the guys at Microsoft, but I don't have any trouble remembering how to CD, MD, DIR, TYPE and ASSIGN my way through sessions at the computer. But with rare exceptions, I still let *PathMinder* handle the dirty details of command syntax. And for those exceptions, I use *PathMinder*'s easy-to-use interactive-DOS facility to type in any more bizarre manuevers.

Nothing's free, and while *PathMinder* only costs \$39.95, it does take up memory, now down to about 70K bytes after a recent reconfiguration. That's 70K well-spent, I'd say—that, from someone who refuses to use a desk-accessories program that doesn't routinely load a macro program because he won't give up the memory.

You don't need a disk manager to survive close encounters of the hard-disk kind. But if you've never seen *PathMinder*, you use it to yourself to take a look at the state of the art in Making Life Easier. ■

Jim Seymour writes the syndicated newspaper column, "MicroBusiness," and helps corporate clients keep their microcomputer users happy.

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Disk Toolkit

A review by Stuart Yarus

Not too long ago, a friend of mine had several sectors on his hard disk "go bad". Since the bad sectors were in a moderately large file used in his business, this was a serious problem. Fortunately, help arrived in the form of Disk Toolkit. Morgan Computing Company, Inc. of Carrollton, Texas, produces this set of utilities which costs \$75 (list price).

The product is packaged as a manual and a floppy. The floppy contains the featured product and demonstrations of three other Morgan products: Professional Basic, Trace 86 and TED (a text editor). The version of Disk Toolkit now available is 2.4, which has significant improvements over version 2.3. There is also a READ.ME file with a description of the additions for the new release. The program works on any PC/XT/AT floppy and any hard drive. The display options are for monochrome, color, or black and white on a color board. PC DOS 2.x and 3.0 are supported. The program takes up only about 25K bytes, making it ideal for storing anywhere.

Just a few minutes with the manual convinced me that I was wasting my time - the program is much easier to use than the Norton Utilities (version 3.1), and the manual is not needed if you know something about disk or diskette organization. That is not to say that the manual is not needed. The manual has about 50 pages in it and addresses the program functions in great detail. In addition to the program description, there is about 20 pages of information on disk/diskette organization and file structure. This basic information is explained in sufficient detail to permit all but the most naive beginner to explore and change data on a disk or floppy.

Disk Toolkit has just two main screens. Each is a menu displaying the options available at the touch of a key. Once an option is chosen, a screen specific to the option is displayed together with a brief explanation of the choices under that option. Any choice which would result in a change to disk or diskette data is held in abeyance until the operator

confirms the decision. The escape key gets the operator out of all choices without changing any data and returns to the main menu.

The major functions are Read, Write and Verify sector data; Verify the disk; Format a track; Load and Save a file; Recover an erased file; Load a (sub)directory; Display general disk information; Read and Write a cluster; Load, Display/Edit, and Save the directory and FAT table; and last but not least, mess with a RAM memory buffer.

Most of the functions are self-descriptive. The one thing that stands out about ALL the functions is that any function that permits editing does so with a full-screen editor - and any data from RAM or a disk or diskette may be edited at will. There are two scrolling modes for editing: normal and fast. Editing may be done in ASCII or hexadecimal. Edited data may be saved to any place on the medium, regardless of the source. Any data can be stored anywhere - a data file can be stored in the boot sector (but don't expect much from your programs or data if you do that...) File data can be changed and placed in a different file. There are no restrictions on data movement - it is necessary to be aware of the consequences.

The RAM buffer deserves some mention. This can be temporary storage for disk data, or a 64K window into any portion of memory. The window is movable to any 16-byte paragraph boundary in the machine, including ROM and screen memory. (Don't expect to write to ROM, and watch for funny effects when editing screen memory.) This feature would allow recovery of any data apparently lost in RAM upon exiting a program that does not wipe RAM upon the exit.

There is one limitation that can be a slight annoyance: the maximum amount of data that can be edited, read, written, etc. is 64K bytes. There are occasional spelling errors in the manual.

In conclusion, I found Disk Toolkit to be a superb set of utilities for anyone needing to work with main or secondary storage, and a good guide for the beginner looking for a clear exposition of basic principles.

Stuart

■



Room Assignments

Saturday, 26 July 1986

Check room numbers in lobby at INFOMART

Special Presentations:



9:00 - 9:55
 Alison Conn of Microsoft Language Marketing Group will demo Quick Basic and MSDOS C Compilers

12:15
 Kent Cobb of Great American Software Products will be showing a new entry into the DOS shell market.

9:00 - 9:55	Room
Science/Engineering	_____
DOS	_____
Genealogy (w/Apple)	_____
Graphics	_____
BASIC Applications	_____
9:45 - 10:10	
Orientation	_____

MAIN MEETING: 10:15 - 11:45

Split program today. Chris Morgan will discuss Disk Toolkit & Westlake Data will demo PathMinder.

D O O R P R I Z E S

12:00 - 12:25	Room	12:30 - 1:55	Room
Orientation	_____	Invest - N-Squared	_____
12:00 - 12:55		1:00 - 1:55	
Assembly Language	_____	Artificial Intelligence	_____
APL	_____	Business Applications	_____
C Language	_____	Communications	_____
Turbo Pascal	_____	Databases	_____
Lotus	_____	2:00 - 2:55	
		Advanced Programmers	_____
		Integrated Software	_____
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NEW SIGS: UNIX _____, DATAFLEX _____.

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The Group meets once each month, usually on the second Saturday. See cover for date, time and place of the next User Group meeting.

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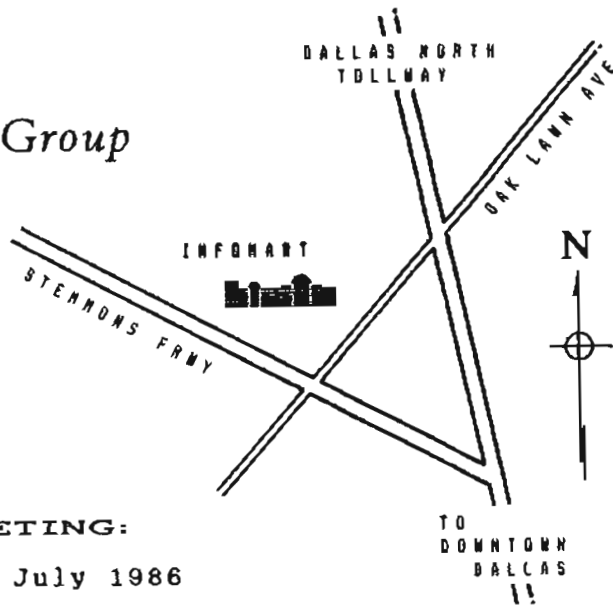


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NEXT MEETING:
26 July 1986