North Texas PC NEWS

North Texas PC Users Group

7.2

February 1988

Deadline:
All ad material for publication in North Texas PC NEWS must be received by the NEWS staff by the 15th of the month. See copy deadline below.

Articles:
Please do not right-justify, indent or otherwise code the copy. If column alignment is critical, send along a hard copy, or written instructions. Article submission is preferred by NTPCUG BBS, Startext MC 51563, or disk in ASCII format, unjustified. If you send a disk, please include a printed copy of the article to assure accuracy. If sending to the User Group Bulletin Board, use "mail" mode, to John Pribyl. Double spaced, typewritten copy is acceptable but must be received a week before the deadline. All material submitted will be considered for inclusion in the newsletter. The Editor reserves the right to edit as necessary to maintain standards of literacy, grammar, and length requirements

Circulation:
North Texas PC NEWS circulation is 1315.

Member distribution is 1084; remaining copies are distributed to PC user groups around the country, and to advertisers, prospective members and others with common interests.

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DEADLINE
Copy deadline for March
NT PC NEWS:
Monday, February 15th.

Note that the March meeting has been changed to the 2nd Saturday

Meeting Dates:

Feb Meeting - 3rd Sat. (20th)
March Meeting - 2nd Sat.
April Meeting - 3rd Sat.
(tentative)

Editor's Notes...

For those of you who haven't heard, we now have a 386 computer with 45 MByte hard disk, a high resolution monochrome monitor, and a laser printer for production of the newsletter. Believe me, it's a giant step forward in preparation of the newsletter!
Details:

Acer 1100B Computer with 80386 processor
Priam ID45H 45 MByte half-height drive
Amdek 1280 (Wyse 700) 1280 x 800 Mono
NEC LC-800 Postscript Page Printer

Preparation is faster now, and will be even faster as I learn the ins and outs of Postscript printing. It certainly is a joy to be able to see page proofs rather than relying on WYSIWYG entirely.

Speedy preparation will be the order of the day when we get to next month's newsletter. From the February meeting on the third Saturday, to the March meeting (second Saturday) there is a three-week time span! This means that the March issue goes to the printer about the time the February meeting is taking place. *Please get your articles and other material in before the 15th deadline if possible.*

John

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February 20 _____ _____ _____ _____ Charles Kroboth, Program Director _____ _____

9:00 AM to 9:45 AM

AUDITORIUM   *** BRODERBUND ***

Carri O'Loughlin is flying in from Broderbund's California office to show us several of that company's products for the PC. Included in the discussion will be Memory Mate, a memory resident, freeform, data manager, and PrintShop.

10:00 AM to 11:00 AM

AUDITORIUM   *** MICROPRO ***

The folks at Micropro will be demonstrating Release 3 of Wordstar 2000 as well as their new personal and legal additions. It's also possible we may get to see a sneak preview of the new Wordstar Release 5 and the new medical edition.

Special Presentation March 8

Bill Gates Chairman and Chief Executive Officer of Microsoft, will address our Group at a special meeting in March.

The presentation will be at the INFOMART on Tuesday, March 8th and will start at 7:00 PM.

You are invited to attend.

Election Results

The results of the January election are as follows:

President-Elect:

> Jim Hoisington

Board of Directors:

> Kathryn Crawford

> Phil Chamberlain

> Sid Nolte

We're looking forward to an eventful year under their guidance.

SECURITY

If you see any children wandering around IN-FOMART during "meeting Saturday" who are not accompanied by a parent or an older guardian, please notify the INFOMART guard from any phone in the area. The number to call is posted near the phones. We regret that this is necessary, but our new contract with Infomart requires this action.

Prez Sez...

DOA's, Stress and User Frustrations

DOA (Dead on Arrival) computers and accessories are becoming more and more common. It's the other, "dark" side of plummeting prices.

From the user viewpoint, how the vendor/dealer handles DOA's (or any unsuitable product) is critical. A good dealer/vendor faced with a reasonable complaint will quickly take steps to resolve the problem and maintain a satisfied customer. Others may be less responsive.

Example: NTPCUG recently purchased a laser printer for Newsletter production from a very large, well-known, local discount vendor. On delivery, an important part was missing and the print drum had a significant flaw.

The vendor who sold the printer was somewhat less-than-helpful in securing either the missing part, replacing the bad drum or living up to reasonable vendor-warranty obligations.

Their attitude was "Who, us? -- go to the manufacturer!" Outside of their arrogance and implied disdain for their customers, they were apparently unconcerned that they had delivered flawed merchandise. And, they appeared determined (at the sales-floor level) to do nothing about their mistake.

The vendor in question compounded their indifference even further by neither knowing nor caring that the printer's manufacturer (NEC) provided a 90-day, ON-SITE repair warranty that would have saved two trips from Arlington to the vendor's location.

While I'm sure that a telephone conversation between this vendor's officers and NTPCUG's officers could have produced a somewhat different outcome, that's not the point.   ►

Most NTPCUG members aren't "Fortune-500" MIS managers or purchasing agents. In spite of the corporate influence we can have as an organization, when we deal with vendors as individuals we often see ourselves pitted against layers of organizational structure antithetical to our goals.

To be truthful, many of us aren't aggressive enough or don't have the "Chutzpah" to argue up-the-line with salespeople who insist that "Nothing can be done." We tend to find such confrontations potentially embarassing and very uncomfortable. Some vendors know that about us -- and count on it to reduce return/replacement overhead.

Such vendors will place every obstacle available between the unhappy purchaser and resolution of the problem, and will hide behind "It's the system/procedure we have to follow." There's not much you can do here except persist and refuse to do business with them in the future.

Generally, it's a different story with manufacturers who are aware of the importance of product reputation and customer satisfaction. This example does have a "happy ending" in that the manufacturer's service center was extremely helpful in replacing the missing part (they didn't have to do this) and in replacing the bad print drum. They were responsive, courteous and concerned about their product's performance and reputation.

Result of this is that we feel "good" about the manufacturer and may recommend their products on that basis in the future. We will think twice about using or recommending the vendor to others.

And, that's the point.

We've added this experience to our knowledge of the manufacturer and the vendor. We'll compare this to other users' experience with them at NTPCUG monthly meetings. Such information is routinely shared between users at Club meetings -- it's one reason PC user groups are a major source of information and support.

Use your users group. If you are considering buying a major component or piece of software, ask around at the next NTPCUG meeting. Go to the SIG Leader concerned and ask. Check out the Club BBS Conferences to what other users know about your planned acquisition.

If you have an unhappy experience with local or mailorder vendors/dealers, let other Club members know about it. Refuse to recommend vendors you know to be either unwilling to stand behind warranties or otherwise unresponsive toward their customers.

Reagan Andrews

Undocumented Lotus 1-2-3 Release 2 Features

by Daniel Ehrmann

Chicago Computer Society via NYPC

In a spreadsheet with lots of ranges, type F5 then F3 to get a list of only five range names in the display panel. So far, nothing new ... then hit the F3 key again! This new mode clears the screen and displays all your range names in pages, with additional information at the top. It works anytime that you call up the display of five names (range names or filenames) into the panel, including GOTO, /RNC, /FR, /FC, etc. And it is nowhere to be found in Lotus' documentation. Another undocumented feature of 1-2-3 is that the four primary direction key can be abbreviated in macros to just their first letters. Thus: {LEFT} becomes {L}; {RIGHT} becomes {R}; {UP} becomes {U}; {DOWN} becomes {D}. The commands will also accept multiple keypresses, so that if you want the cursor to move five places to the right, you can simply say {R5}. In Symphony, you must use {RIGHT}, but you can say {RIGHT 5}.

Serial Communications and the PC Environment

Introduction To RS-232

By Fred Williams

Exploding proliferation of serial communication devices such as inexpensive modems, printers, plotters and mice, can create substantial problems in installation, configuration and operation for the PC user.

Originally published as a series in the May - July, 1986, issues of the "North Texas PC News", the following series on PC serial communications via RS-232-C is being resurrected with minor revisions to help PC users cope with this explosion. The author, Fred Williams, is owner of Systems Consultants, a data communications software development, network design and consulting firm. Fred has been active as leader of the Communications SIG recently, and is a consultant to the Club BBS as well as a frequent contributer to the "North Texas PC News."

Three Episodes Ahead -- Why RS-232-C Is Important to PC Users

This is planned to be a three-part series of articles on one of the most common data communication standards, RS-232.

1. In the first segment, the history and definition of the RS-232 specification will be covered.

2. The second part will introduce you to the most non-standard part of the RS-232 standard, the physical plug/pin and cable design. Major PC products will be covered, as well as the more common modems.

3. The third and final piece will cover the design and construction of "null modems", and printer to PC connection. This segment will also include an introduction to XON/XOFF protocol which is not a part of RS-232, but needs to be covered when talking about printers.

First, a brief history and background on this standard.

Several years ago the Electrical Industry Association (EIA) appointed a committee to develop an interface standard between Data Terminal Equipment (DTE) and Data Communication Equipment (DCE) employing serial binary interchange. This standard was called RS-232. Copies of the current standard may be purchased from the EIA Engineering Department, Electronic Industries Association, 2001 Eye Street N.W., Washington, DC 20006.

Newer standards, RS-422 and RS-432, have also been issued by the EIA and will eventually replace the older RS-232 standard as they offer even greater performance.

RS-232, or more specifically RS-232-C, reflecting the most recent revision of the standard, provides a widely accepted method of connecting two machines together so that they may pass information back and forth between them. Although the machines may be from two different vendors, they can be safely interconnected electrically if both machines conform to the RS-232-C specifications.

Furthermore, RS-232-C not only defines the data signals which carry the actual information, but also defines several special purpose control signals which ensure the smooth flow of information between the interconnected machines. These signals basically control who "talks" and who "listens" as well as some other more specialized functions.

Covered and Uncovered Aspects of RS-232-C in Lights

I will cover only those RS-232-C signals that relate directly to Personal Computer asynchronous communications.

As I discuss each of the RS-232-C signals, I will relate them to the lights which are located on the front of the Hayes Smartmodem as well as some other external modems. So in the future, when you sit back and watch the blinking lights, you will do so with a great depth of knowing satisfaction. Even of greater value, you may be able to isolate the reason for a failure to communicate based on which lights are on or are not on. For those modem lights not directly related to RS-232-C signals, I will give their meaning as they relate to the sequence of events that make up a communications session.

In order to keep this discussion simple, I will exclude any references to the CCITT V.xx series of interface specifications used in the international community. I will also avoid discussing all of the EIA RS-232-C signal descriptions, designation codes, and etc.

Electrical specifications won't be covered in this series. I will not cover the actual electrical specifications of the interface, as I feel most of you only wish to understand what the signals are for and not what the signals' electrical characteristics are. If you want the electrical "nitty gritty", please refer to a full copy of the RS-232-C specifications.

Do keep in mind, however, that any interconnection arrangement must conform to the electrical specifications or the hookup between two machines won't work properly. With today's equipment it is highly unlikely that electrical signal characteristics will cause problems if good workmanship is used in establishing the physical connection between two machines.

Signal Descriptions & Equipment Types: DCE vs. DTE

The following signal descriptions are my interpretation of the EIA RS-232-C specifications. It is recommended that those of you who are going to develop the future communications network of the universe and other equally valuable designs, spring for the extra cost of a complete RS-232-C specification straight from the horse's mouth, EIA in this instance. ►

In this discussion, references to two different types of equipment will be made, Data Communication Equipment (DCE) and Data Terminal Equipment (DTE). My definitions for the two types of equipment are: Data Communication Equipment is any device used to communicate data over a communication link. A modem (Data Set) is considered Data communication Equipment. Data Terminal Equipment is any equipment which either creates data to send or utilizes data received. A Personal Computer and a CRT are two examples of Data Terminal Equipment.

With the needed equipment nomenclature definitions out of the way, we are ready to press on with the RS-232-C signal definitions. So, here we go. Oh, by the way, I do use some rather basic electronic circuit terminology in these definitions. If you are unfamiliar with their meaning any modem dictionary will probably give an adequate description for each of them.

Protective Ground

This conductor must be connected to equipment ground and may, because of electrical code, be connected to external ground. This circuit establishes a common "chasis" ground between the DCE and DTE. If this connection is not established, signal problems may develop and may include a potential shock hazard, though very unlikely.

Signal Ground (SG)

This conductor provides a common ground reference for all interchange signals, excluding protective ground. This circuit may be "strapped" to Protective Ground in order to meet local electric code requirements. This conductor

should be present to ensure the greatest signal integrity possible.

Transmitted Data (TD)

The signal's direction is considered as transmitted from the DTE to the DCE. On the Hayes modem the light marked "SD" will flicker on and off as data is received from the DTE on circuit (TD) and in turn transmitted by the modem (DCE). The DTE should not transmit data on this conductor unless the following circuits, when implemented, are in an ON condition: Request To Send (RTS), Clear To Send (CTS), Data Set Ready (DSR), and Data Terminal Ready (DTR). Each of these signals and their respective meaning are covered later in this definition. When no data is being transmitted by the Hayes the light marked "SD" should be OFF.

Received Data (RD)

This signal is considered as being received by the DTE from the DCE. The light marked "RD" on the Hayes modem flickers on and off when data is being received from the communication link by the modem (DCE) and sent on to the DTE. The DCE will hold this signal in a steady "marking" state any time that the Received Line Signal Detector (RLSD) (Carrier Detect (CD) for short), circuit is in an OFF condition. This signal must also be held in a steady "marking" state if the Request To Send circuit is OFF when operating in a "Half Duplex" mode. On the Hayes the "RD" light should be OFF when no data is being received.

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Moving Data In & Out of the PC Parallel and Serial Communications Ports

What's a Port?

Users new to the PC world may be confused by the terminology used to describe communication of data inside and outside the PC. MS/PC-DOS uses "Ports" to communicate with peripheral devices such as printers, modems, plotters, mice, clocks, etc.

"Communications" ports send and receive data between the PC and the outside world in either serial or parallel form. Serial communication is made up of bits of data in a stream, one bit following another bit, etc. Parallel communication sends a number of bits all at once – in parallel. Most PC parallel data is byte-wide, that is, eight bits in parallel.

Early versions of DOS allowed two (2) serial communications ports -- COM1 and COM2 -- and three parallel ports which were considered primarily for use with printers -- LPT1 - LPT3. Latest (to date of this article) DOS, version 3.3 and 3.31, allow four (4) serial ports. Some specialized software may specify

and allow even more serial ports via modification or replacement of the operating system.

Every port has a name and a unique "address" in DOS. Most serial devices don't. Two ports attempting to share the same (identical) address simultaneously produce data corruption if they work at all. This is called "port conflict."

As the number of devices that need to communicate via serial ports grows, port conflicts have become more common and manufacturers of accessory boards with serial ports provide methods of changing their port address(s). This is usually managed via "jumpers" or DIP switches on the board. If a new device doesn't work properly, checking the port address for possible conflict with other devices is the first place to look.

Also, check the port address used by associated software to make sure it's configured correctly.

Request To Send (RTS)

This signal is sent by the DTE to the DCE. So, the DTE "requests to send" data. When this signal is received by the DCE, the DCE switches to the "transmit data" mode. Once the DCE is in the transmit data mode, it turns ON the Clear To Send (CTS) signal. When the DTE turns Request To Send (RTS) OFF, the DCE finishes sending any current data and turns Clear To Send (CTS) OFF. If implemented, Data Terminal Ready (DTR) must also be ON before data is sent to the DCE from the DTE. Remember Clear To Send (CTS) is not turned off until all current data is sent, and that Request To Send (RTS) cannot be turned on again until Clear To Send (CTS) has been turned off.

Clear To Send (CTS)

Signal direction is from the DCE to the DTE. The DCE turns ON Clear To Send (CTS) when it has finished switching to "transmit data" mode in response to receiving Request To Send (RTS) from the DTE. The DTE should not attempt to send data to the DCE prior to the DCE turning this circuit ON. Also, if Data Terminal Ready (DTE) and Data Set Ready (DSR) are implemented, they must be ON before data is sent to the DCE.

Data Set Ready (DSR)

This signal is sent by the DCE to the DTE. When this circuit is ON it indicates that the DCE is in a powered up condition and not in a test, dial, or "talk" (voice) state. Also, the communication connection should be in the "Off Hook" status. "Off Hook" is when the DCE is electrically connected to the communication network.

You can equate the "Off Hook" status to be the same as when you have actually picked up the telephone receiver from the cradle. In other words in telephone technical talk you have gone "Off Hook". Remember the old wall telephones in the western movies where the telephone receiver hung on a "Hook" on the side of the big telephone box? Ma Bell and the boys don't rush to change terminology to match the real world. One of their signal wires is still called "TIP" and the other "RING", but that's a whole 'nuther story.

Hayes modems deviate from the pure RS-232-C standard for Data Set Ready (DSR), as the Hayes modems and their imitators immediately turn ON Data Set Ready (DSR) when the modem is powered up and it remains ON until power is removed from the modem. Thus, the Hayes cannot be considered to be "ready" as defined by RS-232-C when the Data Set Ready (DSR) signal is ON.

Received Line Signal Detector (RLSD)

This signal is sent by the DCE to the DTE, and for short is referred to as "Carrier Detect" (CD) by almost everyone. The Hayes modem indicates the presence of a carrier tone transmitted by a remote modem by turning ON the front panel light labeled "CD" and by turning ON the Carrier Detect (CD) circuit. At all other times the "CD" light should be OFF as should the Carrier Detect (CD) circuit. This signal is normally protected from short intermittent

carrier tone losses by the use of "guard delays" in the DCE equipment.

Data Terminal Ready (DTR)

The DTE sends this signal to the DCE when it is powered up and ready to communicate data to and from the DCE. The Hayes modem "TR" light is turned ON when the connected DTE turns the Data Terminal Ready (DTR) signal ON. The Hayes modem also handles this RS-232-C signal in a non-standard way. The pure EIA definition of this signal says that when the DTE turns this circuit ON the DCE should go "Off Hook" and connect to the communication link. This is not how Hayes modems work. The Hayes will not go "Off Hook" until a proper Hayes modem command is received from the connected DTE. The Hayes does, however, conform to the definition of the OFF condition of Data Terminal Ready (DTR). RS-232-C specs state that the DCE should terminate the communication connection by going "On Hook" (hang up) when the Data Terminal Ready (DTR) circuit is turned OFF.

Ring Indicate (RI)

This signal is sent by the DCE to the DTE and is, as the name indicates, how the DCE tells the DTE that his phone is ringing. Ring Indicate (RI) is turned ON each time a ring signal is detected on the communication line and OFF when the ring signal is removed. The DCE should turn this circuit ON and OFF as required no matter what the state of the Data Terminal Ready (DTR) circuit is.

If you watch your Hayes modem, it will either turn the light marked "AA" on or off for the duration of each telephone "ring". Whether the light is on and turns off or is off and turns on is determined by whether the Hayes is in "Auto Answer" mode or not. If the Hayes is in "Auto Answer", the light will be on when no ring signal is present and will be turned off when the telephone "rings". If the Hayes is not in "Auto Answer" mode the light will be off and turn on each time the phone rings.

If your Hayes is not in "Auto Answer" mode and you wish to have it answer an incoming call, you or your software must recognize the phone is ringing and send an "Answer" command to the Hayes before it will answer the call. If you are controlling the Hayes, you will know the phone is ringing by either hearing the ring on the modem speaker, seeing the "RI" light turn on, or both. If your software is to answer the phone, it should monitor the Ring Indicate (RI) signal and send the Answer command whenever the Ring Indicate (RI) signal is turned on by the modem. And, conversely, if your modem is in the "Auto Answer" mode, you must ensure that the Data Terminal Ready (DTR) circuit is NOT ON when you DO NOT want the modem to answer an incoming call.

The Ring Indicate (RI) signal is the last RS-232-C signal of significance to the personal computer using asynchronous communication for data transfer. As I mentioned before, there are several other signals which serve to meet the needs of synchronous communications and other less common modem types. ➤

There is also one or two other lights on the Hayes modem's front panel that are not directly related to an RS-232-C signal. One light is on all Hayes modems, that light is the "OH" light. The "OH" light is used by the Hayes to indicate when the modem has gone "Off Hook" or, more accurately, indicates when the modem is electrically connected to the telephone circuit. Whether the Hayes is "On Hook" or "Off Hook" is determined by modem control commands and therefore not controlled by an RS-232-C signal. Also the higher speed models of the Hayes modem product line have an additional light labeled "HS". This "HS" light indicates whether or not the modem is operating in the "High Speed" mode. When the light is on, the modem is in high speed and when the light is off, the modem is in low speed. As you can tell by the description, there is no RS-232-C signal which is associated with the "HS" light as it is controlled by the operating baud rate of the modem.

Now that we have completed our description of the relevant RS-232-C circuits we are now ready to use them to meet our personal data communication needs. Their use in connecting a Hayes compatible modem to a personal computer is far less complicated than when connecting a serial printer to your computer. There is also a neat connection arrangement that allows you to connect two computers together without using modems, this is known as a "null modem".

As I said earlier, in the second part of this series we will cover the various RS-232-C cable components and learn which RS-232-C signals are required for most serial device inter-connections. In addition, we will cover the particular cable components and pin-outs which are required to connect external modems to the various PC models. In the third and final segment, I will cover in detail null modems, XON/XOFF protocol, and some of the more common serial printer connections. Stick with me and you may be able to do it yourself (without me) and save large sums of money.

Fred

[End, Part 1.]

Erroneously Formatted Diskettes

by Roberta Hardaker

Reprinted from the CAPITOL PC MONITOR

What does "erroneously formatted diskette" mean? It's a term I use to refer to a 3 1/2-inch or 5 1/4-inch diskette that's been formatted to a capacity for which that diskette wasn't designed. Unfortunately, many computer users are erroneously formatting diskettes and, worse yet, are actually entrusting their data to such diskettes.

Not long ago, I, like the majority of computer users, knew nothing about erroneous formatting and its consequences. My awareness began when I read the following statement in an IBM Exchange magazine article (Issue 2, 1987) that gave information about the new IBM PS/2 computers: "You must not format a 2MB diskette to 720KB. (In fact, you should discard a 2MB diskette that has been formatted to 720KB, because it will not be reliable even if it is reformatted to 1.44MB.)"

I found that quote rather alarming. I wondered: Is the quote true? What about a 3 1/2-inch 1MB diskette or a 5 1/4-inch diskette that has been erroneously formatted?

To find answers to my questions, I phoned representatives of IBM and the following diskette manufacturers: 3M, Verbatim, Maxell, Sony. My contacts included engineers, technicians, and customer service representatives. With one exception, all individuals interviewed were very willing to discuss the problem of erroneous formatting. My contacts had varying degrees of knowledge of the problem and therefore varying opinions on the subject. I've taken that into account when I've drawn my conclusions presented in this article.

My research via phone involved 3 1/2-inch diskettes used in IBM PS/2 computers and 5 1/4-inch diskettes used in IBM PC, PC/XT, PC/AT, and 100% compatible computers. The following table summarizes the diskettes and their correct and erroneous formats:

Size	Unformatted Capacity	Correctly Formatted Capacity	Erroneously Formatted Capacity
3 1/2-inch	1MB	720KB	1.44MB
3 1/2-inch	2MB	1.44MB	720KB
5 1/4-inch	500KB	360KB	1.2MB
5 1/4-inch	1.6MB	1.2MB	360KB

Users have succeeded in accomplishing each of the erroneous formats shown in the table's rightmost column and are currently saving and using data on those erroneously formatted diskettes. In ALL of those cases, the diskettes are considered UNRELIABLE. They may work fine for months, but there's always the risk that someday their data won't be able to be read properly.

In order to understand why those diskettes are considered unreliable you have to be aware of a few facts about diskettes, formatting, and computer disk drives. The 3 1/2-inch 2MB and 5 1/4-inch 1.6MB diskettes are high capacity diskettes. The magnetic mediums on their surfaces are different than on their lower capacity counterparts. For example, a 2MB Verbatim diskette contains 670 magnetic particles in 1 inch of space, whereas its 1MB counterpart contains 310 magnetic particles in 1 inch of space. The medium on a diskette is designed to be formatted to a certain capacity.

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When a diskette is formatted, its magnetic particles are rearranged. In addition, the circuitries in disk drives use a different current level when formatting to high capacity (1.44MB and 1.2MB) than when formatting to lower capacity (720KB and 360KB). It could be said that a disk drive uses a "lighter touch" when it formats to a high capacity than is used to format to a lower capacity. Writing to those diskettes is also done differently.

Based upon the above generalities, you can probably understand why formatting a diskette to a capacity for which it wasn't designed is asking for unreliability when utilizing that diskette.

How can you determine if a diskette is currently formatted erroneously? To make that determination, you have to know two things about the diskette: (1) the capacity to which it is CURRENTLY formatted, and (2) the capacity to which it SHOULD be formatted. If the answers to both aren't the same, the diskette is erroneously formatted.

To find the answer to (1), the capacity to which the diskette is CURRENTLY formatted, use the DOS CHKDSK command on the diskette. The command will provide assorted information, including the number of "bytes total disk space." That number tells the capacity to which the diskette is currently formatted.

To roughly translate that number into KB or MB, first drop the last three digits. For example, "362496 bytes total disk space" becomes 362 which roughly translates to 360KB. The number 1457664 becomes 1457 which roughly translates to 1.44MB. To find the answer to (2), the capacity to which the diskette SHOULD BE formatted, you can look at the diskette table presented earlier in this article. But first you have to know how to determine the diskette's unformatted capacity. In other words, you have to know how to determine the difference between 3 1/2-inch 1MB and 2MB diskettes, and the difference between 5 1/4-inch 500KB and 1.6MB diskettes.

How can you tell if a 3 1/2-inch diskette is a 1MB or 2MB diskette? It's quite simple. Look at the front of the diskette, with the metal shutter at the top. There's a write-protect hole in the lower left corner. If there's also a hole in the lower right corner, the diskette is a 2MB. In other words, 1MB has 1 hole; 2MB has 2 holes.

That 2MB diskette's second hole is a sensing hole. One of my sources told me that IBM had planned to put a sensing switch in its PS/2 disk drives. That switch would sense which size diskette was in the drive, thereby preventing the user from erroneously formatting a diskette. However, IBM decided to eliminate the sensing switch. As a result, it's up to the user to know what he's doing or suffer the consequences.

How can you tell if a 5 1/4-inch diskette is a 500KB or 1.6MB diskette? To do that you'll have to read the label on the front of the diskette. If there is no label, look on the box in which the diskette came. The label or box should contain some of the information from the following list:

500KB	1.6MB
40 tracks/side	80 tracks/side
48 tracks/inch	96 tracks/inch
double-sided/DOUBLE density	double-sided/HIGH density

What should you do with a diskette that's been erroneously formatted? Obviously, you should NOT continue to use the diskette in its current state. If the diskette contains files that you want saved, copy those files to a hard disk or to a correctly formatted diskette. Next you have to know if the erroneously formatted diskette should be thrown away or if it can safely be reformatted to the capacity for which it was designed. (If the throw-away solution is chosen, you should first physically damage the diskette so that anyone finding it won't be able to read its data and also won't be able to accidentally use that unreliable diskette.)

If the erroneously formatted diskette is a 3 1/2-inch 1MB or 2MB diskette, THROW IT AWAY. It probably won't be reliable even if it's reformatted to the capacity for which it was designed.

If the diskette is a 5 1/4-inch 1.6MB diskette that's been erroneously formatted to 360KB, the diskette may be reliable if it's reformatted to 1.2MB. However, a cautious person would THROW IT AWAY.

You may wonder why the erroneously formatted 3 1/2-inch diskettes must be thrown away, whereas the 5 1/4-inch diskettes might be safe to use if reformatted. It's because they have different surface mediums. Also the 3 1/2-inch disk drives on the PS/2 computers operate differently than do the 5 1/4-inch disk drives on the IBM PC, PC/XT, PC/AT and 100% compatible computers.

Considering all I've learned since I began my research, I personally wouldn't risk using or reformatting a diskette (3 1/2-inch or 5 1/4-inch) that has ever been erroneously formatted. I'd copy its files elsewhere and throw away the diskette.

The only safe alternative to throwing away an erroneously formatted 3 1/2-inch or 5 1/4-inch diskette is to use a hand-held bulk eraser (degausser) on the diskette to the capacity for which it was designed and continue to use it.

The following alphabetical list names hand-held bulk erasers that have been approved by the National Computer Security Center. A general price for such an item is probably about $50.00.

MANUFACTURER	MODEL
Applied Magnetic Lab	42-P-MEM
Computer Link Corp.	600-F4
Computer Link Corp.	600-F5
Constant Data Control Corp.	42-P-MEM
(Same # as first model)	
Precision Methods	1500
Precision Methods	2000
Recoma, Inc.	4KG

Roberta Hardaker is a Computer Programmer/Analyst for the Internal Revenue Service.

Black Holes, Ethics and User Non-Support...

Who Represents the PC User?

by Reagan Andrews, Ph.D.

Rapid change is characteristic of the PC industry. Often, this change is progress and is breathtaking in terms of increased functionality or PC capabilities.

1987 saw a continuation and strengthening of a trend that is both positive and, at the same time, ominous for the user.

First of these is conversion to a "commodities" market mentality among manufacturers. While we are enjoying constantly decreasing, sometimes plummeting, PC prices that put PC's within reach of an expanding market, PC manufacturers are increasingly viewing this as a "commodity" market. We all have enjoyed the low prices.

Soy beans, pig iron, pork bellies and... PC's?

Now, we're beginning to experience the less-pleasant, "dark side" of PC's as commodities -- decreasing (or non-existant) quality control, diminished user support, and more disturbing, the increase of "horse-trader" mentality (or ethics) among vendors. In order to remain competitive in this marketplace manufacturers and vendors have to increase production/sales volumes to compensate for reduced profit margins as a result of lower per unit prices. Cutting overhead (customer support seems to be the first to go) is an important part of this equation.

American and European manufacturers have traditionally prided themselves on the innovation, technical excellence and quality of their products, but now see themselves trapped between two evils. They must either increase production while decreasing costs -- sacrificing quality for volume -- or, lose market share to off-shore producers and go out of business. Most are still trying to maintain a balance of economical production and continued high quality.

Vendors face the same equation -- increase sales and decrease costs -- to survive in this highly competitive marketplace.

The effects are cumulative. In the "good old days" before 1985, computer stores and other vendors configured a system to customer specifications and "burned it in" for several hours to a day before delivery. Everyone was quality conscious in this period and faulty products were extremely rare coming from the manufacturer.

Manufacturers, aware of this practice, sometimes lowered their quality controls in the belief that the end seller would catch any defects in the "burn-in" procedure. Vendors, accustomed to high quality levels from makers, quit burning-in systems, "since the manufacturers' quality programs were so effective."

Result -- an alarming increase in "Dead on Arrival" (DOA) systems and components delivered to buyers by the vendors. This is compounded by the vendors themselves who often attempt to shunt or ward-off warranty claims to the manufacturers to avoid returns overhead. The buyer is in the middle and the real loser here.

Second, and perhaps most disturbing, is loss of vendor-provided, end-user support. IBM announced a reorganization of the division that provided traditional (since 1981) user-group support, and with it, the end of one of the last contacts the company had with end users of their machines. Several major software publishers instituted "new" support systems that replaced free support to users with "subscription" (i.e., the buyer pays for it) support services apparently designed to discourage all but the largest corporations from soliciting their assistance with program problems or bugs.

Our Program has bugs -- Give us more money and we'll fix them.

This is even the case when the product was known to be seriously flawed before release. Perhaps by the time this reaches print PC-DOS 3.XX will be released with fixes for the many bugs found in 3.3! Wishful thinking assumes IBM will issue this as a replacement for 3.3 and at minimal or no charge. Probability, however, sides with the skeptics who believe what is essentially a fix for the too-early 3.3 will be touted as a new OS and priced accordingly to PC-DOS owners. Time will tell here.

PC-DOS 3.2 had a similar history, but IBM did provide some fixes -- actually fixes for the fixes for the fixes in 3.2. Problem here was obtaining them. Some major IBM dealers didn't even know they were available for months after release and most 3.2 owners probably never got them at all.

(I'm "picking" on IBM as an example because they started with the best reputation for end-user support in the business. One they really did try to live up to for several years.)

Nobody loves an "orphan" computer

Third factor is lack of access to major PC system manufacturers for warranty claims and periodic updates. Although this is really related to the "commodity" classification of PC's, it does present problems for users that extend over the projected life of the computer. When we bought our first PC in 1983, it represented a major purchase -- One made with the stability and support of IBM as a major factor in the decision.

Other PC owners made similar assumptions concerning makers of their chosen machines -- Texas Instruments, COMPAQ, Eagle, Corona, Columbia, Osborne, Tandy, Apple, etc., etc., etc. The fact that half of the machines named are either no longer made or supported by their manufacturers is a major problem for their owners. Despite all the glowing promises to the contrary, buyers ►

have discovered that once the PC has left the vendor, there is little, if any, recourse available to owners for operating incompatibilities, system updates to eliminate bugs, or normal software upward mobility.

This presents some unique problems. Operating systems are a good example. MS-DOS is typically sold to the original equipment manufacturer (OEM) in a form tailored for operation on their machines. If the owner of a Columbia or Eagle wants to update from DOS 1.1 or 2.01, it may be very, very difficult to find a version that will work properly (or fully) on their machine.

One solution, of course, is recourse to the illegitimate, pirated system ROM market for a set of system ROMs that will make their machine look like a "true blue" IBM PC to PC-DOS. Such ROMs are just as available as pirated copies of "1-2-3" version 1A.

Some PC makers just quit making their machines

Orphanhood isn't restricted to "old" machines or those from makers who went Chapter 11. Your machine can be "orphaned" practically overnight. Even legitimate BIOS ROMS from current manufacturers can present buyers/owners/users with problems if the vendor has simply quit selling computers.

Award, Phoenix Technologies, Ltd., and Chips and Technologies, Inc., are the major suppliers of non-IBM, compatibility chips and system ROMs (Phoenix and Award) for PC/XT and AT clones.
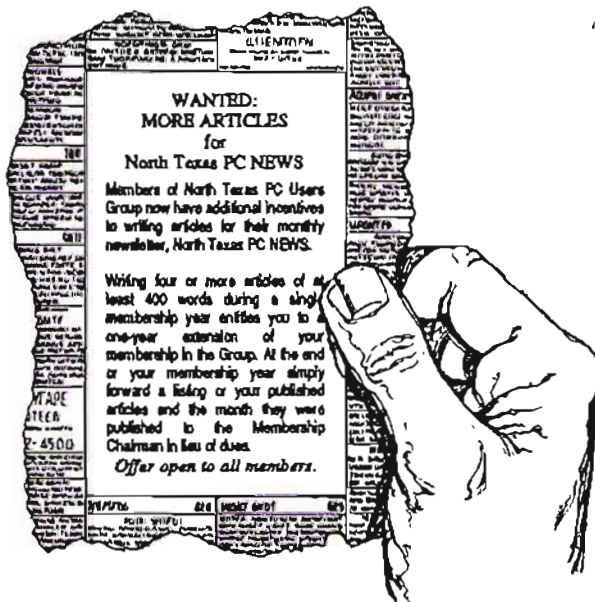
Many system makers currently use either the Phoenix Technologies (c) or Award (c) BIOS sets. Again, these are sold to the OEM and neither company has any official end-user support program for owners of "orphaned" PC's who need to replace BIOS ROMS with known bugs or major software incompatibilities. This leaves the PC buyer, again, in a quandary -- junk the PC with its bugs and incompatibilities, or resort to the aftermarket for pirated ROMS? Neither choice is palatible to most users.

Mix 'N Match Computers Pose More Problems

Further complications arise if the system was purchased on a "Mix 'N Match" basis from a computer supermarket. Take a motherboard from Taiwanese maker "A" (if it's got a name), floppy and hard drive controllers from "B" and "C", a power supply from "D", etc. and assemble a system. A canny buyer with some PC savvy can save some dollars here. But, who supports the system?

The buyer is totally at the mercy of the computer supermarket. Caveat Emptor!

Reagan Andrews

SWAP PC SHOP

CHOWTIME

by Peter Chow, UCLA PC UG

THE COMDEX REVIEW

This year's Fall COMDEX was no different than last year's in that very few innovative products were introduced. Most products at the show followed an evolutionary path and were basically the same. I felt, however, a deeper undercurrent permeating the industry: that there would be hard times ahead. They were making preparation for this by restricting expenses: from less lavish booths and give-aways to a lesser number of sovereign companies attending.

Some of the major show items were: PostScript page description language compatible laser printers, 80386 machines from both domestic and off-shore sources, laptop and "portable" computers of all shapes, flavors and variety of designs (they were still too heavy for my taste), VGA compatible video display adaptor boards, Borland's media blitz on their spread sheet product *Quattro* and the new operating system for the 80286/386 machines from IBM and Microsoft, *ahead of schedule*

(Dec 4) -- OS/2 1.0 and few applications that had made (or would be making very soon) their way over (*Paradox, PC/Focus, DisplayWrite 4, Microsoft C*, etc). These applications, however, were only simple porting of their DOS incarnations into OS/2 environment (reminiscent of the early days of CP/M and DOS); they did not take advantage of the added features that the new operating system offers, thus were generally awkward and inefficient. A few interesting items (in my opinion) were: color laser printers, 600x1200 DPI laser printers (watch out, Linotronic), Amiga's expanded product line and its grown-up image as a creditable and productive computer, lack of competitors for the Apple MacIntosh product line, 5 to 10Mb floppy disk drives and 50 or 60Mb erasable (many times, no less) optical disk drive technology from Kodak/Verbatim, IBM's reaffirmation of their intention and interest in the SAA proposal across their entire product-lines and XT-sized fast AT motherboards from a multiplicity of vendors.

BACK-IT

We all recognize the need to perform backup on our fixed disks in a periodic fashion, but it is a thankless task that no one likes. We promise ourselves that if a less time-consuming method is available, we will perform backup more often. Swift backup alternatives are available (streaming tapes or fixed disk to fixed disk backup), but their cost is generally very high. Although diskette backup isn't the swiftest method available in general (some streaming tape backups are very slow), it is the least expensive of the alternatives. A fast diskette backup program, therefore, promotes a higher rate of backup because the time involvement is less. According to 5th Generation Systems, *Fastback* is the number one seller in the disk backup program arena, but there's a newcomer, *Back-it* from

Gazelle Systems, that challenges the champion in most areas.

Back-it is similar to *Fastback* in that they each employ floppy diskettes (360K, 720K and 1.2Mb) to store the files from one's fixed disk very rapidly. Both are very easy to use and not copy protected (it is now considered pass to copy protect one's software).

Back-it differs from *Fastback* in that it operates at least as fast and is faster under certain situations (large directory with lots of small files). The major advantage, however, is the added flexibility the user has on the selection of file(s) to backup and restore and the ability to create custom backups. It's easy to use and the installation procedure also surpasses the competing product. Before the actual backup, *Back-it* will tell you approximately the number of diskettes required. This is exceedingly handy because if you don't have enough diskettes available, your time won't be wasted in performing an otherwise useless backup. During backup, this product verifies the diskette before the information is written on it so that the accuracy and successful restore rate is extremely high. *Back-it* can format backup diskettes (if necessary) on-the-fly in DOS readable format where others use their own format. This product can backup onto any DOS accessible medium such as Bernoulli cartridges and other fixed disks. However, *Back-it* doesn't keep track of how much time was spent in the current backup procedure and how much time was wasted in diskette changing. *Back-it* doesn't have a feature that allows you to restore only one file quickly although one was promised in the next release. I really miss these features which its competitor *Fastback* offers.

The data on your fixed disk(s) is very important and shouldn't run the risk of going to the proverbial "bit heaven." Back up your data regularly and religiously! If you are looking for a low cost backup alternative, I strongly recommend you investigate this product because Gazelle Systems seems to be very willing to support their products, view their customers as very important individuals and provide products that are finely human-engineered.

TOPDOS

This is a DOS enhancement product that combines several of the most useful shareware utility programs into one and further adds a few features to produce a commercial quality product. This memory resident program consumes 38K of memory but the array of features it offers, by comparison, is nothing less than astounding. For individuals that spend time at the naked DOS prompt, this utility program can be a great time saver. Although *TopDOS* increases your productivity at the DOS prompt level, once you are in your application, it is dormant.

Unlike most other memory resident programs, *TopDOS* seems quite content to co-reside with other software and for the two weeks that I have used the product, I haven't encountered any problems originating from *TopDOS*. With the expense of 38K of RAM memory, you buy: the ability to scroll back past commands issued at the DOS prompt,

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command history, command aliases, scroll back to last screen for review, DOS command line editing (like word processing), automatic command completion, certain enhanced DOS commands (like various sorting for DIR or user prompting for selective DEL), function key macros, file locator (WHEREIS), small text editor (can edit files up to 54K in size), directory manager, and much more. The manual is clear and filled with useful examples and the index is more than adequate for a product of this level of complexity. Additionally, each enhanced command has a brief synopsis of its functions on-line when requested.

On the less positive side, *TopDOS* is not configurable (i.e. can't scroll back for more than one screen or edit a larger file or enlarge the recall buffer), nor can one alter the on-line help facility it offers. One would also hope in the next release *TopDOS* can take advantage of the new expanded memory specification to decrease the conversional memory that it consumes.

All in all, *TopDOS* is a very good, reliable and inexpensive inclusion in your "bag-of-tricks" array of utility software that no one seems to be able to live without these days.

SUBST/JOIN

This pair of commands were added to DOS versions 3.1 and 3.2, but what are the functions? Very few users that I know recognize these commands and even fewer take advantage of them. To put it simply, these commands allow the user to change the appearance of their fixed disk(s) structure (i.e. drive letter designations) in regard to the application programs' point of view.

SUBST

This command was added to DOS in the introduction of version 3.1. It addresses the problem of older software that doesn't understand the concept of sub-directories (e.g. WordStar up to version 3.4). With these programs, the fixed disk is just one big floppy diskette and the current directory is the only accessible part of that floppy. These applications generally do understand the notion of different drives, therefore, this command was spawned. It signals DOS that certain sub-directories have now been designated as drive letters, therefore, these applications can achieve data and program separation by using different logical drives/sub-directories.

Syntax: SUBST d: directory_path

SUBST d: /D

Example:

SUBST E: \WordStar\bus_let

\WordStar\bus_let is now drive E:

SUBST E: /D releases that drive assignment

This command, of course, is not to be used with other commands, such as FORMAT and DISK-COPY.

JOIN

This command is the complement of SUBST; where SUBST separates a drive into different logical drives, JOIN consolidates drives. On a system that employs large fixed disk(s), most people partition the drive into smaller logical drives of no larger than 32Mb in size (limitation of DOS and OS/2). This method, however leads finding a particular file much harder because one has to remember which drive the file is on even with the help of a file locating program. With the help of JOIN, a drive can become a sub-directory of another drive, thus creating the illusion that there is only one large drive instead of numerous smaller ones.

Syntax: JOIN d: directory_path

JOIN d: /D

Example:

JOIN E: C:\Drive_E

Drive E now becomes C:\Drive_E to DOS

JOIN E: /D releases that JOIN   ⌐

Back-it 3.0 is published by Gazelle Systems at 42 North University Avenue, Suite 10, Provo, Utah 84601, (800)233-0383. $129.95

TopDos 2.0 is published by FrontRunner Development Corporation at 14656 Oxnard St, Van Nuys, CA 91411, (818)376-1322. $69.95

(Reprinted from The Journal of the UCLA PC Users Group for December 1987.)

North Texas PC NEWS Financial Report
19 December 1987

Jul - Dec 1987
(December Printing 1435)

INCOME:

Advertising, Labels, etc.	$1928.95
Cash from Treasury	6000.00
Balance June 1987	351.50
	$8280.45

EXPENSES:

Office	$ 50.81
Art Material (Clip Art)	173.86
Misc (Copies, Photos, Laser Repro, Bulk Mail Permit, Startext)	443.17
Print, Dist & Mail NT PCN	7620.63
Telephone Calls	60.47
Balance 19 December 1987	-68.49
	$8280.45

Selected **SIG** Happenings

News and Meeting Notes on Special Interest Groups

(Material for this column should be sent to Phil Chamberlain, SIG Coordinator before the 15th of the month.)

"C"

The February meeting will feature a presentation of Turbo C by the Andrew Chalk, producer and director of the recently-released, "OS/2 – The Movie."

COMM

The success of the first NTPCUG Comm Sig meeting of 1988, if measured in terms of useful information passed on to the membership, was smashing. The majority of this month's successful event is the result of the very nicely executed Q-Modem SST overview presented by William Bennett. William pointed out many of Q-Modem SST's powerful features. Notably, support for up to ten external up/down load protocols in addition to six built in protocols, up to forty user definable function keys, and split-screen conversation mode, just to mention a few, show the planning and upgrade enhancements that make Q-Modem SST the powerful communications package it is. Much thanks to William Bennett.

A short discussion of the long distance network service called PC Pursuits, which now has facilities in thirty-three major U.S. cities, rounded out our Sig time for January.

February will highlight a book review by Jerry McClurg on the "Complete Handbook of Personal Computer Telecommunications". From what I hear, the review will be very interesting.

Pete Testa

DAC Easy Accounting

This month the latest product from DAC Software, DAC Light, will be reviewed. Light is a program designed for personal finances or for the small business which doesn't require much more than a general ledger to keep track of the business records. For the past few meetings ancillary products, such as DAC Mate, which enhance the functionality of DAC Easy have been the subject of presentations and discussions.

Michael B. Macaulay

Desktop Publishing

This is not yet an active SIG. However, if you are interested in forming such a group, contact Sharon Rice at 653-6237 (w) or 374-3842 (h).

DOS

January DOS SIG meeting featured "True Confessions Time" from co-leaders, Jim Hoisington and Reagan Andrews, in which both advised participants NOT to update to DOS 3.3 at this time. Jim Hoisington, former NTPCUG President and now President-Elect, reminded SIG members that this version of PC-DOS has become notorious for some of its many "undocumented features" and may not be a good choice now, pending release of improved, less-buggy versions.

In particular, FASTOPEN was described with some of its unanticipated effects on the unwary, in addition to reminding that APPEND was available in version 3.2x which is much more disciplined than PC-DOS 3.3. Other "features", such as the need for STACKS= in the CONFIG.SYS file to offset IBM's too-low STACKS default were emphasized to the group at the January meeting.

A surprising change of pace was effectuated by a relative absence of questions aimed at hard-disk operation at this meeting. However, tangential reference to this subject came from questions pertaining to the utility of PATH commands and corresponding APPEND additions to the AUTOEXEC.BAT file for users. Using PATH with programs that include overlay (OVL) files such as early versions of WordStar (c) was described as primary justification for inclusion of APPEND in the day-to-day use of the DOS.

Reagan Andrews

Graphics, CAD-CAM

Mike Durbin has resigned as leader of this SIG. At our next meeting, we will survey the attendees, and out Users Group as a whole, to determine if we should shift our emphasis to Computer Aided Design, and possibly Computer Aided Manufacturing as well.

Don Crockett

LOTUS

The subject for the January meeting discussed using string arithmetic in Lotus 1-2-3 Release 1A. Release 1A does not directly support string arithmetic. The presentation was given by David Powell.

The subject for the February meeting will be a presentation of LOTUS HAL. Some basics of HAL will be discussed as well as some advanced features. The primary focus of the presentation will be using HAL to manipulate databases. Working with databases in 1-2-3 is difficult but HAL makes database application much easier - even fun - to work with.

The LOTUS SIG always takes some time to address questions that people have about 1-2-3 and Symphony. If you have any questions, come by and see us or leave a message on the bulletin board in the LOTUS SIG mailbox.

Peyton Weaver
Mark Gruner
►

Personal Users (beginners)

Beginners, novices, new PC owners, soon-to-be PC owners, personal (versus professional) users... this SIG is for you! Two months of our fundamentals curriculum have been completed, and we continue to press on toward having you graduated from this SIG within a few short months (i.e. personally knowledgeable and productive with your PC and software.. and able to join other available SIGs of your choice).

IN PREVIEW: At each monthly meeting, we conduct four different classes (at 9, 10, noon and 1) on four different subjects. As we firm up our February and March guest speakers, we will be covering these eight subjects:

9. Writing your own BASIC programs   10. Printer setup   11. PC Graphics modes   12. Accessing and using Bulleting Boards and using archiving programs   13. Public Domain/Shareware software and the NTPCUG Disk of the Month library   14. Writing LOTUS 123

macros   15. Major categories of software applications programs available today.   16. PCs to the end of the century.

Come join us as we learn and review the fundamentals!

Bob Presley
Richard Terreo

Windows

This is not yet an active SIG, but will be forthcoming in the near future. Watch for further details.

Report on WordPerfect 4.2

Doug Russell

WordPerfect is a word processing package that runs on an IBM There are six disks and a reference manual included in the package. The disks include WordPerfect, tutorial, spelling checker, thesaurus, and printer definition(2). They are not copy protected.

The manual is well written and laid out. It begins with a page on customer support which provides telephone numbers for the different problems you might have. I have not had to use them. The manual assumes this is the first time the user has sat in front of a computer. By the time I finished the manual and tutorials, I was more familiar with my computer, DOS —and WordPerfect.

To use WordPerfect's features, a template is provided which fits around the function keys on the keyboard. Four features are assigned to each function key using a combination of the Ctrl-Shift-Alt keys and/or the function key.

The package offers a lot. There is, of course, wordwrap, bold, underline, macros, and block move, copy and delete. Other features include statistical typing, line draw, timed backup, and DOS shell. DOS shell allowed me to leave the document, use DOS, and return without having to restart.

It has created a monster in me. I no longer write in longhand. I only type. For those of us who have thought "I ought to write a book", WordPerfect is a great excuse. Indexes, outlines, footnotes, sort, split screen, switch screen, table of contents, and word search/replace are some more of its features.

For me, printing is where WordPerfect shines. During a real pinch, I found I could be printing a file, have eight different printing jobs in line and edit a ninth file. Also included is a print option called "binding width". This shifts text to the right on odd-numbered pages and to the left on

even-numbered pages leaving room on two-sided copies for holes or other bindings.

The printer definition disks took me step by step through the process of defining my printer for WordPerfect. The two disks contain 268 different printers such as Epson, Okidata and Panasonic including their fonts. Laser printers such as LaserWriter are included. Up to six different printers can selected and the user can print from one or all six.

There is also a conversion program which changes files in ASCII, Wordstar 3.3 and MultiMate 3.22 format to WordPerfect format and visa versa. I was able to convert files in WordStar 3.1 format with no problem. The manual says WordPerfect can convert to DCA, a format used by IBM mainframes, as well as a format to transfer documents by modem.

WordPerfect can be used more efficiently on a hard disk. To use the spelling checker or thesaurus on a two floppy machine like I have, I must load the file, remove the data disk, insert and load the spelling checker or thesaurus. When finished, you reverse the process.

I have been using WordPerfect to write personal and business correspondence, articles, and small pamphlets. I have easily expand my writing efficiency and productivity. In writing long papers and pamphlets, I was able to create an outline as I wrote and later convert it to a table of contents with page numbers. References were written as found, sorted alphabetically, and converted to bibliographies. Bibliographies were converted to footnotes and inserted into text. After I had finished the paper, I indicated the words I wanted in an index and WordPerfect alphabetized the words and provided the appropriate page number(s).

WordPerfect 4.2 is priced at around $190.00 at various software stores around Dallas. For more information contact WordPerfect Corporation, 288 West Center Street, Orem, Utah 84057, telephone (801)225-5000.

Doug

The disk-of-the-month for February 1988 is the three dimensional spreadsheet, QubeCalc, version 1.01, pub - lished by FormalWare Co., P. O. Box 21726, San Jose, CA 95151-1726. Copyright 1986. It is shareware and registration costs $49.95 plus $5.00 Shipping and Handling. Upon registration, the latest version and a typeset documentation manual are provided. The disk contains an abridged (32 page) documentation manual. User group member Dean Duncan has tried out the program and wrote a readme review file, from which the following information provided has been taken.

The program is a three dimensional spreadsheet, i. e., it not only has a typical spreadsheet format, but has multiple pages "layered" behind the top sheet. The operational method of moving around the work cube is much the same as Lotus 1-2-3, Visicalc, or other similar spreadsheets, except all cells are identified in X, Y, Z terms. For example, the nearest, top cell in the "cube" of cells is designated 1,1,1 for row 1, column 1, page 1.

The F1 key accesses a heirarchical help file. First given is a master help menu, then highlighting the individual help screens presents the next level screen, etc., etc. A person familiar with spreadsheets can get started fairly easily just by reading the help screens. An EXAMPLE.QUB file is provided for ease of familiarization and practice.

QubeCalc has typical spreadsheet functions in the categories of Mathematics (EXP, LOG, ABS, etc.), Trigonometry (SIN, COS, etc.), Statistical (COUNT, AVG, SUM, etc.), Logical (TRUE, FALSE, etc), Financial (FV, PV, PMT,etc.), and Date/Time. Macros are also supported. Color is supported, although not required. Graphics are supported with graphs generated directly from the screen menus.

Other Programs for February 1988

In February there will be quite a few other new programs available at the D-O-M tables.

CityDesk 3.0 (9/87) by Asysta Consultants, is a shareware desktop publishing program that allows you to produce documents with headings in a two column format. Registration is $25. In order to manipulate bit mapped graphic images, the author recommends a program called INSET(tm) available from its developer, Inset Systems,Inc. 12 Mill Plain Rd., Danbury, CT 06811, for $100. Included is NICEPRNT (a public domain program) which gives you six additional fonts for Epson/compatible printers. Some of the commands use unusual syntax and no editor is provided in the shareware version so a word processor or editor is required.

It provides support for 35, 66, 88, and 110 lines per page but is Epson FX specific for support or all features. Most of features can be used on other printers by building a printer driver file with program also supplied. It will run on monochrome or color monitor, floppy or hard disk system. For all feature support, an Epson(tm) FX or fully compatible is required.

Reviewed by Gerry Heine and Jim Wehe. The above information is from Gerry's review. Jim, however, was not impressed with the program:

"If you load the files listed in the documentation onto a hard disk and try to run the program, you get this message: "Not a Registered Copy - Goodbye!" Now that is a strange message for a shareware program. There is one unnamed file (of length 899 bytes) which will be copied if you copy *.* and with this file the program will run. A contribution of $25.00 is requested. Certainly reasonable; however a second program costing $100.00 is needed to support graphics. The program gives occasional trouble messages which flash on the screen and dissappear before you can read them. I have been unable to get consistent output; someone else may have better luck. This program doesn't seem to have anything useful to offer although the few fonts do look nice when you get them. The documentation is 12 pages and does not say very much."

Jim recommends PFS First Publisher ($59) as a cheaper alternative with more Fonts, more direct control of font size and location and already has graphics. Other cheaper options you might consider include Fontasy ($33) and Fancy Fonts.

GodSpeed (tm), King James Bible Search Utility, Gospel Version (10/87), Kingdom Age Software. Reviewed by Gene Carleton and by Rick Griffith. Gospel Godspeed is a full function demo of Godspeed, a concordance type biblical utility. Gospel Godspeed is a high speed tool to search for book, verse, word, or a combination of any two to find references in the first four Gospels of the King James version of the New Testament.

For anyone who has used a concordance to find reference to a word, passage, or doctrine in the Bible will find Godspeed very useful. A search can be made by typing in "Joh" and the full verse book of John is displayed. Typing in "cross" would display that the word is found four times in the first four gospels and would display each verse the word was found in. Godspeed claims any search can find the first reference in three seconds. This applies not only to the demo, but the full version of the New Testament and the whole Bible.

Although this evaluation copy only looks up things in the four gospels, it is really fast, usually under 3 SECONDS. If you have a color monitor, all Christ's sayings are in red. You can even generate a report by using the Insert key to add the data to the report, the END key terminates the report. The full bible (Old and New Testaments) version is sold for $100 at present with a discount for more than 5 copies. The New Testament version sells for around $60.

Harvard Total Project Manager II - Trial Size (DEMO), Copyright 1986 Software Publishing Corporation - ver. 2.0. Reviewed by Richard W. Dunn.

The Harvard Total Project Manager (HTPM) is state of the art in project management software. It combines extremely powerful sophisticated project management techniques with an easy-to-use interface. We plan to archive this three disk set onto two disks. ▶

This trial size is an evaluation copy, designed to familiarize the user with the capabilities of **HTPM**. It is not designed to serve as a functional program. It will not allow the user to save or archive projects, nor will it allow the user to save, create, expand, visit, or return to subprojects. The HTPM program requires at least 512k and a hard disk to work. HTPM allows the user to create, develop, modify, and otherwise monitor projects through various charts (PERT and Gantt, ex.), lists, reports, etc. The idea revolves around the design and maintainence of the CPM (Critical Path Method) in monitoring a project. The programs on these disks work very well, giving the user a good opportunity to evaluate the potential of the more extensive REAL version of HTPM. The program makes use of a better than average interface, employing pull down menus, graphics, fill in forms, and is entirely menu driven. Even an abbreviated exposure to this program demo will make the user drool for the real version.

MCBS GenLdgr DEMO (2/87), by Bill Reese, Micro Computer Business Services, 12703 Stuebner Airline Houston, Texas 77014. Reviewed by R. E. Wilgus.

This disk gives a sample look at another Accounting program that integrates GENERAL LEDGER, ACCOUNTS RECIVABLE, ACCOUNTS PAYABLE, INVENTORY CONTROL and PAYROLL. Only the GENERAL LEDGER part of the program is usable because all of the other parts have been disabled for the DEMO version.

The DEMO is in COLOR and shows that the program seems to be well written and much thought devoted to making it easy for the user. It is menu driven. You need to know something about bookkeeping. Accounts are given an eight digit number and transactions are entered using the ACCOUNT number, DATE, 6 characters of REFERENCE information, 18 characters of TRANSACTION DESCRIPTION, and the AMOUNT (a maximum of $9,999,999.99) to DEBIT or CREDIT. The account BALANCE seems to be able to handle up to $99,999,999.99. ON-LINE HELP is available by pressing the F1 key, and BOTTOM LINE INFO shows which function keys are active. Pressing the F10 key permits you to WINDOW into any module to check balances or account numbers from anywhere in the program, however it is interesting to note that while the WINDOW is present you can not type data into the module.

Ticklex 3.3 (9/87), shareware by R. A. Kelly, Integra Computing, Box 72063, Marietta, GA 30007-2063. Reviewed by Paul van Dreal.

Ticklex is a powerful tickler/calender program. It is designed to work with the Managex series of bookeeping, billing and timekeeping software(NTPC Users Group disk 199 a&b Sept. 1987). It requires an IBM-compatible PC/XT/AT with a hard disk, DOS 2.1 or greater and enough memory to devote 185k solely to Ticklex. **Ticklex** will handle Appointments, Deadlines, Expectations, Reminders and Timetables. The user can enter frequent recurrent events easily. Events can be specified by days, days in the week, weeks in the month or by months. Twenty alarms can be set and used as reminders. Five

persons can be tracked by this program, the registered version can track 15 persons. This is a powerful easy to use program.

WWSIndex 3.22 (10/87), by Robert W. Babcock, 4 Reeves Road Bedford, MA 01730. Reviewed by Anthony Nagy and Charles Carter.

WSSIndex is a program for cataloging MS-DOS files stored on floppy or hard disks. The database it creats contains all of the information normally available from the DOS DIR command. You can supply optional comments and categories describing each file, subdirectory and disk. The database may be printed with various sorting options, or may be searched for specific file names with wild cards in case you don't remember the exact name of the file you are looking for. Additional functions include listing files without current backup copies and extracting directory information from ARC files. The program is menu driven and easy to use without referring to the documentation.

PC Yearbook 2.0 (2/86), Rick Racine, 2520 South East Alexander Drive, Topeka, Kansas 66605. Reviewed by Paul van Dreal.

This shareware program is a calender/appointment scheduler. Appointments can be scheduled from 8:00 am to 6:30 pm in 30 minute intervals. A note pad is included to record other information. Version 2 has a number of new features: reset date and time, alarm features, chimes and search capability for the calender functions.

Monochrome or color monitor is supported. The program seems to work well and is easy to use. If you can live with a 8:00 to 6:30 scheduler, it will do a good job. The alarm and chime features are a nice addition.

There will be several other programs whose readme files have not been received as of this writing.

Disks for January 1988.

0220	ManageX-I 3.3, 7/86,
	Timekeeping, billing & bookkeeping
0221	Master Key Utilities 1.7C, 3/87
	Menu driven file/disk manipulation
0222	New York Word 2.2, 5/87
	Word processing
0223	PC-Deal 2.0+, 4/87
	Double entry accounting ledger
0224	PC Demonstration System, 2/86
	Screen formatter and demo maker
0225	Nostradamus Software DEMO, 1/87
	Demo of Nostradamus products
0226	PC-File+ 1.26, 3/87, Disk#2
	Computer club edition: ARCed manual
0227A	Phoenix BBS 1.00, 11/87, Disk 1/2
	A replacement for Collie BBS
0227B	Phoenix BBS 1.00, 11/87, Disk 2/2
0228	1987 Federal Tax Template, 11/87
	Lotus 1-2-3 2.x worksheet
0229	AM-Tax 1987, 11/87
	1987 tax preparation software
0230A	GT-Power 13.00, 9/87, Disk 1/2
	Communications software
0230B	GT-Power 13.00, 9/87, Disk 2/2

The readme files for the January disks have been archived in the Share upload area of the NTPCUG bulletin board in a file named READ0188.ARC   ►

Guidelines for Reviewers.

Many group members have used software from the Disk-of-the-Month, but have not considered reviewing new software for the group. Well its not that difficult. We need someone to use each program, to make sure that the programs work, that all the files needed are present, and to provide a one page mini-review that we print and provide in notebooks and on the catalog disks to help our members decide which disks they want to purchase.

Here is a copy of the guidelines for these reviews:

North Texas PC User's Group
Review Guidelines for Disk-of-the-Month

EVALUATION COPY

Please USE the programs on this disk. Then write an introductory READ.ME file in 50 lines or less that lists (in ASCII-no JUSTIFY):
(1) Program title, author, version and date.
(2) What the programs do (& how well/poorly).
(3) Known hardware and software requirements, e.g., CGA/EGA, min memory, 1-2-3, etc.
(4) How to install/get started using the program or what files provide that information.
(5) An (annotated) directory of the files.
(6) The source of the disk (if known).
(7) Your name at the end of the file.

Please keep the disk, but submit your READ.ME file (please name it something that will connect it with the software with which it goes) to my NTPCUG bulletin board mailbox:

Select (S)end message, then my name,
    Howard Hamilton,
    then (S)end file; use (7) ASCII.

    or mail it to me
Howard Hamilton
1410 Forsythe Drive, Richardson, TX 75081
996-7139 (office) or 644-5721 (home, 6:30-10:30)

Note: Please DO NOT JUSTIFY or indent the text that you prepare for these reviews. And don't forget to put your name at the end of your review.

D-O-M Information on the Bulletin Board

A current listing of the new software that is available for review is maintained in a message on the bulletin board in the DOM Conference. The new disks that are to be distributed are listed first on the bulletin board about five days before each meeting.

Shareware

Many of the disks that the DOM sells contain software that is Shareware. If you try the software and want to continue using it, you are expected to register by sending the requested amount to the author or distributor of the software listed in the documentation on the disk that you have purchased.

One of our User Group members called me last month about a problem he had with WAMPUM. When he used a date in 1988, the program would no longer work. When he changed the date back to 1987, the program once again would work.

I posted this "problem" in the DOM conference of our bulletin board. I have reproduced the two responses for the enlightenment of our members.

Message # 7 From: Ken Loafman   Sent on: 01/07/88 6:54 pm
Subject: Reply: Problem with WAMPUM

There may be a 'time bomb' in the code such that it will not work past a certain date. There are two widely used reasons for such a thing, 1) the date on this particular evaluation copy has expired and the user should get the newer version, and 2) the date on this particular evaluation copy has expired, and the user should register the current version. Reason 1 is an attempt to keep old versions of software from floating aroung, and reason 2 is to get users to pay. Take your pick.

Message # 8 From: Dan Marmion   Sent on: 01/08/88 7:32 am
Subject: Reply: Problem with WAMPUM

Ken is correct. I have a registered copy of WAMPUM, and I have spoken to the author (Ward Mundy, Atlanta, GA), who told me that there is indeed a "time bomb" in the program.

Authors of Shareware DO NOT have many unobtrusive means to prevent us from using their software beyond an evaluation period. GT-Power 13.00 has a usage counter that restricts you to 150 uses. WAMPUM's restriction is date oriented.

Not many products allow you to try the actual product before you buy. Most Shareware is fully functional. If you do continue using Shareware, please register it with the author or publisher.

Howard

3.5 DISK OF THE MONTH

The Disk of the Month collection can now be ordered by mail in the 3.5 disk format. The 3.5 disk format will be sold through mail order only, and not sold at the monthly club meetings until the demand (i.e.: volume of sales) warrants it.

These 3.5 disks are 720K, so that the contents of two 5.25 disks will fit on one 3.5 disk. You will need to check how many of the 5.25 format disks are in the set for each DOM number you select, then total the number of disks in your order and divide by two.

The cost for the 3.5 disks is $3.00 for each disk.

The mail order fee is $2.00 for 5 disks.

THIS IS AN EXAMPLE OF AN ORDER FOR 3.5 DISKS

DOM Disk #	Title/Description	Number of 5.25 format disks
0230	GT-Power ver. 13.00	2
6137	SYMPHONY PERSONAL FINANCE SYSTEM	3
0198	RBBSPC ver. CPC151B	4
	TOTAL NUMBER OF 5.25 DISKS	9
	FOR TOTAL NUMBER OF 3.5 DISKS IN ORDER, DIVIDE BY 2	5
	Times $3.00 for each 3.5 disk =	$15.00
	Shipping and handling $2 for each 5 disks	2.00
	TOTAL	$17.00

ORDER FORM FOR 3.5 FORMAT DISKS:

NORTH TEXAS PC USERS GROUP   3.5 Disk of the Month

Mail form to:
NTPCUG, DOM Mail Order
P.O. Box 780066
Dallas, TX 75378-0066   Date:

MAIL ORDER FORM

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DOM Disk #	Title/Description	Number of 5.25 format disks
	Total number of 5.25 disks	
	For total number of 3.5 disks in order, divide by 2 =	
	Times $3.00 for each 3.5 disk =	$
	Shipping and Handling— $2.00 for each 5 disks =	$
	TOTAL	$

MEMBERSHIP APPLICATION
North Texas PC Users Group, Inc.

The NTPCUG is a non-profit, independent organization of individuals learning to apply personal computers to practical problems. For additional information about the Group, call (214)746-4699.

Aplication Status: (Check One)
>>>> _____ NEW MEMBER
>>>> _____ RENEWAL
>>>> _____ CHANGE OF ADDRESS

NAME: (Last) _____ (First) _____ (MI) _____

OR Company/Organization: _____

ADDRESS: _____ (Suite/Apt) _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: Home (_____) _____ Work (_____) _____ (Ext) _____ (Check Preferred #.)

Do you want access to the Club RBBS?   YES [ ]   NO [ ]

Please initial here _____ if you wish to have your address included on member lists sold for the club's benefit to advertisers of compatible products.

The NTPCUG expects and encourages volunteer participation by members in helping put on the monthly meetings at the INFOMART. This usually consists of a few hours of your time each year. If asked, would you consider assisting the Group with one or more of the following activities:

(Please check all that apply.)

[A] Working with NTPCUG Volunteer Committees? (Circle selections)

[IB]	Information/Registration	[MM]	Membership	[GP]	Group Purchase
[NL]	Newsletter	[ES]	Equipment Setup	[FB]	Financial/Bookeeping
[DM]	Disk of the Month (DOM)	[PR]	Publicity/Public Relations	[ST]	Startext NTPCUG Column

[B] Giving a talk or demonstration to a small group?

[C] Giving a talk or demonstration to a large group?

[D] Being a volunteer, informal "consultant" in your area of expertise for NTPCUG members?

Would you be interested if the Group arranges instructional courses (at various levels) in any of the following areas at a cost per student of approximately $5/classroom hour?

(Please circle or specify, indicating level preferred, i.e., beginning, intermediate, advanced)

[A] Spreadsheet software – Lotus 1-2-3, Supercalc4, etc. (Please specify) _____

[B] Data Base software – dBase, RBase, Reflex, etc. (Please specify) _____

[C] Word Processing software – Word Perfect, Wordstar, etc. (Please specify) _____

[D] Integrated software – Framework, Symphony, etc. (Please specify) _____

[E] Programming Languages – APL, Assembly, BASIC, "C", Fortran, Forth, Pascal, (other) _____

Do not write in this area – for use by NTPCUG.

Annual Dues are: $24.00 (Regular Membership) _____ $12.00 (Student Membership with ID) _____

Applications should be mailed to: North Texas PC Users Group, Inc.
(Make checks payable to NTPCUG.)   P.O. Box 780066
                                                       Dallas, TX 75378-0066

Received: $ _____ Check No. _____ Date: ___/___/___ by: _____

Report on Borland's Quattro

James McCown

Quattro is a Lotus 1-2-3 clone which offers 1-2-3 compatibility at a reasonable price while adding many features which 1-2-3 does not have. In my opinion however, it does not live up to Borland's claims of increased performance.

I was one of the 10 lucky winners of a free copy of Quattro at the User Group's December meeting, but as of this writing (January 14), I have not received it. I reviewed a copy owned by my employer.

I tested the program on an 8 MHz AT Clone with a 20 MB hard disk and an 80287 numeric coprocessor. All of the comparisons in this article are with version 2.01 of Lotus 1-2-3.

The main Quattro program consists of an executable file "Q.EXE", plus four small overlays. Additional utility files for translation, printing and displaying graphs, squeezing files, etc., bring the total hard disk space needed to run the program, exclusive of data files, to approximately 1.2 MB. According to Borland, the program is written mostly in assembler, with some portions written in Turbo C.

Quattro emulates the look and feel of 1-2-3 very closely, with the exception of the pop-up menus, and sometimes improves on it. Data entry is a delightful task, since Quattro writes to the screen much more quickly than does 1-2-3. Most 1-2-3 users will find that navigating through the spreadsheet and the menus will be as easy or easier as it is with 1-2-3. I remember the first time that I tried Symphony: even though the spreadsheet is virtually the same as 1-2-3's, it just didn't FEEL right. When the user tries to copy or move blocks of data, however, Quattro seems inferior to 1-2-3: the screen blinks several times as the items are repositioned.

Users of large 1-2-3 spreadsheets will discover Quattro's major flaw: the program uses 140k more memory than does 1-2-3, and utilizes what little is left less efficiently. Users with 640K of conventional memory will only be able to utilize about 250k of that for worksheet storage, versus approximately 400k with 1-2-3. Borland's insistence on making the printgraph and file translation facilities part of the main program has its drawbacks. Moreover, I have discovered that the average worksheet loaded into memory with Quattro occupies approximately 50% more space in RAM than it does in 1-2-3. Quattro is very limited as to the size of files it can load. L-I-M expanded memory is not always a solution to this problem. My AT Clone has a 1 MB EMS board, but I can't load a frequently-used spreadsheet that uses 600k of disk space with Quattro. Both 1-2-3 and Quattro utilize expanded memory for storing formulas, labels, and real numbers; the lower 640k of conventional memory is used for storing integers and pointers to the items in expanded memory. Thus, although the amount of RAM that I have appears adequate to hold a 600k spreadsheet at first, it is possible to encounter a "MEMORY FULL" problem and still have unused expanded RAM. Quattro's inefficient use of the conventional 640k makes this a more likely occurrence than with 1-2-3.

Quattro does not load large spreadsheets as quickly as does 1-2-3. I timed the loading of a standard 200k spreadsheet with both programs: Quattro took 40 seconds while 1-2-3 only took 16 seconds. Moreover, Borland's claims of quicker recalculation times for spreadsheets are misleading. Although small, simple worksheets are recalculated quicker than with 1-2-3, the standard 200k worksheet took 14 seconds to recalculate with Quattro, versus only 9 seconds with 1-2-3. When you've got the President of your company breathing down your neck and demanding those sales projection figures immediately, those extra seconds can seem like hours.

Quattro has many positive qualities, however. There is no installation procedure needed: the program detects the type of video card you are using and adjusts itself accordingly. Quattro supports the CGA, MDA, EGA, VGA, and Hercules cards. The program is not copy protected. Quattro has an automatic keystroke recording facility which helps with macro development, and also has a full set of macro debugging aids. There are also facilities for menu customization as well as for making transcripts all of your commands, which can be used to review the history of what has been done to your spreadsheet, create macros, or undo changes to the worksheet. SQZ! Plus Data Compression, a 1-2-3 add-in, is a regular feature of Quattro.

The best features of Quattro, in my opinion, are the graphics and file translation capabilities. Although Quattro's methods of creating graphs are similar to 1-2-3's, the printed graphs are much sharper looking. Also, Quattro can read and write dBASE, 1-2-3, Symphony, Paradox, and Reflex files simply by specifying the correct filename extension during the file-save or file-retrieve process. No separate file translation step is needed.

If you are a user of 1-2-3 and only use small spreadsheets, the additional features of Quattro might make a good investment. If, however, you regularly use large spreadsheets as I do, you will find the program's shortcomings most inconvenient. My future use of Quattro will probably be limited to its excellent graph-printing capabilities.

The program has a list price of $200, versus $500 for 1-2-3, and is available in Dallas for as little as $120.

Jim

North Texas Personal Computer
Users Group, Inc.

P.O. Box 780066, Dallas, TX 75378-0066

Phone (214)746-4699 for recorded information about the User Group and meeting dates.

Board of Directors

Reagan Andrews, Ph.D., Chairman	Jim Hoisington
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Kathryn Crawford	

The North Texas PC Users Group, Inc., is a non-profit, independent group, not associated with IBM or any other Corporation. Membership is open to owners and others interested in exchanging ideas, information, hardware, predictions, and other items related to IBM Personal and compatible computers. To join the Group, complete the application blank printed elsewhere in this issue, and send it with $24 membership dues to the Membership Director whose address is shown at the bottom of this page. A subscription to the newsletter is included with each membership.

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

Officials

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　　　　 – David Lamb (214)931-3068 h
Stock Market – Cliff Murphy (214)279-7973
Turbo Pascal – Don Chick

NOTE: To access the BBS by long distance,
use area code 817

BULLETIN BOARD SYSTEM – 461-0425 (Metro)
　　　　　　　　　　　　461-0506 (Metro)
　SYSOP: – Tom Prickett (voice) (214)690-9087
　Asst. SYSOP. – Maggie Moomey
　Technical Advisors: Fred Williams
　　　　　　　　　　　　Pete Testa

Address Changes, etc...
Payment of dues, address changes, and inquiries about membership should be directed to
　　　NTPCUG Membership Director
　　　P.O. Box 780066
　　　Dallas, Texas 75378-0066

(Check newsletter mailing label for your renewal date..)

MEMBERSHIP CARD

This is your membership card in North Texas PC Users Group. You will need it for identification at Disk of the Month sales, group purchases and other activities. This card is valid only for you, the person named on the label on reverse side. It is valid through expiration date shown on the label.

When trimmed, the card will fit transparent badge holders available at your stationers.

Wear your membership card while attending meetings and other functions of the Users Group.

Membership Card
North Texas PC Users Group, Inc.

This card valid only for individual named on label affixed to reverse side, only through year/month printed on the label, and only with proper identification.

Print Name: _____

Signature: _____

Trim card to wallet size.

Meetings & Times

Saturday, 20 February 1988

9:00 AM to 9:45 AM

AUDITORIUM   * BRODERBUND *

Carri O'Loughlin is flying in from Broderbund's California office to show us several of that company's products for the PC. Included in the discussion will be Memory Mate, a memory resident, freeform, data manager and PrintShop.

10:00 AM to 11:00 AM

AUDITORIUM   * MICROPRO *

The folks at Micropro will be demonstrating Release 3 of Wordstar 2000 as well as their new personal and legal additions. It's also possible we may get to see a sneak preview of the new Wordstar Release 5 and the new medical edition.

Special Interest Group Meetings...

Scheduled SIG times could change. Check the Bulletin Board just before the meeting.
Check room numbers on the overhead display in the lobby at INFOMART.

9:00 - 9:55	10:00 - 10:55	1:00 - 1:55
Assembler	Astrometry	Artificial Intelligence
DOS	ENABLE	Business Applications
Graphics	Personal Users	Communications
Hardware Solutions		Data Bases
Personal Users	**11:30 - 11:55**	LOTUS
Science/Engineering	Orientation	Personal Users
9:00 - 10:30		Turbo Pascal
Genealogy (w/Apple)	**12:00 - 12:55**	**2:00 - 2:55**
9:30 - 9:55	APL	Advanced Programmers
Orientation	C Language	dBase Programmers
	Personal Users	DAC Easy Accounting
	Stock Mkt Investing	

North Texas PC Users Group
P. O. Box 780066
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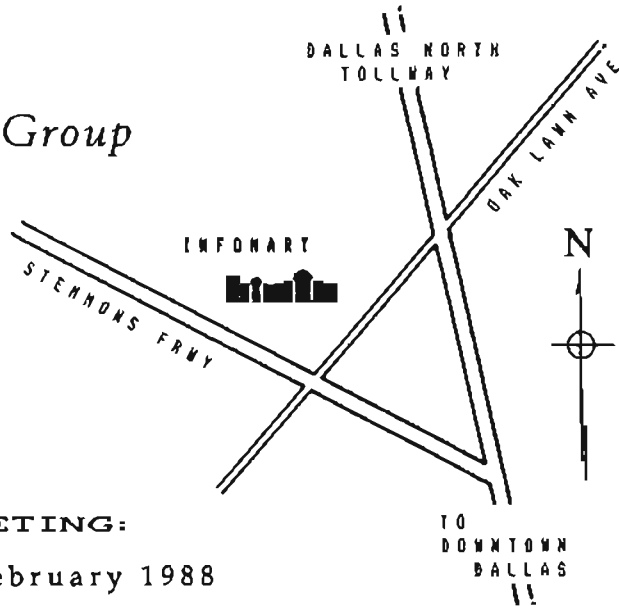**Address Correction Requested.**
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North Texas PC Users Group

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NEXT MEETING:

20 February 1988

TO
DOWNTOWN
DALLAS