



North Texas PC Users Group

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May 1987



North Texas PC NEWS
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All material for publication in North Texas PC NEWS (articles and ads) must be received by the NEWS staff no later than the 15th of the month.

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 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.**

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DEADLINE
Copy deadline for May PC NEWS:
Friday, May 15th.

Meeting Dates

May Meeting - 2nd Saturday (9th)
June Meeting - 2nd Saturday (13th)
July Meeting - 2nd Saturday (11th)
August Meeting - 2nd Saturday (8th) tentative

**North Texas Personal Computer
Users Group, Inc.**

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

(Send membership dues, renewals & address changes to Membership Dir. address at bottom of this column.)

Board of Directors

Jim Hoisington, Chairman Jim Graham
Reagan Andrews Stuart Yarus
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 address shown below. 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.

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Program Chair - Charles Kroboth (214)245-4763 w
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► **Payment of dues, address changes, and inquiries about membership should be directed to:**

NTPCUG Membership Director
135 Skyline Drive
Plano, Texas 75074

Check newsletter mailing label for your renewal date.

May 9

Charles Kroboth, Program Chairman

9:00 AM, Auditorium * MicroPort *

Micro Port will be doing a presentation in conjunction with their visit to the local UNIX user group. They have developed a version of UNIX that will run on a PC.

10:00 AM, Auditorium * Lotus Corporation *

Representatives from Lotus' local Irving office will be demonstrating HAL and Metro. HAL is that company's "English Language Interface" to Lotus 123. Metro is Lotus' desktop accessory package.

Editor's Notes

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It occurs to me that now is about the right time for someone to come out with a really efficient size 5 1/4 inch, high-, high-density floppy. With the installed base of zillions of 5 1/4 inch drives out there I can't believe that everyone is going to change over to the "new", "IBM standard", 3 1/2 inchers.

A lot of you have taken the empty IN basket to heart. You really made my day! We received many good articles this month. Now that you've unlimbered your writing skills, keep in practice - send more. If you haven't sent yours in yet, don't hold back, join the crowd. Remember, if your article doesn't appear in the next issue after you send it, that's a good sign... it means we have a backlog and the following issues will have more good stuff.

Some of the user groups around the country are beginning to publish their newsletters using the new desktop marvel, the Laser Printer. Quality seems to be rising also. You may be wondering when I'll begin using Ventura Publisher (VP) to prepare North Texas PC NEWS. Well, there is just a little problem. VP does not support the Toshiba P351 printer we use for the newsletter, and we do not have access to any of the new "desktop marvels". One of these days...

Went to Electronic Publishing Day at Infomart earlier this month, and saw laser printers by TI, Quadram, Epson and Dataproducts. Problem was, the human interface behind the printer demonstrations needed more expertise in their ability to demo their product. (Where have I heard that before?) Ventura Publisher was used to demo many of the printers.

Prez Sez . . .



April Meeting - I would like to thank everyone who helped us get ready for the April meeting. IBM asked to present their new products at our April meeting just a little over two weeks before our meeting date. A lot of people put in some long hours to be able to make it possible. Thank you.

May Meeting - During the May meeting, the Atari groups will be sponsoring an event called ATARIFEST. We'll be cutting our main meeting a little short so as to be out of the auditorium by 11:30.

They have invited our members to attend but I need to remind you that there is an admission fee of \$5.00.

Membership - Bob Russell, our membership director, wants to remind you that since we have gone to mailing our newsletter via bulk

mail, it is essential for you to keep your address up to date. The post office doesn't forward bulk mail. Please send your changes to:

NTPCUG Membership Director
135 Skyline Drive
Plano, Texas 75074

This last month, we started sending out renewal notices to those members whose membership expired in April. We are doing this because I have gotten so many calls from people whose membership expired and they stopped getting the newsletter. If you get a letter and you have already renewed your membership, it's because we're new at this and we haven't gotten all the kinks out of the process.

Jim

Bylaws Change to be Voted

The following proposed change to the bylaws of the North Texas PC Users Group, Inc. will be voted on in June 1987:

ARTICLE IX

The fiscal year of the Users Group commences on the first day of July and ends on the last day of June.

Need for the change:

Our current fiscal year runs from the first of August to the end of July. This does not match up with our quarterly reporting requirements to the state and federal governments. Shifting the fiscal year back one month will make it easier for our Treasurer to fill out the governmental reports.

Contest



Articles received over the last 5 months show there are a lot of good writers out there. I knew it!

The purpose of the contest was to increase the number of articles submitted for publication in the newsletter. I think you'll agree that we have succeeded in our goal. It is likely that many of the writers will continue to submit articles, since they've found it doesn't hurt very much. Hope this hypothesis proves true...

All articles received between December 1, 1986 and May 1st of this year are eligible for the free trip to the 1987 Fall COMDEX. We plan to publish the remaining articles and a ballot in the June newsletter along with a short synopsis of eligible articles for your choice of the best published during the contest. Plan to vote.

Notes from the NTPCUG Sysop:



Navigating our BBS

HOW DO I GET ON?

ONLY VALIDATED MEMBERS OF NTPCUG CAN ACCESS THIS BBS. If you have received a letter or a postcard from me telling your initial password, you have been validated and may log on to the BBS. We did not automatically validate every member of NTPCUG, as the data entry task of over a thousand names was too much to handle. Instead, you must do one of three things to get validated:

(1) Phone me at (214) 690-9087 (voice) and request that you be validated to the BBS. This number is usually answered nights and weekends when I'm available. (2) Send me a postcard with your name requesting you be validated to the BBS. (3) Sign up at the NTPCUG booth at the next meeting. There is a sign-up sheet available at each meeting.

In all cases, all I need is your name because I get your address when I validate your membership. Then, sit back and wait for your postcard that contains your password to arrive.

If you don't know already, our BBS system is up and running. We (as of this writing) have over 200 validated subscribers. A more accurate measure of BBS traffic is the number of calls we actually receive. We have been averaging about 20 callers per day. I expect this volume to taper off in the near future, and then increase as the board matures. The board is maturing rapidly, and will continue to mature as more help is received from our dedicated membership.

WHAT IS A BULLETIN BOARD?

A bulletin board is an communications program designed to run un-attended except for occasional maintenance by the system operator, dubbed SYSOP. You use the program via a

Modem and telephone line to exchange information. Bulletin boards have been around longer than the IBM-PC. Because they use standard communications lines, they are usually accessible to any type of machine that utilizes RS-232 communications and a modem.

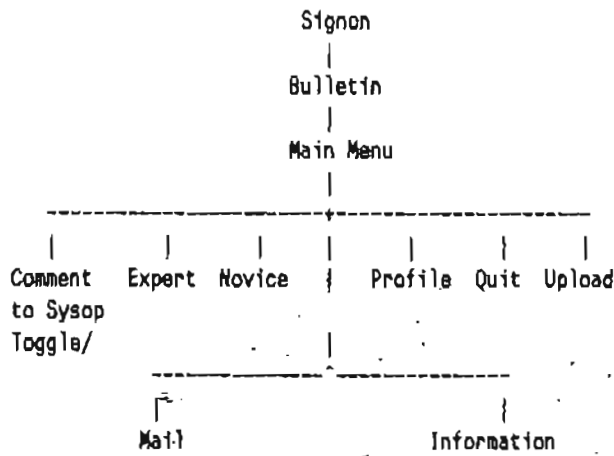
In the IBM-PC world, the person to put bulletin boards on the map was Tom Mack of the Capital PC Users Group in Washington DC. This board is named RBBS-PC, and is certainly the most well known and inexpensive system you can obtain. It is actively supported by members of their club and Sysop's from around the country. For example, Tom's board has an area in it that contains problem logs and questions about RBBS-PC that averages approximately 100 messages per month.

HOW DOES THE NTPCUG BULLETIN BOARD WORK?

Our board operates by progressing through a series of ASCII files that have the text of what is to appear on your screen. Which screens are displayed next depends on your answers to the queries you respond to at the end of a screen. When you connect, you are presented with the Signon screen which identifies the board and tells you how to be validated. After providing a correct first name, last name, and password you progress to the Bulletin screen which tells you pertinent information that is relevant to all who sign on. I know of no way to cancel or prevent the display of these two screens short of severing the communication link. The main menu prompt is now displayed, a full screen if you are in (Novice) mode, or a one line prompt if you are in expert mode.

The main menu can be thought of as the root node to a tree structure of further display screens, but you can select which fork you wish to take next. When you get to a the end node of one of the branches, or indicate you want to go no further, you are returned to some display screen that is along the path you took from the main menu. In general, menus are selected by name or by number.

➤



Comment - This facility allows you to leave a 15 line comment to the SYSOP's concerning problems, suggestions, or the price of System 2's out of the far east. These comments are private and are accessible to no one except the Sysops.

Expert/Novice Toggle - These two menu options allow you to toggle between expert (single line displays) and novice (many line displays). In all cases, you can respond to a single line display with a ?, and get the many line counterpart. One discrepancy is that the Mail display always seems to be in one line mode whether you consider yourself novice or expert. Another thing to remember is that the Expert/Novice commands apply to the current session only, the next time you log on, you come up in the mode that has been selected in your Profile command.

Profile - You are allowed to list or change your user profile. For most users, the user profile consists of the password, and novice/expert default assigned to you at login.

Quit - Use this to hang up and create an orderly termination to your call.

Upload - Allows you to upload files. You will be prompted for a protocol - ASCII or XModem and the file name you wish the board to use when it receives your file. If a file by the same name already exists, you will be given a chance to pick another.

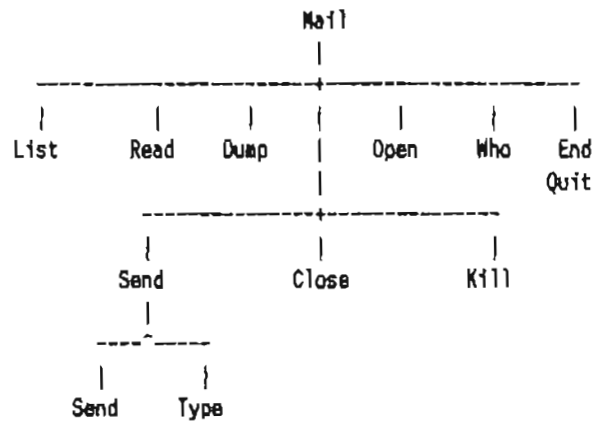
More extensive instructions can be obtained in the Information section, but several points are worthy of mention:

If you select X-Modem, the board will tell you that it is waiting for you get whatever communications package you are using ready to transmit via X-Modem. Be sure that you honor this request, and send via X-Modem. If you get into trouble, Cntl-X will abort the protocol.

If you select ASCII, the board will tell you that it is waiting for you to send, so whatever communications package you are using better be able to transmit a file. When you are finished, the board will just sit there because it doesn't understand you are finished until you send a Cntl-Z. Anything you type before the Cntl-Z will be placed at the end of the file, as if the keystrokes were part of the file you sent.

HOW DOES THE MAIL SYSTEM WORK?

The mail system is a major feature of this board. When you select mail from the main menu the following tree applies:



- L - List message numbers with subject, sender's name and date sent
- R - Read messages
- S - Send messages to another mailbox
 - S - Send ASCII file
 - T - Type message from console
- D - Dump messages to screen
- C - Close this mail box and return to my own
- O - Open another mailbox for reading - Conference or Group
- K - Kill (delete) messages in your mail box
- W - Who are all the Conferences, Groups, or Subscribers
- E - End mail and return to main menu
- Q - Quit: End the bulletin board session

There are three categories of users with which you can interact: (C)onferences (G)roups and (S)ubscribers

Subscribers are other validated members that you can send and receive messages to. They will be notified at their next login that they have mail which they can elect to read. This is a way of carrying on a very slow conversation with someone you don't have the need to call by voice. It is a way of very slowly getting things done.

Conferences are a pool of messages that everyone can read and send mail to. You read conference mail by first (O)pening their mailbox. You have a different set of options here:

(L)ist (R)ead (D)ump (C)lose (O)pen (W)ho (E)nd (Q)uit:

(C)lose is new, you use this to return to your mailbox

(S)end is missing, you must return to your mailbox first

(K)ill is missing unless you are a Sysop or group leader

Groups are kind of like conferences, but only members of the group can send or receive messages. You get into them just like conferences. If you try to find out (W)ho the groups are, you just get the ones you are allowed to talk to. If you get an empty list back, you are not allowed to talk to any Groups. If the (K)ill option shows up for you, you are a group leader or Sysop.

HOW DOES THE INFORMATION SYSTEM WORK?

The information system is yet another tree structured set of screens. We are currently displaying the following in response to INFO at the main menu.

NTPCUG	Current Events and happenings within our club
DOM	Alphabetical subject index of Disk of the Month
XMODEM	How to do XMODEM transfers
NEWPROD	IBM's April 1 announcements
MEMBERS	Results of the members survey at InfoMart
HARDDISK	Latest NTPCUG group buy offer

Information screens come in various flavors. Selection of DOM, XMODEM, and NEWPROD take you to other selection menus where you are presented with yet another selection screen. The most interesting is NEWPROD which gives you selections of:

IBM Product announcements -- April 1, 1987

NEWOVER	Product announcement overview
CURSOFT	Existing software.
NEWSO2	DOS 3.3, OS/2 ver 1.0 & OS/2 ver 1.1
NEWDSPLY	New displays.
NEWNET	New network.
WITHDRAW	Products withdrawn from marketing.

(Editor's Note: The current IBM Product announcements are also available this month as a two-disk set at the DOM counter.)

These are the leaves of the Information tree structure, and they contain information downloaded from IBM BBS's at Boca Raton. These are LONG files, and they are displayed as one solid stream of information. I would advise you to turn on the file capture facility that is probably available in the communications package you use to talk to this board for later reference. If you want to interrupt the display in the middle, type a Ctrl-X, then a return.

There are other leaves of the Information tree - NTPCUG, selected DOM letters, MEMBERS, and HARDDISK that are a bit friendlier. These are shorter, and display their information by pausing at the end of each screen, or at an appropriate paragraph boundary. Much easier to read interactively.

After reading leaves of the information tree, you return to the main menu, or somewhere along the path you took to get there.

HOW WILL THIS BBS EVOLVE IN THE FUTURE?

The board will either be a success, a failure, or somewhere in between.

Judging from statistics, it will probably be a failure because of the large number of boards that come and go in the Dallas area. Failed

bulletin boards are not used, and the slowly dwindle away and die. We are starting with a substantial user base, and currently have a large number of lookers. I would like to see a larger number of typers.

If it succeeds, it will do so because we have a group of people who share common interests. If it succeeds, it will require maintenance, and volunteers will be needed to do a wide variety of things. You do not have to wait for plea for help to volunteer. If it succeeds, it will be because it matures. I've received lots of good suggestions, problem reports, and questions. Those are necessary for our success too. Many thanks to our more active users and helpers.

Tom Prickett

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On Complexity

No. 9 in a Series

Jim Hoisington

My wife is a computer novice. She really hasn't used a computer much until about a month ago. At that point she started entering data into two databases. Her experience showed me something about the future of computing.

The first database is for the local grade school's library. It will eventually contain all the books in the library cross referenced by author, topic and number.

The system is implemented on a multiuser micro and is a series of BASIC programs written by a consultant over about a six months time period.

The second database is a name, address and telephone number database of about 1,500 people for an organization to which we both belong. It is running on a single user AT and was set up in an hour using a popular PC database that includes both a screen and report generator as well as an integrated data dictionary.

She likes working with the second database and hates the first. And after more than

twenty years of marriage, she's not just saying that to humor me. Her reasons for preferring one over the other make a lot of sense.

Her biggest complaint about the first data base is that it is inconsistent. Sometimes she has to hit the enter key to go to the next field and sometimes it goes to the next field by itself.

Editing is also inconsistent. Sometimes she can correct a field by re-entering it and other times she has to delete all the characters in the field before she can change the entry.

On the other hand, the generated screens are consistent. There is one set of editing rules that apply to all fields on all screens. Product reviewers have coined a term to describe feature. If a product has a consistent human interface, they say that the product is "modeless".

Considering that the second database also has three cross references and is about as complex as the first, you begin to see something about the future when you consider that it took me an hour to set up versus about six months for the first.

You might feel that I'm being unfair since the first one is multiuser and mine is single user. But, I use this same package on Local Area Networks and it takes me about an hour to convert a single user environment to a multiuser environment and that includes existing datafiles.

The programmer who set up the first database undoubtedly had to produce documentation and I didn't. However, since the package that I used has an integrated data dictionary, nothing can exist in the system unless it is first defined in one of the dictionaries. The package includes a documentation generator that uses the dictionaries to produce but they go a long way toward getting the job done. And, they give us time to write programs for the problems that they can't solve.

Jim

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NERD ON THE STREET

NERD GEAR: You never know what the surgeon general is going to come up with next and as a card carrying nerd I want to be ready for anything. Im-Ex Company of San Francisco is selling a line of protective glasses designed to absorb ultraviolet radiation from your monitor. Priced from \$19 to \$35 they also control glare & reflections and reduce the brightness of the screen below the level that the human eye identifies as flicker. These gems come as standard issue, clip-ons for those of you already feeling the effects of monitor radiation, and flip-ups for that occasional fly ball. Get yours today by calling (415) 391-4169.

APPLE NEWS: Steve Jobs recently rented 41,000 feet of office space in Fremont, California's Mission Corporate Center. The space apparently is intended for manufacturing Next Incorporated's new line of products. Steve Wozniak walked into Harrah's Casino in Lake Tahoe and within five minutes had a slot machine pour \$6,000 into his already full pockets. In July he reportedly hit an \$8,000 jackpot in Las Vegas. By the way, a single share of Apple Computer stock is going for about \$62, up from \$21.75 last year at this time. Latest in the rumor mill has Tandy Corporation readying a Macintosh clone with a "starving artist" interface. That's a code phrase being used at Tandy and although I don't know specifics, it obviously refers in some way to desktop publishing.

SPARKS: H.L. "Sparky" Sparks has been named president of Amdek Corporation as well as vice president of that firm's parent company, Wyse Technology. Sparky was the man responsible for developing IBM's original dealer distribution strategy for the PC. From there he was recruited by Compaq Computer to set up that company's dealer network. Prior to his move to Amdek, Mr. Sparks worked for disk drive and PC manufacturer Tandon Corporation, where he was senior vice president of sales. All in all, his 25 years in the industry have been reasonably successful.

QUOTE: "This is the sixth consecutive year of the LAN (local-area network), and next year will be the seventh." - Philippe Kahn

NEW CHIP: By 1989 all IBM computers, from PC's to mainframes, will be using IBM's new 4-megabit memory chip. The chip will almost double data access speed with an access time of 65 nanoseconds versus 120 nanoseconds for the current 1-megabit chips marketed on most PC's. IBM seems to be ahead of its competitors Mitsubishi, Fujitsu, and Matsushita. The new technology is made possible by a combination of improved CMOS technology, advanced photo lithography, and new three-dimensional design of each memory cell.

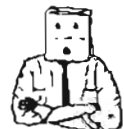
Nippon Telegraph & Telephone Corporation unveiled its 16-megabit dynamic RAM chip but is only in an early test stage. Half of the 20 layers in the chip are etched using an electron beam. That's a technique that does not lend itself to mass production and no time frame for manufacturing was given.

1-TERABYTE: Eastman Kodak Company is producing a new option for its high-storage-capacity optical disk line. The Kodak Optical Disk System 6800 will remember more than 1 terabyte, that's 1 trillion bytes, we're talking 1 million megabytes of data. The information is stored on 14-inch WORM platters and will be sold in 1988. The disk system will be marketed with the KIMS (Kodak Information Management Systems) System 5000 for a mere \$700,000. I'll bet Soft Warehouse could get you a better price though.

COPYRIGHT VIOLATIONS: IBM has been awarded \$1.9 million and \$2.6 million by the U.S. Customs office. Matsushita Electric Industrial Company was found guilty of copying the IBM PC BIOS for that company's clones imported to the U.S. through the Port of Seattle. Matsushita makes clones for National, Panasonic, Technics, and Quasar.

PREZ STATS: A questionnaire passed out at one of our main meetings asked a question concerning the popularity of our current president (J Hoisington not Ronnie). While a large percentage thought Jim is wonderful, 12.2% said bizarre & unspeakable things and 4.4% said UFO people made them vote for him. Jim, inquiring minds want to know!

Nnnnn



February 1987 Survey Results

by Andrew Chalk

On behalf of the officers and myself, I would like to thank all those people who completed the demographic survey distributed at the February meeting. I have summarized the results and present them below. The overall statistics present a fascinating picture of the group, confirming some of the things we believed, but also providing many surprises.

The results will do a number of useful things for us all. First, my personal interest in the survey will be arranging group purchases. Shortly after taking over responsibility for group purchases, I realized that potential vendors knew very little about us and therefore formed inaccurate impressions about our size and diversity. The survey has already provided something tangible evidence that our 990 members collectively represent a market larger than most corporations. Furthermore, it

proves decisively that our membership is a roll-call of the major microcomputer users and computer professionals in the Dallas/Fort Worth area.

A second use of the survey will be to obtain advertising for our monthly magazine North Texas PC News. This not only brings vendors to our attention, it also defrays the production costs of the magazine, thereby permitting our membership dollars to go further.

Finally, many other people and organizations need to know who we are. The media, the management of Infomart, the presenters at our monthly meetings, etc. Here again, the survey can help.

In order to keep the data current, we will send you a survey similar to the one distributed in February with your membership renewal form. By completing it you make the club a better organization for all of us. Your help is greatly appreciated.

North Texas PC Users' Group

Demographic Survey of Membership**February 1987**

The North Texas PC Users' Group, Inc. is an interest group for people involved in all aspects of computing using the IBM family of personal computers and compatibles. Commencing in February 1987, the group began regular surveys of its members' occupations, corporate and personal purchases, current computer hardware and software, and expected future purchases. This is the inaugural survey. It was conducted at the group's February meeting at Infomart, in Dallas, Tx. Future revisions will be made by circulating the survey with membership renewal materials.

*** * * Highlights of This Survey * * ***

--- Group membership as of March 1, 1987 stood at 990. This represented a 39% increase from the same time last year.

--- 62% of group members are computer professionals of some kind. This group recommends, on average, over \$10,000 of computer hardware and software each year and has final authority over \$2,500 - \$5,000 of hardware and software purchases.

--- 23.89% of group members are computer consultants. This group recommends and initiates the purchase of an average of over \$10,000 on hardware and software each year by their clients.

--- Members spend, on average, \$2,165 each year on hardware and \$1,716 on software for their own

personal use. 49% of the members consider the best computer they own to be an IBM PC or compatible. While 22% of the members consider the best computer they own to be an IBM AT or compatible. No members declared that they personally own a 386 machine as yet but 17% intend to buy one within the next year.

--- Over the coming year, 75% of members plan one or more major hardware purchase for their personal use. 18% plan to purchase a hard disk drive. 23% plan to add a larger hard disk. 29% plan to purchase a modem. 52% plan to purchase a new machine of AT capability or better. This is broken down as follows: 16% plan to purchase an AT or equivalent; 19% plan to purchase a "fast" 286 machine; 17% plan to purchase a 386 machine.

Summary of survey results begins on next page. ►

**North Texas PC Users Group
Membership Demographic Survey
February 1987 Results in Detail**

The following is a detailed account of members responses to the survey distributed at the February meeting. It is organized question by question. Some questions are followed by a note that explains how responses were entered. In all cases, questions appear here exactly as they appeared on the survey, except type style and spacing have been adjusted to match the newsletter format.

The total number of responses was 180. The officers consider this to be a large enough, and random enough, sample to adequately represent the membership as a whole in most respects. For each question below, the proportion of respondents is shown.

Question 1: Does a significant aspect of your work involve you in any way in Evaluation, Recommendation, Design, Manufacture or Sales of:

- [A] COMPUTER HARDWARE: 62.78%
- [B] SOFTWARE: 71.67%
- No response: 15.00%

Question 2: If you aren't a Computer Professional, are you considered the PC Expert in your area [Y/N]?

- YES: 55.56%
- NO: 12.22%
- No response: 28.89%

Question 3: As a Computer Professional, the most appropriate description of your job would be: (Circle one)

- [A] Chairman/President/CEO: 3.89%
- [B] Computer/MIS manager: 4.44%
- [C] Engineer (Hardware): 5.00%
- [D] Consultant: 23.89%
- [E] Systems Analyst: 5.00%
- [F] Data Base Supervisor/Administrator: 4.44%
- [G] Programmer: 5.56%
- [H] Representative: 2.22%
- [I] Educator: 7.22%
- [J] Other (Please Specify Below): 17.22%
- No response: 21.11%

Note: A surprising number of respondents indicating other, described themselves as managers in various categories other than MIS (choice B). Future versions of the survey will offer a specific category for non-MIS managers to check.

Question 4: How much in computer hardware and software purchases do you recommend, but have NO FINAL AUTHORITY OVER each year? (Circle one)

- Below \$1,000: 12.22%
- \$1,000 - \$2,500: 8.33%
- \$2,500 - \$5,000: 8.39%
- \$5,000 - \$10,000: 12.78%
- more than \$10,000: 43.33%
- No response: 14.44%

Note: Respondents checking two categories were coded as though they had checked the lower one only.

The median member (i.e. the member who is in the middle when we rank members by expenditure category) recommends between \$5,000 and \$10,000 of

computer-related expenditures each year. However, of those members who identified themselves as consultants in question 3 the median recommendation was over \$10,000. In fact, over 60% of the consultant's recommended over \$10,000 in computer-related expenditures each year.

Question 5: How much in computer-related purchases do you have FINAL AUTHORITY OVER annually?

- Below \$1,000: 31.11%
- \$1,000 - \$2,500: 11.11%
- \$2,500 - \$5,000: 13.89%
- \$5,000 - \$10,000: 6.67%
- more than \$10,000: 23.33%
- No response: 13.33%

Note: The same coding rule described in the previous question was followed here.

The median member (i.e. the member who is in the middle when we rank members by expenditure category) authorizes \$2,500 - \$5,000 of computer-related expenditures each year. However, those members who identified themselves as consultants in question 3 had a median of \$5,000 - \$10,000.

Question 6: Hardware: Do you approve, recommend, or purchase any of these products? (Check ALL that apply.)

- [A] Mainframe/s: 5.56%
- [B] Minicomputers: 15.08%
- [C] Microcomputers (PCs): 70.95%
- [D] LAN's: 24.02%
- [E] Laser Printers: 41.90%
- [F] Impact Printers: 53.63%
- [G] Monitors: 62.01%
- [H] Modems: 55.87%
- [I] Hard Disks: 64.80%
- [J] Tape Backup: 35.20%
- [K] Add-in Cards: 55.31%
- [L] Other (Please specify below): 3.89%

Note: There are two interesting things in the responses to this question. First, the strong microcomputer versus mainframe orientation of the membership. Second, the surprisingly large number of members involved in purchase decisions.

Question 7: Software: Do you approve, recommend, or purchase any of these products? (Check ALL that apply.)

- [A] Accounting: 8.33%
- [B] Order Entry/Inventory: 16.67%
- [C] Payroll: 12.78%
- [D] Time Billing: 9.44%
- [E] Spreadsheets: 62.22%

[F] Word Processing:	68.89%
[G] Communications:	52.22%
[H] Compilers:	36.67%
[I] Project Managers:	22.78%
[J] Database Managers:	54.44%
[K] Programming Tools:	50.00%
[L] Graphics:	48.33%
[M] Statistics/Analysis:	23.33%
[N] Other (Please specify below):	6.67%

[C] COMPAQ 386:	0.00%
[D] IBM XT:	18.83%
[E] COMPAQ (80286):	1.67%
[F] Clone 386 (Specify):	0.00%
[G] COMPAQ (8086):	6.11%
[H] AT Clone (6-8 Mhz):	8.89%
[I] PC/XT Clone (8088-8086):	25.00%
[J] AT Clone (10+ Mhz):	4.44%

Note: Since most members reported only one machine, subsequent choices are not shown.

Question 8: At WORK, I regularly use: (Rank in order of use/access -- "1" = most used.)

	1st	2nd	3rd	4th	5th
Mainframe:	13.33%	12.22%	05.00%	01.67%	02.22%
Minicomputer:	11.67%	8.89%	05.56%	01.67%	01.11%
Desktop PC:	66.11%	16.11%	02.22%	00.00%	00.00%
Portable PC:	05.56%	8.89%	03.33%	02.22%	00.56%
Laptop PC:	02.78%	00.56%	04.44%	02.78%	02.78%

Note: Columns may not sum to 100 due to non-responses.

Question 9: At HOME, the best computer I own is: (Circle one of the following -- if more than one computer, write "2", etc. by second best.)

[A] IBM PC:	20.00%
[B] IBM AT:	7.78%

Question 10: I personally spend _____ on HARDWARE and _____ on SOFTWARE annually.

Mean Hardware Expenditure = \$2,165.36

Mean Software Expenditure = \$1,716.10

Question 11: I am currently planning to upgrade my current system by: (Check all that apply.)

[A] Adding a Hard Disk to a PC:	17.78%
[B] Adding an AT (or clone):	16.11%
[C] Adding a Larger Hard Disk:	23.33%
[D] Add a "fast" 286 machine:	18.89%
[E] Adding a (faster) Modem:	29.44%
[F] Getting a 386 machine:	17.22%
No response:	25.00%



**The
Variety
Store**

(New or unusual hardware/software/applications for IBM small computers and compatibles.)

Peter Norton has a new one out again. In addition to release 4.0 of The Norton Utilities he now has released an advanced edition called, of course, The Norton Utilities Advanced Edition. This edition includes everything in Version 4.0 of the "vanilla" Utilities, and some new, specialized programs. Speed Disk re-arranges the logical structure of a hard disk to improve seek time, speed and performance. Format Recover recovers data lost from inadvertently formatting a hard disk. Norton Utilities/Advanced Features

contains new functions that allow editing of the Directory, File Allocation Table and Partition Table. Retail price of The Norton Utilities, Version 4.0 is \$99.95. The Advanced Edition sells for \$150; or \$39 for registered users of any previous version of The Norton Utilities. Peter Norton Computing, 2210 Wilshire Blvd, Suite 186, Santa Monica, CA 90403-5784.

dBASE SIG

Our May meeting will be comparing various dBase compilers. The primary compiler discussed will be Clipper. Foxbase Plus, and Quicksilver will also be discussed. If you're developing applications in dbase, and want to have your applications in a compiled, secure format useable without dBase, you should attend. David Hayden (214) 380-8172 or (214) 931-2209 (BBS)

Lost Again in Never-Never Land -- Selecting a Hard Disk for Your PC

Reagan Andrews, Ph. D.

No other area of PC's creates such heated conversation, questioning and myth as the mystique surrounding hard disks. Would-be purchasers are deluged with specifications such as interleave factors, merits of MFM vs RLL encoding, plated vs coated media, band-stepper vs voice-coil head positioning, expensive high-speed disks vs low-speed disks, SASI vs SCSI vs ESDI interfaces, ad nauseam.

Doing it the Easy Way -- or --

Do I Have to Know What All that Technobabble Means?

No. Almost all the details, above, are "transparent" to the user once the hard disk is installed and running. Some, such as "band-stepper vs voice-coil head positioning", may have importance in terms of operating routines, though.

Is dealer installation absolutely necessary?

Again, No. Most PC owners can install their own hard disks -- with this caveat -- that the hard disk is part of a system designed for their machine, and suitable for owner rather than dealer installation. Notice the use of "system" above. AT&T 6300's, although otherwise excellent, can be more of an installation problem than IBM's and many clones.



Such a system should include the hard disk, a suitable control card, connecting cables, a low-level formatting utility (disk or controller ROM routine) and a well designed installation manual. Kits sold this way often have the low-level formatting completed and will only need physical placement in the computer and completion of high-level (MS/PC-DOS) formatting via FDISK and FORMAT. Locally, most "kits" are composed of 20M 1/2 high drives (Seagate ST225's look most popular) using Western Digital or OMTI controllers. Most 30M kits appear to be 1/2 high Seagate ST238 drives with Adaptek RLL controllers.

A good installation manual may be the most important (and most neglected) item in the system. It will make the difference between a pleasant and fulfilling experience and hours or days of frustration. Probably the best treatment of general installation can be found in Don Berliner and Chris DeVoney's book, *Managing Your Hard Disk*, published in 1986 by Que.

Problem Areas that Complicate Installation

There are three potential problem areas for users installing their own hard disks: mechanical quirks not explained in the computer manual, unanticipated electrical requirements and low-level formatting of the disk after physical installation.

Mechanical --

Installations that should be quick and easy can be complicated by mechanical factors. Example -- the AT&T 6300. Unless you are intimately familiar with the mechanical quirks of the AT&T 6300, be prepared for scraped knuckles or broken fingernails. The case on the AT&T apparently was designed by the Marquis de Sade and endorsed by Cesare Borgia. The manual does describe opening the machine, but neglects some important information on installation of a hard disk or a second floppy disk.

Like some clones, the AT&T 6300 ONLY takes half-high disks. The second disk is mounted on top of the aluminum bracket attached to and

surrounding the "A" floppy. What the manual doesn't show is the spring-loaded catch UNDER the "A" floppy holding the whole assembly in place. Pry down gently on the catch with a flat-blade screwdriver while pushing the assembly toward the front of the machine. It will release with a "snap" and the assembly will come out easily. The "A" floppy is attached to the bracket by four (4) screws, two (2) on each side.

You have to remove the "A" drive to mount a second drive, since the second floppy or hard-disk drive is attached to the bracket by four (4) screws that go from the "inside" of the bracket top to the "bottom" of the second disk. Don't worry, almost all drives are designed to allow both bottom and side mounting. You will need four (4) 6-32, 3/8" machine screws to attach the drive to the bracket. After this, the rest is easy.

Electrical ---

Unanticipated electrical needs present a second problem. Early IBM PC's had an anemic, 63.5 watt power supply. Although many half-high hard disks are advertised as "Low Power", when coupled with a controller that isn't "Low Power, they will demand more power than is available if the computer also has an internal modem and an expanded memory board that's fully loaded or other power-hungry boards.

Even if power seems "O-K", it will probably be marginal at best.

Heat build-up (the "hidden" IC killer) may become a problem anyway. Best solution is a larger power supply with high-capacity cooling fan which will usually be available from the same source as the hard disk. You should be careful to get a "quiet" power supply, since some of the replacements available are much louder than the original and can take all the pleasure from using your computer for extended periods.

Speaking of cooling, Berliner and DeVoney describe a "trick" I also stumbled across installing a memory board in a PC/XT that was part of a very high-tech piece of lab equip-

ment. Either IBM or the instrument maker placed a piece of black electrical tape over the cooling holes under the "B" drive bay. (You can see them when you pull the cover off the IBM.) I tried it on my PC and it did produce a temperature drop.

You may also need a "Y" adapter if you plan to keep two floppies in addition to the hard disk. This is true for IBM PC's and some clones that only have two disk power leads. This is not a problem for most replacement power supplies, but you should ask the vendor about them before you buy.

Low-level Formatting --

After the disk is physically installed, you probably will have to do the low-level formatting before you can use the DOS FDISK and FORMAT routines. This can either be very easy, particularly if the hard disk type is one of the controller's "default drives", or can be a very time-consuming and frustrating experience. Usually, this is a function of the care with which the controller manufacturer has designed his installation utilities.

Low-level formatting utilities can be supplied on a floppy disk, or may be routines in the controller ROM BIOS. Most are menu-driven and won't be a significant problem since they usually offer several default drive types and will take over once one is selected. If the routines are in controller ROM, you'll have to use DOS's DEBUG to access them and run the low-level formatting routines. Follow directions exactly and you'll probably be successful. Good installation manuals will provide trouble-shooting tips that assist in case of difficulty. Poor manuals, well...

No matter whether disk or ROM routine, you should boot your computer from a DOS disk without any RAM-resident programs or "fancy" AUTOEXEC.BAT or CONFIG.SYS files. Programmers who wrote the low-level formatting routines didn't plan on anything except DOS being loaded and your programs may interfere with them. Results are unpredictable if you don't.

Upgrade to latest DOS --

Following successful low-level formatting, you are ready to complete the job with DOS's FDISK and FORMAT. This is an excellent time to upgrade to the latest version of MS/PC-DOS available for your computer. Do it. Use the DOS manual for specific instructions in part of the installation.

Doing It the Interesting Way

Mix 'n Match Systems -- When You Want More

Once the user decides he or she wants more -- or just something different -- from what the kits provide, technical knowledge becomes very important. One solution is the dealer and his ability to customize a system for the user that will be suitable within budget constraints. Surprisingly, a number of dealers either don't know (or don't care) enough to assemble systems appropriate for the user's machine. (See "Speed", below.)

First -- Decoding the Techno-babble

Before venturing into Never-Never Land, we need a common analog for the hard disk to aid understanding. Record players are good (almost) for that. The turntable rotates at controlled speed and the music is taken from the grooves on the record by a stylus (needle) in the tonearm and amplified electronically.

A major difference is that the "grooves" are really one long spiral on a record, but a hard disk has a number of circular "tracks" or "cylinders" magnetically defined via low-level formatting on the surface of the platter. These tracks (cylinders) are also divided into sectors at the time of formatting that contain (in most PC drives) 512 bytes of information. The disk drive heads, like the phonograph tonearm, pick up this information as the platter turns. Unlike the tonearm, the heads are controlled and are moved across the platter, from cylinder to cylinder, to locate the appropriate cylinder and sector in which to read or write data.

Speed is -- Average Access Time

All hard disks for microcomputers rotate at approximately the same speed, 3600 RPM. Speed -- "high-speed" vs "Low-speed" -- really refers to "average access time" or how quickly the disk heads can be moved to the designated track (cylinder) on the hard disk. This is measured in milliseconds (1/1000's of a second) and ranges from around 115ms (low-speed) to 18ms (very high-speed) with price in inverse relationship to speed. Early PC/XT 10M drives ranged from 85 - 115ms.

IBM upped the ante for the PC/AT and specified a maximum of 40ms for PC/AT drives. However, this figure was/is ignored by some dealers who placed older, slower and much less expensive drives in PC/AT's. PC/AT owners, unknowingly stung by such practices, wondered why their machines seemed so slow.

Currently, mid-range drives such as the Seagate half-height series at 60ms average access time and Rodimes with 45 - 55ms access times are widely available and reasonably priced locally. These drives are appropriate for PC's, PC/XT's and other 8088 and 8086 machines, and can be used without too much performance degradation in "old", 6MHz PC/AT's.

Speed is Also -- Interleave Factors

A second major "speed" determinant is "Interleave Factor" or how sectors on a track are sequentially processed. Remember, tracks or "cylinders" are divided into sectors. "Standard" MFM encoding produces a 17-sector track/cylinder while the newer RLL encoding produces a 25 or 26-sector track. (This is how RLL 2,7 encoding increases drive capacity by 50%.)

Interleaving refers to how consecutive sectors are read and written. Interleave Factor of "1" means that each consecutive sector passing the head is read. An interleave factor of "4" would indicate only every fourth sector is read sequentially. The time in between ►

sectors allows the CPU to process or catch up with the data.

Although the lower figure, "1" would seem preferable, IBM PC's and PC/XT's with 4.77 MHz 8088 CPU's CANNOT handle data this rapidly. Most 4.77MHz PC's (with only a few exceptions) really can't handle anything faster than "4," while 6Mhz AT's usually don't handle anything faster than "3." High-speed AT's may handle factors of "2" and sometimes "1", depending on system clock rates.

Paradoxically, too low an interleave factor is much less efficient than too high an interleave factor. That is, if the "ideal" interleave is "4", the disk will perform much more poorly with an interleave of "3" than it would with a "5". The disk controller maker's default used to be a "safe" rule to follow, but this is changing as controller manufacturers appear to be caught up in an interleave-factor race.

I strongly suggest reading (if you can obtain a copy) Steve Gibson's "Tech Talk" column in the March 30, 1987, issue of "Info World" (Vol 9, Issue 13) for further elaboration.

Nothing is absolute, though.

All the above are generalizations, and "real-world" performance depends on "typical" data manipulation patterns, the efficiency of the controller data-handling algorithms (sort of like "secret ingredients") and the operating systems data-handling routines (MS/PC-DOS is considered notoriously "slow") coupled with the PC ROM BIOS routines. These latter are partially responsible for some differences in disk read and write times published in computer reviews.

Head Movers -- Voice Coils and Band Steppers.

Most "high-speed" hard disks use voice-coil head actuators. Low and medium-speed hard disks have typically used band-stepper head actuators. Aside from "speed", a major difference between the two types is



that voice-coil head actuators usually go to a "safe", i.e., non-data, area on the hard disk after power is removed. Band-steppers usually leave the heads over the data on the hard disk (unfortunately, usually over track "0") when powered down. Head-parking programs move the heads to "safe" areas on the disk before power down so that moving or jostling won't harm data. This is vital to long data life.

RLL 2,7 -- Magic Space Increaser

RLL 2,7 controllers that increase disk size by approximately 50% work well ONLY with RLL-capable disks, usually those with plated disk media. Manufacturers of these cards, Western Digital, OMTI, Adaptek, etc., typically have a listing of drives that work with their systems. If you plan to use one of these, follow their specifications. However, many non-RLL certified disks do work well with RLL encoding. The problem is that neither the disk manufacturer nor the control-board maker will guarantee that the particular disk-controller combination will work, so you are "on your own" when you step outside of their recommendations.

Best source of information and/or data on RLL combinations other than those recommended by the makers is people who have successfully (or unsuccessfully, for that matter) installed a combination similar to one you're considering. Try people in the NTPCUG -- that's one of the major functions of a users' group. Browse through the technical or programming conferences on local BBS's. Ask dealers of the various drives.

Heart of the System -- The Hard Disk Controller

For users assembling their own systems, a major decision is selecting the hard-disk controller. This is a much more complex, sensitive and important factor in disk performance than many dealers admit or are prepared to discuss.

Problem is the computer-controller-hard disk match. Not all hard-disk controllers work with all PC's. This is particularly a problem

with the "Turbo" clones such as computers with the ACS 1000 motherboard, AT&T 6300's, and IBM- PC's with some accelerator or speed-up boards. Also, not all controllers work with all hard disks. The original IBM PC-XT came with a Xebec hard-disk controller that was quite limited in terms of drive types it would accept.

Add-on controllers from Western Digital, OMTI, and Adaptek allow a much broader range, but usually require extensive knowledge on the installer's part if the drive is not one of the board's "default" drive types. This tends to exclude "bargains" unless the user has significant tolerance for frustration and unlimited patience.

Further complicating the picture is the fact that some controller-disk combinations appear to be more efficient (faster) than others. This is a function of the controller algorithms coupled with the disk interface algorithms. Rapidity of model change and unannounced changes in existing models by controller makers add substantial confusion. Even field engineers often can't keep up with these changes and may be of limited assistance to users.

Final Hurdles -- Getting it All Together

Once you've selected the "perfect" -- or best affordable -- drive and hard-disk controller, you'll be ready for installation. Your drive probably won't be a controller "default" for low-level formatting routines unless you're lucky. In the absence of luck, the following drive/controller data will be necessary for a successful installation:

- (1) Power consumption of the drive, i.e., will a larger power supply be needed?
- (2) Type of controller interface, such as ST506, RSDI, etc.,
- (3) Head actuator type, i.e., band-stepper or voice-coil activated -- if the former, a "head-parking" utility program will probably be necessary,
- (4) Number of disk cylinders and data heads,
- (5) If write precompensation is required, and if some cylinders require reduced write current,

- (6) Seek step pulse rate range,
- (7) Preferred encoding -- MFM or RLL, or, if the drive is RLL certified.
- (8) Etc. (Many Etc.'s)

The bulk of this data should be available either from the drive and controller manuals, or via conversations with the respective manufacturer's technical representatives/engineers. One source of information would be the dealer who sold the drive and/or controller, and emphasizes the importance of knowledgeable, "full-service" dealers somewhere in the chain if possible.

Gathering all this information in the absence of appropriate documentation tends to make most users reconsider the \$35 - \$50 many dealers ask to install a hard disk.

Reagan

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SWAP



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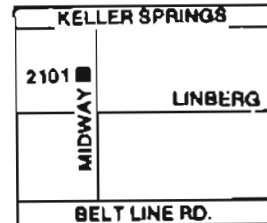
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North Texas PC User Group
**Group Purchase
 Announcement**

Across The Board Discounts On Software

Up until now, group purchases have focused on hardware rather than software. It isn't hard to see why. Software is so heterogeneous. For example, if we were to have a group purchase of word processors, we would have to offer at least ten different brands in order to satisfy everyone's tastes. Far better to offer the NTPCUG member an across-the-board discount from a local vendor who already offers low, low prices: the objective being to assure the club member that, almost invariably, this is their lowest price in Dallas/Fort Worth.

We are pleased to announce that we have negotiated such an offer. The vendor is:

Dallas Softstore and PCs,
 2101 Midway Rd., Suite 200,
 Carrollton, TX 75006
 Phone: (214) 387-8044

Check their advertisement in this issue of North Texas PC News and compare their prices with anyone in town.

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(Note: Occasionally some software items are in very short supply from the manufacturer and may not be available at the special discounted price. These situations will be rare.)

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General information:

- 1) You must show your membership card at time of purchase in order to obtain the NTPCUG MEMBER DISCOUNT.
- 2) If you know what you want to buy then call first to check that the item is in stock;
- 3) If you live some distance away, Dallas Softstore will be happy to ship;
- 4) The NTPCUG MEMBER DISCOUNT arrangement holds through November 1, 1987.

Dallas Softstore has been in business for over five years. Traditionally, they have sold hardware and software as systems directly to corporations. They have also provided programming and training services. Earlier this year they diversified into the retail software market, offering substantial discounts off manufacturers' list prices. ▲

GROUP PURCHASE RE-RUN

USRobotics 2400 BPS Internal Modems -- \$175

In February we ran a group purchase of USRobotics 2400 baud internal modems. Over 150 members have already taken advantage of the offer, but if you haven't yet, or if you just joined the group, we are pleased to announce that it is still valid. The full details about the modem and the offer can be found in the February issue of the club magazine on page 13, or on the bulletin board in the bulletin "Modem Group Purchase".

The purchase is being handled through CMO, a national mail-order company. To order, just call 1-800-233-8950 and ask for operator 15 (or just "Chris"). Tell Chris that you are a member of the NTPCUG in order to get this special price, and have a major credit card ready. If Chris is busy, leave your number and he will be happy to call you back.

This offer was very popular when we first offered it and we are pleased to extend it. CMO has the modems in stock but, as always, the offer is limited while supplies last.

Andrew Chalk ▲



Disk of the Month

By Tim O'Neil

The Disk of Month for April was a big success. We always have fun. If you would like to work give me a call. We did not run out of any disks (almost), and with our handy little Televideo we were able to fill all orders.

As Disk of the Month Chairman I would like to say thanks to all of you for the nice things that are being said about the DOM operation. Remember, if you have any suggestions let me know. We have come a long way in the last 15 or so months and I can not say thanks enough to our committee, Howard Hamilton Kathryn Crawford, Dwight Neal, and Ken Loafman our new rookie in the group. They have really worked hard. To members who buy our disks, and to all of you that have contributed software to our library, I cannot tell you how much I appreciate your contribution. Thanks also to those who call or write me about software that is bad or a program that I need to get into the library... we need your feedback.

We have made this a library that we can be proud of. Please keep the disks and the comments coming. Kathryn is working on a new numbering system that will really help us sort out our disks in the future. Not enough can be said to thank her for all her hard work for the club. Kathryn, we thank you.

Tim O'Neil

May is going to be another block buster. Disk of the Month will be PC-File+ By Jim Button, a two-disk set. (See below.)

Other disks for May...

IBM Announcement Disk - A two-disk set
 Buery Utilities
 Dosamatic
 L. Q. Version 2.11 - an upgrade
 A86/D86 V 3.0 Cheap Assembler upgrade
 Smart Forcast
 Window Boss - C compiler
 Basic Aids
 File Friend

Outline
 Marks Presentation
 Turbo-Expert
 ManageX III Version 2.1
 Instant Recall

I have an ARC version of the Bible that is only available by special order or mail. It is a 12-disk set, and if picked up at the DOM table, is priced at \$24.00. By mail add \$5.00 for handling.

When you send in mail order please write your check to cover both disks if your order is for a two-disk set. The cost is \$2.00 per disk to members. \$3.00 per disk to non-members. Add \$1.00 for handling up to 5 disks, \$2.00 for more than 5 disks. My address is Tim O'Neil Box 396, Bedford, Texas 76021. I try to get them mailed out to you the next day.

Discounts... Ask us before you purchase!

PC-WRITE Manuals - \$25.00 - by mail add \$3.00
 PC-WRITE - \$14.00 in addition to write manual
 BUTTONWARE - - 30% off

DISK OF MONTH:

PC-FILE+ by Jim Button (two-disk set)

Again buttonware has outdone itself on shareware. It has been rewritten in C programming language to add speed. It has given Jim Button a chance to upgrade the manual and help screens, and to add many advanced features.

He has also added the ability to print sophisticated reports; paint entry screens; inbed calculations in reports, databases and relational fields; password protect individual features; drop to DOS and more.

He has added 175+ help screens and introduced a new "teach mode" that explains each step as you perform it. Printing is 2 to 10 times faster than before and sorting is 2 to 5 times faster. The cost to our club members to register is \$49.00. If you're already are a registered user it is only \$17.50 to upgrade if done through the club.

Have a great month and see you at disk of the month table.

Tim

▲

A - B - C

and Other Fine Stories
Part 2

Ben A. Stephenson, P.E.

This is the second in a series of articles about what it's like for an ordinary person, not a computer genius, to learn the programming language called "C".

Before I begin this discussion, I wish to acknowledge all of the wonderful feedback that I received concerning my first article. Never having written such an article before, I was more than a little surprised at how many people took the time to look up my phone number and give me a call. I have learned that this club is capable of a great deal of support from people who really know what they are talking about - true genesis. As a brief aside, should you wish to write an article for this newsletter, I highly recommend it.

Much has happened in my quest to learn "C" since my last article (March 1987). I have begun to take a formal class from Richland Junior College. This class is actually being taught at a place called Preferred Business Systems. For me, the location is anything but preferred; however, the facilities are adequate. The instructor, Mr. Bill DeGan, seems to have a reasonably complete knowledge of the "C" Language and is able to discuss various parts of the syntax in terms that most people are able to understand.

As we were informed when the class started, Preferred Business Systems is under contract with Richland Junior College to provide a place to teach the course, an instructor to teach it, and a minimum of 10 computers to be used during the instruction. Preferred Business systems provides exactly that. Unfortunately, the room in which the class is taught is rather small and with upwards of 20 people and 10 computers crammed into a small room, it gets rather hot and uncomfortable.

The compiler that Preferred Business Systems is using to teach the course is the Microsoft "C" Compiler, Version 3.+. According to the startup message that appears on the screen, this compiler was actually written by Lattice. It is a multi-step compiler and has included most of the standard "C" header files. Unfortunately, Preferred Business Systems has seen fit to use EDLIN as the editor to be used to write our programs. The first class night, many of us were completely lost and unable to be effective because we simply did not know the editor. If you wish to take this or any other course in computer programming, be sure to ask what editor the class will be using and if you will be allowed to bring in the editor with which you are familiar. Preferred Business Systems suggested that we bring in our own editors, but this causes another problem - speed. The computers that Preferred Business Systems has provided are two disk drive IBM Clones that run at 4.77 MHz. While there is nothing wrong with a clone, without a hard disk, I find that I am continually switching disks. To give an example, you begin by loading in a word processor (Wordstar takes about 45 seconds to start), you type in your program, you end the word processor (takes a few seconds), you switch the word processor with the compiler, start the compiler, try to compile the program, find that you have an error or two, switch back to the word processor disk, start the word processor, fix the errors, end the word processor, switch the word processor disk with the compiler disk, and compile the program. All of the above process can take as long as 10 minutes for a simple program. This system of instruction seems to be categorically flawed - you spend most of the night waiting and switching disks. What could be done? In my opinion, there is a better way. While "C" is intended to be a compiled language, there are "C" interpreters. Perhaps if the class were taught with an interpreter, many of the problems with typing errors could be avoided and more time could then be spent in actual instruction.

With the few flaws that I have mentioned above, I am pleased with the instruction that I am receiving at Richland Junior College (Preferred Business Systems). If you have some understanding in how to program and wish to

learn the "C" Language, then I recommend this course.

Since my last article, I have done much more than take the above mentioned class. I have begun to actually program in "C". In addition to having written several small programs that I am using in my work (making water run down hill), I have started to re-write the Fortran program that I wrote about in my last article. I have also used several compilers. Among the compilers that I have used are: 1. Mark William's Let's C Compiler (the compiler only - retails for \$79.95 and is available for \$39), 2. Microsoft "C" Compiler (this is a full development system - retails for \$450 and is available for about \$259), and 3. MIX C Compiler (this is a full development system - retails for \$89.95 and is available for \$49).

I have found the Mark William's Let's C and the Microsoft "C" Compiler to be rather equivalent in terms of the syntax of the language. Both systems have similar header files and methods of compiling. A header file in the "C" Language is a pre-written program that handles various standard routines such as getting the computer's time and date, providing a means to get a character from the input device, etc. Header files also help in high level opening and closing of files, making direct DOS calls, and making calls to various library routines. A library routine contains information to access the math co-processor (the 80x87 chip), floating point arithmetic routines, etc. If you have been programming in interpreted Basic, you may not be aware that header files and library files exist. Header and Library files are one of the reasons that some of the compilers out there cost more than others. It takes considerable time to write and check these files. The more of these files that the compiler provides means the less time that you have to spend developing your code and greater accessibility to the system.

The Microsoft "C" Compiler, Version 4.0, is a complete development system. It includes libraries for a small, compact, medium, large, and huge code sizes. This means that depending on the actual size of the program code and data space required, you can select the the most efficient model. By selecting the most efficient model, the program execution time can be reduced.

The Mark William's Let's "C" compiler is limited to the small model in that only 64K of memory is available for code and data. According to the manual that accompanies the Let's "C" Compiler, the Mark William's "C" Development System is capable of addressing up to one megabyte of memory. This system retails for \$495 and is available for \$249 making the Microsoft System and the Mark William's system seem very competitive. Before you rush out and buy the Mark William's "C" Development System, be aware that in all of the looking around that I have done, I have not seen a single book that could provide additional support or additional information on the Mark William's Systems. I have found a great many books that deal with the Lattice Systems, Microsoft Systems and several other systems (mostly CP/M related) but none that might provide additional insight to a particular problem that the Mark William's books might gloss over.

Further, before you rush out and buy any system, particularly a system to learn the language on, carefully read the following:

At least one of the members of this august body of persons interested in computers, is nothing short of an absolute genius. The fellow, Dr. Neil Bennett, has written a program that is a part of the MIX C Compiler. The Mix C Compiler is a small model compiler (limited to 64K) that is in and of itself not particularly extraordinary. It is a single pass compiler and therefore does not generate extremely tight or efficient code. Although the compiler does conform to the K&R (Kernighan and Ritchie) standard, it makes use of some non-standard header and library files and it does not include many header and library files that the Microsoft System includes. However, at a retail cost of less than one-half of any other system currently available and an actual cost of \$49 from Soft Warehouse, the system is amazing.

The system contains a compiler and linker, an assembler, an editor, and a program called CTRACE. Although each of the parts are available separately from the MIX C people (they are located in Richardson), for such a low price why not get the entire system?

What does the system do? The compiler, of course, compiles the C program into executable code. The editor allows for basic program writing, the



assembler will assemble machine code so that assembly programs may be linked to executable files, and CTRACE does what no program that I have seen will do - it allows the programmer, in real time, look into the heart of the computer. This is where the real genius has been placed. Did you ever wonder why, after several hours of pondering a program, the answer was always wrong? In Basic, you place pause statements, print statements, and no telling what else to try to figure out what the computer is doing with a perfectly innocent looking block of code. With CTRACE, you can actually run the program one line at a time and via a split screen, actually see when a variable changes, actually see when an array becomes corrupted, and see when a division by zero takes place.

Another thing that should be considered about the MIX C system is the documentation. How many of us have pondered for literally hundreds of hours documentation that was written by illiterates? The documentation that accompanies the MIX C compiler is nothing short of wonderful. The main book is over 400 pages long and begins at a very elementary level. It contains some of the clearest explanations of the language that I have come across. In "The C Programming Language" by Kernighan and Ritchie, the authors assume that you understand such things as pointers, pointers to pointers, pointers to arrays, etc. The book that comes with the MIX C Compiler explains these features of the language as well as provides examples both written in the book and on disk so that one is able to learn the syntax of the language quickly.

In short, CTRACE has helped me to begin to really understand "C". It is amazing how fast you begin to understand something when you actually see it happen. Dr. Bennett has written a terrific teaching tool. If you are thinking about learning the "C" Language, I highly recommend the MIX C system.

So that you will not think that I am on Dr. Bennett's payroll, I have several criticisms of the MIX C System. When a program is compiled, if there are any errors, a separate listing file is created showing the location of the error (line number) and a message is included that tells why the program refused to compile. In the Microsoft System, a file is created with the extension *.LST. The

*.LST file contains a listing of the entire file along with line numbers and error notes. Under the MIX C Compiler system, a file called C.err is created. This file contains the line number, and the error statement, but it does not show the context of the error. As a result, if you must add or delete a few new lines of code, by the time you have gotten to the end of your program, the line numbers in the c.err file may mean nothing.

The MIX C Compiler is slow. It seems to take a minute or two to compile a very simple program. The linker produces a finished executable file that requires an outside-of-the-program runtime file. Apparently, the runtime file can be linked into the program code but this is an extra step and the directions to do this are not easily found (it is on page 380 and does not have an index listing). As this is a single pass compiler, what is available for code optimization is left to the programmer. Included with the compiler are programs called speedup.com and shrink.com that allow for either a faster running code or a smaller size code. Unfortunately, it is not possible to have both smaller code and faster running programs. The MIX C Compiler is limited to small (less than 64K) files and provides no support for a math co-processor. However, it is my understanding that the MIX Software will be producing a large model with 80x87 support in the near future.

Many of us have seen advertisements for what seems to be a mythical product from Borland - Turbo "C". It is not yet available. According to the toll free number in the advertisements, it will be at least mid-May before the product will be available in the stores. The specifications in the advertisements sound wonderful. When, if ever, it comes, I will be interested to see what others think of the product.

The "C" Language is very powerful. As I am only just beginning to be able to write in the language, I am not completely sure what it will do; but, from the little I know, "C" is a good step for the Basic programmer to consider taking. The compilers are not extremely expensive nor is the language difficult to learn. The language is fast and takes advantage of much of the hardware that Basic will not. If you have begun to notice limitations in what you can do with Basic, consider "C".

Ben

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MEMBERSHIP APPLICATION
North Texas PC Users Group

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) 748-3297.



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

(Please Print Clearly or Type)

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 _____?

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

The NTPCUG expects and encourages volunteer participation by members in helping put on the monthly meetings at 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:

[A] Working with NTPCUG Volunteer committees?, (See below, and description of activities on reverse.)

Volunteer Areas from [A] above (Please check all that apply.)

- | | | |
|-------------------------------|---------------------------------|-----------------------------|
| [IB] Information/Registration | [MM] Membership | [GP] Group Purchase |
| [NL] Newsletter | [ES] Equipment Setup | [FB] Financial/Bookkeeping |
| [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, etc.)

[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) _____

(Volunteer Activity descriptions on reverse side.)

 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:
 (Make checks payable to NTPCUG.)

North Texas PC Users Group, Inc.
 P.O. Box 780066
 Dallas, TX 75378-0066

Received: \$ _____ Check No. _____ Date: ____/____/____ BY _____



Special Interest Program Reports

General Special Interest Group (SIG) Information

The Assembler SIG has been "reincarnated", under the leadership of Dr. Neil Bennett. For those of you who are new to the NTPCUG, Neil is one of our founding members. He has been in the computer field for over 25 years, and has achieved a certain amount of fame for the things he has accomplished. You will find Neil's presentations both understandable and humorous, not to mention educational!

Despite the advances in "high-level" languages, Assembler will likely always be with us. So if you want to know how processors REALLY work, let Neil get you started!

A reminder that any SIG news items for this newsletter must be received by noon of the 14th of the month -- regardless of the date of the next meeting.

BASIC APPLICATIONS SIG

The BASIC Language Special Interest Group was treated to a demonstration of the Progenitor BASIC Program Generator which will be available at the May Disk of the Month booth. Each attendee was given a free disk of the program with the attached string that any bugs found would be reported to the author. The Progenitor allows the user to "paint" a screen form for menus, for data entry

and for indexed file input and then generates a BASICA program to process the data from the screen to the appropriate file.

The consensus of the attendees at the March meeting was that they wanted the SIG meetings to act as a beginning programming course. The first subject to be presented at the May meeting will be the entry of data to the program. - Ross Carter 238-8638

BEGINNERS SIG

May will be the second of the 3-part Beginners sessions. It covers the sequence of events that occur when you first "boot" your system, the Autoexec.BAT file, the Config.SYS file, and the DOS commands that are of particular importance to beginners.

Although the content of the meeting is structured, we try to allow plenty of time for questions. - Phil Chamberlain

"C" SIG

The program for the April meeting was given by Mr. Larry Streepy of the Raima Corporation. Larry told us about db_Vista, a C function library to aid in the development of network model data base management. There was consider-

able interest in that program, for there was standing room only.

The program for the May meeting will be presented by Jim Wroton, one of our own regulars. Jim works with the Unix operating system, and will present the program on Unix. Even though C and Unix go together, most of us have exposure only to C in the MSDOS environment.

Come join us for this interesting program. - Sid Nolte

DOS SIG

Our April SIG meeting was marked by emphasis on hard-disk problems some participants are having. It re-emphasized that problems booting from the hard disk demand immediate backup and close inspection of disk functioning, including possible low-level reformatting.

For the May meeting, a return to basics of using MS/PC-DOS is planned with emphasis on "internal" vs. "external" commands, the sins and consequences of mixing DOS versions, and other aspects of daily use. Members of the DOS SIG are encouraged to participate in the DOS SIG Conference on the NTPCUG BBS, and to leave suggestions for future DOS SIG meeting agendas. - Reagan Andrews

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Special Interest Program Reports

GENEALOGY SIG

More than 70 people attended our April meeting, most being first-timers as a result of recent publicity in "Family Tree," written by Margaret Ann Thetford and published in the Dallas Morning News. We appreciate her courtesies.

Our speaker, Earl Bryant, brought a new genealogy game, "Generations," which she is marketing. Designed along the line of the game, "Coue," players seek to identify an ancestor's occupation, birth place, life style, time of birth, and name. "Generations" is available by contacting Mrs. Bryant at 699-1649.

The balance of the meeting time was spent in determining what the needs of the people were. From that information, the following program topics were evident:

- shopping for computers
- shopping for genealogy programs
- print outs of various computer programs
- genealogy computer minifest
- Mormon library usage
- genealogy bulletin boards
- repeat of Joe Walker's program

A request was made for a surname index. If you are interested in adding the surnames you are researching, please contact Minnie Champ at 341-6507.

The National Genealogical Society will be holding its annual conference in Raleigh, NC, May 13-16, 1987. Special conference lectures will include computer use in genealogical research.

The May 9th meeting of the Genealogy SIG will have as the featured speaker Mrs. Joyce Jones who will do the first of a two-part series: How to Select a Genealogy Computer Program. The second part will be in June, and will be entitled, How to Shop for a Computer. - Minnie Champ 341-6507

PERSONAL FINANCIAL PLANNING SIG

There's a new SIG in town and it's scheduled to hold its first meeting on May 9th. The PFP SIG is intended to be a forum for CPAs, CFPs, CLUs, ChFCs, Trust Officers, Attorneys and all others in the practice of personal and business financial planning (that includes everybody who may finally be fed up with the Tax Man getting the best of them!)

Besides demonstrating, exploring and explaining the computer tools available for financial planning, we want to be able to provide guidance to both the users and writers of PFP software. We've already contacted more than 50 major vendors to solicit their support, including: Computer Language Research (Fast-Tax), Sawhney

Software, IFDS, IFS, LPP Systems, Sterling Wentworth (Planman), Blaze, Lumen TaxCalc, and Softbridge. We are also inviting the members of various professional organizations to join us, including: TSCPA, ICFP, IAFP, and the Estate Planning Council.

Come prepared for an informative and productive meeting. - Hugh Christensen, CPA
214-631-4758 w

TURBO PASCAL SIG

This month's meeting will consist of a short presentation of the next installment of the function explorer and the usual bull session in which questions will be answered by the membership at large. The short presentation will consider two topics, a scaling program and a mathematical expression compiler.

The scaling program accepts two user specified numbers 'xlo' and 'xhi' with $xlo \leq xhi$, and returns three numbers 'nlo', 'nhi', and 'divs' where $nlo \leq xlo$, $nhi \geq xhi$, and the interval between nlo and nhi can be nicely divided into 'divs' pieces.

The expression compiler accepts a mathematical expression and returns a compiled form of the expression suitable for rapid evaluation by an evaluator written in Turbo Pascal. - Warren Ferguson

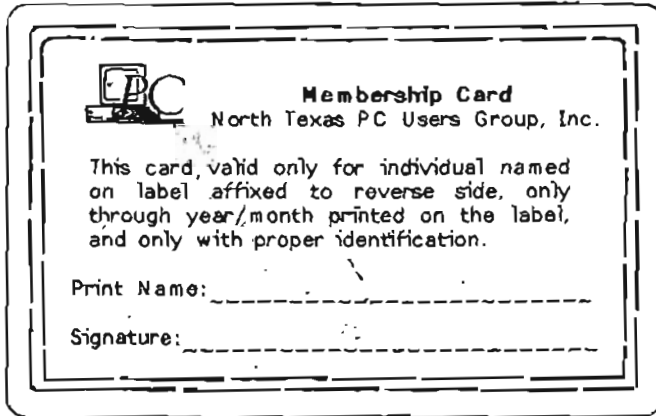
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MEMBERSHIP CARD

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 label on reverse side. It is valid through expiration date shown on the label.

When trimmed, the card will fit the holders previously furnished for Infomart cards which are no longer required. Wear your membership card instead. Additional holders will be available at a nominal charge.



Trim card to wallet size.

Room Assignments



Saturday, 9 May 1987

Check times & room numbers in lobby at INFOMART

	8:30 - 9:30	Room
	Beginners	_____
<i>Special Presentation</i>	9:00 - 9:55	
	Science/Engineering	_____
	DOS	_____
	Genealogy (w/Apple)	_____
	Graphics	_____
	Buyers Guide	_____
	Astrometry	_____
9:00 Auditorium	9:30 - 9:55	
MicroPort will present	Orientation	_____
their version of UNIX		
that will run on a PC.		

MAIN MEETING: 10:00 - 11:30

Lotus Representatives will be demonstrating HAL, the Company's "English Language Interface", and Metro, their desktop accessory package.

11:30 - 11:55	Room	1:00 - 1:55	Room
Orientation	_____	Artificial Intelligence	_____
12:00 - 12:55		Business Applications	_____
Assembly Language	_____	Communications	_____
APL	_____	Databases	_____
C Language	_____	2:00 - 2:55	
Turbo Pascal	_____	Advanced Programmers	_____
		Integrated Software	_____
		Basic Applications	_____
		Lotus	_____

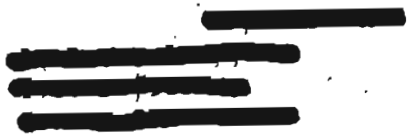


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