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North Texas PC Users Group

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June 1987

North Texas PC NEWS

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Editor/Publisher
John Pribyl (817)275-4109

Assistant Editor
Carlisle Phillips (214)348-2345

Newsletter Exchange Editor
Tom Prickett (214)690-9067

Software Review Editor
Dick Galt (214)234-8888

Advertising Manager
- open -

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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 Starlext 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 July PC NEWS: Monday, June 15th.

Meeting Dates

June Meeting - 2nd Sat. (13th)
July Meeting - 2nd Sat. (11th)
August Meeting - 2nd Sat. (8th)
September Meeting - 2nd Sat. (tentative)

Prez Sez...

Tax Exempt Status

I would like to thank everyone who stayed for the business meeting and voted for the changes to the Bylaws and Articles of incorportation. Joe Brophy has been working on getting the NTPCUG changed to a tax exempt status for over a year. We're down to the wire and we hope it'll all be over by our June meeting.

I would like to thank Joe for all the time he has devoted to this project and to our reviewer at the Internal Revenue Service who has been so patient and helpful in guiding us through the things that need to be done

Volunteers

Connie Andrews, wife of our president elect Reagan Andrew, is the person who calls around each month to get volunteers to help us put on the meeting. During the course of each meeting we need between 30 and 40 volunteers.

Please make Connie's job easier and sign up at the registration desk to donate an hour of your time on Saturday toward making this whole thing work smoothly.

Stuart Yarus

Speaking of making things work smoothly, Stuart is the person who schedules the rooms for all the meetings. He's usually there when I get there at 8:30 a.m. and is still working when I leave around 5:00 p.m.

He pointed out to me this last month that at our May meeting, there were 105 seperate meetings between all the groups meeting at the INFOMART.

I have never had anyone come up to me and say that there were two meetings scheduled in the same room at the same time. Thanks Stuart. You're a good guy even if you do program in APL.

Jim Hoisington

June 13 — Charles Kroboth, Program Director

9:00 AM to 9:45 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 standard PC.

10:00 AM to 11:00 AM

AUDITORIUM *** Egil Juliussen ***

Egil Juliussen, Ph. D., of Infotrek, will be talking about his company's new book, The Computer Industry Almanac. Dr. Juliussen is best known as the past president of Future Computing. He will talk about current industry directions and answer questions.

Table of Contents

Editor's Notes...

After three times on the schedule it looks like we may finally hear about MicroPort UNIX and DOS-Merge. Read James Green's excellent article beginning on page 3 for a preview of the programs.

Congratulations to Walter L. Henson on winning the door prize at the May meeting. He won a copy of Lotus' HAL program courtesy of the folks at Lotus' Irving office. If you missed the HAL demo, you missed a good one.

No, we haven't bought a Laser printer. It so happens that the printing company we use now has a Laser copy shop with a completely equipped micro station using both PC-DOS and Apple computers. (It's not cheap, he does charge rent, but we know you want the very best.) His setup for the PC is straight Xerox, so you know that it is Ventura Publisher compatible. And that's the reason this issue has a little different look...

VP is not the easiest program in the world to learn, but we're getting there. Let me know what you think about this issue.

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.)

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.

Officials

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

Microport UNIX and DOS-Merge

James E. Green, Ph.D.

NOTE: The June 13th NTPCUG meeting will feature presentations of Microport UNIX and DOS-Merge at the 9:00 AM general meeting in the main auditorium, and the 2:00 PM Advanced Programmers SIG. Also, Microport will have a demo table downstairs at the computer flea market. At 7:30 PM Thursday evening, June 11, Microport will give an additional presentation with more UNIX details to the D/FW UNIX User Group at the Hewlitt-Packard Las Colinas facility. It is located on the east side of Beltline Rd between SH-114 and I-635 [at Royal Lane]. Those interested in attending the UUG meeting should call Grady Walker's secretary at 830-8994.

I. Introduction

When IBM announced its "Advanced Technology" 80286 based PC- AT in mid 1985, Microsoft president Bill Gates promised 286 PC- DOS support by late '85. Based on this promise, large numbers of us bought ATs or AT compatibles. We are still waiting! The repeatedly delayed "DOS 4" crashed and burned in the spring of 1986. Its replacement, "DOS 5", met a similar fate this past March. Now, for the third time, we are promised support for the 286, this time "sometime in 1988", maybe. In the meantime, our "advanced technology" computers are operating under DOS 3.x as slightly faster XTs, a single task with a 640K memory limit. I could have saved $2,000 and purchased an XT Turbo clone!

Now comes Microport with what appears to be a solution to our problem: DOS-Merge, a multitasking UNIX-DOS compatibility package. Merge uses the full 16MB memory capacity of the AT, allows UNIX and DOS files to reside transparently in the same (UNIX) file system and single (UNIX) disk partition, and allows the user to type a UNIX or DOS command at the UNIX (or DOS) prompt, or even combine UNIX and DOS in the same command file or program.

As part of their presentation, Microport sent me a UNIX and DOS-Merge package to evaluate for this review. I have a cursory knowledge of UNIX, having a UNIX workstation for number crunching, but am not a UNIX guru. This review is aimed at DOS users with little or no UNIX knowledge. Let me begin by giving a brief background of UNIX, including its pros and cons, and then proceed to describe the documentation, installation, operation, and performance of the Microport package on my PC/AT clone.

II. What is UNIX?

UNIX was originated in the late 60s at AT&T Bell Labs by a remarkable group of computer scientists. They were into program development on a PDP-7 mini, and were unhappy with the available operating systems. They decided to write their own: UNIX. In a brilliant reversal of convention, they decided to implement UNIX in a high level language, and when no suitable language was available, they invented C for the job. From that time, the fortunes of UNIX and C have been closely related. Initially, AT&T released UNIX to the academic community on a low cost, as- is, no-support basis. However, AT&T releases included source code in C which the academics accepted with open arms, began to improve upon, and eventually issue their own releases, the most familiar of which is the Berkeley BSD series.

In the early 70s, UNIX improved and spread like wildfire. Unfortunately, each UNIX shop had a "unix-person" with his/her own favorite versions of the shell (command processor), utilities, etc. In practice this meant there were as many versions of UNIX as there were unix-persons, all relatively incompatible. In the late 70s, AT&T sensed that UNIX had commercial potential, but to realize that potential, it had to regain control of UNIX and develop a "standard" version. After several attempts, AT&T launched UNIX System V, of which Release 2.2 or Release 3 are the latest versions. System V opened up the UNIX commercial marketplace and has gained wide acceptance among computer manufacturers, industrial, business, government, military, and technical users.

III. Why UNIX for the AT? - The Pros.

There are four reasons I believe that UNIX now may be the answer for AT owners:

1. UNIX unlocks the AT's power.
2. UNIX is a Real Operating System.
3. UNIX is an accepted standard that is growing rapidly.
4. Microport DOS-Merge allows a painless transition.

Let me postpone elaboration of item 1 until later when I discuss the Microport UNIX/DOS-Merge package in more detail. Suffice it for now that UNIX/DOS-Merge succeeds where Microsoft has failed.

Second, UNIX is a Real Operating System. By this I mean that, in comparison, PC-DOS is a toy. UNIX was designed from scratch as a multitasking environment and has had 20 years of refinement and enhancement. The complete System V distribution contains over 240 utilities, including compilers, assemblers, debuggers, editors, lexical analyzers, communication and networking utilities, software control packages, compiler compilers, and on and on and on, software you now purchase separately for PC-DOS, if it is avail-

►

able at all. The standard AT&T UNIX documentation set, terse as it is, consumes nine 8.5" x 11" x 2" binders. UNIX offers the PC-DOS expert the opportunity to migrate to the big computer OS world (some would say the real world).

Third, UNIX is an accepted OS standard that is becoming a tidal wave. System V tipped the scales toward UNIX in a big way. To date almost all the major and minor players, excepting AT&T arch-rivals IBM and DEC, have made a commitment to UNIX. The heavily committed list includes mainframe and mini makers AT&T (of course), Amdahl, Hewlett-Packard, Burroughs + Sperry = Unisys, NCR, Prime, Pyramid, Nixdorf, Sun, plus super-micro makers Altos, Artete, Charles River, Convergent Technologies, Encore, Masscomp, Plexus, Sequent, Sequoia Systems, and Tolerant Systems. Not totally committed but offering the UNIX OS are Apollo, Cray, Concurrent Computer, ata General, Harris, Gould, Modcomp, and Wang, plus offshore Fujitsu, Hitachi, and NEC in Japan, plus Bull, ICL, Olivetti, Phillips, and Siemens in Europe. (see Unix/World, Apr 87, p 40) IBM and DEC, not wishing to have a crucial element of their business (their OS) controlled by a rival with heavy financial and marketing muscle (AT&T), and having a proprietary OS as a keystone of their respective marketing strategies, have resisted UNIX. DEC reluctantly yielded to pressure from its academic customers and half- heartedly provides ULTRIX, a UNIX workalike, for its VAX line (see Unix/World, Apr 87, p 32). Likewise, IBM has made small forays into the UNIX world with XENIX on its PC-RT and AT, and VM/IX, a System V based OS for its 370 architecture models.

DEC and IBM's objection to a major rival controlling one of their OSs has spawned the IEEE POSIX (Portable Operating System) standard group, an effort to extract the future of UNIX from AT&T and deposit it in a jointly funded, private nonprofit corporation like COS/ISO did for networking standards (see Unix/World, Oct 86, p 34). This effort was recently given more support when the US Federal Government, Department of Defense, and General Motors decreed that, in the future, any bids for computer systems sold to them must include a UNIX or POSIX operating system!

What this all adds up to is almost an avalanche to UNIX (or POSIX) as the standard computer OS. Within five years, PC-DOS may be a relic of the past. All this means that anyone seriously in the computer business had better start learning UNIX. I will discuss below why I believe Microport UNIX/DOS-Merge is an inexpensive and painless way to ease a PC-DOS user into the UNIX world. But first, UNIX has some shortcomings.

IV. Why not UNIX for the AT? - The Cons.

Although UNIX is extremely powerful and may become the standard OS for the big boys, it has some drawbacks for current PC-DOS users, principally the difficulty in learning UNIX. I have grouped these into six areas:

1. Complexity and the Software Tool Approach
2. Cryptic Commands
3. Overly Terse Documentation
4. Sparse Applications
5. The 286 bug
6. The Performance Penalty

UNIX's major drawback is, ironically, its power. Or rather, the other side of the power coin. Remember that UNIX was conceived and developed by the worlds ultimate hackers. To simultaneously (1) invent a new high level language (C), (2) write a compiler for it, and (3) write a new OS in that language, must require an extreme masochistic bent. They developed UNIX for their own research, and designed an extremely powerful tool evoked by a minimum number of keystrokes. UNIX has never really recovered from this mentality. Remember that a terse, powerful OS also allows you to make terse, sweeping mistakes. UNIX assumes you know what you are doing and that you really want to do it. No "are you sure?"s. For new and inexperienced users, at best this can be frustrating.

Second, UNIX uses the "software tools" approach. Most OSs have a one-job-one-command philosophy. UNIX has software tools: elemental processing units connected by pipes, redirections, and the like - you do the connecting. Vestigial remnants of pipes and redirection are present in PC-DOS, but seldom used. Then there are the UNIX command names. In most OSs you type "dir" to get a directory listing; in UNIX you type "ls" (for list, I suppose?). Add that to "cat" to type a file, "rm" to delete a file, "mv" to rename a file, and a hundred other equally nonsensical combinations, and learning UNIX becomes a major pain. Third, to help you out, UNIX has equally terse documentation designed as a reference for experienced users, but short on examples and cookbook material (Microport has changed this somewhat).

Fourth, to date, UNIX has not elicited the wide variety of application programs familiar to DOS users. The basic data base, spread sheet, word processing, and accounting systems are available, with more appearing daily, but many packages are still priced for large computers. Naturally, for program development, UNIX is unsurpassed except by (possibly) VMS. Fifth, there is the widely discussed design error in the 286 which is related to the sixth issue, the performance penalty. Let me postpone discussion of these last two.

Microport understood these problems for the PC/AT-DOS user, and has attempted to minimize some of ➤

them with the DOS-Merge and SYSTEM-VISION packages.

V. UNIX Alternatives for the PC.

Why all the excitement about UNIX now? UNIX add-in boards and the XENIX look-alike OS have been available for the PC for a year or two. There are two reasons: cost and user friendliness. Add-in boards like the Opus 532 with the National 32032 chip set produce 2 MIPS VAX-like performance on an XT or AT, but cost $2,500 plus. XENIX software is available from both IBM and SCO, but the price for the minimum you will want is $1,200 - $1,300. These options also require that you divide your disk into DOS and UNIX partitions, and when you want to run a DOS application, you must shut down UNIX and boot DOS.

Microport UNIX comes in three packages: runtime $199, software development $249, Text processing $199, or all three for $549. DOS-Merge is $149. I would select the runtime, software development, and Merge packages for about $550. (I'm happy with my DOS word processor.) This makes my AT into a transparent, single partition UNIX/DOS workstation. If you only want to run UNIX and DOS applications, the cost is about $350. Either way is cheap enough to justify just to learn UNIX. The software development system includes the bullet-proof AT&T C and F77 compilers, SCCS, debuggers, etc, and costs less than many of the pathetic versions available for DOS. (An acquaintance of mine is converting a 10,000 line Fortran simulation to the UNIX F77 environment. Try that with Microsoft Fortran.) Microport's price structure will make lots of DOS fans take a hard look at UNIX.

Let me digress for a moment and address the update and upgrade issue. Microport has 386 versions of UNIX Release 3.0 and DOS-Merge now, and will have a 286 Release 3.0 UNIX in 4Q 87. UNIX/Merge runs much faster on a 386 (the 286 design error makes 286 protected mode switches inefficient; see BYTE, May 87, p 88). Unfortunately, few of us have 386 PCs now, but at some point (when the price comes down) most of us will want to upgrade our hardware with a 386 add-in board. Microport says their policy is to provide "updates and upgrades at the lowest possible price." For a 286 to 386 upgrade, Microport will give you credit for the full price you paid for a 286 product toward the purchase of the corresponding 386 product. The difference will be "about $250" for the three UNIX packages, and "about $100" for Merge. How fair (and unusual)! For the 286 Release 2.2 to 3.0 update, the price has not yet been established, but for reference, the Release 2.0 to 2.2 update was $25 (the 2.2 to 3.0 update will be "a little higher").

VI. The Microport Package.

This review will focus on the 286 version. First, Microport did not port UNIX to the 286 (or 386). This is fortunate, as you should never trust your OS to a small company (apparently, from past performance, this should also include Microsoft). The port to the 286/386 was a joint venture between AT&T and Intel costing millions of bucks. Microport licensed the AT&T/Intel product and ported it to the IBM PC-AT architecture. In fact, Microport was formed by several of the people who worked on the port at AT&T- Intel. Microport distributes the software on 1.2MB floppies: 8 (runtime), 4 (software development), 3 (text processing), and 1 (DOS-Merge).

VII. Documentation

Why discuss the documentation first? Because with UNIX that is the first thing you will see. WARNING: Do not attempt to operate UNIX without reading the directions! The manuals are divided into two parts: the parts written by AT&T, and the parts written by Microport. (You can distinguish them by the style and size of type-face used.) The AT&T part was simply reprinted by Microport. It contains (1) the reference sections, terse, no examples, written for experienced users, and (2) the tutorial sections, more useful to the novice. Microport reduced the standard 8.5"x 11" page size down to 5.5"x 8.5" PC size by using very small print on thin paper. Fortunately, the print is sharp and the paper quality good, so even the small print can be read easily with reading glasses. After you learn UNIX, it is very helpful.

The Microport written sections are much better. They read like the DOS manuals you are familiar with (keeping in mind that UNIX is much more complex). The Microport parts contain clear, step by step instructions with examples (larger print too). With the System-Vision utility (below), DOS users should be able to spend most of their manual time in the Microport parts. However, you must learn the UNIX vi editor from the AT&T vi tutorial. The beta test DOS-Merge manual I received was well written but was missing some parts, presumably to be added for the final version. It also contained a section of beta test notes and known bugs that will hopefully be missing in the final version.

A major deficiency in all the manuals was the lack of an index, a feature that would be very helpful to the novice. AT&T normally provides a KWIC index to commands, but I have found it to be long and not very useful. Evidently Microport did too, as it was deleted from the Microport documents. With the UNIX text processing utilities, a comprehensive index should be easy for Microport to add. ►

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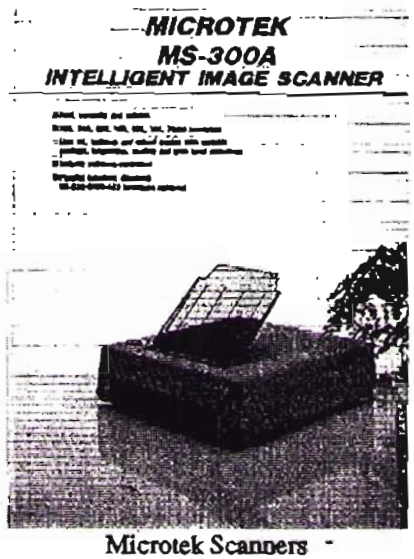

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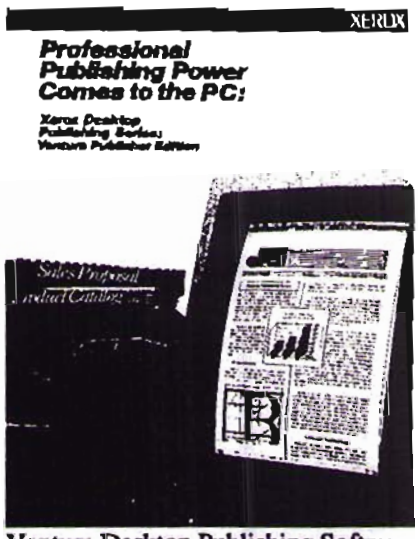

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VIII. Installation

Installing UNIX the first time is like making love to a gorilla: it can be fun, but usually results in multiple cuts and bruises! I was pleasantly surprised by the Microport procedure. There are two options, the easy way and the ridiculously easy way. Using the easiest method, you insert the "boot" floppy in drive A: and boot
alt-del. Then type "easyinstall". Everything is automatic. There is one question about how much space to reserve for a DOS partition, you wait about 20 minutes, feed it a couple more floppies on command, and the system boots up in multi-user UNIX. Then feed it the remaining floppies in the order specified in the release notes, type "installit" after inserting each floppy, and UNIX is installed. If you want to configure your disk differently from the "easyinstall" built-in defaults, you type "installit" instead of "easyinstall" and answer the questions it asks about your disk setup. I tried it both ways. I can't see why anyone would not use "easyinstall", except that with the "installit" method you can save about 20 minutes by manually entering the bad track table for your disk.

Each step in the "installit" method is outlined in detail in the manual. Microport claims that installation takes about an hour. For an experienced user, maybe. I took twice that long. I recommend that you do the same the first time because the order of loading the floppies is important. The software development system and DOS-Merge installed about as easily using "installit". The Merge install procedure requires that you insert two formatted 360K diskettes and your DOS distribution diskettes when instructed. I did not install the text processing or device driver development system to conserve disk space, but they also use "installit".

At the time this review was written (late April), only the beta test version of Merge was available, and the fancy menu system which will streamline DOS application installation under Merge was not included. In addition, Merge had a few known bugs which will be corrected in the production version, but which I had to work around with the beta version I tested. Even so, most DOS applications installed easily with a little manual UNIX work.

IX. The SYSTEM VISION Utility

O.K., you've installed UNIX. You have the UNIX "#" prompt. What do you do now? You type DIR and it says "not found"! Of course, you haven't read the manuals yet. Microport helps in two ways. The first is a 70 page paperback of cookbook UNIX information. Take about an hour to read this and you will learn that dir is "ls -al", cd works about the same except you use "/" instead of "\" in path names, and so forth.

Second, even with this basic knowledge of UNIX commands, some system administration tasks, such as adding a user account (e.g. yourself) or mounting a floppy drive to the UNIX file system, require a detailed knowledge of UNIX. To help the novice, Microport has provided SYSTEM VISION, or "sysviz". Sysviz is a menu system which allows a novice to perform all common UNIX tasks, from listing a directory to adding user accounts, configuring the print spooler, configuring the network software (uucp), and the like. You just select a menu option and fill in the blanks. Help screens are provided for each blank if you don't understand the question. If that's not enough, the sysviz part of the manual is very complete with step-by-step instructions. Sysviz is a godsend to the casual UNIX user (like me) who must also be the system administrator. For example, I learned the hard way how to add a user account manually, but will never do so again with sysviz available. (For reasons which should be obvious, it is wise to do your work in a user account instead of in "root", the system administrator account.)

X. UNIX System V/286

Microport UNIX works just like any other System V implementation. It conforms to the System V Interface Definition (SVID) which defines "standard" UNIX. All the expected utilities are there, as well as the popular Berkeley C-shell to supplement the AT&T Bourne shell. Microport has added "file hardening" (also a feature of AT&T's latest Release 3). This fixes the notoriously fragile UNIX file system and permits (Microport says) system shutdown by typing
Alt-Del. Horrors!! Having some experience with UNIX, I still prefer to shut down using the "shutdown" utility which takes only a minute and guarantees that all tasks stop gracefully. The vi editor and F77 compiler work just like my "big" workstation. The compilers support both the small and large 286 memory models. Personally, I don't care for the dual mode UNIX vi editor, but the public domain Micro-E-macs is available (I have the code from the "usenet", but haven't installed it on the AT yet). Microport also includes detailed, step-by-step instructions for backing up the file system on 1.2 MB floppies.

XI. The DOS-Merge System.

Of primary interest to DOS users is how one runs familiar DOS applications under UNIX/Merge. Merge provides several options. First, you can run a dos program from the UNIX prompt. For example, just type "lotus" and Lotus 123 appears. When you exit Lotus, you are back at the UNIX prompt. Second, you can switch to an (almost) normal DOS environment by typing "dos". Merge loads the DOS environment as a UNIX job, switches to the "DOS screen", and the familiar C prompt appears. Now DIR and all the normal DOS commands work. Type "quit" and you switch back to UNIX and the "UNIX screen". ►

Third is the most interesting option, concurrent DOS and UNIX. Type "dos &" and Merge starts DOS as a background job. Then, for example, say you started Lotus in the normal way and suddenly remember you need to transmit a file to another computer. No need to exit lotus, just type Alt-SysReq to switch back to UNIX and the UNIX screen, start a UNIX "uucp" job to transmit the file, then type Alt-SysReq again to return to Lotus in your DOS screen (no graphics applications, please). In fact Merge will support one DOS environment and four Unix environments (virtual terminals) at the same time from your console. I can't imagine what I would do to get five jobs running at the same time, but its there if you need it. Just remember that you have just one 286 chip, and if you start five compute-bound jobs, each will run at a fifth of normal speed.

Merge has a final mode. You may type UNIX commands in the DOS environment! For example, instead of DIR, you may type "ls - al" and get the UNIX-style directory listing, including UNIX hidden files (the -a option) that don't show up using DIR. You can even combine UNIX and DOS commands in the same shell script (the same as a .BAT file in DOS), but that's too complicated to describe here.

The only problem I had was getting some of my extra hardware (mouse, etc) to work. Microport was very helpful (they have a toll free support line), and we finally traced the problem to a subtle bug in Merge that was not assigning the requested IRQ channels to DOS. This will be fixed in the release version.

XII. DOS Applications That I Tried.

I tried a number of DOS applications under Merge, and most of them worked. Microsoft Word V3.1 (which I'm using to write this), Lotus V2, AutoCad V1.7k, dBase III V1.0, GWBASIC V2.1, IBM Basic Compiler V1.0, and Procomm V2.4 (my favorite shareware com package) all worked. My favorite DOS shell, DS, which should have crashed the system, incredibly almost worked, and might have if the UNIX file system had not overloaded its internal buffer.

WARNING: Needless to say, I did not perform extensive tests on any of the above software. Some obscure features may not work exactly as under DOS. In addition, when trying utilities which were designed to manipulate a DOS file system, be very careful. You should (1) make sure that they go through DOS to create, delete, and access files, and (2) back up your file system before beginning any tests. Remember that the Merge file system is all UNIX files, not a combination of UNIX and DOS files. Software that directly manipulates the disk, such as DISKPARK, will definitely not work.

XIII. Performance and Other Impressions.

UNIX and Merge should work on any 100% IBM AT compatible. I used my trusty Sabet Electronics (Richardson, TX) AT clone for most of the tests reported below. (Note: Your clone may produce different results.) Its 8 MHz one wait state speed was state of the art when I purchased it in Feb 1986, but seems slow compared to the 10-12 Mhz no wait state systems you can buy now. It has a 20 MB Rodime (65 msec) disk and 2 MB RAM. I mention this because UNIX's performance can be dramatically improved with extra RAM and a fast (25 msec) disk. Microport recommends 2.5 MB RAM for optimum performance with UNIX. UNIX (not Merge) will run in as little as 512 KB, but this is with the "small" kernel and only 50 KB of buffers. With my 2 MB RAM you switch to the "large" kernel (310 KB) and get 500 KB of buffers. (That sounds like a lot until you remember that MS Windows is 330KB.) I didn't time both, but it seemed that system speed almost doubled with the "large kernel and buffer" setup. The more memory you add, the more software UNIX can keep in RAM ready to run, saving disk accesses. With Merge installed, I suspect about 3 MB would be optimum for multiple simultaneous processes. With RAM at about $100 per MB, it makes sense to have too much rather than not quite enough.

My 20 MB disk was marginal. I put it all in the UNIX partition, did not load all the Microport software or all my DOS files, and I still quickly got down to about 3 MB free space. For many reasons I don't like full disks. If you want to load all of UNIX and Merge, I would recommend at least a 30 MB disk, say 25 MB in the UNIX partition and 5 MB in a DOS partition just in case you want to boot stand-alone DOS. (For comparison, my National 32016 based UNIX workstation has an 80 MB, 27 msec disk; most UNIX vendors recommend 40 MB minimum.) A DOS partition may be accessed from Merge as drive D: or J:, but not from UNIX. An Adaptek RLL controller would be an easy way to get 50% more space (and speed) out of your existing disk drive.

How about speed? In this life you don't get something for nothing. UNIX, being a generic OS written in C cannot be as efficient as an assembly language OS tailored to a particular architecture. Time sharing adds system overhead. The 286 is not a very powerful chip, and the 286 protected mode design bug extracts a penalty when you context switch. You pay a penalty for the UNIX/Merge system overhead when running DOS applications. The table below shows some results for Norton's SI and the BYTE sieve benchmark (BYTE, Fall '85 special IBM issue, p. 200). These are tests of CPU speed, not I/O. Without a DOS partition, I could not test disk access speed. ►

Table 1 - Benchmark Results - 8 MHz Sabet AT

Test	Result
Norton's SI V3.10, UNIX/Merge	5.4
Norton's SI V3.10, UNIX/Merge, nice	5.7
Sieve, GWBasic, PC-DOS	57.0 sec
Sieve, GWBasic, UNIX/Merge	70.4 sec
Sieve, GWBasic, UNIX/Merge, nice	66.8 sec
Sieve, Compiled Basic, PC-DOS	6.1 sec
Sieve, Compiled Basic, UNIX/Merge	9.0 sec
Sieve, Compiled Basic, UNIX/Merge, nice	8.7 sec
Sieve, F77 Int*4 variables, UNIX	0.7 sec
Sieve, F77 Int*2 variables, UNIX	0.4 sec

When I began these tests, I was using DOS 3.1. I was concerned about the performance degradation of DOS under Merge shown in the table. I talked with Microport and they suggested trying DOS 3.2. Microport claims that Merge/DOS 3.2 performs considerably better than Merge/DOS 3.1, especially on disk access, and that a mixed batch of compute and I/O intensive jobs averaged less than a 5% drop in speed. I used DOS 3.2, but obtained the same results with the sieve benchmark. However, I did notice that I/O seems to be much faster with 3.2, but couldn't run I/O benchmarks without a DOS partition. I also tried running the DOS partition with the "nice" utility which raises its priority. This prevents many context switches back and forth between UNIX and DOS. The "nice" results are shown in Table 1. Using nice, DOS programs run noticeably smoother, but it can only be run from root or as a "superuser". Microport also suggested that another 1MB RAM could improve my results, but I did not have time to test this before the review was due.

I discovered Microport's major Merge bug running my DOS com program, Procomm: character buffering to DOS is not handled properly, resulting in data loss when the system goes off to UNIX doing whatever. Microport is aware of this bug and promises to have it fixed by June. Even so, Procomm ran at about 4800 baud (under DOS it handles 9600 without a hitch). With "nice" it regained its lost speed, but still lost characters occasionally.

However, lets compare apples to apples (no pun). With the UNIX/Merge system on your AT, you have some additional tools, like the UNIX optimizing F77 and C compilers. The last two entries in the table show that the sieve benchmark in UNIX F77 runs eight or 15 times the speed of the compiled basic version under DOS, depending on whether you use integer*4 or integer*2 variables. This result was obtained without invoking the F77 optimizer. In reality, my word processor runs plenty fast under Merge, and if I need to do number crunching on the AT, the UNIX F77 and C compilers are available. (Not to mention the extensive libraries, system call support, GKS and "curses" graphics packages, and the MIT developed X-windows/X-ray environment coming with X-11.) If you have a high speed data transfer, you can always boot up your DOS partition.

XIV. Conclusions.

Microport UNIX was what I expected considering its AT&T- Intel heritage: a solid UNIX for the AT that meets AT&T's SVID. All the familiar utilities are there, even the c-shell. It is both a solid system for getting work done and a marvelous vehicle for learning the UNIX standard. Performance on the AT is not up to 68020 or 32332 workstation standards, but is still adequate for routine work. However, forget about multiple users.

The beta site version of Merge that I tested had a few missing parts and bugs. All the manuals need an index. Getting some of my extra hardware to work took some effort. Microport claims that (most of) these problems are fixed in the June release version. Even the beta version is adequate for its intended purpose: running standard DOS applications without having to boot up DOS. DOS runs a little slower under Merge, but should be plenty fast on the new 10-12 Mhz clones. (Speed would be no problem with one of the upcoming 16 MHz 386 upgrade boards installed.) If Microport really cleans up Merge, I believe it will be very attractive to AT owners.

In the last analysis, if you have an AT clone or are considering a purchase, I don't think you can pass up Microport's 10% discount offer for NTPCUG members. The handwriting is on the wall; the UNIX tidal wave is coming. The Federal Government, the Defense Department, and General Motors have seen to that. In five years, PC-DOS (or OS2) experience on your resume and $.50 will buy you a Coke. For the hobbyist, UNIX may not be attractive, but if you make your living with computers, you can't afford not to learn UNIX, and the sooner the better. Microport is a solid UNIX product which confirms to the SVID standard, and has transparent DOS capability to ease your transition. You can't beat the price. Catch the wave.

About the author: Jim Green grew up in Atlanta. He received his A.B. and Ph.D. degrees from Duke University. For four years he was a Research Associate at MIT's Research Laboratory of Electronics, where he performed pioneer research on image processing, computer vision, and pattern recognition. For the past 15 years he has consulted in the application of computer vision and pattern recognition to medical, defense, and industrial problems. Currently he is owner and president of Robot Vision Corp, which specializes in applying these technologies. He has numerous publications and patents. He came to Dallas in 1976, liked it, and stayed. His hobbies are automobile racing, music, and (of course) computers

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GROUP PURCHASE OFFER: 

Math Coprocessors With Free Installation

We are pleased to announce that our group purchase for June is math coprocessors. See the article elsewhere in this magazine for a full description of how math coprocessors work, but the bottom line is that the speed of mathematical calculations can be increased considerably through the addition of one of these chips. The most dramatic improvement is with the PC, XT or clones that use the 8088 or 8088-2 chip. The addition of a math coprocessor here can speed up calculations by a factor of ten. With the AT's 80286, the improvement is not as dramatic, but substantial nonetheless.

Who Can Benefit from a Math Coprocessor?

Here is a list of some popular software that supports a math coprocessor if one is installed. This list is by no means exhaustive and we recommend that you check the manual for your software to see if there is math coprocessor support.

Autocad, Enable, Framework, Freelance, Graph-in-the-Box, Javelin, Lotus 1-2-3 Rel. 2+, MathCAD, Mathplan, Multiplan 3.0, Quickbasic v3.0, Supercalc IV, Symphony, TK!Solver, Turbo Basic, Turbo Pascal, The Twin Classic.

Virtually all statistical packages.

Virtually all compilers can generate code for the math coprocessor.

What's Available?

8087-3 for the IBM PC, XT, Compaq portable, etc. using the Intel 8088 processor (4.77 Mhz)

... $99

8087-2 for the Compaq Deskpro, Leading Edge Model M, AT&T 6300 and clones using the Intel 8088-2 processor (7.14 Mhz) or the Intel 8086 processor < = 8 Mhz)

... $145

80287-6 for the IBM AT (6 and 8 Mhz) and 8 Mhz clones using the Intel 80286 processor

... $159

80287-8 for clones running at a clock speed of 10 Mhz using the Intel 80286 processor

... $249

Note: These are prices for cash or check -- add 4% for use of credit card.

If the coprocessor you require is not listed above (for example, if you have a very high speed clone that uses the 80287-10) it may still be available at a reasonable price. Feel free to call the vendor and check.

CLONE OWNERS PLEASE NOTE: In an effort to obtain higher numeric performance, some clones run the coprocessor at a speed different from that of the equivalent AT machine. If you own a clone, check your manuals, or with the supplier, to ensure that you get the right chip.

How To Order

This group purchase is arranged with Lucky Computer Co., 1701 Greenville Ave., Suite 602, Richardson, 75081 (690-6110). These prices are available to NTPCUG members only, so remember to take your membership card when you go by. If you have not installed a math coprocessor before, we recommend that you take advantage of the free installation offer as it is very easy to bend the connectors on the chip out of shape.

Important News About the Hard Disk Group Purchase

We have added another disk to the hard disk group purchase. The Seagate ST-251 is a half-height 42.8 megabyte drive with an average access time of 40 milliseconds and self-parking heads.

NTPCUG Member Price ...$525

This drive is available from Lucky Computer Co. And can be installed and partitioned for $10. See the coprocessor offer elsewhere in the magazine for the full address and phone number. If you have not installed a hard disk before, we recommend that you take advantage of the installation offer as it is easy to incorrectly connect the drive or damage other components during the installation procedure.

Numeric Coprocessors or Do Numbers Really Crunch?

David McGehee

What's that you say, Bunky? You say your 1-2-3 Recalculation is set to Manual and you take a long Coffee Break when you hit F9 [calc]? You say your CAD program has turned into "Turtle Graphics"? You say you measure your FORTRAN program's execution time by the calendar, not a stop watch, and your Fast Fourier Transforms aren't? Well, cheer up 'cause help may be closer than you think.

The Case of The Empty Socket

Lurking near the processor (8088, 8086, 80186, 80286, or 80386) in your XT, AT, Compaq, and most clones, is a long socket which, when filled, can turn your XT's calculation minutes into seconds and reduce your AT's calculation time by an order of magnitude. What goes in this socket to do these marvelous things? It's called a numeric coprocessor (NCP) or numeric data processor (NDP). Each Intel processor has a companion numeric coprocessor available to help with the heavy-duty calculations: the 8088/8086 has the 8087, the 80286 has the 80287, and the 80386 will have the 80387.

When Intel designed the 80xxx family of processors, they were trying to produce inexpensive, flexible, general purpose CPUs. In order to meet their objectives, they included a complete instruction set for 8-bit and 16-bit integer arithmetic but left out floating-point and other advanced mathematical instructions on the CPU itself. Definitely no barn burning math speed for Intel CPUs.

Instead, Intel designed a companion numeric coprocessor chip for each of their CPUs. These math chips are more sophisticated than their companion CPUs and have the advanced math hardware instructions one would expect on a super mini or mainframe. They are very fast, very accurate number crunchers! As an example, try taking a square root using just additional, subtraction, division, and multiplication; takes a while, doesn't it. The NCP has a square root instruction, just like your new pocket calculator, performing the function in one operation. This design decision was not only economically sound, since the 8088 was shipped long before the 8087, but provides significant performance advantages.

The Numbers Game

Here is my lie for the day! The PC handles numbers in three ways, depending on the nature of the number and in how the PC is instructed to handle it. Whole numbers (integers) like 36, 24, etc. are handled as binary numbers, until they pass 64k (32k, if signed). Real numbers like 3.1416, etc. are handled as floating point numbers. Floating point numbers are the binary equivalent of Scientific Notation; you remember in school where you were faced with things like 2.3 x 104. Some software handle some or all numbers as Binary Coded Decimal (BCD), also called Packed Decimal, which uses decimal coding for each digit packed two (2) characters to a byte (COBOL programmers know all about this).

Integer math is reasonably fast because of hardware instructions, but very limited in numeric range. Floating point math, however, is terribly slow since it may take a very large number of individual operations to achieve the final answer by purely software means. Decimal math is also extremely slow for the same reason, although primitive machine instructions are available for ASCII/unpacked decimal.

The Cruncher In Action

When the software knows that it has a numeric coprocessor available, it merely hands the numbers and mathematical operations to the NCP and goes on to the next instruction, while the NCP computes and returns the answer. Therefore, the CPU and the NCP execute simultaneously: two instructions at once equals real coprocessing. The NCP is the equivalent of the PC having its own fast scientific calculator. Besides the speed advantage, an NCP provides a high level of accuracy; more accuracy is available with an NCP than on most mainframes. Integer and Packed Decimal ➤

numbers have 18 significant digits of accuracy, floating point numbers have about 16.

If You're So Smart, Why Aint You Rich?

If these NCPs are so good, why aren't they in all PCs? NCP use is not yet prevalent for several reasons. We will take them one at a time.

Limited Math Use: Just how much of the time is your PC actually doing mathematics? Probably, not much. Therefore, even though an 8087 may do your floating point math, for example, fifty (50) times faster, if the math is currently only taking up two percent (2%) of your CPU time, that 2% is all that is speeded up. However, if your computing comes in bursts, such as recalculating a large spread sheet or computing vectors for a CAD display, you will DEFINITELY NOTICE THE DIFFERENCE.

Price: The price of the NCP chips is just now coming down to a point where a casual user doesn't get air sick. Low speed 8087 prices are around $120 and equivalent 80287 prices are around $180.

Speed: Related to price is speed. Just like their companion CPUs, the NCP chips come in various speed ratings. As you would expect, the faster the chip, the higher the price. Now for the fun part. The NCP chip must be rated at least as fast as it will be clocked in the machine. An 7+MHz XT clone requires an 8087-2 instead of an 8087-3, confusing isn't it. If you think that's bad, the CPU speed of an 80286 machine is not necessarily related to the speed at which the NCP is being driven. Some machines actually drive the NCP faster than the CPU, but most drive the NCP at approximately 2/3 CPU speed - the chips are much cheaper! NOTE: when buying an NCP for an 80286/386, please look at the hardware specifications to determine the required speed for the NCP.

Software Awareness: If the software you use does not support (check for and attempt to use) an NCP, the total increase in speed will be ZERO! An NCP is a coprocessor with a separate set of machine instructions. The CPU itself makes no use of the NCP, although the NCP uses the CPU to get numbers and requested operations. Your favorite software must know of its presence and generate the instructions for its use. Only recently has a significant number of popular programs made use of an NCP's capabilities.

Installation: Depending upon what boards are currently nestled within your PC and upon your familiarity in dealing with multi-legged critters, the installation may be quick and easy or long, painful, and expensive. Considering the price of the chip, the fact that it too may be destroyed by stray static electricity - just like RAM chips, and the number of pins to get bent/broken, look in the mirror carefully before deciding to do-it-yourself. Note that installation is available, when you look at the Group Purchase on Math Coprocessors.

So What Are You Telling Me?

The viability of an NCP depends upon the amount of math and the awareness of your software to an attached NCP. An NCP won't speed up your hard disk or even your CPU, but for a segment of XT, and even AT owners, an NCP will provide a low-cost alternative to the purchase of a faster PC. For users who really need number crunching, an NCP opens up vistas of super-mini power and speed at their desk.

Look at it this way, it won't slow anything down, it doesn't take a significant amount of power, and even if you don't heavily utilize the NCP today, tomorrow's software probably will. On the other hand, if all you do is run Wordstar (Wordscar, as a prominent member of the group calls it), you could probably better spend your money elsewhere.

To give you an idea of which software vendors think NCP support is worth having, here is a very partial list of products which can utilize an NCP

Asyst
Autocad
Autosketch
Borland: Turbo [anything]
EUREKA: The Solver (TK!)
Enable
Gauss
Graph-in-the-Box
Javelin
Lotus: 1-2-3 V2+
  Freelance
  Symphony
MathCAD
MathPlan
Matlab
Microsoft: [latest version of all language products]
  Multiplan
PC FOCUS (DBMS, Application Environment)
Reveille (Accounting Software)
Revelation (DBMS, Application Environment)
Ryan-McFarland FORTRAN
Supercalc 4
VP Planner

On Complexity

No. 10 in a Series

Jim Hoisington

What's the difference between a minicomputer and micro computers using a Local Area Network (LAN)?

I have to answer this question all the time. The answer is complex and since the capabilities of LAN's are improving, the answers are changing. First, let's look at how they are the similar.

Both systems let more than one user share disks. Since disk prices have come down, you might think that sharing a hard disk is not very important.

But, I have met very few computer users who like to backup their data. If everybody keeps their data on the same hard disk or disks, then a backup to that disk or disks automatically backs up everyone's data. It's painless except for the one person who has to do it.

Networks and minicomputers also let people share expensive peripheral equipment like a laser printer. Again, prices of laser printers are dropping but it is still nice for everybody to have access to one, even if they only need it once a month.

Both systems usually let all users send messages to each other. A nice convenience until some jerk starts sending "junk" electronic mail.

Finally, both minicomputers and Local Area Network's let the users share software. If a program gets updated or "fixed", everbody gets it. You don't have to go looking through desk drawers for floppies or through a hard disk with a subdirectory structure that is 53 levels deep.

That is how minicomputers and LAN's are the same. Now we will look at the differences.

A minicomputer uses one medium speed central processor. The LAN is made up of a series of microprocessors. The minicomputer is faster than any one microprocessor but if the network has more than 8 stations, the combined processing power of the microprocessors can exceed the computing power of the minicomputer.

The minicomputer central processor runs at one speed. The microcomputers may all run at the same speed or they can be running a different speeds. This becomes important when the users of either system need different amount of computing "horsepower".

The minicomputer uses software to allocate its central processor between users. When it recognizes a user that needs additional power, the software (which itself uses up some of the central processor power) allocates that user a bigger share of the central processor.

Since the amount of computing power available from the minicomputer processor is fixed, when one user gets more power, the other users get less.

In the Local Area Network environment, a user that needs more computing power can either go to a station with a faster microprocessor or they can have their microcomputer replaced with a more powerful microcomputer.

Conversely, users with only moderate processing needs can get by with a cheaper, slower microcomputer. Data entry that does not require a lot of data file lookup often falls into the moderate processing power category.

The minicomputer has to keep up with everbody's screen and keyboard information. The early minicomputers did this very slowly but modern computers usually are able to read the keyboard and paint a new screen at a speed that is faster than a human can detect.

The real difference comes when the minicomputer gets busy. The microcomputer on the LAN is always there waiting for a keystroke or to update the screen except for the very tiny slices of time when it is talking to the network.

The minicomputer on the other hand puts a low priority on getting keystrokes or writing the screen. When it gets busy, the slowdown becomes very noticable. This is especially true if everybody on the mini is requiring a lot of screen updates. The information necessary to refresh the screen of your terminal or microcomputer is large and takes time to transmit. On the minicomputer, that information has to come from the central computer, on the LAN it comes from your local microprocessor.

In summary, the most obvious difference between a minicomputer and a Local Area Network is where you run into the other people using the system. On the minicomputer, you meet the other users on the central processor. On the LAN, you find them only when you need to use the hard disk or a shared printer.

Most microcomputer hard disks have a light that comes on when the disk is in use. If you have one of these, notice how often it is on during the total time that you use your computer. Then you will understand why a Local Area Network outperforms a minicomputer for some applications.

Jim

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TRADEWINDS PERIPHERALS INCORPORATED
PRESENTS

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10, 22, 32, 49, 64, 98 MEGABYTE

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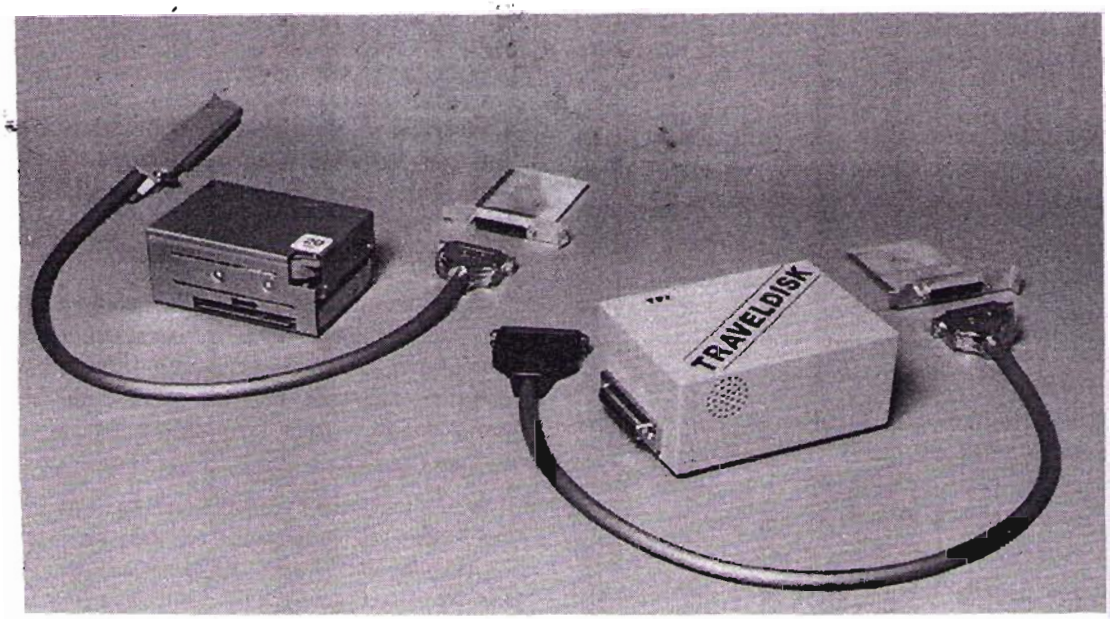

DESCRIPTION

TRAVELDISK is a portable Sub-system packaged in a metal case only slightly larger than the 3.5" disk drive itself. This subsystem provides the means of transporting programs and data files between IBM PC, XT, AT, and true compatible systems by moving only the *TRAVELDISK*. Small and rugged enough to be easily transported in a briefcase, (Model 1), *TRAVELDISK* can be removed and reattached to any similar compatible system **in seconds.** *TRAVELDISK*, a new concept in portability. Move only the *TRAVELDISK*, not your entire system. Equip additional computers for under $50. The high shock resistence *TRAVELLDISK* makes Hard Disk portability practical NOW.

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TRAVELDISK can be used as a high speed back-up for multiple computers by being plugged into each system successively. This capability of being able to function with a number of systems gives TRAVELDISK maximum flexibility. TRAVELDISK offers the power and convenience of hard disk capacity and speed to copy, transport and share data files and programs among many independent computer systems without modems or other connections.

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On Special Order only, Tempest Versions of *TRAVELDISK* can be equipped with an internal electronic modification that alerts security forces if the *TRAVELDISK* is being moved from a secured room or building. *TRAVELDISK* may also be modified to work only on one single computer. These options are available only to companies with appropriate clearances.

SUMMARY

TRAVELDISK provides the personal computer user a way to achieve three basic goals, **A) DATA PORTABILITY, B) DATA SECURITY, C) DATA BACKUP.** While many more uses have been invented for the TRAVELDISK, these three prime applications are accomplished in a small, rugged, and highly reliable unit at a reasonable cost. The TRAVELDISK from T. P. I., a wise choice for computer users on the move.

WHETHER YOU MOVE AROUND THE WORLD OR BETWEEN YOUR OFFICE AND HOME, *TRAVELDISK* GIVES YOU PORTABILITY WITH CONFIDENCE.

TRAVELDISK GOES ANYWHERE!

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* Specifications subject to change without notice at any time.

4/87

Winning at the Track

Don Marquis

As a followup to Robert Huff's article in the April Newsletter, I would like to point out that other programs are available in a similar genre. One is "Winning at the Track", a program written for IBM PC's and compatibles and developed by Infosoft, Inc.

The program is designed to utilize information readily available in daily newspapers utilizing the Performance Method Rating System. Data from the newspaper is typed into the program's "History Worksheet" for each horse. The Ability Factor will require some judgement but, the computer will do the work and the number crunching for you.

The ABILITY FACTOR total tells which horses in the race should be best suited for the distance and class of company. It is also, to some extent, designed to tell whether the horse is ready to run on that day.

The PURE SPEED calculation shows exactly how fast each horse has run the day's distance (or its equivalent) from the historical figures available.

The EARLY SPEED total expresses each horse's capability to lead other horses in the first part of the race.

The LATE SPEED calculation tells which horses are capable of running the last part of the race and which would have more difficulty.

Is pari-mutual just around the corner in Texas?

Winning at the Track includes twelve menus: FILE NAME, RACE CARD, HELP, HANDICAP SUMMARY, SPEED RANKING, LAST QUARTER RANKING, P/M TABLE, HISTORY WORKSHEET, ABILITY FACTOR, PURE SPEED, EARLY SPEED AND LATE SPEED.

I read about this program in the book "Winning at the Track" and have not used the program. At the end of the book is the message: "For information or questions regarding the program please write to:

Winning at the Track Editor Liberty Publishing Company, Inc. 50 Scott Adam Road Cockeysville, Maryland 21030 or Phone 301/667-6680

With pari-mutual just around the corner in Texas, this could be a worthwhile and interesting program for those who follow the SPORT OF KINGS.

Don

dBXL by WordTech

Review by Bruce C. Lutz

I recently purchased dBXL which is a dBase III+ look-alike and has a few additional commands. Although the list price is $169, I purchased it for $79 and it can now be purchased at Soft Warehouse for $69.

This program used dBase data files and most dBase programs unaltered. Although I am still exploring it, among the nice surprises is that the program Editor is limited to 10,000 bytes rather than 5,000 as is dBase and it gives you a warning message that the file being input is too big rather than merely truncating it like dBase does. The product has available up to 99 "windows". Although I have not mastered this portion of the language or its concepts, it could be very useful in program development.

In doing some rather extensive testing in extracting data from two small data bases, one of 100 records and the other of 200 records, and placing the extracted information in a third data base with additional computed fields, I found that dBXL was half as fast as dBase II using the approach of a dBase II program. dBase III ran the program at the same speed as dBase II. dBase III+ ran the program about 15% faster. When the program was extensively modified to utilize the additional capabilities of dBase III and dBXL, the result was obtained in about 45% of the time taken by the original dBase II program in dBXL, dBase III ran the program about 16% faster than the original dBase II program, and dBase III+ produced the results 90% faster or in other words, took about 52% of the time required for the original dBase II program. As mentioned above, dBXL has some additional commands which did allow me to even further reduce the amount of programming involved, but had the detrimental effect of the programs no longer being usable in dBase III. Additionally, it increased the time necessary to run the program.

When the number of records in each of the two databases being manipulated were increased by a factor of ten, dBXL took 7.8 times as long to run the program as before whereas dBase III+ took only 6.6 times as long. Thus extremely large databases may require dBase III+ for time efficient operation.

In testing dBXL I found that it is significantly enough bigger such that when I had my normal memory resident programs in place, there was not enough memory space available to run something simple from within the program, such as my sorted directory program. However, one can temporarily exit to DOS, run one or more programs and then return to the place that one left in dBXL.

dBXL also has a very nice additional option arising when a mistake is found in the program. In addition

to SUSPEND, IGNORE and CANCEL, dBXL allows one to pick the option "FIX", thereby "DUMPING" one into the Editor which displays the program presently operating at the exact line causing the problem. That line or any subsequent lines can be edited. (one can view but not edit previously interpreted program command lines.) After the editing operation, the program is saved and one is returned to program operation and the program continues operating from where it left off as if there were no programming bugs in the first place. I should mention that I have found a few bugs in dBXL program, but none have been of major significance to date. In other words, I have been able to easily develop work-arounds for these bugs.

.sh0 I guess my total summary for the program is that if speed is less important a factor than price, dBXL is an excellent program and I recommend it. Further, WordTech, which produces the program and also sells QUICKSILVER (a dBase III compiler), has been around for some time and is generally well regarded. QUICKSILVER, retails at $600 although it can be purchased at Soft Warehouse for about $330. I should also mention that I talked to technical consultants at WordTech several times about my supposed problems in programming or using the documentation and I was always able to get through to someone immediately or my call was returned the same day. This is certainly a pleasure after trying to deal with Ashton Tate.

Bruce

My Favorite Assembler

A Biased Review of Turbo Editasm

Ray Quay

I have to warn you that this is a very biased review, after all I am talking about my favorite 8086 assembler, TASM or Turbo Editasm from Speedware. Oh I have that other assembler, Microsoft's Macro Assembler, and I use it; but it is just not my favorite. I admit the Microsoft's is often faster, has more bells and whistles, and is a lot more for the money; but TASM is still my favorite. Why? ... because it is an integrated package much like Turbo Pascal and QuickBasic; and not only does it produce .OBJ files, but it also can produce .COM files directly, or execute your code directly in memory like Turbo Pascal. For a novice like me it has become the perfect assembly language development and teaching tool.

I lucked onto TASM in 1984 when Speedware first started advertising in the back pages of Byte. You know, back there with the ads like "FREE DISK CATALOG PROGRAM Let DISKombobulate keep track of your disks." TASM,s name has gone through a series of gyrations. I think it was first called Turbo Assembler. Then after some rounds with Borland, it was called Fast Assem-86, later becoming Turbo Editasm. There are three versions of the program, TASMA which is the basic package, but can only produce .COM files; TASMB which can produce .COM and .OBJ files, and TASMC (what imaginative names!) which has no editor and works much like Microsoft's MASM. TASMA sells for around $49, and TASMB and TASMC come as a package at around $95.

Speedware states, "TASM has been written with the goal of source code compatibility with the IBM/Microsoft Macro Assembler (MASM)." Indeed it comes very close. I have found very few programs, written for MASM that can not be assembled with TASM. And those that could not, only required some simple modifications. However, it does have its quirks (bugs) and incompatibilities. Some major ones are:

1) TASM does not support expressions like 2*0Ah or 0ABh shl 2 in the DD, DQ, or DT pseudo opcodes.

2) TASM does not support the PURGE, REPT, IRP, or IRPC pseudo ops used with macros.

3) TASM's listings do not have the little 'R's and 'E's after relocatable externals.

4) TASM does not allow EQUs to floating points, opcodes, or indexing modes (rats!).

5)MASM has 101 error messages, TASM has only 76, some of which are not in included in MASM's 101.

TASM is a Macro assembler. I do not use macros much, but have yet to find any major quirks. All the pseudo ops are there, plus a few nice extras. It supports 8088, 8086, 8087, 80186, 80286, 80287 opcodes the same as MASM ver 4.0., well almost. It also uses the .186 , .286c, .286p pseudo ops to assemble code for these processors.

TASM is not always slower (or faster) than MASM 4.0. But it is very close. For smaller assembly files (which you will see in a minute that this is what TASM is really for) the time difference is just not significant. The following shows some comparisons. These times were done using batch files for control and all files being read and written on a ram disk. The Count.ASM is the sample file that comes with the MASM ver 4.0 package. VDISK.ASM is the VDISK ram disk driver that comes with DOS 3.x. As the table shows, MASM is faster at assembly and TASM is faster at disk I/O.

Source File	MASM	TASM	Output Options
COUNT.ASM	4.5 sec	5.1 sec	(no list, just .OBJ file)

►

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COUNT.ASM	9.9 sec	7.0 sec (list and .OBJ file)
COUNT.ASM	39.0 sec	57.8 sec (list,.OBJ, and LINK /M)
VDISK.ASM	30.0 sec	49.9 sec (no list , just .OBJ file)

But all this is not what is really important to me (though it might be to you). What makes TASM my favorite assembler is its integrated environment. TASM is an integrated editor/assembler much like Turbo Pascal. Very, very much like Turbo Pascal! TASM comes up with a main menu screen (see below) that has the Menu choices listed with the first letter of each choice highlighted (you know, like Turbo Pascal). One navigates around by pressing the letter of the menu choice that is desired (you know, like Turbo Pascal). The editor is another Wordstar clone (you know, like Turbo Pascal). Now you know why Speedware had a brief run in with Borland.

The commands are summarized as follows:

A Assembles
E Enters the editor
G Loads a source file into the editor
W Saves the current source file
R Will run an assembled source file in memory
H List a hex dump of the file
K Erases a file (why do they have to call this kill?)
L -List a disk file on the screen (like type)
S -Displays a list of the symbols in the source file
X -Displays a cross reference of the symbols by line
D -Displays a directory of the current disk/directory
N -Sets the current disk/directory
O -allows several assembly options to be set
V -Displays the value of a symbol or expression (very useful)
Q -Quits of course.

The assembly options let you determine if a list file will be displayed on the screen, to the printer, to disk, or nowhere; set whether a .OBJ or .COM file will be created, or if the assembly should be to memory; and whether a symbol table and a cross reference table is to be produced.

As you can see, it is a very complete package, really only lacking an integrated debugger. Even debugging is a bit easier because code can be run in memory, and values of symbols viewed in a hex, binary, octal, decimal, and ASCII format. When run in memory, and an int 3, or int 20h is encountered, TASM displays the register contents in a fashion similar to debug. So some brute force debugging can be done. However, I find myself usually jumping back and forth between TASM and my symbolic debugger. TASM has the option to write just a symbol file to disk. I wrote a simple Turbo Pascal program to convert this quickly into a .MAP format which my debugger then loads (Thus by passing LINK for .COM files). My development cycle of TASM, MAKEMAP, CSM (oops sorry Neil, I did not know yours was better), is faster than MASM, LINK, EXE2BIN, CSM when working with .COM files.

Ah, and there is another major advantage. I work a lot with .COM files. Either I am trying to work out some assembly logic or I am working with Turbo Pascal and writing an external file to load into Turbo. So the .COM file is what I am often after. Since TASM can produce .COM files directly, it really saves on time. I occasionally will also write some .OBJ files to link with C or PROLOG, but again, they are short routines.

The biggest advantage to TASM, is the integrated editor. Like Turbo Pascal (boy I have mentioned that a lot), when TASM encounters an error, the editor can place you right at the location where the error occurs. One nice thing about TASM, which I wish Turbo had, is that this is optional. All of your source can be assembled, and checked for errors with out dumping you into the editor. Being a novice, I have a hard time remembering the exact syntax for all the indexing modes, pseudo ops, and whatever. SO, I make a lot of silly errors. I found writing code under MASM very frustrating, but with TASM is is much more enjoyable (well maybe not enjoyable, less frustrating). I also find it very useful to view a symbol table or cross reference as a am writing code.

TASM is not all Roses. Sometimes it drives me crazy. It has some wierd bugs that occasionally crawl across the screen. It handles tabs very strangely, at least I have not figured it out. Inserting spaces in front of a tab will force them over to the other side of the tab (I think.). Every once in a while, stray lines will appear at the bottom of the screen or file. They do not seem to affect assembly, but are still wierd. The jump on error to editor feature is nice. But if you try to exit after making your change using the traditional ESC or ^KD, it starts assembling again from where the error occured, but now it will find an error on every line. I discovered (undocumented) that you had to press a ^Break to exit the editor gracefully after editing an error. Usually a ^KD will exit the editor, but not always. So it is not perfect, in fact kind of buggy in some ways.

I still use MASM. It has its place. It is a high powered macro assembler that is very fast, particularly when you do not need a list file. It really has a lot of bells and whistles that occasionally do come in handy. The philosophy of use of these two assemblers is ironically reflected in their packaging. MASM comes with a nice IBM size notebook, printed out on a laser printer (like Quick Basic). It has a fair index, good discussions about MASMs use and the pseudo ops, ►

with just a list of op codes. The tone of the manual is quite professional and assumes some knowledge on the readers part. TASM comes with a spiral bound 5 by 8 manual, printed with letter quality printer. It has an adequate index, a nice discussion of all the op codes, and a good discussion of the more frequently used pseudo ops and a brief discussion of the others. The tone of the manual is quite informal with lines such as "When you are debugging a routine or first learning assembly language it is nice to have all the segment registers pointing at the same place" (What? they can point different places?); or "So which would you rather have, an elegantly coded 'transportable' dinosaur that is a performance dog, or a tight, screaming product that took a bit more hair pulling and skill to write?" (I myself have little hair left and even less skill. Where does that leave me?). As opposed to MASM's "Don't confuse byte and word align types with the BYTE and WORD reserved words used to specify data type with operators such as THIS nd PTR." (Shouldn't that be THIS and THAT ?) TASM's manual is also rather amusing in that the printer they used has the characters [and] reversed so all their examples look like MOV AX,]SI[.

TASM comes with no extra utilities, while MASM v4.0 comes with SYMDEB, CREF, LINK, LIB and MAKE. SYMDEB, which is an extended DEBUG with symbolic debugging capabilities, has replaced my debug for quick debugging (was that clear?). Though I still use my other symbolic debugger for more extensive debugging. (wheww!) I have on occasions used MAKE, though I really do not do a lot of "big time" program development. MAKE of course is like its UNIX father (father? cousin whatever, I know nothing about UNIX) that is an aid in maintaining programs that have many source files. MAKE will automatically carry out all the tasks needed to update a program when one or more of its source files have changed. CREF is a real anomaly to me. TASM has xref built in to the assembler, I do not see why Microsoft did not include this in MASM as well? Maybe in version 5.0? I have yet to use CREF. As for LINK, well the documentation in the manual has a good explanation of the use of LINK, but the date of the LINK that came with mine was older than the one that came with my DOS.

So the bottom line. MASM means power, TASM means fun. I personally like to have fun.

Turbo Editasm is available from most of the programmer's software houses. Speedware's number (last time I called) is 916-988-7426.

I warned you it was biased.

Ray

SOFTWARE REPORT

by Dick Gall

New Modules Expand Finance Manager II

General Ledger (GL), the base module of the Hooper International Finance Manager II system, was introduced in the July 1986 PC News. Updates to GL since then have improved on its high marks for getting the job done effectively. With the recent April 15 release of Accounts Payable, a total of four additional modules are available. Finance Manager II is well on the way

to becoming a full system, guided by Hooper's careful response to user comments and requests. The latest GL version, 1.1c, significantly increases the calculation speed of reports for users with a hard disk and lots of transactions. The full GL price is $40, and a functional evaluation copy is available for $5.50.

The new modules available are:

- **ACCOUNT RECONCILIATION.** Works with GL to reconcile bank statements with entries for checking accounts. Just make sure all deposits are recorded, enter any bank service charge, designate cleared checks with *, input the statement

balance and you should be through. $15.

- **FINANCIAL UTILITIES.** Programs for calculating loan payments, loan amortization schedules, depreciation schedules, and present and future annuity values. A new version is now in preparation that will double the number and types of calculations available. $20.

- **ACCOUNTS RECEIVABLE.** AR is the key to organizing the incoming side of the most critical parameter to short-term business survival: cash flow. As a by product, customer information, statements, and mailings are automated. The module is fully integrated with the General Ledger, multiple GL distributions can be made, prior period adjustments are allowed, and transactions can be pre or post-dated. Statements are set up for window envelopes, and up to 30,000 transactions per year are available. Reports available: AR journal, balance forward statements, receivable aging, schedule of receivables, customer accounts list, customer address labels, non-posted transactions journal. The module provides a permanent record of all sales and also calculates finance charges. $30.

- **ACCOUNTS PAYABLE.** The second half of managing cash flow is controlling payments, which is the job of AP. This newest FMII module was released April 15, and is also fully integrated with the General Ledger. Transactions generate the accounts payable ►

journal, from which schedules of payables are prepared. Vendor account data are managed with accounts lists and address labels, and payment checks can be generated by computer. Invoices can be selected for payment by due date, discount date, or vendor. AP posts to the General Ledger in summary format, and summary or trended payable balance reports are available. $30.

Each module includes an on-disk manual and call-in customer support by Hooper. Machine requirements are PC/XT/AT or compatible, 256K memory minimum (512K recommended), two 360K diskette drives (or 1 diskette drive and 1 hard disk),

DOS 2.0 or higher. Printed manuals are also available, as are customized versions of the programs by special request. Discounts are provided on quantity orders starting at 3 modules.

For further information, contact Hooper International at 813-466-0050, or write them at P.O. Box 8430, Fort Myers, FL 33908-8430.

Introduction To Turbo Basic from Borland

Borland nearly set a record for vaporware by advertising the TURBO BASIC compiler months before its availability. Its delivery for local sale in fact coincided with IBM's announcement of its new machines. The link between the two is to be found in the README file on the TURBO BASIC program distribution diskette - TB already includes graphics modes for the new hardware:

SCREEN MODE		
11	640 X 480	black and white
12	640 X 480	16 Color

TURBO BASIC starts a major new wave for Borland with an aggressive attack on the PC languages mass market. It provides an integrated program development environment surrounding a fast compiler. The reconfigurable main screen consists of a top-line menu bar, four functional windows, and a dynamic, context-sensitive help line across the bottom. Control is at the top menu bar when the program opens, and can be returned there at any time by pressing the ESCape key.

The functions available at the top menu bar are:

File Edit Run Compile Options Setup Window Debug.

Most menu selections pop up additional selection windows, sometimes 3 and 4 levels deep, so the user is constantly prompted with available choices. The help line at the bottom of the screen provides some definition of the available choices, and detailed HELP is available at any level by pressing F1.

The four windows are called EDIT, MESSAGE, RUN, and TRACE. The size and location of each window can be adjusted to suit the user and current stage of program development. During program creation, for example, the EDIT window is normally zoomed to make the full screen available for displaying the program. The MESSAGE window gives compiler progress and statistics on a compiled program, the RUN window shows a section of the output screen of a running program, and the TRACE window shows which statement is being executed.

Selecting EDIT moves the cursor to the EDIT window and transfers control to the Wordstar-like program editor. Source programs can be generated with any program editor, however, since the compiler operates on standard ASCII files. RUN compiles the program to memory. If a source-code error is found, the compiler stops and the editor shows the location of the offending source code. When no errors are found in compilation, the program is executed automatically. If a stand-alone program is desired, a selection of the OPTIONS menu can be used to generate an .EXE program file directly.Advertised features for TURBO BASIC include recursion support, standard IEEE format for floating-point numbers, use of the 8087 (or 80287) numeric coprocessor chip (or software emulation if no 8087 is present), large program size, access of local, static and global variables, a new long integer (32-bit) data type, and full 80-bit precision. TURBO is the first BASIC implementation to make 8087 support available as a standard feature. The power of the 8087 is shown in a comparison of the time required to execute 10,000 repetitions of a loop that takes the square root of a double-precision floating point number. This required 3 seconds using compiled TURBO BASIC in a PC with an 8087, versus 42 seconds for a competing BASIC compiler not using the 8087. The use of the 8087 coprocessor can be disabled by setting an environment message using a DOS command SET 87=F. Per the manual, the command is 87=NO, but Borland tech support reports that the 87=F version works with the initial release of TB.

TURBO is distributed with several example source programs, including a simple spreadsheet. The minimum system configuration to use TB is 256K of memory, one floppy drive, and DOS 2.0 or later.

Just after the release of TURBO BASIC, Microsoft introduced new version 3.0 of its QuickBASIC compiler, also offering 8087 support for the first time and an expanded development environment.

Dick

Disk of the Month

by Kathryn A. Crawford

The Disk of the Month for June is PC MAGAZINE UTILITIES DISK, VOL. 1. This package of utilities was issued by PC magazine in 1986, and consists of utilities that appeared in PC magazine vols. 4-5.

There will be an announcement at the meeting about the five (or six) other disks that will be offered. The DOM Group decided that there would be a lower incidence of insanity amoung the DOM production staff if we could concentrate on putting out the disks that were ready for distribution. The deadline for this newsletter falls several weeks before the club meeting, and we usually find a major glitch in one of our offerings directly after the deadline.

DOM Organizational (and Reorganizational) Things

There is a blues song that has the refrain "Next week, we got to get organized." In the case of the DOM, we have been promising a reorganization for many months now -- and this month we are finally delivering. It has been a long road, because there were a number of things that had to be in place before we could do the reorganization.

The reorganization took some time because there were a number of factors to consider. We wanted a system that was simple to maintain and easy to use. We finally (after much discussion) hit on a method that should fill the bill. There is an explaination of the new system on the DOM Catalog Disk, but basically it is a combination of a broad subject classification and a catalog number. The four digit catalog number is all the identification we need to get the disk for you. The subject classification is there to make it easier for you to scan what is in the collection.

The disk production is being managed by Howard Hamilton. This is a time consuming, exacting task. What makes it really interesting for Dr. Hamilton is the way we all get our text for the readme files to him about a week before the meeting. He has decided that he really can't take all that excitement and would appreciate receiving the readme file texts ASAP. Text can be sent to the Dr. through the NTPCUG bulletin board (ASCII, please).

If you would like to help with the readme file production, you should contact Dr. Hamilton. You will need to have a modem; we have found that sending text and messages through the club's bulletin board is the most efficient method.

The indexer is also waiting with bated breath for the readme files, since it is very difficult to do subject indexing without a clue as to what the program does.

For the past few months we have been putting LARGE numbers of disks into the DOM each month. We had a backfile of material and thought it would be better to put the stuff out where everyone could use it instead of waiting until it was all reviewed. The idea is that you, the user, should pick out what interests you and then give some feedback to the DOM. There is a review form on the second disk of the club catalog if you need a starting point for your review.

If you want to put disks into the DOM collection, you need to contact Tim O'Neil. You can drop off disks at the DOM table at the monthly meeting or send it Tim. Leave your name, your phone number, and a brief description of where you got the material (from a bulletin board, wrote it yourself, whatever). *This information must be written down.* We have had people drop off disks at the DOM table with only a smile and a wave, which makes it sort of awkward later if we have questions.

Dwight Neal schedules workers for the DOM table at our monthly meetings. If you would like to volunteer to work the DOM table, you need to get on Dwight's list.

In future DOM columns we will be taking a look at software in the collection: reporting on what it is, what it does, and how well it does it. Your comments are welcome, especially if you send them in an ASCII text through the club's bulletin board.

Kathryn

DOM Particulars

The North Texas PC Users Group copies these programs as a service to the club and its members. We try to test all the programs, but we do not warrant the programs in any way. You must decide if a program is suitable for your system and use. If you ask, we will tell you what we know about any program, but the final decision to buy and/or use these programs is yours. We will gladly and without question exchange an unreadable diskette for one of the same program

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

MAIL ORDERS: At prevailing prices plus $1.00 for mailer and postage. Mail your order to Tim O'Neil, Box 396, Bedford, TX 76021.

PRICE: Members: $2.00 per diskette (if the program is on two diskettes the price is $4.00). Non-members: $3.00 each diskette

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

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

AVAILABILTY. We will do our best to have all past diskettes at each meeting DOM sales will begin at the DOM counter around 9:00, and continue until 2.00 PM

IBM EXCHANGE NEWSLETTER: The EXCHANGE for the current month will be available at the auditorium AFTER the main meeting, at no charge to paid up members of the NTPCUG.

Contest Entries

Eligible entries for the best article submitted by a member for publication in North Texas PC NEWS are listed below. It is your (our reader's) privilege to vote for the article you like best. Writer of the article that receives the most votes will be declared winner and will receive airplane, taxi, and hotel costs for the 1987 Fall Comdex Meeting in Las Vegas.

Contest Articles - 1 December 1986 through 1 May 1987

[ ] User Group Summit Meeting, Charles Kroboth, Dec 86. Report on meeting of User Groups at Comdex 1986.

[ ] On Complexity No. 4, Jim Hoisington, Dec 86. Size of PC-DOS.

[ ] Nerd on the Street, Nnnnn, Dec 86. Industry news items.

[ ] Software Report, Dick Gall, Dec 86. A report on ScreenCODE.

[ ] Mavericks, Strays and Other Disk Clutter, Reagan Andrews, Ph.D, Jan 87. Use of various DOS file utilities.

[ ] Nerd on the Street, Nnnnn, Jan 87. Industry news items.

[ ] On Complexity No. 5, Jim Hoisington, Jan 87. Predictions according to the prophet Fred.

[ ] Computer Council of Dallas News, John Pellet, Feb 87. Report of CCD happenings.

[ ] Organizing for Speed, Convenience and Reliability No. 1, Reagan Andrews, Ph.D, Feb 87. Getting organizing. How will your computer be used?

[ ] On Complexity No. 6, Jim Hoisington, Feb 87. Keep in mind your computer is a system.

[ ] Nerd on the Street, Nnnnn, Feb 87. Industey news items.

[ ] Computer Assisted Jury Selection - A Fair deal?, Bob Russell, Feb 87. Analysis and recommendations for Colin County jury selection.

[ ] Survey Results; Contest Topics, Tom Prickett, Feb 87. Summary of survey on newsletter wish list.

[ ] Data Communications, John Keohane, Feb 87. Communication with computers.

[ ] The Good News, The Bad News, Tom Prickett, Feb 87. Discussion of newsletter exchange volumes.

[ ] Greetings from North Texas BBS Sysop, Tom Prickett, Feb 87. Opening of North Texas PC Users Group Bulletin Board.

[ ] Impact of Section 1706 of the 1986 Tax Reform Act on Independent Computer Consultants, Richard Browne, Ph.D, Mar 87. Are you really a consultant in the "new" eyes of the IRS?

[ ] A-B-C and Other Fine Stories, Ben Stephenson, P.E., Mar 87. Converting a major Fortran program into "C" language.

[ ] On Complexity No. 7, Jim Hoisingtom, Mar 87. Complexities of the "look and feel" controversy.

[ ] CCD News, John Pellet, Mar 87. CCD News Items.

[ ] PCTalk "Displays", Carrington Dixon, Mar 87. The four official IBM displays, an analysis.

[ ] Nerd on the Street, Nnnnn, Mar 87. Industry news items.

[ ] Book Review - The IBM XT Clone Buyer's Guide, Andrew Chalk, Ph.D., Mar 87. Review of clone buyer's best seller.

[ ] Lotus 1-2-3, John Keohane, Mar 87. Calculating current value of a real estate loan.

[ ] The Answer Man, Jim Hoisington, Apr 87. How to make the right clock run.

[ ] Organizing for Speed, Convenience and Reliability No. 2, Reagan Andrews, Ph.D., Apr 87. Getting the hardware you need, and making do with what you have.

[ ] Nerd on the Street, Nnnnn, Apr 87. Industry news items.

[ ] On Complexity No. 8, Jim Hoisington, Apr 87. Software support and where you probably wont get it.

[ ] Let Your Computer Help You Win, Robert Huff, Apr 87. Analysis of a computer assist in playing Blackjack.

[ ] Navigating Our BBS, Tom Prickett, May 87. How the North Texas PC Users Group Bulletin Board works.

[ ] On Complexity No. 9, Jim Hoisington, May 87. Setting up a data base for a computer novice.

[ ] Nerd on the Street, Nnnnn, May 87. Industry news items.

[ ] February 1987 Survey Results, Andrew Chalk, Ph.D., May 87. How the demographic survey will help the Users Group.

[ ] Lost Again in Never-Never Land - Selecting a Hard Disk for your PC, Reagan Andrews, May 87. Specifications, terminology, and other things about buying and installing a hard disk.

[ ] A-B-C and Other Fine Stories, Ben Stephenson, P.E., May 87. What it's like for an "ordinary person" to learn "C" language.

[ ] Winning at the Track, Don Marquis, Jun 87. Tips for computer analysis of horse racing.

[ ] dBXL by Wordtech, Bruce Lutz, Jun 87. A review of this dBase III + look-alike.

[ ] My Favorite Assembler, Ray Quay, Jun 87. A biased review of Turbo Editasm.

[ ] Software Report, Dick Gall, Jun 87. Reports of Finance Manager II and Turbo Basic.

[ ] Using 3 1/2-inch Disks on the PC, Robert Zant, Ph.D., Jun 87. Considerations in switching from 5 1/4-inch to 3 1/2-inch drives.

Cut here or send entire page.

Official Ballot
North Texas PC Users Group, Inc.

My vote for the best article published in North Texas PC NEWS during the contest period is...

Title of Article: _____

Date Published: _____

Your Name: _____

[ ] NTPCUG Member [ ] Other (Specify) _____

Instructions:

Mail ballot to North Texas PC NEWS, 2025 Rockcreek Drive, Arlington, TX 76010 or bring to the June meeting. To be eligible, your ballot must be received by 20 June 1987.

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) 746-3297.**

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.)

[IR] 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)_____

Do not write in this area -- for use by NTPCUG

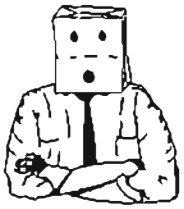
Annual Dues are: $24.00 (Regular Membership) _____ $12.00 (Student Membership with ID) _____

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 _____

NERD ON THE STREET



TURBO RAG: Borland is preparing a magazine devoted to its languages and toolboxes for release on September 1. Turbo Technix Magazine will initially be sent to 150,000 Borland product owners with the hope that many will subscribe to the bimonthly publication. For more information, try calling (408) 438-8400.

NERD NEWS: A new magazine, PC Clones, recently published its premier issue. It included items like free start-up software, articles like "Getting Started With MS/DOS", and Miss May. It appears that Patch Communications, the magazine's publisher, is also the publisher of Playboy Magazine. Due to an error in the binding process, Miss May was indeed bound in all her glory into PC Clones. If you were unfortunate enough to have received on of these defects, you may return it to Patch Communications.

OPTICS: This fall look for the first beta shipments of an erasable magneto- optical disk for Sony Corporation. Each disk will store 650 megabytes of data and format with 1024 byte sectors. They will rotate at 1,800 rpm with a transfer rate of one megabyte per second and a data rate of 510 kilobytes per second. The drives will use a SCSI interface and measure 6.5 x 3.75 x 9. Initially the drives will sell for one million yen and the media for 30,000 yen.

COMMIE COMPUTERS: Gary Emert, Remo DiBartolomeo, and Roberto Roque are facing up to 10 years in prison and a $50,000 fine each for selling $1' million of clones to Cuba via Panama. Soviets are currently producing their own PC compatibles called the Ryad 1 & Ryad 3 and recently contracted for mass quantities of clones from Ecuador.

SYIF SYNDRONE: Some American companies think we have shot ourselves in the foot with a new 100% tariff on Japanese imports. The tariff affects laptop & desktop computers and certain electronic components. Victor, GRiD Systems, Zenith and Data General have all or part of their computers made in Japan.

STOCKS: Apple Computer announced its first quarterly dividend in its history. Shareholders will get a check for 12 cents per share owned. About $7.8 million will be distributed on June 15 and the company expects to continue sending quarterly dividend checks from now on. If 12 cents doesn't sound like much, consider Apple's largest shareholder, Mike Markkula, whose check will be $480,000.

BBS NEWS: If you're not using our new bulletin board, you should be. It was 13 months in the making and most of the bugs have been ironed out. Since our BBS is for members only, you will need to get a password from our hard working sysop, Tom Prickett. Leave a message on his answering machine (690-9087) or put your name on the sign-up sheet at the IBM booth on user group day.

The National Geographic Society now has a 24-hour bulletin board (RBBS-PC at 1200 baud). The board is oriented toward kids, although the conferences can be interesting for all ages. BBS # is (202) 775-6738, 8 bits, 1 stop bit, no parity, and the sysop is Hakeem.

The first annual Andrew Fluegelman Award, recognizing achievement by an individual in public domain or shareware software, was recently awarded by PCW Communications. Tom Jennings received the honor for his program FidoNet, a BBS program now in use on over 1300 boards worldwide. Tom got out of the computer business last year to pursue his favorite pastime and now runs a cooperative for skateboarders. He accepted his $5,000 award in a tuxedo, a bright orange crew cut, and earrings.

The Portal System is a new online matchmaker in the Bay Area. You can use it to make new friends or business contacts by entering responses into a questionnaire and asking for a match. At that point you can correspond by email, take part in a bulletin board conference, or talk online using the Portal real-time meetings facility. There is a $4 per hour charge and local access numbers for 300/1200/2400 baud modems. For voice information call (408) 973-9111.

NERDS REVENGE: Engineers at Sun Microsystems in Mountain View, Ca. play a practical joke on one of their superiors each year. Eric Schmidt, VP of R&D, once found his entire office relocated to a pond in front of their offices. The phone even worked. The following year he arrived at work one day to find a VW Beetle inside his office. The nerds, lead by John Feiber, disassembled it and reconstructed it inside.

#1: Microsoft Corporation has moved back to the number 1 spot in micro software sales, unseating Lotus who held the position the last few years. The company had a 95% increase in revenues over last year and posted $19.1 million in earnings for its third fiscal quarter. Jon Shirley, President and CEO, attributes the success to increased sales of Microsoft Word for the Macintosh and Microsoft Mouse for PCs.

Business Week magazine and Forbes both rank IBM #1 based on market value (about $90 billion in common stock shares outstanding). Fortune magazine ranks IBM 4th in total sales for 1986, behind GM, Exxon, and Ford. Forbes also rated Big Blue second in the country on profits.

MORE NEWD NEWS: Original PictureDisk Co. of Austin, Texas thinks hackers need to upgrade their image, loosen their top shirt button, and insert some excitement into drive A. The company sells a "floppy" disk featuring a beautiful blonde named Ana in a reasonably provocative pose. You'll find no jokes about hard disks or dynamic RAM in this column. I

ordered 500 and intend to "backup" my software library 3 times. After using a few of the disks I found them to be palm-sweat resistant but haven't figured out how to write to drive A with the door open.

NTPCUG NEWS: This just in from DEEPTHRT.SIX - Stuart Yarus spends a lot of time at the information booth on user group day. Rumor has it that Anita, the pretty blond at the booth, may have more appeal than a stimulating discussion on APL.

Nnnnn

Using 3.5-Inch Disks on the PC

Robert F. Zant, Ph.D.

The 3.5 inch disk drive is the new standard for laptop computers.

They are included in machines from IBM, Toshiba, and other manufacturers. The drives can also, however, be used in PC/XT/AT-type computers. The most obvious reason one might want to install a 3.5 drive in a PC is to provide for easy portability of programs and data between a laptop and a desktop computer.

There are, though, several other possible reasons for adding a 3.5 inch drive to your PC. One is that the capacity of the 3.5 inch diskette is twice that of the 5.25 inch. This is of particular interest if diskettes are used to back-up a hard disk.

Another reason is the convenience of the smaller media. The 3.5 inch diskettes are more easily transported ("they fit into a shirtpocket") and take less room to store. They are also less susceptible to harm since the recording surface is completely enclosed when the diskette is outside of the drive. Finally, the

3.5 inch drive offers superior performance in that there is no problem with centering the diskette, no danger that the diskette will be crimped when loaded, and the drive is very quiet in operation.

The 3.5 inch drives are hardware and software compatible with 5 1/4 inch drives (e. g., a Toshiba ND-354A - $129 at Soft Warehouse). This means that a 5.25 inch disk controller board can be used with the smaller drives and the drives can be used with DOS 2.x and above. If a current 5.25 inch drive is to be replaced or if your disk controller will handle more drives than you currently have installed, you will not have to purchase another disk controller for the 3.5 inch drive. If a controller has to be purchased, an inexpensive 5.25 inch controller will work. (A cable, of course, is also needed.)

DOS 2.x and above can be used with the 3.5 inch drives but only DOS 3.2 will format the diskettes for 720K. The earlier versions will format the diskettes at 360K. Fortunately, an alternative to changing to DOS 3.2 does exist. MicroTech Exports (223 Forest Ave., Palo Alto, CA 94301, 415/324-9114) supplies a device driver and a formatting program ($50) that is compatible with DOS 2.x and 3.1. The software, named Reformatter, contains a program used with 3.5 inch drives in place of the DOS FORMAT command. All other DOS commands perform as usual. The software works very well although there is a difficulty in configuring it for a system with more than two drives. The current version, 1.07, is designed to work with a 3.5 inch drive only as either the first or second physical drive in the system. A minor patch is required if the 3.5 inch drive is the third or fourth drive. I found the technical support at MicroTech Exports to be excellent. They were courteous and responsive, and the patch worked.

The installation of the hardware and software is very straightforward. The instructions included with the Toshiba drive are excellent. (Be sure to read the update to the instructions.) The instructions included with the formatting program were written for a previous, related product. But, if you are familar with the use of config.sys files and device drivers, you will have no difficulty installing the software. Hopefully, the documentation will be updated soon.

Robert

Special Interest Program Reports

General Special Interest Group (SIG) Information

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

BEGINNERS SIG

June will be the final part of the 3-part Beginners sessions. It covers the DOS commands that are of particular importance to Beginner, overview of the types of Application Programs beginners should consider, and review of other SIG's that beginners will find of interest.

We are very anxious to continue this SIG in the future. However, we will need a new SIG leader starting the the July meeting.

Phil Chamberlain

dBase Programmers SIG

Due to the unavailability of the Auditorium, Nantucket, who was tentatively scheduled to speak to our SIG, will not be able to attend. We are privileged to have the developer of UI Programmer, a dBase application generator, speak to our SIG. This is a must for any serious developer of dBase applications. Nantucket, as well as a surprise guest, will be rescheduled for a future date.

To clarify some misconceptions, our SIG has been aptly named dBase Programmers SIG, as the primary focus of our group is geared towards developers. The reason for this, is that it is the opinion of this consultant, that the majority of people that use dBase are developers and/or consultants. The reason for this is the fact that it is a very powerful programming language, not designed for the first time computer user. For those of you that are confused about which database to use, you may want to attend the Databases SIG which meets right before our group.

The general focus of this group will be to discuss various products that enhance the usefulness of dBase as a developers tool. Previous meetings have consisted of discussions on compilers and application generators. Due to the length of this SIG, it would be inappropriate to train users on how to program in dBase, although there may be discussions of such advanced techniques as file and record locking. For those of you that are interested in being trained on programming principals and techniques, we will be having speakers that specialize in these training sessions. There will be time devoted at the end of virtually every meeting to answer technical questions that you may have.

As a side note, congratulations to Walt Stine, who was the winner of Genifer (not from WKRP in Cincinnati), the dBase applications generator, which was given away at our first meeting. I look forward to seeing you all in June. --

David Hayden

DOS SIG

DOS-SIG co-leaders Jim Hoisington and Reagan Andrews discussed several of the new options in IBM's PC-DOS 3.3, and possible traps awaiting the unwary in the new utilities. Appropriate use of FILES = ??? and BUFFERS = ??? in CONFIG.SYS were also examined with a reminder that many database and accounting programs need more than DOS's default FILES = in order to avoid significant system degredation.

Warning concerning Norton Utilities "WIPEDISK" ("WD") ability to destroy all data, FAT's and BOOT sector from a hard disk was emphasized with a suggestions that it be removed from the normally-accessed program area.

Problems resulting from multiple DOS versions were elaborated and removal of all COMMAND.COM's from previous DOS versions described at length.

Reagan Andrews

GENEALOGY SIG

The May meeting was presented by Joyce Jones of Heritage Computing. She had many good ideas for beginners, such as don't try to use word processors or data bases for genealogy. A specialized package is much easier to use. A fine book is COMPUTER GENEALOGY by Paul Anderek, published by Ancestry Computing. Cost is $12.95, but $3.00 for members. Joyce distributed an index that she has prepared. It lists all computers that run genealogy packages, and the software that runs on each of them.

Packages Joyce feels are good are: Family Roots, First Family, Genie, PAF, Roots M, and Roots II.

Minnie Champ 341-6507

PERSONAL FINANCIAL PLANNING SIG

If you missed the first meeting of this exciting SIG, don't feel bad or embarrassed -- the next exciting episode will be at 12:00 Noon (this is a change) on June 13. Roger Jones, President of Dataplan, Inc., will be our guest to demonstrate and discuss his Modular Planning System.

We have quite a braod base of interest, including individual investors (both newcomers and experienced), attorneys, CPAs, CFPs, insurance professionals, and others. Robert Wilson will be spreading the word, too, with the American Association of Individual Investors here in the Metroplex.

►

Special Interest Program Reports

If you have any questions, please call any of the following:

Hugh Christensen, CPA:
214-631-4758 w 214-484-3072 h

Roger D. Jones, CPA:
214-960-2200 w 214-788-0408 h

Michael V. Stoddard, CFP:
214-363-4200 w 214-783-4488 h

Robert B. Wilson:
214-231-4720

TURBO PASCAL SIG

June's meeting will feature the last installment of the programs which edit, parse, compile, graph, and evaluate mathematical expressions. July's meeting will feature a talk by David McGhee on calling DOS functions from Turbo Pascal routines. August and September's meetings will feature talks by Don Chick on topics of his choosing.

Warren Ferguson

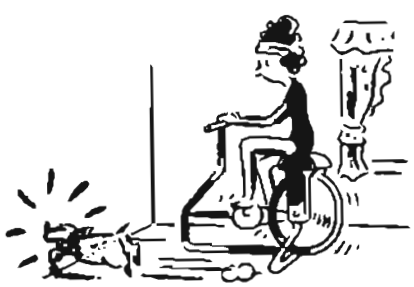
SWAP PC SHOP

Four lines free each month to members; 5th through 10th lines at 15 cents per word. Larger ads at commercial space rates. Send check to the Editor for words exceeding the four-line limit. Free ads are on a space-available basis. Mail ads to the Editor.

Sr. Accounting Position Wanted. Member with 16 yrs. exp. in Analysis, Budgeting and Reporting; PC exp using LOTUS, and FRAMEWORK. James Turnock - Use BBS or call 867-0655

Need help using your IBM PC or Macintosh computer system? Computer Systems Analysis can help! Call C.S.A. today at (214) 380-8172.

Write an article... today!



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.

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.

Room Assignments

Saturday, 13 June 1987

9:00 AM to 9:45 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 standard PC.

10:00 AM to 11:00 AM
AUDITORIUM *** Egil Juliussen ***

Egil Juliussen, Ph. D., of Infotrek, will be talking about his company's new book, The Computer Industry Almanac. Dr. Juliussen is best known as the past president of Future Computing. He will talk about current industry directions and answer questions.

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

8:30 - 9:55

Beginners

9:00 - 9:55

Assembler
Astrometry
DOS
ENABLE
Graphics
Hardware Solutions
Science/Engineering

9:00 - 10:55

Genealogy (w/Apple)

9:30 - 9:55

Orientation

11:30 - 11:55

Orientation

12:00 - 12:55

APL
C Language
LOTUS
Personal Finan. Planning
Turbo Pascal

1:00 - 1:55

Artificial Intelligence
Business Applications
Communications
Data Bases

2:00 - 2:55

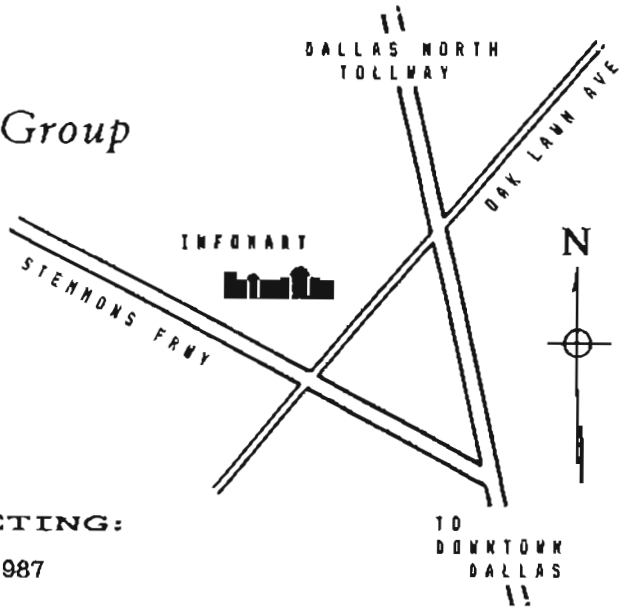
BASIC Applications
Advanced Programmers
dBase Programmers

North Texas PC NEWS
2025 Rockcreek Drive, Arlington, Texas 76010

Address Correction Requested

[redacted]

North Texas PC Users Group



NEXT MEETING:

13 June 1987