

North Texas  **NEWS**

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*North Texas PC Users Group*

**7.11**

**November 1988**



**North Texas PC NEWS**  
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**Deadline:**

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

**Articles:**

We would like to get more articles for publication in North Texas PC NEWS. Article submission is preferred via the Group Bulletin Board (to QMail, John Pribyl), or via Startext (to Mail Code 51563), or on disk (360K or 1.2M, 5 1/4 floppy). Prepare the material in ASCII format, unjustified. If you send a disk, please include a printed copy of the article to assure accuracy. If sending to the User Group Bulletin Board, use QMail mode, to John Pribyl. Include special formatting instructions, if any, with the article or in a separate QMail transmission.

Please do not indent, right-justify, or otherwise code the copy. If column alignment is critical, send two copies, one formatted, the other unformatted. If sending a disk, send along a hard copy that has been printed in the right format, with written instructions.

Double spaced, typewritten copy is acceptable if you do not own a modem or cannot put the material on a floppy disk. This copy must be received at least two weeks before the deadline to allow time for keying.

Send all material to the Editor at the address shown above.

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**DEADLINE**

**Copy deadline for December  
NT PC NEWS:  
Tuesday, November 15th.**

**PLEASE NOTE THAT THIS IS BEFORE  
THE NOVEMBER MEETING.**

Meeting Dates:

November Meeting - 3rd Sat. (19th)  
December Meeting - 3rd Sat. (17th)  
January 1989 Mtg - 2nd Sat  
(tentative)

*Editor's Notes...*

Had a party last night, and a lot of good people came! Well, not a real party, but it was a get-together of some of the greatest people in the world—namely, volunteers of NT PC Users Group. A number of new positions have been established in the User Group, and we were indeed gratified at the number of members who turned out to volunteer.

We'll be telling you more about the jobs, and the people who volunteered to fill them, in future issues. Suffice to say, however; that some of the jobs of running the Group and preparing the newsletter have been divvied up so that more of us can be involved. After all—us "old" volunteers don't want to have *all* the fun. There is still time to volunteer if you couldn't make it to the "party." Just call one of the officers to find out where to start.

Ha! I told you you should stay for the business meeting... Door prizes were given away *after* the October meeting. Two monitors were given away courtesy of AST Research, Inc. Thanks, AST.

And I'd like to thank you all for helping to fill the "IN" basket. There was a good response to the "MAKE MY DAY!" cartoon and we now have a couple of articles held over to start the December issue. Keep up the good work.

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**November 19**

John Ogle &amp; Timothy Carmichael

9:00 AM - 9:50 AM

Auditorium

**\* Dr. James A. Brown \***

\* APL-II Language For The PC \*

10:00 AM to 10:55 AM

Auditorium

**\* Microsoft Corporation \***

\* Announcing An Exciting Software Revision \*

11:00 AM to 11:30 AM

Auditorium

**NTPCUG Business Meeting**

Don't miss the latest! Attend the business meeting.

**Prez Sez...****Sighs, Cries, Whispers, Moans and Screams****-or-****We'll do Anything (Almost) to get a few good Volunteers**

Most readers should have guessed by this time that I'm hopelessly addicted to "purple prose" broken only by unabashed theft of literary allusions from "real" writers.\*

Headlines are both the most fun, and most difficult aspect of this genre of publishing. A good headline should tell the reader exactly what's in store in the article, entice further reading, and provide either a bit of drama or fun.

**Otherwise, it's "Prez Sez."****Sighs - We Need a Few Good Men and Women**

I'm not sure what calling for volunteers has to do with sighs, but I'll bet the headline took you this far, at least. It's no secret that the Club is being very active in terms of pursuing members to fill volunteer roles in the organization.

That we are doing some reorganization shouldn't be that much of a secret either. More on that later.

Many (approximately 300) club members received letters inviting them to a Volunteer meeting October 19. These were people who have worked in some volunteer capacity in the last year, or who volunteered to serve in more specialized areas, such as public relations (PR), at the time they joined or renewed their membership.

If you didn't get a letter and want to participate as a volunteer in Club activities, let us know. Sign up at the Information Booth, send me a note on the Club BBS, or write us a post card outlining your areas of interest, expertise and/or background.

We'll get in touch.

**Cries - Lots 'n lots happening this month, most of it good, or at least exciting.**

EISA (Extended Industry Standard Architecture) continues to unfold in the public eye. I mentioned EISA last month in passing, I've gone into more detail in a separate article this month. It really is important to all of us at one level or another and further developments will be chronicled when available.

Armonk\*\* bashing is fun, mostly 'cause IBM takes themselves so terribly serious as to be ludicrous on occasion. Not outrageous, which might be witty, but ludicrous. That's one of the things that makes the concept of EISA so much fun for us on the sidelines in this, the latest round of the nascent battle between Big Blue and the Gang of Nine.

**Whispers**

The Houston-based clone maker featured in most of the EISA publicity is simultaneously rumored to be trembling on the precipice of unveiling a laptop machine some time in October. Long rumored and

eagerly awaited (mostly by the computer press) the Houston, Texas-made laptop has almost achieved mythical proportions during the wait.

Not to be left out, IBM supposedly is also poised to release yet one more portable/transluggable/laptop PC. It/they (rumor says more than one machine is involved) follow closely on the heels of earlier, quite memorable, IBM efforts, and will be IBM's third shot at the market.

**Screams - Non-Released Software Makes Non-News (Again)**

1-2-3 release 3.0 has been delayed again by Lotus, Inc., and rumored to be tentatively scheduled for release sometime in 1989. Lotus has been very upfront concerning the problems being experienced in getting this software to the delivery stage and appears determined not to repeat the version 2.0 debacle if at all possible.

According to industry sources, Lotus may release an upgrade to 1-2-3 2.xx in the meantime in an effort to prevent further erosion of their market share by Microsoft's Excel and the Borland spreadsheet product.

Ashton-Tate is experiencing similar difficulties with the latest version of Dbase IV which has been delayed again as well. Dbase IV was announced much earlier this year, and demonstrated (in part) at the NTPCUG Meeting in July of this year.

Ashton-Tate doesn't have the fierce level of competing products nipping at their heels as does Lotus, but that could change. (Has anybody else noticed the rather prominent R:Base screen display in some current Microsoft advertising inserts?)

**But, We Saw Them at NTPCUG**

Sharp-eyed readers may wonder how both products were "shown" at our meetings earlier this year if neither is ready. What we saw were modules that would be included or integrated in the final releases, not the final, completed products. This is a very popular method of displaying nearly-ready products to groups such as ours and often isn't the modules themselves, but display models of what the finished product should look like.

It's like showing architectural models to prospective condominium buyers.

**Moans - Non-Compatible Hardware makes some news**

After months (years) of rumors, Steve Jobs unveiled his NEXT, Inc. computer in early October. Source of almost mystical-level speculation, the NEXT machine shown, if really delivered, would be impressive without the hype.

The show, reported as true Steve Jobs at his best, was anticlimactic as a result of expectations raised over the last two years since he was forced out of Apple by his hand-picked heir. Folks with long memories will recall that Steve Jobs at Apple's helm was responsible for two significant moves - nearly "killing" the Apple II series through intentional neglect, and introduction of the "hobbled" 256K Mac.

Jobs apparently was also the source of Apple's initially very, very closed Mac architecture philosophy - opening the case on the first Mac's voided the warranty - a direct slap to early Mac enthusiasts.

Reagan Andrews

\* I haven't stolen quite enough from Joe Bob Briggs to be in real trouble, but then most software and hardware really doesn't lend itself to a drive-in-movie critical approach.

\*\* Armonk - mythical site of the "Great Blue Valhalla," supposedly located somewhere in equally-mythical "Nnyok" on the Eastern coast of the Continental United States (CONUS). Rumored to be the PC center of the ancient Watson Empire following the fall of fabled "Boca" in "Flawdah."

**North Texas PC Users Group  
Personal Users (Beginners) 16-Class  
Revolving Schedule**

Sched.	Class	ClassTitle/Description
Jan 89	1.0	Start Up
	2.0	Diskette Sizes & Formatting Each
	3.0	Copying & Backing Up Files
	4.0	Hardware
Feb 89	5.0	Fixed Disk Directories, Batch Files & Paths
	6.0	DOOS Menu Systems on Fixed Disk
	7.0	Installation & Setup of LOTUS 1-2-3
	8.0	Running BASIC Programs
Mar 89	9.0	Writing Your Own BASIC Programs
	10.0	NTPCUG Disk of the Month Library
	11.0	PC Graphic Modes
	12.0	Bulletin Boards & Archive Programs
Nov 88	13.0	Printer Setup
	14.0	Writing LOTUS Macros
	15.0	Major Categories of Software Applications Available Today
	16.0	PCs to the end of the 20th and into the 21st Century

Four Classes are offered each month (at 9:00, 10:00, 12:00 noon, and 1:00 pm). Across four months all 16 of the classes are completed, and the cycle starts all over again. Each class is independent of the others, thereby allowing people to begin attending classes any time their schedule allows. The classes are free and are open to all beginners, novices, new PC owners, soon-to-be owners and personal (vs. professional) users. Come join us as we cover the fundamentals!

Bob Presley and Richard Terreo, Instructors

## ON COMPLEXITY

*No. 21 in a Series*

Jim Hoisington

I was sitting in an IBM school last month, learning about the new AS/400 family of computers when a statement from the instructor almost made me laugh out loud. What he said would probably not have been funny to anyone else in the audience, but it took me back almost 25 years to the first IBM school that I attended. I didn't believe it then and I still don't believe it.

Some 25 years ago, I was just making the transition from TAB operator to programmer. The aerospace company that I worked for used me occasionally to write mathematical algorithms for our new IBM 1401 because all of its programmers were trained in accounting programming. IBM announced a new computer, the 1620, that did decimal arithmetic and my employer wanted me to look it over to see if we could use it to do some of our engineering calculations.

The statement that I found so funny 25 years later was the claim that the computer could diagnose its problems and order its own repair parts. It was explained to us that IBM 1620 came with a diagnostic deck of cards that would determine the result of any machine malfunction and would tell us which parts to have the customer engineer bring to fix the machine.

That deck of computer cards came to be known as the "power on deck". If you could read it in, then the power must be on to the computer. It never, to my knowledge, gave anyone any other piece of useful information.

The AS/400 family of IBM computers comes with a built-in modem in each computer. When the machine senses a malfunction, the computer is supposed to dial a central IBM computer and report the problem. Again, as was claimed 25 years ago, the valiant customer engineer will show up at your doorstep with exact parts needed to fix the computer, even before you know that you have a problem.

I admit it, I'm a cynic. I'll believe it when I see it.

IBM has made some sort of program like this available with every new system that I have seen them introduce since the 1620. It is a major corporate goal and someday I'm sure that it will be a reality.

The reason for their commitment to a computer which diagnoses its own problems probably came from a series of lectures that Dr. John Von Neumann gave at the University of Illinois about 1948. In those lectures, Dr. Von Neumann contributed many ideas

that shape the architecture of the computers that we use today.

The founding premise of the lectures was that computers would become increasingly complex. As an outgrowth of this complexity, he theorized that their problems could only be diagnosed and repaired by another computer.

Most modern IBM mainframes have a built-in diagnostic processor which monitors the operation and records any anomalies. However, this information is rarely used.

You can find IBM's commitment to the diagnostic program on the earliest PC's. If you own a "real" IBM PC, you have to wait for the diagnostic test called the "Power-On Self-Test" (POST for short) to run each time you power your system on. The program runs a test on each of the major system components and displays an error code if it finds anything out of the ordinary.

For those of you who have seen the codes and maybe even experienced a problem or two, you know that the POST test error code may or may not point you in the right direction. There is a lot of hard programming to be done before diagnostic programs rise to the level where they will be able to order the right part.

If you are a young programmer looking for an area where you can make an impact, consider the area of diagnostic programming. If you work for IBM, please don't let the company give up on its commitment to making the machine diagnostic work; someday we won't be able to function without it. And if you happen to be next to me at the announcement of IBM's next generation of computers and I should clear my throat, grin, and look down at my shoes when they announce their built-in computerized customer engineer, please forgive me. I've just been reminded of the IBM 1620 and its wonderful "power on" diagnostic deck of cards.

Jim

□



### Computer Help

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## Ramanujan and the Partition of 200.

by Nell Bennett, Ph.D.

Srinivasa Ramanujan was an Indian mathematical genius who died in 1920, but whose ideas are the basis of calculations of pi to millions of places on modern digital computers.

There was a recent TV program about the life and work of Ramanujan and a small part of it gave rise to an interesting little problem. One of the many interests of Ramanujan was the partitioning of numbers. For example, there are 5 ways of partitioning the number 4. There is 4 itself, 3+1, 2+2, 2+1+1 and 1+1+1+1. This function has the name of  $p(N)$  and the example above is  $p(4)=5$ . This function of  $N$  grows very rapidly as  $N$  increases;  $p(50)$  is 204,226 and  $p(100)$  is 190,569,292. To check on some theoretical work, Ramanujan needed the value of  $p(200)$ . A Major McMahon made the calculation and it took him nearly a month back in about 1918. The answer is 3,972,999,029,388.

At this point, I said to my wife "I could probably do that in about half an hour on my PC"

The obvious way is to generate all possible partitions in a systematic way. Figure 1 is the partitions of 10. The 1st number in each generation is 10, 9, 8, etc. The sum of all the numbers has to add up to 10. Hence, when the 1st number is 6, the second number ranges from 4 down to 1. The general rule is that each cell can be filled with a number in this fashion, but that number must not be greater than the preceding number. This leads to the following program in C:-



SRINIVASA  
RAMANUJAN

```
#define min(a,b) (a)<(b)?(a):(b)
int cell[35]; /* array of numbers */
int bign;
long count;
main()
{
    int i;
    for(bign=5;bign<36;bign+=5) {
        count=0;
        for(i=bign;i>0;i--) {
            cell[0]=i;
            donext(i,1,i);
        }
        printf("p(%d) is %li\n",bign,count);
    }
    donext(sumsofar, cellno, lastcell)
    int sumsofar; /* sum so far */
    int cellno; /* index of the cell to be filled in */
    int lastcell; /* value of last cell */
    {
        int i, local;
        if(sumsofar==bign) {
            count++;
            return;
        }
        local=min(lastcell,bign-sumsofar);
        for(i=local;i>0;i--) {
            cell[cellno]=i;
            donext(sumsofar+i,cellno+1,i);
        }
    }
}
```

A variation of this program was used to produce Figure 1.  $p(50)$  was used for a timing test. The value of  $p(50)$  is 204,226 and my 1982 vintage PC took 250 seconds. That's about 1,224 microseconds per generation. So, to recalculate  $p(200)$  would take about 1224 microseconds times 3,972,999,029,388, or about 154 years on my PC.

Somehow, I don't think that is how it was done back in about 1918.

Have another look at Figure 1, the partitions of 10. The number of lines starting with 7 is  $p(3)$ , and the number of lines starting with 6 is  $p(4)$ . However, the number of lines starting with 3 is not  $p(7)$ , but rather less. The second number is constrained to be no more than 3. Let's introduce a new function  $q(N,M)$  where this value is the number of ways  $N$  can be partitioned with  $M$  being the largest number. Note that  $p(N)$  is just  $q(N,N)$ . Without proof, here is a program to evaluate  $p(50)$  using this method:-

```
#define min(a,b) (a)<(b)?(a):(b)
long cell[50][50];
main()
{
  int i, j, adds;
  cell[0][0]=1;
  cell[1][1]=1;
  adds=0;
  for(i=2;i<51;i++) {
    cell[i][0]=0;
    for(j=1;j<=i;j++) {
      adds++;
      cell[j][i]=cell[i][j]-1+
        cell[i-j][min(i,j)];
    }
    printf("p(%d) is %ll, adds=%d\n",i,
      cell[i][i],adds);
  }
}
```

- 10
- 9+1
- 8+2
- 8+1+1
- 7+3
- 7+2+1
- 7+1+1+1
- 6+4
- 6+3+1
- 6+2+2
- 6+2+1+1
- 6+1+1+1+1
- 5+5
- 5+4+1
- 5+3+2
- 5+3+1+1
- 5+2+2+1
- 5+2+1+1+1
- 5+1+1+1+1+1
- 4+4+2
- 4+4+1+1
- 4+3+3
- 4+3+2+1
- 4+3+1+1+1
- 4+2+2+2
- 4+2+2+1+1
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- 4+1+1+1+1+1+1
- 3+3+3+1
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- 3+1+1+1+1+1+1+1
- 2+2+2+2+2
- 2+2+2+2+1+1
- 2+2+2+1+1+1+1
- 2+2+1+1+1+1+1+1
- 2+1+1+1+1+1+1+1+1
- 1+1+1+1+1+1+1+1+1+1

It is much more efficient than the first method, so maybe all I need to do is to increase the size of the array to 200 by 200 and start crunching. But I know the answer is 3,972,999,029,388. That won't fit into a long integer. The simplest solution is to use double precision floating point numbers. But the space needed for my data would be 200 by 200 by 8 is 320,000 bytes. That won't fit into a 64KB partition on the PC! The final solution was to map the array onto hard disk and compute the place to store and retrieve each number. This took 32 minutes and 26 seconds on my PC (mostly disc seeks), so I was about right in my initial estimate.

I also kept count of the number of additions to get the answer. Major McMahon did 20,099 additions by hand in "almost a month"! If he only worked 12 hours per day, that is an average of one addition every 66 seconds. The more amazing feat is that he got the correct answer.

Neil ■

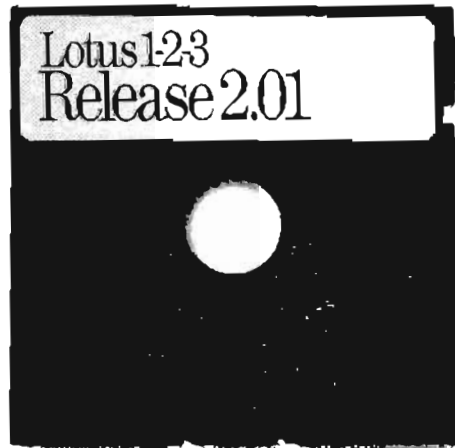
**References**

"Ramanujan and Pi", Borwein and Borwein, Scientific American, February 1988.  
 NOVA, "The Man Who Loved Numbers", shown August 30th, 1988 on KCTS (PBS) Seattle, WA

Figure 1. The partitlons of 10.

*(Neil Bennett is one of the founding fathers of North Texas PC Users Group. He was Leader of the Programmers SIG for many years, until he moved away from the Metroplex. He now works for Microsoft in Seattle, Washington. His address is 19916 - 190th Ave. N.E., Woodinville, WA 98072. Ed.)*

# Here's an offer only the most analytical minds in America can appreciate.



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After exercising your grey matter with a few hundred "what ifs" every day, it's nice to have a no-brainer to deal with. How's this: for every Lotus® 1-2-3® Release 2.01 you buy on or after September 6, 1988, you get a free 1-2-3 Release 3 Upgrade as soon as it's available. (Be sure to save your proof of purchase.)

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After all, 1-2-3 Release 2.01 has recently been rated the top-performing

spreadsheet for an unprecedented fifth straight year by the NSTL.<sup>2</sup> In fact, 1-2-3 is the backbone of business, with over 7 million users who depend on it everyday.

Plus, the upcoming 1-2-3 Release 3<sup>3</sup> will be the most powerful spreadsheet on the market by far, yet it will offer the familiar 1-2-3 interface and be fully compatible with all your present 1-2-3 data, macros and applications.

The new 1-2-3 will offer an exciting

3-dimensional spreadsheet for better organization and consolidation of data. Plus, improved graphics and powerful database enhancements, including the ability to access external databases, like dBase<sup>®</sup>, from within your spreadsheet.

See your Lotus Authorized Dealer or Lotus sales rep for details.

## Lotus 1-2-3

(1) Upgrade offer valid September 6, 1988 through 30 days after the 1-2-3 Release 3 ship date. (2) National Software Testing Laboratories, Inc. Software Digest Ratings Report, June, 1988. (3) System requirements will vary from Release 2.01 to Release 3. 1-2-3 Release 3 runs under DOS and OS/2. Hard disk and 640K required. Lotus certified compatible PC with 80286 processor is better recommended. Lotus and 1-2-3 are registered trademarks of Lotus Development Corp. dBase is a registered trademark of Ashton-Tate Corporation.



# The Family Tree of Personal Computers

Part One of Three Parts

Tom E. Krieg, BSME, PE, MBA  
Investment Management & Research

There have been more inventions in the last 60 years than in all of the preceding history! And it is still going on! The technology explosion is growing faster than the human mind can grasp what is occurring. This is still the most exciting time to be alive and aware of the change that is going on right before our eyes.

The purpose of a family tree is to identify its roots. The roots of the Personal Computer go back a long way and have several families who contributed to its existence. For those of you who have an interest in where things originate may find this series of articles will help pull several things together.

We will explore the source of calculating from 600 BC to the current high speed microprocessor, how we got here and who did it to the best of our ability. There are a few gaps and a few disputes about who did what and when but by and large the search I did reveals a fairly complete story.

You won't find nitty gritty solutions on how to solve your hard disk problem but you may appreciate a little bit more what the inventors and artists did who struggled to make an idea work.

There are three major lines of contributions that lead to the Personal Computer that we know today. One is the development of the Main Frame Computers with the associated calculations and computer languages. Another is the development of the Vacuum tube and the Radio Electronic Industry. The other is the development of Television and its part in the Electronic industry. Each of these developed along parallel paths in very closely related time periods after technology reached a certain degree of refinement in the 1800's.

The integration of the three technologies and demand for improvements produced a revolution in the electronics industry known as Solid State Electronics. It started in 1948 and by 1968 was a full fledged industry that was just beginning to expand.

From the Solid State Electronics revolution we got transistors that within 20 years completely changed the way we made radio and television equipment. It had a major impact on the Aerospace Avionics and Space industry allowing a miniturization to take place that exceeded the highest demands placed on them by DOD development laboratories and NASA Projects.

## Computing Geneology

When the China exhibit was in Dallas, Texas we saw examples of early technology - movable type in the year 10xx A.D. Paper making and weaving machines, devices for computing similar to the ABACUS, one with reeds, one with beads were available. Even their astronomical observations were quite unique.

Western cultures began a faster mode of computing as they learned the arabic number system between 800 and 900 A.D. Napier, Burgi and Briggs brought forth logarithms between 1614 and 1624. Shortly after this a working adding machine was displayed by Pascal (and you thought all Pascal meant was another programming language.) About ten years after Pascal showed off his "adding machine" the slide rule put in an appearance. How many remember using a slipstick?

Several attempts had been made to make a mechanical calculating machine but Leibnitz is credited with a success in 1670. The father of the modern day computer is held to be Babbage with his design for a computing machine. Unfortunately Babbage did not have the materials worked out for his design and it was a while before a working machine was available.

The next breakthrough occurred in 1854 when Boole presented his paper on Symbolic Logic (an Advanced Algebra to the rest of us.) The team of Saxon and Farmer combined the design of the Babbage machine with the Boole logic and produced what they called the Symbolic Logic Machine sometime between 1858 and 1860.

These early Babbage machines were restored and are on display in the London Science Museum near Kensington Gardens, London, England. The computer language ADA is named for Babbages Wife.

The next event was one that for some people is completely mystifying and for others it has been very helpfull. The introduction of Probability Theory about 1870. It seems that this came at a time when a Dr. Hollerith was trying to make predictions about the U.S. Census results. The big push in the U.S. toward machine accounting and tabulating machines came from the Census Bureau.

The origin of the punch card is said to come out of the weaving mills. Burke in his TV series on "Connections" showed the card that controlled the weaving pattern in the mills in the 1890's and believes that this is where Dr. Hollerith got his idea for the "Hollerith Card" which we lived and died with for years.

About 1900 Dr. Hollerith was able to produce a keypunch, punchcard, and tabulator that significantly reduced the amount of time to tally the number of

people in the U.S. and provide various counts of activities and commerce.

At MIT, Dr. Mauchly and J.P. Eckert had been working on producing electronically what was done in Dr. Hollerith's mechanical equipment. Their first computer was called ENIAC and was unveiled in 1945. It was a vacuum tube job, very large! The second version called EDVAC followed in 1947. The first miniaturization was started with UNIVAC I, all under the sponsorship of Dr. Mauchly and Eckert. By 1960, the National Bureau of Standards unveiled the largest computer known called FOSDIC. By this time, IBM was in the act with their follow-on to the wired board machines and the 709 was soon followed by the 7090. IBM and UNIVAC had two other major competitors - Control Data and RCA.

These were all card fed programs. The UNIVAC required special cards and we had to separate the program cards from the data deck. Control Data was used to solve scientific problems involving orbits, trajectories, launch windows, motion problems. The RCA was used on many defense sites for collecting and processing intelligence data.

The IBM was used to solve structural design problems but it had to be fooled as it was mostly designed for business. In 1960-1965 we were just learning how to write programs to solve design problems for hydraulics, propulsion, thermodynamics, radiation, and were not confident enough of the procedure to accept the computer solution without testing the answer.

The rise of the main frame from 1945 to 1988 has been exciting to watch but what is more exciting is to sit at my own PC at home and have more computing power at my finger tips than the early engineers did with their mighty invention.

If the computer follows the "fifty year" cycle the next new computer (Neuron, Microbe) will be making its formal appearance soon and a few years from now we will look back at today and say we didn't know what power was until we try the new machine.

To get from the main frame of computing to the personal computer requires a bridge. In this sector the focus has been on the computing aspect and less on the hardware to a significant extent other than how it came about. The sections that follow address the accompanying developments which made the first ENIAC possible, Radio and the Electron Tube, Television, and Solid State Electronics which enabled us to reach the Personal Computer capability of having one in one's home.

The following table provides the broad spectrum across which computing spans.

### Major Milestones

Abacus (Reeds - 600 B.C. China - Beads - 450 BC - Egypt Rome)  
 Arabic Numbers (Hindu Arab - 800 A.D.)  
 Logarithms (Napier 1614; Burgi 1620; Briggs 1624)  
 Adding Machine (Pascal - about 1644)  
 Slide Rule (about 1654)  
 Calculating Machine (Liebnitz - about 1670)  
 Babbage Machine (Design only - 1834)  
 Symbolic Logic (Boole - 1854)  
 Symbolic Logic Machine (Saxby and Farmer - 1858-1860)  
 Statistics (Probability Theory - about 1870)  
 Key punch, Punchcard, Tabulator (Dr Hollerith - 1900)  
 Wired Board Machines - International Business Machines  
 ENIAC - 1946 (Dr Mauchly and J.P. Eckert)  
 EDVAC - 1946  
 UNIVAC - 1948 (Dr Mauchly and Eckert)  
 FOSDIC - 1960 (National Bureau of Standards)

### Radio's Impact on Everything

It is very difficult to just talk about Radio from a technical standpoint because it had such an impact in my life and so many people were affected either directly or indirectly by it. People born after 1955 do not comprehend a world without television and computers. Through these articles I hope to share some of the development history by people who managed to solve the unknown to pass on the technology we have and enjoy today. It isn't all technical - it includes the happenings of people who applied and expanded and demanded more than they were getting. ▶



## The Electron Tube

The first record of someone actually making a vacuum tube with electrical current flowing through the wires and exciting a flow of electrons is credited to Thomas Alva Edison - in retrospect. At the time, in the 1880's, he didn't know what he had started. The early physics books referred to it as the "Edison Effect". (Edison patented this device but did nothing with it, letting the patent lapse. Later, the design came back and was known as the thermionic diode. World Book Encyclopedia - 1958 - Electronics.)

In 1904, British scientist John Ambrose Fleming was experimenting with the Edison effect and found that he could detect "wireless" radio signals with Edison's inventions. Fleming's tube became known as the "Fleming Valve", the first practical radio tube.

Lee De Forest advanced the tube in 1906 by creating the "Audion" (which could strengthen the signal), and Harold D. Arnold figured out a way to use the audion tube to make a signal even stronger in 1912. American Edwin H. Armstrong and German Walter Schotky added elements to the tube to make it even better. Then American Albert Hull advanced the vacuum tube even more. Along came Dutch engineer Benjamin D.H. Tellegen to continue to perfect the amazing tube.

*Source: The Amazing Transistor, Key to the Computer Age by Ross R. Olney and Ross D. Olney, Atheneum 1986, N.Y., Chapter 3.*

The refinements in electron tubes were variations on Edison's original design. Once a sense of direction and purpose was derived there were many improvements. Between 1904 and 1923 most of the basic configurations of electron tubes had been worked out. There were tubes for radio transmission, heating, x-ray, battery charging. (See ICS Radio Handbook, 1923.)

The photoelectric cell (some know it as the "Electric Eye") was made practical by the vacuum tube which would enclose a sensitive plate. So long as a beam of light, whether visible or invisible, such as infra red, were unbroken, the circuit remained operational. When the beam was broken, a relay was activated that started a particular action - opening a door, ringing an alarm, shutting a door, etc. The "electric eye" was also used to transmit television signals.

The invention of the electron tube spawned a whole new industry that didn't exist in 1900 and by 1970 was an entirely different creature than had existed just 20 years earlier. (50 year cycle)

Radio was probably the outstanding success of the electronic field until Television came of age in 1955. Radio had an impact on technology, politics and business as well as the social attitudes of the country.

Once people were introduced to the earliest forms of radio they wanted an improved version - one that sounded more "Natural," like a person talking rather than one squawking.

Radios were big and bulky but they worked. The sound quality left a lot to be desired and there was still a lot to learn about built-in aerials (antennas). If you were very far from the broadcast station then your antenna had to be longer or bigger to pick up the signal. Today, a 50,000 watt station that can broadcast across two or more states (or the state of Texas) is not uncommon and a 100,000 watt super station is able to send a signal for several hundred miles. (Just about reach from El Paso to Texarkana.)

From 1925 until late 1960 vacuum tubes were in a constant state of refinement. Improving the materials, performance, size reduction, miniaturization and finally, replacement by the transistor and chips. The first transistorized radio was touted as only slightly bigger than a pack of cigarettes and some were soon small enough to fit in one's shirt pocket. These small, battery operated radios led the way in writing the end to the vacuum tube for radio.

Nicklas Tesla was another contributor who was the prime mover in shifting the power industry from the Edison Direct Current power system to Alternating Current we know today. By 1900, Tesla held about 100 patents on Alternating Current switching and control devices that made it possible to distribute high voltage A/C to a district where it could be reduced for industrial and household use. Transmission at high voltage resulted in much lower line loss than if done at a lower voltage level for a given long distance. His contribution made long distance power networks a workable possibility so that every home could have A/C electricity.

Today, motor and circuit controls are made using semi-conductors and integrated circuit chips instead of large bulky switches.

One other area of Tesla's inventions was the broadcast of electrical energy. He demonstrated his system in 1900-1901 at Colorado Springs by broadcasting electrical energy for a distance of at least 25 miles and operating a pump motor. He used a version of the induction coil and the Tesla Coil to raise the energy level. He had a dedicated power plant nearby and took all of it for his experiment. What he succeeded in demonstrating was the capability of wireless broadcasting of energy, although inefficient by today's standards. He spent his next few years raising money to commercialize his ideas and refine the process but finally gave up. Variations of his work are seen in microwave technology, laser beams, sonar, and devices utilizing controlled vibration in beam technology.

►

From the late 1920's, radio was the medium of mass communication, the source of entertainment and early news. If you wanted to get the news in detail, you read the newspaper. Radio had Soap operas for years, Kids had fifteen minute after-school entertainment programs modeled after cartoons in the paper. Supper time brought a special network newscaster, evenings there was family entertainment. One evening might be music, another might be comedy, another drama, another mystery. Saturday was divided between the Texaco Opera and a baseball game in the summer. I didn't know there was a game other than baseball until I was in high school and nearly got killed trying to learn to play it. (Football.) Sunday there was generally a mystery on and a Walter Winchell newscast. (He got excitement into every announcement no matter how dull it really was.)

The depression slowed things down so the laboratories had more time to refine an idea before bringing a product to the market. The most radical departure in the radio appearance was made by Atwater-Kent about 1934 when they went from a table model to a floor standing model. The next few years were mainly cosmetic changes in cabinetry. In 1939 you could buy a table model plastic radio with push buttons that you could set to a station and not have

to hunt around trying to find your favorite radio program. About 1940 Philco brought out a recorder so that you could record parties, music and what have you, on a disk in your own living room and play it right back on your own built-in record player. Zenith was right close with their design until you looked inside and saw the RCA patent on both.

The desire to record in one's own home was still strong, so, after the war, the Weber Corporation brought out a recording/player unit called the Webcor. It recorded on a thin wire. It was all electronic and everything worked fine until you got the spool of wire scrambled up and then it was worse than any fishing line backlash you ever did see. If that wire got bent you couldn't play it again - too tight on the tolerances.

The quality of the radio sound was continually improving as the speakers got bigger and there were more of them in the box. I forget all the names but we had woofers, tweeters, and basso's that tried to cover the spectrum. The swing music of the 1930's to the mid 1940's was all Benny Goodman, Tommy Dorsey, Woody Herman, Jack Teagarden, Glenn Miller, Cab Calloway, Wayne King—the King of Swing, and Guy Lombardo just to name a few.


The stars of the future came out of these bands - Gene Kruppa, Harry James, etc. I still remember existing on Iwo Jima where we had a radio station that played at noon for about one hour. The theme music by Cab Calloway was "Caldonia—What makes your big head so hard?" The rest of the time they played the swing music of the above bands and must have swapped records with somebody because once in a while we would hear a new batch. It did help keep us from going too nutty on that volcanic island. I inherited the radio, a nice one made by Phillips in Holland—what a story it would make on how it got to Iwo Jima where it was "Liberated."

Radio got pretty sophisticated by 1935. Luxury cars had a radio installed in the dash so you could have music etc. wherever you went. They were very neat in that they hid the antenna under the running board on the driver side of the car. Police cars had external antennas so people did not want their cars to resemble police cars for one very good reason - you might get shot by a gangster (and there were plenty of them around in the early 1930's). But the "G-MEN" soon got most of them rounded up.

With a radio in your car you could take a date to your favorite lover's lane and park and listen to the great bands broadcasting live from the finest ballrooms in the country from coast to coast from 9 PM until the wee hours of the morning. This mode of broadcast still remains, although not on a coast to coast basis and not with live music from the various ballrooms around the country.

Tom □



(Next month we'll cover the transition to radio, and from radio to television.)



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# BBS Study Committee Report

by Fred Williams

The BBS Study Committee's latest activities have concentrated on the study and design of an organization of volunteers which will provide the NTPCUG BBS with a level of ongoing support that will insure a high level of BBS utility for the BBS user community. The major content of this status report is a report describing the proposed BBS Support organization as designed by the study committee. The report has been presented to the NTPCUG Board Of Directors for their approval.

The BBS Study Committee is interested in hearing from any NTPCUG member who is interested in filling any of the positions defined in the following report. Should you have such an interest, please contact any one of the committee members. Or better yet, contact Kent Cobb or Tom Prickett, as they have by default become the committee members most active in working with BBS volunteers.

## NTPCUG BBS Support Organization

### Introduction

The BBS Study Committee has completed another study task in the BBS Improvement Project. The just completed task was the study and design of an organization which would have the responsibility and personnel resources necessary to insure the continuous successful operation of the NTPCUG BBS System. This report is the formal definition of the Committee's BBS Support Organization design.

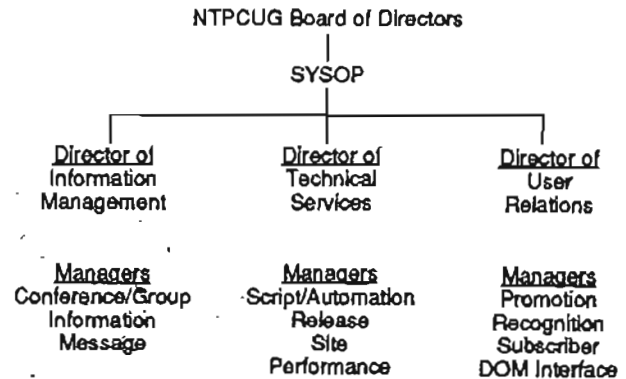
The vertical structure of the BBS Support Organization will begin with the NTPCUG Board Of Directors who will be responsible for establishment of BBS operations policies and guidelines.

The BBS SYSOP (SYStem OPERator) will be responsible for day to day management of the BBS. The SYSOP will also be responsible for implementing the Board Of Director's BBS policies and guidelines. To accomplish the ongoing task of operation of a successful BBS, the SYSOP will have three BBS Directors which will report to him.

The three BBS Directors will each be responsible for the accomplishment of his designated tasks which have been identified and defined and will be covered in more detail later in this report. The BBS Director's assigned tasks have been grouped by commonality to a particular expertise. To accomplish the assigned tasks a BBS Director may, at his discretion, appoint a Manager for each of his assigned tasks.

### Structure

The following is a graphic representation of the hierarchy of the BBS Support Organization:



### Succession

It will be the responsibility of the NTPCUG Board of Directors to appoint a new SYSOP in the event a reigning SYSOP is lost. It is strongly recommended that the current BBS support group members be given first consideration for this appointment.

It will be the responsibility of the SYSOP to appoint, from the ranks, a new BBS Director to replace a lost BBS Director.

It will be the responsibility of a BBS Director to seek out volunteers to fill any Task Management vacancies that occur in his area of responsibility.

### Term of Commitment

Any position within the BBS Support Organization (below NTPCUG BOD) will require a desired commitment of six months minimum from any volunteer. This six month minimum will aid in insuring a continuing high level of BBS performance by providing an expected level of personnel commitment so that each Support Position is not in a constant "On The Job Training" mode.

## Job Title Definitions

### SYSOP

SYStem OPERator. A historical title bestowed on the person with the overall responsibility for a BBS (Bulletin Board System). The NTPCUG BBS SYSOP will be responsible for the day to day operation of the NTPCUG BBS System. The SYSOP will report to the NTPCUG Board Of Directors.

### BBS Directors

There will be three BBS Directors. These BBS Directors will be responsible for accomplishing the ongoing

ing tasks required to maintain a viable, useful, and responsive BBS System. Each BBS Director, at his discretion, may assign volunteers to accomplish tasks related to his area of responsibility. The BBS Directors will report to the SYSOP.

#### **BBS Director of Information Management**

The BBS Director of Information Management will be responsible for the continuing tasks required to maintain the BBS data content and the Conference / Group structure to best suit the needs of the BBS users.

#### **BBS Director of Technical Services**

The BBS Director of Technical Services will be responsible for the tasks required to insure the maintenance and peak performance of the BBS System hardware and software.

#### **BBS Director of User Relations**

The BBS Director of User Relations will be responsible for the dissemination of selected BBS information, provide a conduit for public interface with the BBS organization, maintain current subscriber data and monitor BBS user input.

#### **Managers**

All positions with the title of Manager are optional positions which may be filled by a volunteer at the discretion of the BBS Director responsible for the related task(s). If appointed the Manager will report to the BBS Director responsible for his assigned task(s).

#### **Conference/Group Manager**

The Conference/Group Manager will be responsible for maintaining the structure of the BBS Conferences, Groups, and Group Membership lists in a state that reflects the current needs of the BBS user community.

#### **Information Manager**

The Information Manager will be responsible for the maintenance of all "non-message" BBS information files (bulletins, information files, help files, BBS menus, etc.) in a useful, current, and informative condition.

#### **Message Manager**

The Message Manager will be responsible for insuring that the messages residing in the "public" areas of the BBS be current, informative, useful, and inoffensive in content.

#### **Script/Automation Manager**

The Script/Automation Manager will be responsible for developing and maintaining custom Script files, DOS Batch files, and custom program source code to implement and insure the continued automated performance of all recurring BBS maintenance tasks that, by their nature, lend themselves to automation.

#### **Release Manager**

The Release Manager will be responsible for the acquiring, testing, installation, tuning, and monitoring of all packaged software products required for continued maximum performance of the BBS System.

#### **Site Manager**

The Site Manager will be responsible for the physical site where the BBS System hardware is installed. The Site Manager will be responsible for site security, authorizing access, hardware condition monitoring, initiating hardware maintenance calls as required, and provide host system console operation when required.

#### **Performance Manager**

The Performance Manager will be responsible for monitoring the overall BBS System hardware and software performance. And, when deemed appropriate, take actions to restore the BBS System to an expected level of performance.

#### **Promotion Manager**

The Promotion Manager will be responsible for the BBS System and support organization's public relations. Provide a human contact point for the public and BBS users with needs or requests which cannot be provided from within the electronic BBS.

#### **Recognition Manager**

The Recognition Manager will provide press releases and encourage external recognition for noteworthy events and actions of members of the BBS Support Organization and significant BBS User contributions.

#### **Subscriber Manager**

The Subscriber Manager will be responsible for maintaining the BBS Subscribers list in an up to date condition. This task will consist of insuring new and renewing subscribers gain timely access to the BBS; Deleting subscribers who have failed to renew; And handle subscriber exceptions as they occur.

#### **DOM Interface Manager**

The Disk Of the Month Interface Manager will be responsible for providing BBS services to the DOM Committee upon their request.

### **Conclusions**

The BBS Committee has attempted to keep the "head count" required to maintain a viable BBS system as low as possible. This organizational design covers the tasks required for day to day operation of the BBS. Each task has been designed as a fully disconnected, stand alone, task with no direct task interdependencies. This allows the person responsible for

the accomplishment of that task the greatest amount of independent freedom for task scheduling and completion.

The Organizational design does not directly address one time or crisis tasks. In the event a sizable or crisis task arises the BBS team members should expect a call from the SYSOP and must be willing to respond in kind whenever possible. In the event the crisis proves too great for BBS manpower or resources, the SYSOP should enlist the services of the NTPCUG Board Of Directors in acquiring the necessary resources required to solve the problem.

Although this organizational design has been done with the greatest of care, actual implementation will undoubtedly require some fine tuning of the details. It is with this in mind, that the BBS Committee is submitting this organizational structure proposal to the NTPCUG Board Of Directors for a "design concept" approval. This means, we feel the overall structure will work, but some of the details may need additions, subtractions, or other adjustments to best fit the real world.

In the event the NTPCUG Board Of Directors approves the plan, the committee is ready to implement the plan immediately. We also have on hand enough interested volunteers to staff over half of the positions defined immediately.

Fred

### NTPCUG Expands Officer Group With Addition of PR/Advertising Director & Increased Volunteer Participation


Citing the Club's growth over the past two years, NTPCUG President Reagan Andrews announced two new officer-level positions and expansion of existing activities to facilitate Club operation.

New positions include a Director of Advertising and a Public Relations (PR) Director. Other roles announced were North Texas PC News Editor and Assistant Editor(s), expansion of the BBS volunteer staffing, DOM and Information Booth staff.

NTPCUG's President spoke briefly to a gathering of approximately 75 volunteers and Club officers October 19 at INFOMART. Called to help fill out the Club's volunteer efforts, the October meeting presented NTPCUG volunteers with opportunity for increased involvement in Club functioning.

Members who had indicated interest in increased Club roles were invited via letter to the meeting in September. Despite the mid-week date closely following the regular monthly meeting October 15, volunteer turnout was described as meeting all expectations Club officers stated.

"Volunteer burnout is always a problem in groups like this," one officer stated, "This meeting provided people who had been volunteers in one area to look at others, and perhaps refresh their enthusiasm in working for the Club."



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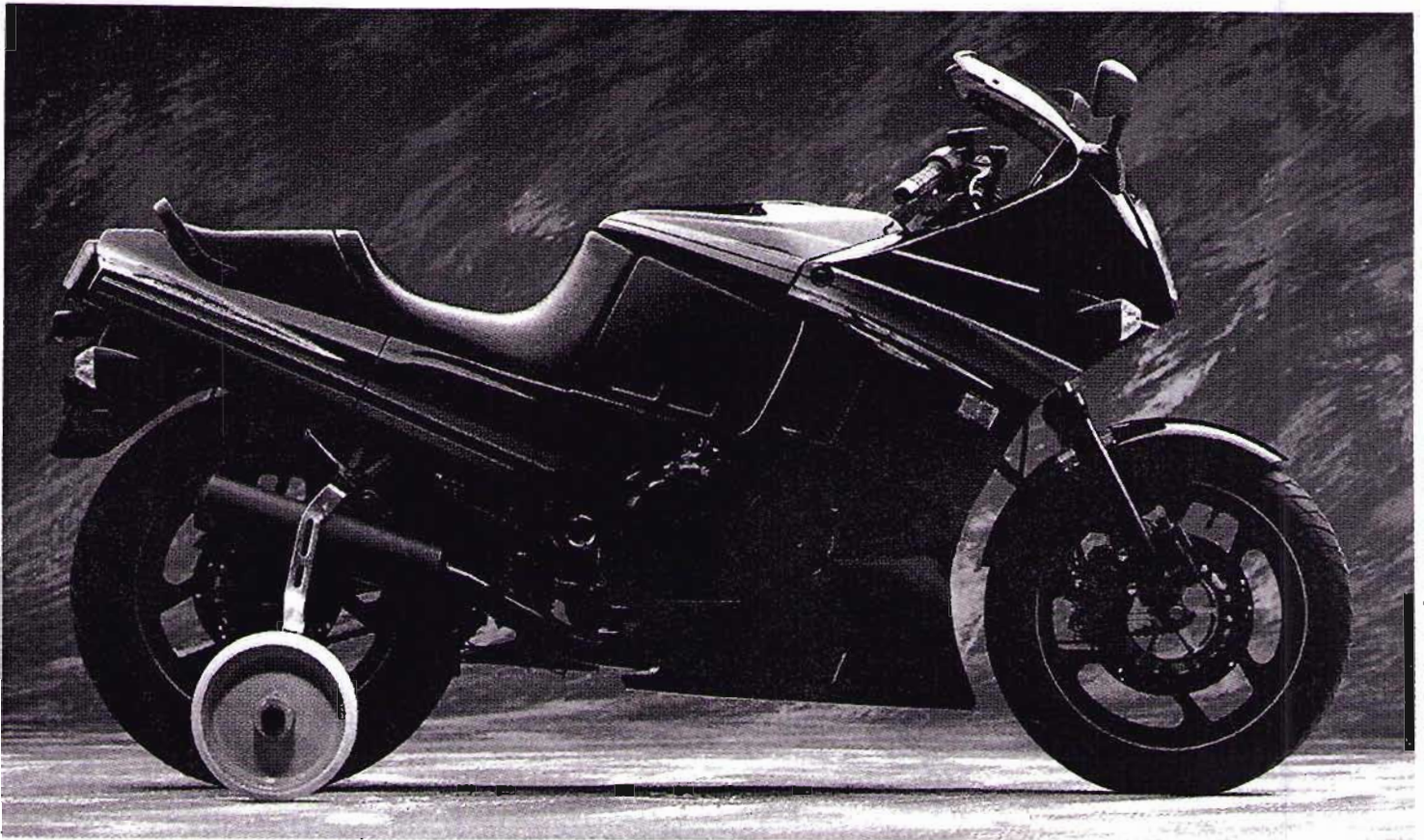
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## Fear and Loathing in Armonk:

### "Gang of Nine" & EISA Menace IBM's MCA

Reagan Andrews, et al\*

There'll be a new PC bus in town in 1989 to compete with IBM's Micro Channel Architecture (MCA) and possibly give the PS/2's a new headache.

Not that the PS/2's with MCA Busses don't already have a headache—the "old" AT-style bus just won't die. IBM recognized that fact in September with introduction of two new PS/2 30-286's featuring 80286 CPU's sitting firmly on the old-style, PC/AT bus.

This followed the "Gang of Nine's" New York announcement September 13 that a new, non-IBM standard, EISA, would be available in 1989 to compete with the MCA bus.

#### What's in a Name?

A brief break for nomenclature — names -- is in order so the game and the players may make some sense.

EISA is the acronym for Extended Industry Standard Architecture. ISA is the acronym for Industry Standard Architecture, and is really IBM's PC/AT bus architecture by a non-IBM name.

There isn't an acronym for the "original" PC bus standard, primarily because PC has become a generic term in practice. As a result, IBM became much more protective about their trademarks so that "PC/AT", "PS/" and other designators can only be used in reference to IBM products—not clones or compatibles.

#### Players in the EISA Drama

"Gang of Nine"—the original EISA developers—is a misnomer as EISA supporters actually numbered somewhere between 80 and 100 at the time of the announcement on September 13. Cast is led by nine major players, though, so the title does have some merit.

#### Original EISA Players:

- Tandy Corp. of Fort Worth, TX,
- Zenith Data Systems,
- Epson America, Inc.,
- NEC Information Systems,
- AST Research Inc.,
- Hewlett-Packard Co.,
- Ing C. Olivetti & Co.,
- Wyse Technology, and,
- a Houston, TX,-based clone maker;

#### Non-Player (although invited)

- IBM's PC division

Microsoft Corp. and Intel Corp., not listed among the "Gang of Nine" (I think the *Wall Street Journal* created the name) were described as instrumental in getting the various competing players to work on the standard together. Both are listed as major participants in later stories, however, as are Chips & Technologies, Inc.; Digital Equipment Corp. (DEC); Amstrad PLC of Irving, TX; Dell Computer Corp., Austin, TX; Phoenix Technologies, and many, many others.

Three of the major computer companies associated with EISA have spoken with the Club in the last several months.

AST's Jerry Bower and Michael Krieger were able to talk about EISA, both at the October 15 Main Meeting and at various SIG's during the day. Unfortunately, Tandy's John Patterson and Dell's Paul Rubin who participated with NTPCUG's Jim Hoisington at the September 10 Main Meeting were unable to mention EISA before the announcement.

#### So, what's all the excitement about?

First, it's all about speed and power. Introduction of the Intel 80386 CPU chip promised massive quantities of both—at levels formerly reserved for mini's in the \$100,000+ range.

The excitement is the promise of a true, non-IBM 32-bit bus standard. The "bus" is what the CPU uses to communicate with all the I/O devices, DMA, disk drives, ports, etc. There have been several PC busses since 1981. (See "Non- DART Busses".)

To make maximum use of the 80386, it needs to work with a full, 32-bit bus capable of supporting very high speed operation, very large memory access and very rapid data transfer. Presently, there is no "standard" 32-bit bus that would allow users to make maximum use of their PC's. IBM would like the MCA bus to become the standard.

#### Recent IBM announcements underscore EISA's economic importance.

IBM's "open architecture" policy became a lot less open when IBM announced the Micro Channel Architecture (MCA) bus with the PS/2 series. "Big Blue" confirmed they were indeed going to collect royalty fees from anyone who used or "cloned" the MCA bus in future computers.

In addition, IBM also promised to pursue, vigorously, past royalty payments from manufacturers who had used IBM intellectual property, i.e., cloned the PC and PC/AT busses, in the past. Some manufacturers were anticipating figures in the 6 - 8% of sales range under this IBM plan. ➤

Most PC makers just aren't working with sufficient margins to tolerate the IBM "tax" and remain cost competitive.

#### What's EISA have to offer?

Most important is that EISA is the result of a consortium of PC hardware and software makers to arrive at an industry-wide standard for 32-bit compatible computer busses. A "Technical Synopsis" obtained from AST's Jerry Bower provides a look at the claimed advantages of the new EISA-bus:

1. A known, "standard" system architecture with standard I/O subsystem. The IBM PC system architecture was well known, but IBM's technical specifications for the PC/AT or ISA bus were not as openly revealed and detailed,
2. Memory capacity greater than 16 Mbytes, (16M is the published upper limit for MCA. However, at current DRAM prices, this may be more academic than a real advantage except for OS/2 and UNIX users.)
3. Support of multiple bus master devices with high-speed burst transfer rates, (Approaching 33 Mbytes/sec)
4. 32-bit data transfers for CPU DMA and bus master devices,
5. Enhanced Direct Memory Access (DMA) arbitration and transfer rates,
6. Programmable edge- or level-triggered (shareable) interrupts, (ISA bus primarily utilizes edge-triggered interrupts while MCA utilizes level-triggered.)
7. Automatic configuration of system and expansion boards.

Any one of the features would be appropriate for a lengthy article—or series of articles. To combine all in a single article would be impossible short of something book length. Individual aspects will be examined as more details are available.

#### What's it all mean to the PC user?

What do all these advantages mean? For most PC users with 8088, 80286 and current 80386 machines, not too much. However, speed isn't the sole province of the "power users" and Fortune 500 crowd manipulating huge spreadsheets.

As we ride the increasing swell of "graphical interfaces" to its logical conclusion (Microsoft CEO Bill Gates' vision) the power necessary to implement lots of coming software will have to come from somewhere. EISA is a way of harnessing raw CPU power and converting it into useful PC work. That's all.

Initial EISA machines will be for large-scale LAN or multiuser applications and will be priced in the \$12 -

15,000 range according to most of the computer makers involved. Remember that the PC/XT was released by IBM for the "serious business user" and wasn't considered appropriate as a home computer. EISA may have a similar future in store.

#### Mythmaking—and other computer lies

Announcement of the EISA standard by the "Gang of Nine" has already generated enough half truths and outright misinformation to fill volumes. All tend to ignore some aspects of the general rules of physics, radio-frequency (RF) propagation, common sense, or all three.

Dependable high-speed bus operation is a careful blend of design that takes into account mutually coupled capacitance, self inductance, line to ground capacitance, etc. Otherwise the user will have an unlicensed radio transmitter sitting on their desk. Or, a design that tends to lose data. Either is at least a nuisance and may be dangerous.

Regardless of what is published elsewhere, neither the PC nor the ISA busses as presently implemented are capable of 50 Mhz CPU clock rates. Actually, going above 12 - 16 MHz on either bus requires significant re-engineering. Some individuals may have "goosed" their personal machines above these limits, but dependability is highly questionable.

It's not just a matter of chip (CPU) speed. 20 and 25 MHz operation is possible with some 80286 chips, primarily those produced by Hitachi and AMD. Physical design and layout of the bus attached to the chips is a limiting factor. Dell's 20 MHz 80286 machine was engineered taking all this into account and is reasonably successful. Others may not be.

FCC "B" (home use) certification usually won't be found on the very high-speed ISA machines. For some indication as to the difficulty involved in keeping RF emissions inside the computer box and out of the environment, take a look at the original 80386 machine produced in Houston, TX.

RF energy produced by the high-speed boxes can be responsible for some very unusual errors which may be incorrectly ascribed to other equipment. Recent studies indicate it's not too healthy for humans, either

Reagan

▲

\* Et al. This article is a compilation of material from a number of sources. I would like to thank AST's Jerry Bower and Michael R. Krieger, who gave an excellent EISA presentation to the October Advanced Programmers SIG and provided other material on EISA, the editorial staffs of the *Wall Street Journal*, *Infoworld* and others who conspired to flood the media with early descriptions and interpretations of the new standard.

## Non-DART Busses

### PC history is non-standards —not standards

IBM's PC set the standard for 8088-powered PC's in 1981 when it was released. It became the basis for the standard "clone" bus produced by a Houston, TX,-based PC maker and others.

However, it wasn't the first microcomputer, or even home PC bus. Busses are the connecting link between the PC's CPU and everything else — memory, disk drives, serial- and parallel ports, keyboard and video ports.

Included on the bus are data lines, address lines, DMA control lines, status lines, interrupt lines, etc. Original PC bus utilized 62-pin connectors. PC/AT (ISA) bus added a 36-pin connector to handle 16-bit requirements in addition to the 62-pin connector.

Modern busses don't by and large run at CPU speed. Most available add-on cards simply can't keep up with 12 Mhz and faster CPU's, so makers tend to run the bus at a more manageable 8 Mhz and "couple" to faster CPU's running at high speed. This latter represents some significant technological hurdles, and may prove troublesome to the user over time if not done well.

#### CPU chips usually define bus

Busses tend to be associated, with one major exception, with specific CPU chips. The IBM-PC bus, of course, is associated with Intel's 8088 CPU chip. Tandy/Radio Shack's TRS-80 computers were originally Z-80 chip based, and the Apple II's bus was dependent on the 6502 chip.

Both the TRS-80's and the Apple II's established standards that IBM recognized in developing the initial PC—user ability to modify operation by attaching add-on cards expanding the PC's capabilities. This lesson was very apparent to IBM, but somehow forgotten by Apple when the original Macintosh was released to the public.

Apple finally responded to user criticism and (some) later Macs feature the NuBus for the Motorola 68000 chip family.

CPU-independent busses haven't fared so well since introduction of the IBM-PC. Once the dominant business micro bus, the S100 bus is rarely seen anymore except in Jerry Pournelle's "Byte" column. At its peak, S100 accomodated

8080's, Z-80's, 6502's, 8088's and even some 80286 cards were available. S100 was really more of a backplane than a true bus, however, similar in some respects to PC's still being made.

#### Even the PC bus wasn't really "standard"

IBM's PC/XT was a non-standard PC bus with the "short slot" having somewhat different connection standards than the other seven slots. PC/XT clones approached this issue with variable adherence—some kept the IBM configuration, others made the 8th slot just like the others.

AT&T's 6300 (really an Olivetti machine) had still another bus that took advantage of the true 16-bit 8086 and had additional connectors available to make use of 16-bit access. Unfortunately, not many accessory board makers jumped on the 6300 bus.

Even the more conservative Houston, TX,-based clone maker dabbled with 8086's and non-standard busses when their second generation, desk-top machines were introduced.

#### 32-bit CPU's further muddy the waters

IBM PS/2-80's MCA wasn't the first 32-bit PC bus. The Houston, TX,-based clone maker responsible for the first available 80386-powered PC developed their own 32-bit extended ISA bus to handle the, then new, Intel CPU chips. Other PC makers released their own versions of 32-bit busses which created some confusion among buyers.

Most of these were extensions of the PC/AT bus with provision for at least some 32-bit-wide, high-speed memory access if nothing else.

One of the more popular 32-bit busses for use in PC's is the Intel (maker of the 80386 CPU chips) bus released as an entire system/motherboard. A number of manufacturers base their 80386 machines on the Intel board and 32-bit bus arrangement. There are several others almost as popular as the Intel board.

Problem is that most of the various 32-bit efforts are incompatible with one another at the high-speed, 32-bit level. That forces the machine's owner to go back to the original company for memory expansion. Usually this is considerably more expensive than adding memory via "standard" add-on boards. If the computer maker has gone out of business—not that infrequent now—installing additional memory may be impossible.

That's why the standards proposed by EISA are so important.

Reagan

## What's happening on the BBS

by G. Kent Cobb

For the past couple of years, the NTPCUG has been operating a bulletin board for the use of its members. It's a good place to ask for help when you have a problem. It's a great place to express an opinion. And, for the rabble-rousers among you, it's a fantastic place to get an argument started! For those of you who have never logged on, here's a taste of what you're missing.

### From the COMM SIG Conference

From: Rick Griffith Sent on: 10/06/88 6:54 pm  
Subject: Modem Problems

I'm trying to install a modem in a Packard Bell XT clone to transmit personnel data. I've installed an Everex 1200 baud internal modem that I've used successfully in another computer. The problem is the modem will connect, its getting the shrill hand shake, but I get nothing on the screen, not even the connect string. I've doubled checked the DIP switches, and the other settings in the machine and in Procom. I even tried another modem and get the same results. The problem is probably simple, but its got me stumped. Settings I'm using are 1200b,n,8,1 com1. Anyone have any suggestions, I'd appreciate the help.

From: Pete Testa Sent on: 10/07/88 7:54 pm  
Subject: Reply: Modem Problems

Is it possible you have another async adapter in the machine configured as COMM 1??? I think I've seen machines do what you've described if there are duplicate COMM ports.

From: David Daniel Sent on: 10/08/88 10:24 pm  
Subject: Reply: Modem Problems

I've experienced similar problems with an internal Packard Bell modem (2400) baud when attempting to connect to the SMU mainframe. I even tried a second (identical) modem, but the problem persisted. Packard Bell tech-support didn't know what was going on either. SMU computer consultants claim they have had similar complaints about internal 1200 baud Everex modems. Softwarehouse tech-support claim they have had similar problems with some internal modems, but that external modems tend to be much more dependable. Reluctantly I gave in and got the external modem and it worked with out a hitch.....same brand, same baud, same software, same mainframe, same settings, same everything!

I'm no expert, but it is a possibility.

Good luck, - David Daniel

### From the DOS SIG Conference

From: Douglas Sharp Sent on: 09/05/88 2:36 pm  
Subject: DOS 4.0 INSTALL PROBLEMS

I AM HAVING A PROBLEM INSTALLING IBM DOS 4.0 ON MY XT SYSTEM. AFTER I GET THROUGH WITH THE

INSTALLATION AND FINISH ENTERING THE DATE DOS COMES UP WITH "AN ERROR OCCURRED WHILE INSTALLING DOS". I HAVE A 360K DRIVE AS DRIVE A, DRIVE B IS 720K, AND THE HARD DISK DRIVE C IS A SEGATE 238 WITH WESTERN DIGITAL CONTROLLER. I AM RUNNING MS-DOS 3.20. I HAVE TALK TO THE DEALER AND TELLS ME I NEED TO BRING IN THE SYSTEM FOR SERVICE AT 36 DOLLARS AN HOUR. THE DEALER HAS CALLED IBM AN SAYS THAT THIS IS A HARDWARE PROBLEM, BUT HOW COME MY MACHINE WORKS RUNNING MS-DOS 3.2. I THINK THE DEALER NEEDS TO DO SOME MORE TALKING TO IBM. IF YOU HAVE THE ANSWER LET ME KNOW. I CAN BE REACHED ON STARTTEXT MC 158654

From: Reagan Andrews Sent on: 09/05/88 11:09 pm  
Subject: Reply: DOS 4.0 INSTALL PROBLEMS

I don't know for sure, but I think you are running into problems in the cross-over that are very simple, but usually so subtle that most people don't think of them until later.

MS-DOS has two hidden files, IO.SYS and MSDOS.SYS that correspond to IBM's IBMBIO.COM and IBMDOS.COM. Neither of these will be erased or replaced by a typical PC-DOS installation via SYS - or by the disk installation program that comes with PC-DOS, since that program will be looking for the two IBMXXX.COM files.

Usual solution is to do a complete re-FDISK and re-FORMAT instead of using SYS. An alternative, if you have NORTON utilities or some other such available, will be to "unhide" the hidden system files, delete them, then do the new SYS.

You must remember that this is one of the few times when DOS is very concerned with physical location of a file on the disk, and having the space "corrupted" by foreign MS-DOS files may be a part of the problem.

As you've been using the disk for some time, you probably have a lot of material on the disk you would like to save. If you intend to back-up the files via the "free" DOS utilities, you MUST make a back-up set under the NEW DOS version before you attempt a complete re-format of the hard disk. Easiest way will be to boot-up the PC from a floppy boot disk with 4.0 installed, use the 4.0 backup utility to make the new backup, then do the re-format. Two complete sets would be nice if it's data you really care about.

If you intend to use a commercial backup utility, call the publisher beforehand and make sure your version will work under 4.0 before relying on it to save your data.

I know it's probably redundant, but be sure to EXCLUDE the MS-DOS 3.2 system files and COMMAND.COM file while making the backup, or at the time of restoration. This will all be for naught if your back-up program restores 3.2 for you, or corrupts the 4.0 files you've put on the disk.

Hope all this verblage helps.

Reagan....

From: Pete Testa Sent on: 09/06/87 7:38 pm  
Subject: Reply: DOS 4.0 INSTALL PROBLEMS

I'm not sure, but could your problem be caused by using the DOS 4.0 equivalent of DOS 3.3's REPLACE command on a disk that was set up for MS instead of PC DOS 3.2. You might try a low level format and then install PC DOS 4.0 from scratch.

From: Douglas Tharp Sent on: 09/25/88 2:28 pm  
Subject: IBM DOS 4.0

OVER THE LAST FEW WEEKS I HAVE TRIED TO INSTALL DOS 4.0 ON MY XT COMPUTER AND KEEP GETTING ERROR MESSAGES STATING "AN ERROR HAS OCCURRED WHILE INSTALLING DOS". I WANTED TO INSTALL IBM DOS 4.0 OVER THE TOP OF MS-DOS 3.2. BUT THIS DOES NOT WORK. I FOUND THROUGH DOING A FORMAT AND FDISK THE INSTALL PROGRAM WILL DO IT'S JOB. THANKS TO EVERYONE THAT HELPED ME WITH THIS PROBLEM.

## From the All Conference

From: Tom Hawkins Sent on: 09/17/88 3:13 pm  
Subject: Format.bat

Matt had a batch file to avoid reformatting the hard drive on p. 4 of the August 1988 NT PC News. I cannot get the file to run. Anybody got any help?? It seems to treat every command as if it were bad. Thanks somebody for help. It looks like a great idea.

From: Leroy Tannison Sent on: 09/18/88 2:29 pm  
Subject: Reply: Format.bat

Tom, I can't help directly with the PC News article but I can supply a format.bat that will do the job. All you need to do is put my format.bat in the same directory where your format.com is and rename format.com to dsk-frmt.com. This may not be the greatest batch file around but it does the job. Hopefully the listing is contained in the next message. If not, look for another message from me on this sig stating what happened and where the listing is.

From: Tom Hawkins Sent on: 09/19/88 8:30 pm  
Subject: format.bat

Leroy, thanks for the format.bat file. As soon as I changed the name of format.exe it worked great. Thanks. I even tried it without specifying a disk. I too have had problems getting my Procomm 4.2.4 to download files from this BB. I don't know if I am doing something wrong. Your suggestions worked. Thanks again. I appreciate the file.

Tom Hawkins

From: Charles Carter Sent on: 09/21/88 5:02 pm  
Subject: Reply: format.bat

I have also had trouble downloading files, but, only when using the usr modem of line 2. I have never had any problem when connected to the multimodem 224E.

## From the Pascal SIG and C SIG Conferences

From: Pete Testa Sent on: 08/31/88 8:49 pm  
Subject: TSR Problem

A friend of mine is having a problem writing a TSR. His problem is that making calls to interrupt 21 when in the TSR causes his PC to lock up.

I would appreciate any hints from you all.

Thanks, Pete...

From: Sid Nolte Sent on: 09/01/88 7:38 pm  
Subject: INT 21 CALLS FROM TSR's

This fellow went to the doctor with the complaint that when he put his hand above his head that it hurts. The good doctors advice was not to put his hand above his head any more.

With regard to int 21 calls from tsr's the same advice can be given. Don't do it any more.

Sid

From: Leroy Tannison Sent on: 09/01/88 10:00 pm  
Subject: Reply: INT 21 CALLS FROM TSR's

Sid, could you elaborate. I seem to recall reading things about not calling DOS from TSR's (of was it critical interrupt handlers or something else?) or about only being able to call certain functions or checking the INDOS flag before you did. As you can tell, its a fuzzy matter to me. As usual, I couldn't find anything in print when I went to look. A short "refresher" course would be appreciated.

Leroy

From: Kent Cobb Sent on: 09/01/88 11:29 pm  
Subject: Reply: INT 21 CALLS FROM TSR's

I put a response to Pete's original message in the Programmers' SIG conference listing some sources of information on how to safely generate DOS interrupts from a TSR. I figured that was as good a place as any - Pete put his original message in several conferences, and I couldn't reply in any of the others without starting Andrew on one of his tirades about writing TSRs in high-level languages.

Rgds, Kent

From: Stan Milam Sent on: 09/02/88 7:41 pm  
Subject: Reply: TSR Problem

The problem is that DOS is not reentrant. If the task that was interrupted was in the middle of an int 21h and then the TSR took over and did int 21h you are sure to lock it up. I suggest your friend do a little more homework about TSRs before he just goes out and writes one. As Andrew says TSRs are a world without rules. And as I say, where there is a rule it will quickly change. I further suggest your friend run out and buy a copy of:

1. The MS-DOS Papers by the Waite Group
2. Turbo C Memory Resident Utilities & Screen I/O by Al Stevens.

These books can clear up a lot of TSR mysteries.

From: Stan Milam Sent on: 09/02/88 7:57 pm  
Subject: Reply: INT 21 CALLS FROM TSR's

Would you guy (or girls) want to see a series of article on the mysteries of TSRs. I have tons of info and I have seen so many questions & conjectures. I do not recommend writing TSRs for commercial applications but they can be fun to write (as well as frustrating) and they are definately a challenge. Your comments please.

--(stan)--

From: Dan Marmion Sent on: 09/03/88 2:56 pm  
Subject: Reply: INT 21 CALLS FROM TSR's

Yes, Stan, please. I got a book about Turbo Pascal 4.0 that I thought was going to tell me how to do a TSR that I could pop

up whenever I wanted it, but then it told me that I couldn't put a hot key with it (at least I think that's what it was telling me). So do a series of articles if you can.

From: Andrew Chalk Sent on: 09/05/88 12:33 am  
Subject: Reply: INT 21 CALLS FROM TSR's

I think that this BBS would benefit from a feature something like:  
echo Cobb > NULL

From: Leroy Tennison Sent on: 09/17/88 1:05 am  
Subject: Reply: INT 21 CALLS FROM TSR's

Stan, you bet your bottom dollar I would like to hear more about TSR's, especially why you don't recommend writing commercial applications using them.

Leroy

### From the All and Hardware SIG Conferences

From: Leroy Tennison Sent on: 09/26/88 11:17 pm  
Subject: Macintosh and IBM connections

Our office is considering buying a MAC for desktop publishing and attempting to connect it to an AT using PAGEMAKER so

that information can be shared. Anybody out there actually done this. If so, please post messages. How was your experience? Any recommendations on connecting hardware (or de-recommendations as the case may be)? Any advice, warnings or helpful information would be appreciated. Thanks.

Leroy

From: David McGehee Sent on: 09/27/88 9:12 pm  
Subject: Reply: Macintosh and IBM connections

Do you wish to share the files or just the laser printer?

David...

From: Leroy Tennison Sent on: 09/27/88 11:18 pm  
Subject: Reply: Macintosh and IBM connections

I want to share both the files and the printer. I learned today that Word Perfect can handle that by itself (somehow it detects which format the file is in and compensates, by the way, I am talking about 5.0). However, what we are interested in is Adobe Illustrator and Page Maker.

Leroy

P.S. I am not wanting to try and run IBM programs on the Mac or vice versa. I want to share data files.

From: Jim Holsington Sent on: 09/30/88 8:21 am  
Subject: Reply: Macintosh and IBM connections

I work with two companies that mix PC's and MAC's. There are several solutions to moving information between them.

The best (i.e. the least labor intensive) is to use a Novell network with the version (coming out this October) 2.15. PC subdirectories show up as folders on the MAC. Novell takes care of the data and program fork. I've used this software at Novell and Pagemaker can easily transfer files between them. You can also hang your Apple Laserwriter off the server and use it from either side.

The second best solution is to buy a Mac IIX. It can read DOS files.

A third way is to buy one of the third party drives for the PC or the MAC to read the other fellow's diskettes.

Finally, (and this would probably not be acceptable if you don't have other needs) is to put a PC transporter from Applied Engineering in an Apple IIe or II GS. It can read DOS diskettes and write ProDos diskettes. The Mac can read the ProDos diskettes.

From: David McGehee Sent on: 10/05/88 8:04 pm  
Subject: Reply: Macintosh and IBM connections

In addition to the suggestions left to your MAC problem on other conferences, I would like to add that besides Novell other networks also handle the problem. The most common is TOPS, now a child of SUN.

David...

*(If you like this article, please let us know that you do. We may be able to talk Kent into making this a regular feature. Send me a letter or message on the bulletin board. Ed.)*

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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?**

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

[IB] [ ] Information/Registration [NL] [ ] Newsletter [FB] [ ] Financial/Bookkeeping  
 [NL] [ ] Equipment Setup [DM] [ ] Disk of the month (DOM) [PR] [ ] Publicity/Public Relations

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

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

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

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

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

- [A] Spreadsheet software - Lotus 1-2-3, Supercalc4, etc. (Please specify) \_\_\_\_\_
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- [E] Programming Languages - APL, Assembly, BASIC, "C", Fortran, Forth, Pascal, (other) \_\_\_\_\_

**Newsletter Article Submission**

We would like to get more articles for publication in North Texas PC NEWS. Subject matter is your choice. We've had feedback recently that many members would like to see more articles for new computer users. If you can't write an article for some reason, send in your ideas for subjects you want to read about in the newsletter. We have some excellent writers out there who would write more articles if they only knew the topics you would like covered.

Article submission is preferred via the Club's Bulletin Board (to (M)ail, John Pribyl), or via Starlink (to Mail Code 51563), or on disk (360K or 1.2M, 5 1/4 floppy). Prepare the material in ASCII format, unjustified. If you send a disk, please include a printed copy of the article to assure accuracy. If sending via the User Group Bulletin Board, use (M)ail mode, to John Pribyl. Include special formatting instructions, if any, with the article or in a separate (M)ail transmission.

Please do not indent, right-justify, or otherwise code the copy. If column alignment is critical, send two copies, one formatted, the other unformatted. If sending a disk, send along a hard copy that has been printed in the right format, with written instructions.

Double spaced, typewritten copy is acceptable if you do not own a modem or cannot put the material on a floppy disk. This copy must be received at least two weeks before the deadline to allow time for keying.

Send all material to:

Editor, NTPC Users Group  
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All material submitted will be considered for inclusion in the newsletter. The Editor reserves the right to edit the articles as necessary to maintain NTPCUG standards, including grammar, suitability, and length to fit available space.

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## Selected SIG Happenings

### News and Meeting Notes on Special Interest Groups

(Material for this column should be sent to Zack Porterfield, SIG Coordination, before the 15th of the month.)

#### Personal Users (Beginners) SIG

This SIG (Special Interest Group) is for you...if you consider yourself any of the following:

- ...a personal (versus professional) PC user
- ...a beginner with personal computers
- ...a soon-to-be PC owner
- ...a novice
- ...a new PC owner
- ...a person curious about PCs

We offer 16 individual, standalone classes covering the fundamentals of PCs. Four classes are offered at each monthly meeting of the North Texas PC Users Group. After four monthly meetings (covering four classes each), the entire 16-class curriculum is begun again. The classes are presented in numerical sequence. The classes start each month at 9:00 AM, 10:00 AM, 12:00 noon, and 1:00 PM. Since each class is a "stand-alone" ...i.e. self-contained and not requiring prerequisite other classes...you can begin attending at any time Convenient to your schedule. Each class has a set of handout notes to allow your review later and to allow your undivided attention to the instructor during his or her presentation. There are no homework requirements, no pressures, no tests, and no dumb questions. You don't even have to be a member of NTPCUG before you attend...ALTHOUGH YOU ARE ENCOURAGED TO JOIN NTPCUG AND VOLUNTEER YOUR TALENTS. This 16-class curriculum of PC fundamentals is designed to be the kind of learning experience you always wished

existed...where you would be accepted just as you are, and where you could gain knowledge without hassles...and best of all...the classes are FREE.

Our November classes will complete the third offering of this 16-class curriculum as follows: at 9:00 AM - Class 13.0 - Printer Setup; at 10:00 AM - Class 14.0 - Writing LOTUS Macros; at 12:00 noon - Class 15.0 - Major Categories of Software Available Today; and at 1:00 PM - Class 16.0 - PCs to the End of the 20th and into the 21st Century. December will start our fourth offering of this curriculum with classes 1 thru 4.

Join us and learn and review "THE FUNDAMENTALS."

Bob Presley  
& Richard Terreo

#### Assembler SIG

October's meeting of the Assembler SIG discussed the PC-XT BIOS. The group discussed which video services might be replaced and what new services could be added.

The November's meeting will feature a special presentation by one of our own members. Jamie Dunn will discuss how to compress bitmap graphics images and he will give implementations in C and Assembler.

Andrew Chalk

#### Graphics SIG

The new Graphics SIG will have a presentation at the November meeting on software packages available for the VGA (Video Graphics Array). An overhead projector will be used to show examples.

In the future we will be discussing business graphics software,

CAD software, animation software, color output technology, and graphics programming. If you would like to bring your own color transparency examples to show the group it would be greatly appreciated.

Richard Terreo

#### Cryptanalysis SIG

This is proving to be a popular SIG. Starting from zero, we are now at 15 members in four months, and we show no signs of peaking. There is a lot more interest in learning how to break codes, and how to use PCs for code breaking, than anybody has figured on.

Meetings are well attended, usually about eight to ten strong with different members each time, as personal schedules permit.

Meetings have found their format, at least for now. We read the tutorials beforehand, then in meetings work through the exercises as a group. It's a fact that you can't learn how to break codes except by actually breaking them, and working as a group lets everybody share in the learning.

A couple of more meetings and we should be ready to tackle the programming. Solving a cryptogram, we are discovering, is fun. It's a thrill to see a jumble of letters begin to make sense. Programming the PC to take over the chores of counting letters, looking for reversals, and so on, is also challenging. And when we get there it will be even more fun, since the machine will attend to the chores, leaving us free to concentrate on the part that humans do best -- understanding.

The next meeting will wrap up the simple substitution cipher with proper word divisions, the kind you see in newspapers. If time permits, we will 'prove' that



it is impossible to break a newspaper cryptogram as a good-natured spoof of the most popular fallacy in the history of cryptography — that a huge key-space makes a cipher unbreakable. The size of the key-space may be quite inexhaustible, as it certainly is for newspaper cryptograms. But the ciphers are all too vulnerable anyway, as members of the SIG can now attest. In logic, the fallacy is a non sequitur. It simply does not follow that a crypto-system is secure because of the size of its key-space. Much more is required.

If you want to attend, call me for the tutorials, and we'll see you at the meeting. As soon as we get our SIG on the BBS, I'll place the current tutorials there.

#### CIPHER LORE...

Secret writing is very old. Undoubtedly, secret speech preceded it. What is not generally appreciated because it has always been shrouded in official secrecy, is that code breaking is just as old. In fact, Kahn, the authority on the history of cryptology, claims that secret code breaking is older than secret writing, and that the latter arose in response to it!

Perhaps the earliest of secret writing is concealed writing. A slave's head was shaved, the message was tattooed on his pate, and his hair allowed to regrow. Then the slave was sent on to his destination. Those were leisurely days. History does not reveal the fate of the poor slaves undone by ancient cryptanalysts. The modern descendent of concealed writing is the microdots of spy novels and movies.

One of the earliest of crypto-systems that was a cipher was the ancient Greek skytale. Two rods were prepared of exactly the same diameter. To encode a message, the Greek general carefully lapped a long strip of parchment around his rod, then wrote out his message horizontally along the

wrapped skytale. The strip was then unwound and sent to his confederate, who read the message by lapping the strip around his matching rod. Did the Spartans and Athenians break each other's codes? We may be sure of it, though history is utterly silent on the point.

The skytale is probably the first recorded instance of a transposition cipher, quite sophisticated for its time, and the first 'machine' cipher. The ancient Greeks were an amazing people. Today, it is the emblem of the American Cryptogram Association, a remarkable organization of amateurs with nothing else quite like it in the world, devoted to the art and science of breaking codes.

John K. Taber  
Metro 430-8173

#### Lotus SIG

The subject for the October meeting was interactive macros. This meeting was an extension of keyboard macros which were presented in September. Interactive macro command extend the use of the keyboard by allowing user input while the macro is running. Many users also had some helpful tips with regard to the macros.

The subject of the November meeting will be string functions and how these functions can dress up a spreadsheet. String manipulation is a very powerful technique that is used to manipulate imported files, combine numbers and strings, and a host of other uses.

The Lotus SIG always takes time to answer questions that users have concerning 1-2-3 and Symphony. If you have any questions or want to learn more about string functions, come by and see us in November.

Mark Gruner  
& Pat Henley

#### R:Base SIG

The new R:Base SIG met for the first time at the October NTPCUG meeting. The turnout was very good with almost 40 in attendance witnessing an excellent presentation by Microrim representative Russ Levinton.

This first meeting, Russ gave an in depth demonstration of the many features of R:Base for DOS ver 2.1 and R:Base for OS/2. Also of interest at the meeting, was an announcement that the North Central Texas R:Base Users Group and Microrim will be having a joint meeting/presentation at the LBJ Hilton on Nov. 3rd at 6:30. Microrim is presenting the new R:BASE COMPILER. The new compiler has a 'Codeview' type debugger and will generate native "EXE" stand alone executable files from your R:Base applications.

The next meeting of the R:Base SIG we will focus on applications. Specifically, applications created by the R:Base application generator, Application Express. We will explore ways to streamline and speed up these and other database handling procedures. We will also have an open forum to field and answer questions from the floor. See at our 12:00 noon meeting, check the main board in the lobby for the room location.

Alan Alberts

#### DAC Software SIG

During the October meeting we saw a presentation on the Release 3 of DAC Easy Accounting along with the new Graph+Mate program. The presentation was "live" with the monitor output being projected onto a screen. We experimented with capturing reports with Graph+Mate and saving them to disk as well as using the graphics feature to create and display a graph.

We will continue next month with similar live demonstrations and experiment with other features of the Graph+Mate package. There

will also be the opportunity to answer questions on DAC Easy by watching what happens on the screen.

Mike Macaulay

**DOS SIG**

How many versions of DOS are there? More than most participants at the October DOS SIG Meeting were expecting to hear about.

President-Elect Jim Hoisington and President Reagan Andrews discussed this issue as a major source of problems facing users who planned to update their DOS

versions. Differences in PC-DOS and MS-DOS are often glossed-over by the popular press, Hoisington emphasized, but are critical when updating across DOS versions and manufacturers.

Going between MS-DOS and PC-DOS when updating currently demands either a complete (new) DOS reformat, or use of an external utility such as Norton or Mace to change the attributes of the hidden system files so they can be erased prior to use of the SYS command to install the new DOS.

Questions from the floor focused on the CONFIG.SYS file syntax and order, need for periodic refor-

matting as a form of media "refreshment" and need for similar treatment of floppy disks as well as hard disks.

November Meeting Plans: Continuation of this topic, and how to deal with version-specific problems in DOS, will occupy members at the November DOS SIG Meeting. Expanding DOS's "environment space" to accommodate longer PATH= statements will also be discussed in some detail at the November Meeting.

Reagan Andrews



*Inside the North Texas PC Users Group Community*

Connie Andrews, Volunteer Coordinator  
John Mackoy, Assistant Volunteer Coordinator

Volunteers are the lifeblood of the Club. This is another in a regular series recognizing those Club members who have contributed their time and efforts as volunteers to assist in presenting the monthly meetings.

NTPCUG Volunteers are listed by area(s) served at the October 15, 1988 Club meeting. Some volunteers worked in more than one role, hence some names appear more than once.

SIG Leaders, Officers and Directors of NT PC Users Group, the newsletter editor, staff and writers are all volunteers, and are listed separately in other sections.

**INFOMART Liaison:**

Stuart Yarus  
Robert Hilliard

Jim Laughter  
John Mackoy  
John Meyers  
Tony Noguera  
Andy Oliver  
Archie Pinkney  
Botter Reeves  
Raymond Reyes  
Douglas Scott  
Jay Shilstone  
Connie Testa  
Eric Thomason  
John Trotter  
Larry Tucker  
Ivy Urquhart  
Raul Vela  
Julian Weiss

Terry Gearhart  
Barry Halgh  
Glyn Holland  
Hal Horton  
Maurice Kelley  
Ron Kerr  
Dan Marmion  
Don Mayfield  
Nancy Ogden  
Tom Scurlock  
John Sheppard  
Jerry Stone

Mark Gruner  
Harold Horton  
Peh L. Lee  
Don Mayfield  
Zack Porterfield

**Presentation/Equipment Setup:**

Timothy Carmichael  
John Ogle  
Tom Fowlston  
James Rupert

**Bulletin Board System (BBS) Volunteers:**

**BBS Sysops**  
Tom Prickett  
Maggie Mooney

**Vendor Assistance/Setup:**

Bob Russell  
Terry Gearhart  
Claude McClure

**DOM Central Committee**

Preston Brashear  
Charles Carter  
Kathryn Crawford  
Mark Grunner  
Howard Hamilton  
Hal Horton  
Kenneth Loafin  
Pete Testa, BBS Liaison

**BBS Steering Committee**

Andrew Chalk  
Kent Cobb  
David McGehee  
Pete Testa  
Fred Williams

**Information/Registration Booth**

Connie Andrews  
Mike Ashley  
Dean Duncan  
Rick Griffith  
Allan Harbaugh  
John Hardman  
Delbra Henderson  
Grover Jones

**Disk of the Month (DOM) volunteers:**

DOM table

Roy Bales  
Charles Carter  
Jay Chambliss  
Dawn Cupit  
Bill Drissel  
Patrick Flautt

**BBS Champions**

Dwight Neal  
Dan Marmion

**DOM Review/Presentation**

Bill Bauman  
Richard Bauman

Club policy is that volunteers registered on duty at the time of a drawing on meeting day are eligible to win even though not in the Auditorium.

We have need for volunteers in all areas of the Club for various activities throughout the month as well as on meeting day. If you are interested in participating, please drop by the Information/Registration Booth or the DOM Booth at the next meeting

and sign up. Or contact Connie Andrews on the Bulletin Board or at 828-0699. You can volunteer for as little as an hour, or more if you can spare the time. Our members have discovered that it can be quite rewarding in terms of getting to know our Club and its people. Let us hear from you!

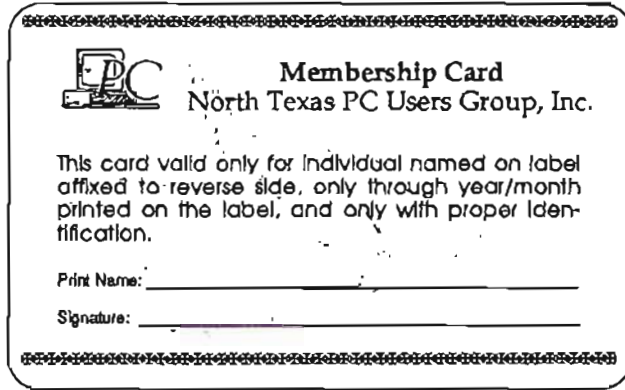


# MEMBERSHIP CARD

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

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

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



Trim card to wallet size.

## Meetings & Times



9:00 AM - 9:50 AM

Auditorium

\* Dr. James A. Brown \*

" APL-II Language For The PC "

10:00 AM to 10:55 AM

Auditorium

\* Microsoft Corporation \*

" Announcing An Exciting Software Revision "

11:00 AM to 11:30 AM

Auditorium

NTPCUG Business Meeting

Don't miss the latest! Attend the business meeting.

## Special Interest Group Meetings...

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

9:00 - 9:55

Assembler  
DOS  
CAD/CAM  
Hardware Solutions  
Personal Users

11:30 - 11:55

Orientation  
12:00 - 12:55  
C Language  
Communications  
Personal Users  
Stock Mkt Investing

1:00 - 1:55

Business Applications  
LOTUS  
Personal Users  
Turbo Pascal

2:00 - 2:55

Advanced Programmers  
Cryptanalysis  
DAC Easy Accounting  
dBase Programmers

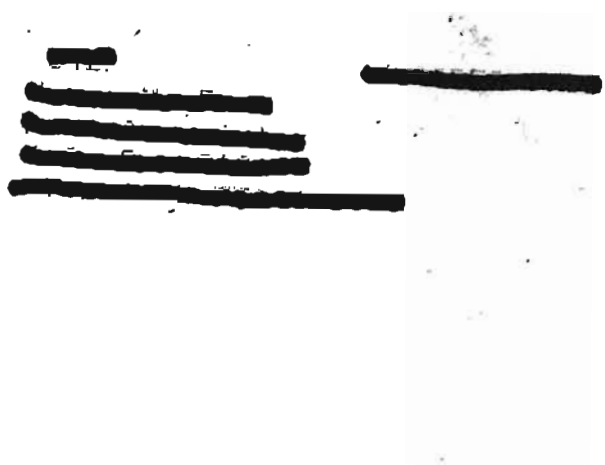
10:00 - 10:55

Astrometry  
Personal Users

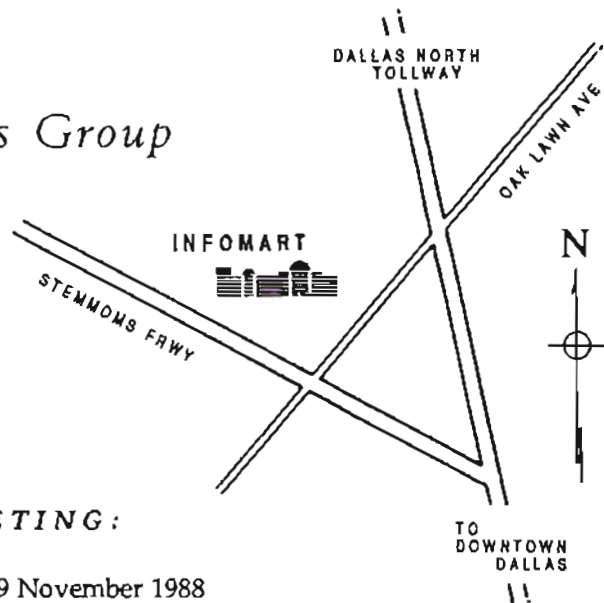
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# North Texas PC Users Group



**NEXT MEETING:**

19 November 1988