

JANUARY 1987 ISSUE NO.1

FOR THE RECORD

by Ed Bittner  
Recording Secretary

DON'T MISS THE JANUARY MEETING as I did the December meeting of the West Penn Ninety Niners (99'ers for short). We should have the GENEVE for display and demo and discussion ! Be there.

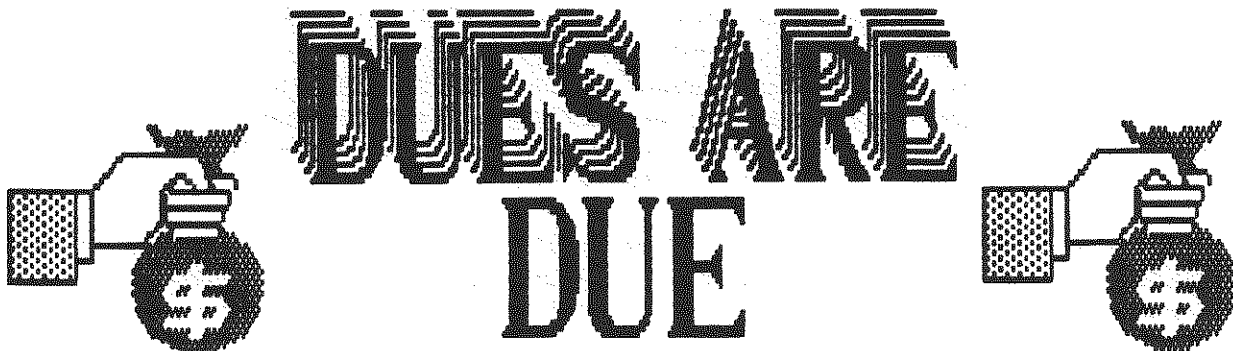
Regarding the December meeting, I once cried about listening to a cassette (that sounded like OLD CSI) to write this report, never again.! This time, instead, I got a set of notes which makes hieroglifics a thing of the past. Anyway ,here goes.

Scott Coleman reminded everybody that DUES ARE DUE (see note below). Less essential, but equally important were the following items: Data cases, diskettes, and micropendiums will be on sale. We need 7 more orders for Toshiba DSDD drives to get the \$69.00 price. See the grand poo-ba. We must limit the time for demonstrations to 10 min. unless special dispensation has been given.( see poo-ba again.)

Several demos including a recently released by TI for public domain diagnostic disk for speech, computer and peripherals as well as rapid copy, a 30 second (SSSD) format and copy disk reproducer.(75 sec.DSDD) were shown.

Clyde announced that 4 more FLORIDA disks are now available in tht library. Note: I will continue to bring old newsletters to the meeting for the borrow program.

Freshly submitted,  
Scoops Bittner



TREASURERS' REPORT

CASH BALANCE		BANK BALANCE	
12/1/86	50.00		
			344.28
12/16	DUES 75.00		
	DISK SALES 20.00		
	LIB. SALES 24.00		
	MICROPEND. 14.00	12/26	DISK PAYMENT -268.00
			BALANCE 76.28
12/30			
	50 DISKS 20.00		
	DUES 30.00		
	BALANCE 233.00		
-----			
1/1/87	BAL. \$233.00	1/1/87	BALANCE \$ 76.28
		1/3/87	POSTAGE -44.00
			32.28
1/5/87	DEPOSIT -175.00	1/5/87	DEPOSIT +175.00
	CASH BAL. \$ 58.00		BANK BALANCE \$207.28

TOTAL ASSETS AS OF JANUARY 5, 1987:

\$265.28

NEXT MEETING.....

The next meeting of the West Penn 99`ERS, will be held on January 20,1987. The time that the main meeting starts will be 7:00 PM. Library functions will start at 6:45. The location of the meeting :

FIRST PRESBYTERIAN CHURCH OF THE COVENANT  
4th and OAK sts.  
IRWIN, PA

This months meeting should be particularly interesting if the new MYARC computer, the GENEVE arrives. I talked to LOU PHILLIPS about the machine, and received more information about the new HARD DISK controller. Mr. Phillips tells me that instead of the 60 MB. of hard disk originally reported, the new unit will support (3) 240 MB. hard drives, for a total of 720 MB. of on-line diskstorage, and will at a later date, support up to 4 floppy drives.

Mr. Phillips indicated that we should have the GENEVE, the NEW DISK CONTROLLER, and the MANUAL, along with some operating software to demonstrate. I would HIGHLY recommend that if you can make it to this meeting, to do so.

I'm particularly excited about what our club has done this, our first, year of it's existence. We have grown from about 23 members at our first official meeting, to over 62 members at this writing. We are growing not only in numbers, but in skill, enthusiasm, and fellowship.

I must remind you that dues are due, just in case you missed it on the front page. The family membership is still \$15. for a year starting January 1, and \$10. for an associate membership for the same period.

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We will be offering TWO one year subscriptions to RYTE DATA newsletter. These will be only two of the many prizes to be RAFFLED off at the meeting, and there will also be some FREE door-prizes.(the church is replacing some of their old doors with new ones) Don't miss out, be there early!

Copies of the BY-LAWS will be available at the meeting, and for those who did not receive a copy when you joined, just call or write, and I will send you one. My address is on the bottom of the article on "Fractured Files".

The GREAT POO-BA later in this newsletter talks about some of the earlier times in the computer world. Well I came across a great deal for you on a computer of a earlier time when computers had lights and toggle switches.

A gentleman named BOB BERKEY, has a SWTP COMPUTER w/terminal, 2-serial and one parallel port, 2-dsdd disk drives, BASIC,PASCAL, and ASSEMBLY, with manuals, for a paultry \$300.

He has an EPSON MX80 w/GRAFAX upgrade,(effectively an FX80)-\$200.

Phone (412) 793-6558 evenings.

Another good buy, HEATHKIT H-89A complete, DISK, PRINTER.....\$250. Call Al Kolbe...(412) 898-1432

## "TIPS FOR BEGINNERS"

I STARTED TRYING TO PUT IT ALL TOGETHER A LITTLE OVER A YEAR AGO. A LOT OF UNEASINESS AND TRIAL AND ERROR FOLLOWED. SOME OF THE THINGS I LEARNED MIGHT HELP YOU. SO HERE WE GO TOGETHER. THE FOLLOWING TIPS ARE JUST RANDOM BUT ANY ONE OF THEM MIGHT HELP YOU GET THROUGH JUST A LITTLE EASIER AND LET YOU KNOW OTHERS HAVE KEYED YOUR SAME PATH AND ARE INTERESTED IN YOUR PROGRESS.

(1) JOIN A COMPUTER CLUB FOR YOUR BRAND OF COMPUTER. SINCE YOU ARE READING THIS ARTICLE YOU CAN EASILY FIND THE INFORMATION LISTED AS TO WHERE AND WHEN ONE "GOOD" CLUB MEETS FOR THE TI-99/4. IT WOULD BE WISE TO GIVE ONE OF THE CLUB OFFICERS A CALL TO FIND OUT FIRST HAND WHAT YOU CAN LOOK FORWARD TO AS A MEMBER. BENEFITS INCLUDE: FELLOWSHIP WITH OTHERS INTERESTED IN YOUR TYPE OF COMPUTER; SOURCE FOR CLASSES AND SOFTWARE DEMONSTRATIONS; CURRENT INFORMATION FROM OTHER CLUBS; RECEIVING COPIES OF A GOOD NEWSLETTER IS OFTEN REWARDING; PRICE BREAKS ON CERTAIN CLUB SPECIALS; SOMEONE WITH WHOM YOU CAN EXCHANGE IDEAS AND DISKS; PERHAPS USE A BULLETIN BOARD AND FIND REFERENCES TO BUYING AND SELLING EQUIPMENT, ETC.

(2) SHOULD YOU NOT YET BE FAMILIAR WITH THE TECHNIQUE OF MAKING BOTH SIDES OF YOUR DISKS AVAILABLE FOR PROGRAMING. SEE ONE OF YOUR FELLOW CLUB MEMBERS AND ASK FOR A COPY OF THEIR PUNCHING TEMPLATE AND SOME BRIEF INSTRUCTIONS ON HOW TO MAKE THE THREE(3) PUNCHES REQUIRED. THEN ALL YOU WILL NEED IS A LARGE ROUND CIRCULAR HAND PUNCH. THE PUNCHES ARE AVAILABLE AT K-MART OR MURPHY'S FOR ABOUT A \$1.50. I PREFER THE TYPE THAT HAS A LOWER JAW COVER THAT CATCHES ALL THE PUNCHOUTS. THERE IS ANOTHER METHOD SOMETIMES USED AND THAT IS TO INITIALIZE OR FORMAT THE "A" SIDE OF THE DISK, THEN CAREFULLY OPEN THE SEAM AROUND THE THREE (3) SIDE FLAPS ON THE BACK ("B" SIDE). CAREFULLY REMOVE THE DISK ITSELF FROM IT'S PROTECTIVE POUCH, FLIP IT OVER THEN REPLACE IT IN THE POUCH. REPLACE THE SIDE FLAPS AND TAPE OR GLUE CLOSED. INITIALIZE AGAIN AND THE JOB IS DONE. THIS METHOD SEEMS TO TAKE LONGER AND COULD POTENTIALLY CAUSE HARM TO THE DELICATE DISK FINISH. WHAT WITH ALL THE HANDLING. REMEMBER JUST A FINGER PRINT ON THE DISK SURFACE CAN CAUSE IT TO MISCOPY A PROGRAM. THIS NEAT LITTLE TRICK WILL ALLOW YOU TO HAVE DOUBLE STORAGE CAPACITY OR IN EFFECT CUT YOUR DISK COSTS IN HALF WITH JUST A LITTLE WORK. LATER AS YOU ADVANCE IN YOUR EQUIPMENT YOU MAY GO TO A DOUBLE SIDED DISK DRIVE AND AVOID THIS PUNCHING PROCEDURE ALTOGETHER. ANOTHER ADVANTAGE OF THE DOUBLE SIDED DRIVE IS THE CONVENIENCE AND SOMETIMES IT ELIMINATES THE CONFUSION THAT MIGHT COME WHEN HAVING TO REVERSE YOUR DISK WHEN TRYING TO FIND A CERTAIN PROGRAM. IN OTHER WORDS THE PROGRAMS ON BOTH SIDES OF THE DISK ARE MADE AVAILABLE BECAUSE YOUR DOUBLE SIDED DRIVE EMPLOYS TWO(2) CONTROL HEADS SIMULTANEOUSLY. THIS REQUIRES ONLY ONE PLACEMENT OF THE DISK IN THE DRIVE UNIT.

(3) IN ITEM (2) ABOVE WE MENTIONED THE "A" AND "B" SIDES OF THE DISK. PROPER PLACEMENT OF THE DISK IN YOUR VERTICALLY OR HORIZONTALLY MOUNTED DRIVES WILL MAKE IT EASIER TO LOAD THE DESIRED PROGRAM THE FIRST TIME. SO SET A STANDARD EARLY AND STICK WITH IT. GENERALLY THE SQUARE NOTCH ON YOUR DISK IS KEPT UP IN A VERTICAL DRIVE (UNIT MOUNTED LONG WAYS - UP/DOWN) AND THE SQUARE NOTCH IS KEPT ON THE LEFT IN A HORIZONTAL DRIVE (UNIT MOUNTED FLAT-LEFT/RIGHT). IN BOTH CASES WHETHER THE DRIVE IS VERTICAL OR HORIZONTAL THE ELONGATED SLOT ON THE DISK THAT EXPOSES THE DISK MEDIA ITSELF TO THE CONTROL HEADS IS THE END OF THE DISK THAT IS INSERTED INTO THE DRIVE FIRST. I USE A QUICK REFERENCE METHOD TO EASILY FIND THE "A" AND "B" SIDES. THE PROTECT TAB I USE ON THE SQUARE NOTCH ("A" SIDE) IS A COLORED TAPE WHILE THE TAB ON THE ROUND NOTCH ("B" SIDE) IS A BLACK TAPE. NOW TO LOAD THE "A" SIDE WE SIMPLY KEEP THE COLORED TAB UP FOR A VERTICAL DRIVE AND ON THE LEFT FOR A HORIZONTAL DRIVE. IT HELPS TO BE ORGANIZED. I AM STILL SLOWLY LEARNING THIS LESSON FROM MY WIFE WHO ORGANIZES VERY WELL. HOWEVER, IT IS HER CONSTANT REARRANGING THAT KEEPS ME DISORGANIZED. SO DON'T DO THIS DISSERVICE TO YOUR SELF, START ORGANIZED AND STAY WITH IT.

(4) ANOTHER GOOD IDEA THAT IS SOMETIMES OVERLOOKED IS TO NOT USE REGULAR TRANSPARENT SCOTCH TAPE AS A PROTECT TAB. WHILE IT MAY WORK FINE ON YOUR PARTICULAR DISK DRIVE IF IT USES A MECHANICAL NOTCH LOCATER, IT MAY LOOSE ITS EFFECTIVENESS IF YOU LOAN YOUR DISK TO A FRIEND AND THEIR DRIVE HAS A PHOTOELECTRIC BEAM TO IDENTIFY THE NOTCH AREA. THE BEAM WILL READ RIGHT THROUGH THE CLEAR TAPE AND YOUR DISK MAY BE WRITTEN OVER WHEN ALL THEY WANTED TO DO WAS TO ADD SOME NEW PROGRAMS FOR YOU. UNTIL NEXT MONTH GOOD 4'S.

-BY FRANK N. ZIC

A LOOK AT FRACTURED FILES.....  
( or what's been running through my head ? )

By John F. Willforth

Some of you may doubt that I really don't like to waste space in this newsletter, rambling on and on about highly technical hardware and software issues, but I really would like to discuss it in person, and if you can afford the money, feel free to call and I'll share the little that I know, and the many things that others have shared with me. I do, by the way, like to put a few thoughts onto paper. It's the only time I can say anything, and not get interrupted.

- \* I've heard that there is some talk, even at this stage, of speeding up the TI-99/4A by changing the clock crystal, from about 12 Mhz, to 14.318 Mhz. Well about 4 years ago, I broke the very same crystal, and replaced it with the same frequency that was recommended in the article, or the BBS. The results were very dissappointing if you do not have the 32K memory expansion, because the 9900 chip, which is the "CPU", can only access the 16K of available memory, through the VDP chip, and it is running at a rate set by it's own clock (10 Mhz.) crystal. The unit would certainly operate faster if you would speed up the VDP clock but, if you do, things like your cassette, would only be useable "only" by you because the VDP crystal affects the CRU chip. I have tried this. Memory manipulations should be faster with just the CPU crystal changed. You could have fun TRYING anyway!
- \* I've come across a perhaps not novel, but a very easy way to trouble-shoot and repair the video processor's 16K of memory! The symptoms vary, but usually fall into these general categories:
  - BITS DROPPING ON THE SCREEN (CHARACTERS INCORRECT).
  - PROGRAMS DOING STRANGE THINGS (SYNTAX ERRORS, ETC.)
  - COLORS WRONG
  - SCREEN APPEARS "VERY DARK", AND SHIFTED.
  - COMBINATIONS OF ABOVE.

Well if you are what you might consider of medium hardware technical ability, I've got an "almost sure fire fix".

The TI uses 4116 dynamic RAM chips, and are arranged so that each bit of a byte, are located in a different ram chip. ie: a byte with "FF", would have a "1" on in the same address in each chip. This makes it very hard to trouble-shoot to the chip, because all chips are involved in any one byte of information.

The first attempt to fix a "MEMORY PROBLEM", was to remove one chip at a time, install a chip socket, and put in a new RAM chip, and test the computer. I did this, wouldn't you know it "eight" times. It was the last chip in the console. There had to be a better way.

I beleive that I found it. The answer was very obvious, why not piggy-back the chips with a good one, trying one at a time, until the defective chip was found. The second console proved this theory correct. I put a 4116 chip directly over the first chip, and turned on the console. I repeated this until either (A) the symptom changed, or (B) the problem was corrected. The reason I specify a changing of symptoms as an identifier, is because there have been two instances where there were more than one chip at fault, and because the chip may exhibit other symptoms when piggy-backed.

Now, replace the chip with a new one, by either using desoldering tools or cutting the leads to the old chip and installing the new chip in place.

- \* I must tell you of one problem with putting 32K of memory inside your console, and that is that many of the game cartridges that plug into the right side of your console will not work. It seems that this is the only problem that I have heard of, and this is because of the heavy bus loading by the ROMs in the cartridge.
- \* I have recently come across two consoles that have exhibited problems that appear as the wrong key being pressed, and the keyboard and CRU chip are not at fault. Check to see if the JOYSTICK PORT pins are BENT together. This will cause the WRONG character to be displayed with some key depressions.
- \* Finally, I would like to apologize for the delay in getting additional hardware articles written up for you who like to do these things. I've been away most of December, and this has deprived me of the time I would have spent writing for you. I hope that these hints will help make up for it. I would like to suggest that if you are interested in knowing what is new exciting in the world of the TI user, that you subscribe to the MICROPENDIUM and RYTE DATA. These two are VERY GOOD.

1/9/86 JOHN F. WILLFORTH .....R.D. # 1 BOX 73A...JEANNETTE, PA 15644.....  
(412) 527-6656

T. I. Writer (Part 6) Stan Katzman

Well let's do some more things that by this time you probably already know about. Using some "special" keys.

Let's start with Fctn 1 (Delete Character). This key allows us to remove the letter that the cursor is sitting over. We have already discussed Fctn 2 (Insert Character). Fctn 3 (Delete Line), pressing this key will remove the entire line that the cursor is on. Fctn 4 (Roll Down) will show the next 24 lines of text. (Eg. if lines 1-24 are showing and pressing Fctn 4 will now show lines 25-49.) Fctn 5 (Next Window) will "wrap" twenty columns at a time across the screen. Fctn 6 (Roll Up) will move the display up the screen. (Eg. if lines 25-49 are showing Fctn 6 will now show 1-24.) Fctn 7 (Tab) will now "tab" the cursor across the screen that has been preset in the "Tab" function of the Command Mode. Fctn 8 (Insert Line) will insert a blank line above the line where the cursor is setting. Fctn 9 (Command/Escape) has been discussed many times before. Fctn 0 (Line numbers) toggles between showing and not showing the line numbers on the left side of the screen.

Now let's discuss the Ctrl keys. Ctrl 1 (OOPS!), if you make a removal change like Delete Line and you want the line back, press Ctrl 1 and you get the line back. There is a catch, you cannot have pressed any other key before you pressed Ctrl 1. Ctrl 2 (Reformat) we have discussed this one previously. Ctrl 3 (Screen Color) this "toggles" you through a series of screen colors and character colors. (I personally just use the starting colors.) Ctrl 4 (Next Paragraph) moves the cursor ahead to the next paragraph with each press. Ctrl 5 (Duplicate Line) will duplicate the previous line. (I have yet to find a use for this one!) Ctrl 6 (Last Paragraph) moves the cursor back through the text one paragraph at a time. Ctrl 7 (Word Tab) moves the cursor across the line one word at a time. Ctrl 8 (New Paragraph) places a paragraph symbol and starts a new paragraph. This is useful in the middle of a document. Ctrl 9 (New Page) places a new page symbol on the screen at the place the cursor is setting. This symbol will cause the printer to advance to a new page. Ctrl 0 (Word Wrap) we have discussed this one (it toggles between word wrap and fixed mode.)

These special keys also have a duplicate set by using the Ctrl plus letters. There is only one key that is not duplicated with the Fctn and Ctrl plus a number the is Ctrl Y. When you press Ctrl Y this allows one to go past the left margin (a left margin release.)

More next time.

## COMPUTING CALORIES

```
100 ! *****
110 ! * WAVE POWER *
120 ! * by *
130 ! * JOHN WILLFORTH *
140 ! * WEST FENN 99'ers *
150 ! * 12-29-86 *
160 ! * WRITTEN TO SOOTHE *
170 ! * THOSE WITH AFTER *
180 ! * CHRISTMAS BLUES ! *
190 CALL CLEAR :: CALL SCREEN(1):: S=1
200 A$="0000000000000000" :: B$="0000000000000000" :: C$="0000000000000000" :: D$="000
0000000" :: E$="00000000" :: F$="000000" :: G$="FFFF"
210 ! LINE 200 DEFINES A-G STRINGS TO CREATE WAVE SEGMENT CHARACTERS.
220 H$="30303EFF7F3E1E04" :: CALL CHAR(103,H$):: CALL SPRITE(#5,103,2,180,180,-3
0,0):: CALL SPRITE(#6,103,2,80,100,-30,0):: CALL MAGNIFY(2)
230 ! LINE 220 DEFINES THE H STRING FOR USE BY THE SPRITES #5 AND #6.L
INES 220 AND 230 MAY BE LEFT OUT TO OMIT SPRITES.
240 CALL CHAR(96,A$):: CALL CHAR(97,B$):: CALL CHAR(98,C$):: CALL CHAR(99,D$)::
CALL CHAR(100,E$):: CALL CHAR(101,F$):: CALL CHAR(102,G$)
250 ! LINE 240 ASSIGNS THE REDEFINED STRINGS TO THE ASCII CODES.
260 AA$=CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(1
01)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)
270 BB$=CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(
100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)
280 CC$=CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$
(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)
290 DD$=CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$
(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)
300 EE$=CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$
(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)
310 FF$=CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(
96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)
320 GG$=CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(9
7)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)
330 HH$=CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98
)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)
340 II$=CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)
&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)
350 JJ$=CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)
&CHR$(101)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)
360 KK$=CHR$(98)&CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101
)&CHR$(102)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)
370 LL$=CHR$(97)&CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(10
2)&CHR$(101)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)
380 MM$=CHR$(96)&CHR$(97)&CHR$(98)&CHR$(99)&CHR$(100)&CHR$(101)&CHR$(102)&CHR$(1
01)&CHR$(100)&CHR$(99)&CHR$(98)&CHR$(97)&CHR$(96)
390 ! LINES 260-390 CREATE THE WAVE SEGMENTS.
400 FOR X=1 TO 1000 :: CALL SCREEN(S)
410 PRINT AA$&BB$ :: PRINT BB$&CC$ :: PRINT CC$&DD$ :: PRINT DD$&EE$ :: PRINT EE
$&FF$ :: PRINT FF$&GG$ :: PRINT GG$&HH$ :: PRINT HH$&II$
420 PRINT II$&JJ$ :: PRINT JJ$&KK$ :: PRINT KK$&LL$ :: PRINT LL$&MM$
430 ! LINES 410,420 NOW DO THEIR THING BY PRINTING THE WAVES TO THE SC
REEN
440 IF X>1 THEN S=6
450 NEXT X
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THE PROGRAM LISTING ABOVE, IS ONLY "ONE WAY" TO CREATE THE PLEASANT WAVE PATTERN THAT IT YIELDS. THE REASON THAT I WROTE IT IS NOT TO SHOW MY FEEBLE ABILITY IN PROGRAMMING, BUT BECAUSE OF SOMETHING THAT I SAW AT A LOCAL STORE THIS CHRISTMAS SHOPPING SEASON.

I WAS IN THE COMPUTER SECTION (SUCH AS THEY ARE THESE DAYS), WHEN I SAW A COMADORE 128 RUNNING A PROGRAM THAT CREATED THIS EFFECT.. WELL THE DISPLAY WAS SO SOOTHING AND APPEARED SO SMOOTH THAT I THOUGHT THIS MUST BE AN ASSEMBLY DEMO PROGRAM. I DON'T KNOW IF IT WAS OR NOT, BUT I THOUGHT THAT USING PRINT STATEMENTS, AND WITH AN APPROPRIATE PATTERN, AND WITH THE MULTI-STATEMENT, AND SPEED ADVANTAGES OF EXTENDED BASIC, THE SAME COULD BE DUPLICATED.

MY FIRST EFFORTS, ALTHOUGH MUCH SHORTER, ALL HAD UNACCEPTABLE PAUSES AT EVERY 6 LINES OR SO. THIS TOOK ALL THE SMOOTHNESS AWAY OF COURSE. AGAIN I AM NOT A PROGRAMMER, SO THE PROGRAM SHOWN HERE, IS THE CULMINATION OF ABOUT 3 HOURS WORK, AND SOME ADDITIONS SUCH AS SPRITES, AND THE BLANK SCREEN UNTIL THE WAVES ARE COVERING THE ENTIRE SCREEN. IF YOU CAN "DUPLICATE" THE EFFECT, AND NOT CREATE PAUSES, I WOULD LIKE TO SEE YOUR VERSION. PLEASE SEND ME A PRINTOUT OF YOUR PROGRAM.

MY ADDRESS IS:

(412) 527-6656

JOHN F. WILLFORTH

R.D. #1 BOX 73A

JEANNETTE, PA

15644

## TWENTY-FIVE YEARS AGO IN COMPUTING

Excerpts from the January 1962 issue of "Communications of the ACM" magazine. Researched (and commented) by Scott Coleman.

At the Dec. 1961 Eastern Joint Computer Conference in Washington, the developers of the first electronic computer (J. Presper Eckert and John W. Mauchly) were awarded the John Scott medal for their contribution to the welfare of mankind. They built the first electronic computer, ENIAC, 15 years earlier. Also at that conference, the president of Remington Rand, in the keynote address, said "One top U.S. physicist with an advanced American computer can out-produce 1000 Russian engineers." (Remember those good old cold-war days?)

The next day, same hotel, saw the Computer Conference for Federal Executives. (You could fit most of the world's computer experts into one hotel back then.) "The conference was sponsored by the Bureau of the Budget to familiarize Government executives with the capabilities and limitations of EDP equipment in anticipation of the day when all repetitive operations in Government will be handled by such equipment." "...government use of data processing equipment has grown from only three installations in FY1951 to over 750 today, with the possibility of that figure being doubled within 5 years."

In other news:

Digital Equipment Corp presented a Programmed Data Processor (PDP-1) to MIT. (Not a PDP-11, mind you, a PDP-1.)

"Yale University's newly-constructed Computer Center houses a complex of four "electronic brains." Heading the list is the IBM 709. This, together with a 1401, 1620 and 610, provides Yale with an extremely versatile computing center." (Not a single joystick, I'll bet.)

"A Store of Human Knowledge Distilled from Writings as Ancient as the Acropolis and as modern as psychoanalysis will be available for retrieval via EDP techniques by visitors at the forthcoming Seattle World's Fair through the use of a UNIVAC Solid-State computer. This 'instant wisdom', stored in the memory of the UNIVAC, will consist of passages from the major works of the world's greatest minds from Euripides to Freud. The purpose of the 'Syntopicon'-an 'index of ideas'-is to demonstrate the potentialities of the computer-based library of the future." "The memory of the computer will be loaded with material taken from 'Great Books of the Western World' under the direction of Mortimer Adler, one of the foremost scholars and philosophers of the present day." (If they liked this guy, imagine how much they would have liked a Donkey Kong machine.)

"A Bendix G-20 Computing System will be installed early next year at the University of Naples...The university, founded in 1200, has an enrollment of 20,000 students and operates the only computing center in southern Italy."

"Computer Forecast: A year-end forecast, just released by 'Business Automation' magazine, projects that over 12,000 computers, estimated to value more than three billion dollars, will be processing business data in the United States by this time next year. Two years from now the total is expected to increase almost 38 percent to approximately 16,500 computers. By comparison, three years ago there were fewer than 2,000 in operation.

A total of 8,813 digital computers have been sold or leased to American business and government since the first system was delivered over 11 years ago. Of the 8,813 total, 933 are in the large-scale class ranging in price from \$750,000 to \$6,000,000; 4,761 medium-scale computers are in use, and the balance of 3,119 consist of small-scale systems costing under \$75,000.

The leading manufacturer from the standpoint of total computers delivered to US users is IBM, with 6,426 in operation. Remington Rand is

next with 514. Other leading firms are Royal McBee with 493 and Bendix with 375.

Most popular large-scale computer is the IBM 705 with 175 installations. IBM also leads in the medium-scale class with 1,250 of its Model 650 now in use, a figure which is being challenged by its increasingly popular 1401 Series with 975 sold or leased through 1961. The same firm also holds first place in the small-scale computer field with 2,300 Model 632 installations. Increased plant capacity and more intense competition have reduced delivery time to 6-24 months for the large-scale computers, 2-18 months for the medium size systems and 1-6 months for the small scale computers." (I think I'm going to start referring to my TI99 as Royal McBee.)

"The Internal Revenue Service's National Computer Center, whose magnetic tapes will eventually store the entire record and audit the returns of every taxpayer in the United States, was dedicated on November 6th at Martinsburg, West Virginia. According to Treasury Secretary Douglas Dillon, 'the adoption of automatic data processing equipment will increase our total revenues by helping to ensure that all of our citizens are bearing their full and fair share of the national tax burden.'"

"IBM engineer William C. Dersch recently demonstrated 'SHOEBOX', an experimental machine that does arithmetic on voice command. He told the machine: 'Seven plus three plus six plus nine plus five, subtotal,' and the correct subtotal of 30 was printed out...IBM has no plans to manufacture SHOEBOX but the experimental machine could be the forerunner of future voice recognition machines." (Now if only it could play Championship Baseball!)

HOW LOW CAN YOU GO?

BY JOHN F. WILLFORTH

REVIEWING A SOUND TUTORIAL, I FOUND AN EXAMPLE OF A METHOD OF CREATING SOUNDS AT LOWER FREQUENCIES THAN THOSE PUBLISHED BY T.I. IN THE BASIC MANUALS. THE LOWEST FREQUENCY, IS AT "110", AND IF YOU BELIEVE THIS, YOU WILL NEVER BE ACCESSING THE REALLY LOW NOTES THAT THE MACHINE CAN CREATE. THE LOWER NOTES, ARE CREATED USING "NOISE #4 "-4" IN COMBINATION WITH CERTAIN FREQUENCIES. THE TUTORIAL LISTS THIS PROGRAM TO EXHIBIT THE LOW FREQUENCIES:

```
100 DATA 1475,1293,1227,1105,990,957,840,735
110 FOR I=1 TO 8
120 READ T
130 CALL SOUND(1000,T,30,T,30,T,30,-4,1)
140 NEXT I
150 RUN
```

NOW RUN THIS PROGRAM, AND SEE HOW LOW THE T.I. CAN GO!

THIS IS AND MUCH MORE, IS DESCRIBED IN A PROGRAM CALLED "CALL SOUND EFFECTS" BY TOM MORAN. THE PROGRAM IS CALLED A UTILITY PROGRAM FOR THE T.I. 99/4A.

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FOR YOU "PLOTTING" PEOPLE.

I often return to yester-year, and review articles from the "99'er MAGAZINE". While parusing one day, I came across an article on PLOTTING WITH THE HOME COMPUTER. I know that there are people out there who would like to hook there machine up to a plotter, but do not know where to get information. While this article is not the answer to all your concerns, I believe that it will give you a very good start. The article includes ASSEMBLY routines to draw axes, plot curves, and even draw objects in perspective. The package consists of plotting routines for the MINI-MEMORY, and the EDITO/ASSEMBLER cartridges, and accesses the powerful graphic capabilities thru TI BASIC.

The article was in the DECEMBER, 1982 ISSUE, page 19, written by Joseph G. DeVincentis Jr.



## NEW FROM MONTY SCHMIDT: **GPL LINKER V1.1 RunTime Version**

GPL Linker is an ingenious program that places the power of Graphics Language Programming (GPL) at your command. No extra hardware is required beyond standard 32k and disk system. In short, Linker creates runnable program files from compressed (or uncompressed) GPL Assembler object files. You can then run these programs with "Option 5 Run Program Files" of the Editor Assembler Module.

Up to 24k GPL programs can be developed and run on standard 32k systems. Included in the run time version are two demonstration programs and "CONVERT," a public domain conversion program that converts MS BASIC statements to TI BASIC statements. Price: \$21.00 CDN funds \$15.00 US funds.

now \$49.95  
w/Linker \$59.95  
plus Intern \$69.95  
add \$3 shipping

## **ENHANCED** **GPL Assembler v2.1**

**NOW with high memory loader package**

**UNLOCK ALL THE SECRETS!** New GPL Assembler Version 2.1 available exclusively through Ryte Data.

This program provides the power to write, edit and assemble true GPL programs for the TI 99/4A. Create code that accesses console operating system routines directly. Develop programs that use the GPL Interpreter and all the features of the TI 99/4A.

This package includes the GPL Assembler disk, printed documentation, GPL tips and hints, update support service and commented GROM/ROM listings (with the book "INTERN"). An example for a command module type GPL program is included with source, object and list files on disk.

Requires: 32k memory, disk drive(s), TI Editor Assembler package. Printer/RS-232 recommended.

# GPL price Reduction

## **MegaRam<sup>tm</sup>** from **ATRONIC**

The only full megabyte (1024k) RAM memory expansion for the 99/4A has now been introduced in North America. This new stand-alone unit attaches to the I/O connector to add the standard 32k PLUS 992k of extra memory. The innovative "SUPERVISOR" program monitors memory use, RAM-DISK functions and bank-switching for application programs. MegaRam works with XB or E/A languages and other TI modules which require 32k. Compatible with virtually all TI programs. MegaRam does not come as an Expansion Box card due to the direct address line access needed.

Price: \$575.95 (US) for twice the memory in this astounding product! Requires console, drive, XB or E/A.



Designed for the CorComp Clock Peripheral—Triple Tech Card or Stand-alone models. This utility package provides more functions for use in your Extended Basic programs. Direct access to the clock ROM at assembly speed gives you these features: three independent timers to set and read; alarm function; two interrupt routines to display time and date on screen with CTRL T—continuously or on your

command; all time and date displays are in 12 or 24 hour format using **TEXT**. This program also allows the week, date and time to be set independently rather than all together.

Program disk is not copy protected to allow you full use in your Extended Basic programs. Package includes disk and instructions. Only \$17.95 plus \$2

## **XBII plus**

Totally compatible with TI's XB, this enhanced version gives your programs more power to access your 99/4A. Commands such as MLOAD, MSAVE, VPEEK, VPOKE, GPEEK are superior to most other Basic environments. Various demo programs and new applications using high resolution graphics make this module a "must" for Extended Basic users. Comes complete with a 95 page manual. Requires console and 32k. \$75.00 (US) plus \$2 shipping.

As reviewed in Micropendium October 1985. This command module gives you all the features of Extended Basic PLUS 40 new commands.

## **BASIC** **Compiler V1.1**

New Basic Compiler that is finally easy to use! Supports virtually all Basic and Extended Basic commands in existing programs. Simply load and compile programs from a menu driven directory on your screen. No extensive re-writing, variable declarations or conversions are required. Compiler produces code-list in one pass containing all variable addresses and jump list. Package includes Extended Basic Loader, Floating Point Loader, Integer Loader, Disk Menu program and DSR program for the Compiler support. This Compiler cannot unravel DEF statements and stops on the END statement—no SUB's allowed. TRACE, BREAK, ON ERROR, CALL LOAD and CALL LINK may produce execution errors. Requires 32k, disk. Price: \$20.00 plus \$2 shipping (US funds).

## **New catalogue available**

Prices listed in U.S. funds.

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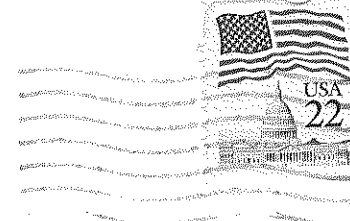
(before he gave up cigs)

BECAUSE OF PERSONAL PROBLEMS YOUR SECRETARY (ED), WAS NOT ABLE TO MAKE IT TO THE DEC. MEETING. WE WERE TO GET A GROUP PICTURE OF ALL THE OFFICERS, BUT AS A RESULT, WE ASKED EACH OFFICER TO SEND THEIR "FAVORITE PERSONAL PHOTO". SO, IF YOU NEVER MET THESE PEOPLE BEFORE, THIS SHEET SHOULD BE TAKEN TO THE NEXT MEETING, AND USED AS A REFERENCE.

JOHN

THE WEST PENN 99'ERS

% JOHN F. WILLFORTH  
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FROM THE WEST PENN 99ERS, A HAPPY NEW YEAR TO YOU !  
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