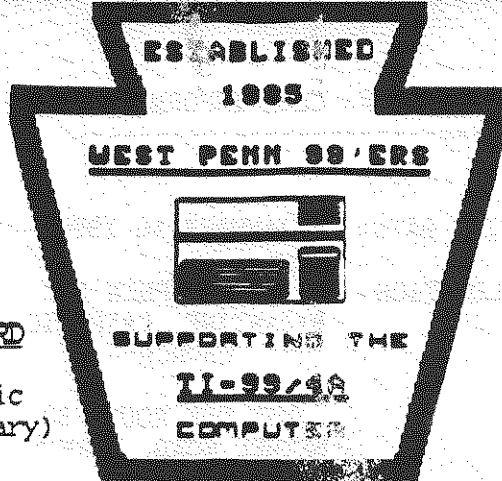


ISSUE #1 January 1990

FOR THE RECORD

by Frank N. Zic
(Acting Secretary)



The December meeting was called to order by President Mickey Schmitt at 7:30 PM. (delay of game). She began the meeting giving thanks to Rob Ekl for his fine job as past librarian. Neither Rob nor Bob Sadusky had any updates to offer during this transition period. (backfield in motion). Lynn Gardner reported over \$900 in the treasury. (nice trap play for a big gain). Please keep in mind that yearly dues of \$15 should be paid no later than January. Associate dues are \$10 (newsletter only). Joe Ekl had no new membership news. I reported that TCI cable TV will run our ad for new members after the first of the year. Mickey reported the equipment inventory check was in line. We need a decent pair of joy sticks in our supplies, hint, hint. Just kidding, I'll supply a pair. New members received a nice disk of Christmas music. All those present received a copy of the public domain version of Picasso. Next came the highlight of the meeting, Joe Ekl made a beautiful wall clock, that he most graciously contributed as a free door price. The clock numbers were made-up of large and small metal TI symbols. Joe always does a professional job. The clock was won by Judy Muir, congratulations. Judy has a health problem that we hope is not too serious, best wishes. Later in the meeting Joe volunteered to bring in the goodies for the January meeting. Shouldn't we all contribute a little when asked? Mickey thanked Lynn for her many past efforts. Thanks to Art too.

Thanks to Bob Sadusky for picking up the Pizzas for last month's meeting. Scott Coleman and Eric Zeno reported good sales on their circuit boards. Paul Brock showed us a print-out of a small listing program he is developing. Since Gene Kelly and Gary Taylor didn't make it to the meeting. (didn't suit up) and things were getting a little slow, Mickey was saved by a jolly figure at the door. It was none other than—John Wilforth. Mickey made a quick hand off and John carried the ball the rest of the evening. (touchdown). In case you didn't detect it, I'm excited that the Steelers may be in the playoffs. John's one bad report was that his Wife, Fay was in a car accident Saturday. Fay is getting along slowly, but the car was totaled. Among many other things, John mentioned that a new music enhancement is being developed for the TI, that will allow two way inter-action to an instrumental keyboard.

Well, we have had another successful club year and all of us at the West Penn TI group extend our best wishes to all the other computer clubs and the many very talented program authors that give so much pleasure to so many. While we all know their efforts should be better rewarded financially, their interest in our common hobby is really the only thing that is keeping us alive. Thank you all so very much. I'm running out of space and getting a little mushy, so as always, may the good 4's be with you.

WEST PENN 99'ERS CLUB INFORMATION

NEXT MEETING DATE: JANUARY 16 1990
 MEETING LOCATION: ST. STEPHEN'S
 BYZANTINE CATHOLIC
 CHURCH
 JUST OFF ROUTE 30
 BETHEL ROAD, NORWIN
 TIME OF MEETING: 7:00 P.M.

LIST OF WEST PENN OFFICERS FOR 1990

PRESIDENT: MICKEY 335-0163
 VICE PRESIDENT: SCOTT 523-3754
 TREASURER: LYNN 835-4304
 RECORDING SEC: ED 864-4924
 CORRESPONDING SEC: GENE 829-0469
 LIBRARIAN: BOB 863-5672
 NEWSLETTER EDITOR: JOHN 527-6656

GENERAL ITINERARY OF THE CLUB'S MEETING

6:45 P.M. DOORS OPEN
 7:00 P.M. GENERAL MEETING
 7:45 P.M. DEMOS AND NEW INFO
 8:45 P.M. HARDWARE & PRINTERS
 8:45 P.M. INTRO TO ASSEMBLY
 8:45 P.M. INTRO TO TI-BASE
 8:45 P.M. USING YOUR CASSETTE
 11:00 P.M. DOORS CLOSE

MEETING HIGHLIGHTS FOR THIS MONTH

LATEST T. I. NEWS AND SOFTWARE DISCOUNTS
 "PICASSO PUBLISHER" DEMO BY GARY TAYLOR
 NEW "TI ARTIST PLUS" DEMO BY NORM ROKKE
 WEST PENN "LIBRARY DEMO" BY BOB SADUSKY
 LATEST SOFTWARE DEMOS BY JOHN WILLFORTH

RENEW YOUR MEMBERSHIP DUES!

\$15.00 PER YEAR FOR INDIVIDUAL / FAMILY
 \$10.00 PER YEAR FOR JUST THE NEWSLETTER

TREASURER'S REPORT FOR DEC. 20, '89

FROM LYNN GARDNER

* * * * *
 * 12/19 CASH ON HAND \$ 50.00 *
 * LIBRARY SALES 6.00 *
 * MICROPENDIUMS 28.50 *
 * DISKS & CASES 142.72 *
 * RAFFLE 14.00 *
 * DUES 225.00 *
 * TOTAL \$466.22 *
 * 12/20 DEPOSIT - 416.22 *
 * 12/20 CASH ON HAND \$ 50.00 *
 * * * * *
 * 11/27 BANK BALANCE \$ 976.54 *
 * 11/27 RAFFLE ORDERS - 112.00 *
 * 12/19 POSTAGE (JOHN) - 76.00 *
 * 12/20 MICROPENDIUM - 37.50 *
 * 751.04 *
 * 12/20 DEPOSIT +416.22 *
 * BALANCE \$1167.26 *
 * * * * *
 * TOTAL CASH BALANCE \$1217.26 *
 * * * * *

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BASICALLY BASIC, ALMOST

by N. Armstrong

I've made several false starts at this month's article, and each one leaves a convey of half written programs on unlabeled disks in the shoebox on the modem. Someday, I'll have to dig in and get the mess straightened out.

Meanwhile, my quest, I think, is for the ultimate program; a program that writes programs, and then annotates them (HA). I got the idea from a conversation with my neighbor.

He says, "I'm finally getting to do some programming with that thing you gave me. I looked at that grid in the blue book; how do you know how to make those characters? Don't you have a program so you can just type them in and look at them without doing all that pencil work?"

Now, I have no trouble visualizing how an 8x8-pixel character will turn out, but for him I suggested:

```

100 CALL CLEAR
110 INPUT N$,D$
120 CALL CHAR(ASC(N$),D$)
130 PRINT : : " ";N$;" "
    ;N$;N$;N$
140 GOTO 110

```

Where I have trouble is in visualizing several 8x8-pixel characters together, hence, the program listed below. Hey, I could combine the above with the below and have a real helper. Watch out shoebox, here comes another unlabeled disk.

```

90 REM SAVE DSK6.B3
100 CALL CLEAR
110 CALL SCREEN(5)
120 FOR I=5 TO 8 :: CALL COL
OR(I,16,2):: NEXT I
130 CALL CHAR(92,"#103070F1F
3F7FFFEEFCF8F8ESC#000000C0E0
F0F8FCFEFF7F3F1F0F070301")
140 CALL CHAR(49,"7EFFFFFFFF
FF7E3C")
150 CALL CHAR(56,"FFFFFFFF
FFFFFF")
160 CALL CHAR(51,"#F#F#F#F#")
)
170 CALL CHAR(52,"F#F#F#F#")
180 CALL CHAR(53,"C3C3C3C3C3
C3C3C3")
190 PRINT "      1 2 3 4 5 \
] ^ "
200 PRINT : "
          1
          3N4
          \ 2 ^
          5": :

```

FROM ROM
SEPTEMBER '89
THANK YOU!

```

210 FOR R=11 TO 15
220 FOR C=14 TO 18
230 CALL HCHAR(R,C,79)
240 NEXT C
250 NEXT R
260 IF R>15 THEN R=11 ELSE 1
F R<11 THEN R=15
270 IF C>18 THEN C=14 ELSE 1
F C<14 THEN C=18
280 CALL GCHAR(R,C,TK)
290 CALL HCHAR(R,C,30)
300 FOR D=1 TO 50 :: NEXT D
310 CALL KEY(0,K,K)

```

Pressing the key for any printable character places that character on the grid.

```

320 IF K>31 THEN TK=K
330 CALL HCHAR(R,C,TK)
340 FOR D=1 TO 50 :: NEXT D
350 IF K<1 THEN 290
360 IF K<>13 THEN 390

```

Pressing <ENTER> advances the cursor one space.

```

370 C=C+1 :: IF C>18 THEN R=
R+1
380 GOTO 260
390 IF K>11 OR K<8 THEN 290
400 ON K-7 GOTO 410,420,430,
440

```

The arrow keys also move the cursor.

```

410 C=C-1 :: GOTO 260
420 C=C+1 :: GOTO 260
430 R=R+1 :: GOTO 260
440 R=R-1 :: GOTO 260
450 GOTO 450

```

* Original use was for developing SEMA-4 SAM, a flag waving tutorial character.

JUSTIFYING DECIMALS

By Earl Raguse

Console BASIC does not provide a command for aligning decimal points as does XBASIC with PRINT USING, but here is a routine that does it well. Its so easy, that I often use it in XB, instead of PRINT USING. Lines 5 thru 8 do all the work, the rest are for demonstration. Delete what you wish, RESequence and SAVE in MERGE format for MERGEing with you number programs.

```

1 REM DSK1.JUSTDEC
2 CALL CLEAR
3 INPUT "COLUMN FOR DECIMAL
POINT ":C
4 INPUT "INPUT A NUMBER ":X
5 X$=STR$(X)
6 IF POS(X$,".",1)=0 THEN 7
ELSE 8
7 X$=X$+"."
8 PRINT TAB(C-POS(X$,".",1))
;X$
9 GOTO 4

```

The following are instructions for a program disk I received from John Bull. I will have this in the hands of Bob Sadusky the week before the meeting. I hope that you who are interested in the game either as a player or in learning it, will pick it up. You may want to contact Bob before the meeting.

CONTRACT BRIDGE

Version 3.00

by John H. Bull

INTRODUCTION

This option (the file is "TUTOR") will show you how the game is played and how the mechanics of this program work. The bidding and play of all hands are entirely by you but must be within the rules - the program does not allow you to make an illegal bid or play an illegal card.

The hands are not in memory but are randomly dealt - each set of hands is different. The size of the 28 column screen limits the display of a set of hands to 8-card suits. Suits longer than 8 cards will be dealt, bid, and played - but only the first eight cards in the suit will be seen. It happens very seldom and it should not be a problem.

Once or twice through this option should be enough if you already know how to play bridge. It is not likely to improve your game. Several deals will help if you have not played before.

RUBBER BRIDGE

This option (the file named "RUBBER") is as much as possible like an ordinary social game of Bridge but instead of four players there are just you and the computer. You play the South hand and also the Dummy if you win the bidding and are Declarer. If you are the Dummy you just collect the tricks. You are competing against the cards and the computer.

The level of play is intelligent but not expert - very few of the conventions of expert bidding and play are used. The computer pretty much uses the tips on bidding and play that are given in the Introduction.

DUPLICATE

With this option ("DUPLICATE" is the file name) you play sets of hands that have been previously dealt and played. You compete, not against the computer and the cards, but against the score made by another player who has played the same cards. The fifty boards on the flip side of the disk were played by me and, as you will see, I don't qualify as an expert. The option to "ISlave your play" will let you substitute your bidding, play, and score for that board. Also, you can play the NORTH hand, your partner's, when it is Declarer, if you choose to.

Scoring for Duplicate is different - there are no rubbers but bonuses of 300 and 500 points are given for nonvulnerable and vulnerable games. Game scores do not carry over from one board to the next. Penalties for being set four and more tricks at a doubled contract are higher - 400 points each for the fourth and higher tricks.

The deal is rotated to the left, as in Rubber Bridge, and so is the vulnerability: When South is dealer no one is vulnerable; when West is dealer W-E is vulnerable; when North is dealer N-S is vulnerable; and when East is dealer both pairs are vulnerable.

Additional boards can be dealt and saved to disk with the "Deal Boards" option of Duplicate. Each board is a separate file named "BOARDn", where "n" is the board #. The program will accept 99 boards numbered from 1 to 99. The original disk will hold 49 more boards numbered 51 to 99 and additional sets of up to 99 boards can be put on separate disks. Each disk must be named "BRIDGE".

The "Random Deal" option is quick and easy but remember that you will be replacing (and losing) any Board on the disk that has the same number. To "Display a Board" is also simple. In Duplicate play it is also, technically, cheating.

The "Arrange a Board" option is not as friendly as the others. The cards must be entered in proper order since no sorting is done. In entering the cards, do not press the keys too

quickly. Allow a fraction of a second between key presses or else you will lose a card or two in a series. This option lets you stack the deck or replay hands from the newspaper columns.

PROGRAMMING

To program really expert bidding and play would be approximately the same size task as programming the TI99 to play a good game of Chess and the program would be pretty slow unless you did it in A/L. If you'd like to try your hand at it feel free and good luck! I have a "work copy" of "RUBBER" with fairly full REMs and the source files for "DEAL/03" and "CHARBR/0" that I'll be happy to share with you.

The Screen Dump that is included in the utility for dealing duplicate boards was published by Jerry Stern in the June 1989 MICROPENDIUM. It is a clever piece of programming and works fine with my MX1000 printer. You may have to consult his article and change the default device name to suit your printer. It is VERY SLOW on the firr' board but be patient. Succeeding boards print much faster. Thank you Jerry! especially for line 29360. This Screen Dump is (C)1989 Jerry L. Stern; All Rights Reserved; Used with Permission.

I have worked on this program for about 5 years, off and on, learning as I went. The first versions were kept on cassette tape and I used Minimemory with the Line-by-Line Assembler to write the first versions of the A/L "DEAL" program. It has been fun. The K'Town 99'ers have given encouragement, advice, and sometimes crucial wisdom and information. Art Gibson, Mike Dodd, Mike Epperson, Joe Simmons, and Bill Sheridan have been especially helpful.

There are no KNOWN bugs but I'll be grateful if you will let me know what you find. Meanwhile, I hope you have fun with it. JHB

WEST PENN 99'ERS

I needed that month off. I mentioned in November that we'd deal with spacing paper in PRINTERS #4, so here goes.

The most common spacing is 6 lines of print per vertical inch of paper. Most printers manufactured today can have that adjusted to just about any increment that you could want. Below are several interesting options and results. Try them on your printer, and look at your appendix on Control Codes to adjust the codes to your particular printer.

**** LINE SPACING ****

```

100 T=39 ! T=TAB POSITION
110 OPEN #1:"PIO"
120 FOR I=1 TO 20 ! INCREMENT
130 T=T+1 ! JUST TO MOVE EACH LINE RIGHT
140 PRINT #1:CHR$(27);"A";CHR$(I);
150 PRINT #1:TAB(T);I;"/72 INCH LINE FEED"
160 NEXT I

```

128 1/72 INCH LINE FEED
 6 7/72 INCH LINE FEED
 7 7/72 INCH LINE FEED
 8 7/72 INCH LINE FEED
 9 7/72 INCH LINE FEED
 10 7/72 INCH LINE FEED
 11 7/72 INCH LINE FEED
 12 7/72 INCH LINE FEED
 13 7/72 INCH LINE FEED
 14 7/72 INCH LINE FEED
 15 7/72 INCH LINE FEED
 16 7/72 INCH LINE FEED
 17 7/72 INCH LINE FEED
 18 7/72 INCH LINE FEED
 19 7/72 INCH LINE FEED
 20 7/72 INCH LINE FEED

THE PROGRAM ABOVE PRODUCES THE PRINTOUT ON THE RIGHT. YOU OF COURSE WILL NOT NEED THE LOOP TO PRODUCE YOUR RESULTS BUT IT CAN HELP YOU CHOOSE WHICH SPACING YOU MAY NEED. THERE ARE THREE PACKAGED COMMANDS IN MY EPSON COMPATIBLE THAT SELECT 8 LPI OR 6 LPI OR A SPACING THAT WILL PROVIDE GRAPHICS WITH NO WHITE LINE. THESE ARE RESPECTIVELY CHR\$(27);"0"(8 LPI) CHR\$(27);"1"(6 LPI) AND CHR\$(27);"2"(7/72" GRAPHICS). IN THE PROGRAM ABOVE ONLY LINES 110 AND 140 ARE NEEDED TO SET UP THE PRINTER.

**** PAGE LENGTH AND CENTERFOLD ****

```

100 OPEN #1:"PIO"
110 PRINT #1:CHR$(27);"C";CHR$(5)!LINE UNITS PAGE LENGTH
120 FOR I=1 TO 2
130 FOR J=1 TO 3
140 PRINT #1:"PAGE ";I;" , LINE ";J
150 NEXT J
160 PRINT #1:CHR$(12)
170 NEXT I
180 PRINT #1:"PAGE 3"

```

PAGE 1 , LINE 1
 PAGE 1 , LINE 2
 PAGE 1 , LINE 3
 PAGE 2 , LINE 1
 PAGE 2 , LINE 2
 PAGE 2 , LINE 3

THE PROGRAM ABOVE CREATES THE CONTROL OVER PRINTING TEXT ON A PAGE BASED ON THE NUMBER OF LINES DESIRED ON A PAGE. THE COMMAND IN LINE 110 SETS THE PAGE TO FIVE LINES ONE AT TOP AND ONE AT THE BOTTOM ALLOWED FOR THE CENTER-FOLD SO THAT YOU WILL ONLY GET THREE LINES PRINTED PER PAGE. YOU CAN SUBSTITUTE SIXTY -SIX LINES IN PLACE OF THE FIVE TO SEE IF IT WILL SPACE CORRECTLY FOR YOUR PAGE. CHANGE THE 3 IN LINE 130 TO A 64 IF YOU WANT TO RUN THIS PROGRAM FOR THAT TEST.

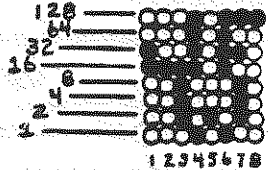
**** FOR FUN CREATE A SPECIAL GRAPHIC CHARACTER ****



```

100 OPEN #1:"PIO"
110 PRINT #1:CHR$(27);"K";CHR$(8);CHR$(0);
120 PRINT #1:CHR$(48);CHR$(16);CHR$(30);CHR$(241);CHR$(2);CHR$(241);CHR$(174);CHR$(128)

```



THE PROGRAM ABOVE CREATED THE SMALL "JFW" YOU SEE IN AN 8x8 SQUARE GRAPHIC CHARACTER. YOU NEED TO FIRST DESIGN YOUR CHARACTER AND THEN FIGURE THE BINARY WEIGHTS AND THEN PUNCH THEM INTO LINE 120. PLAY AROUND WITH THIS UNTIL WE SEE EACH OTHER AT THE JANUARY MEETINGS. USE THE DECODING CHART ABOVE. ML

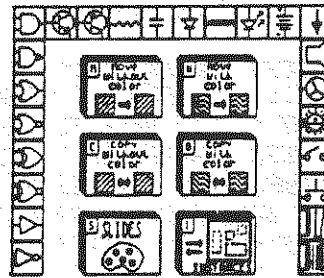
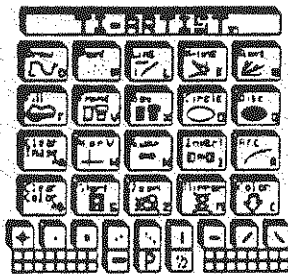
The makers of TI Artist are proud to introduce the most powerful and comprehensive graphics development system available for the TI-99/4a Home Computer...

TI Artist Plus!

More than just an ordinary drawing package, TIArtist PLUS! is a complete drawing system that consists of six dynamic graphics development modules. With these modules, virtually anyone can create, edit, transform, and present the most dazzling of graphics. And with its innovative point-and-shoot menu system, TI Artist PLUS! is extremely user friendly.

Drawing Module

With 8 different brushes, 10 fill patterns, and 16 available colors, almost any picture can be created using TI Artist's drawing tools. Freehand drawing, automatic point-to-point lines, shooting rays, boxing, circling, filling, mirroring, zooming, and spray painting are all a snap! Variable arcs and ellipses can also be drawn with ease. Any picture you design may be saved to disk and later recalled for viewing and modification.



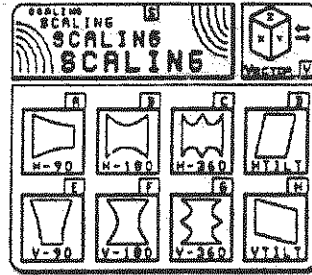
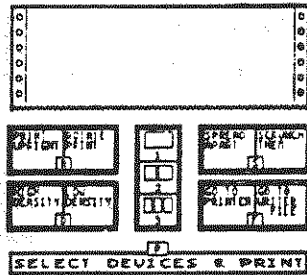
Enhancement Module

Cutting, pasting, copying, importing and exporting graphics is easy with TI Artist PLUS!. Small images, called instances, and collections of small images, called slides, may be used to enhance your artwork. Instances and slides can be created, saved to disk, and used over and over again in all of your drawings. And if you wish, you could also purchase small collections of various (pre-drawn) graphics artwork to use.

Only \$24.95
(Plus Shipping)

Print Module

With TI Artist PLUS! 1 to 3 pictures can be simultaneously printed together (or separated) across a standard 8.5" x 11" sheet of paper. Print options include: printing in portrait or landscape mode, printing in high or low density, redirecting output to a disk file, printing an outline around a picture, and printing a reverse image of a picture. TI Artist PLUS! supports most popular printers and a limited number of color printers.



Vector Module

Selected areas of a picture can be scaled using TI Artist PLUS!. With scaling, a section of your picture can be made larger or smaller; the height and width of an object can be varied independently. Special effects can also be used to enhance selected areas of a picture. They allow the horizontal and vertical parts of an image to be scaled along a range. Objects can be tilted and shifted using various pre-defined special effects.

Font Module

The font module is used to place alphanumeric data anywhere within a picture. Detailed bit-mapped fonts (available in numerous Artist Companion products) may be used to label a drawing, create a sign, and so on. Features available in the font module include: multiline text editing, automatic outlining of fonts, automatic shadowing of fonts, and automatic left, right and center text positioning.

Movie Module

Animated movie sequences can be produced with TI Artist PLUS!. A small interpreted command language allows you to design an animated sequence using your own pictures and artwork. The command language consists of 8 simple instructions, including a handy indexing command that will display a directory of all your TI Artist files. Movies may be saved to and later played from disk.

Upgrade to TI Artist PLUS!

Owners of the original TI Artist may obtain TI Artist PLUS! for only \$14.95 (plus shipping). To be eligible for the reduced rate, return your original TI Artist disk and the front page of your existing TI Artist manual along with the upgrade fee.

TI Artist PLUS! requires a disk system, 32K, and either an XB, E/A, or MM cartridge. TI Artist PLUS! is compatible with the Geneve 9640 (in GPL mode), and the Myarc hard disk controller. TI Artist PLUS! supports the following printers: Epson, Prowriter, IBM Graphics Printer, Seiko-sha GP-100/100TI/550/700, Okidata 92/93, Star NX-1000 Rainbow, and Canon PJ1080A, and Tandy CGP220.

TEXAMENTS

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Please add the following shipping charges to your order: \$2.50 for domestic first class delivery, \$8.00 for foreign insured air mail delivery. Orders are usually shipped within a 48 hour period. All C.O.D. orders must be placed by phone. Sorry, no credit card orders will be accepted.

THE NEW STAR XR1000 PRINTER
DEANNA SHERIDAN - NORTHCOAST 99ERS - CLEVELAND, OH

The newest printer in the Star line is a real winner!! A few years ago, I would never in my wildest dreams have thought it possible for the "man on the street" to own a printer with all these features for the price.

To recap, my first printer was a Gemini 10X, no letter quality, about the only font enhancement was italics, speed was 120 CPS (one of the faster printers on the market for the price, tho) and I paid \$299. My next printer was the S610 which was basically the same as the 10X except that it had a NLO (Near Letter Quality Font). I still like the crispness of that font. I paid \$259 for this one. Then last year, I thought the NX1000 was a real breakthru for the individual computerist. It had some speed increase..up to 144 cps and 4 built-in letter quality fonts which could be accessed from a front panel. I only paid \$179 for this printer.

Compare the above with the specs on the XR1000:

300 CPS - 72 NLO

8 Letter-Quality Fonts

32K print buffer

Inexpensive color kit (\$45)

Cost (MICRO PERIPHERALS IN COMPUTER SHOPPER) \$327

The eight letter quality fonts are:

COURIER - This is Courier
SANSERIF - This is Sanserif
GOTHIC - This is Letter Gothic
ORATOR - THIS IS ORATOR
SCRIPT - This is Script
OCR B - This is OCR B
TW LIGHT- This is TW Light
CINEMA - This is Cinema

You can choose 10CPI, 12CPI, 17CPI, 20 CPI and proportional for a wide variety of effects. As you can see from the above, with our Funnelweb/II-Writer, these are all very easily incorporated into your documents. I have several word processors for my Leading Edge, none of which allow me this flexibility.

If you are tired of wasting a sheet of paper everytime you want to start printing at the very top of the paper, you will like the "auto loading feature" on the XR1000.

You are also going to find that setting dip switches are probably a thing of the past. The new printers are almost computers in themselves. You choose your favorite settings through a program resident in the printer.

By holding down the first three buttons on the front panel at the time you turn on the printer, the menu will automatically print out on a page and allow you to choose the features you will use the most. These include:

RAN USAGE - this printer has a 32K buffer which can be 1 as a buffer or for downloading fonts.

QUIET MODE - Will slow down the printing somewhat, and I find it unnecessary as compared with our old printers, this is very quiet anyway.

UNIDIRECTIONAL OR BIDIRECTIONAL graphics printing.

AUTO ON-LINE - Can choose to have it automatically on-line or off-line at powerup.

ZERO STYLE - Have your zeros slashed or not.

NLO FONT - Choose a default NLO font.

PRINT QUALITY - On power up will default to NLO or draft, whichever you choose.

PRINT PITCH - Again whatever you choose at powerup.

AUTO LOADING - You choose if you want it to autoloading to start printing anywhere from the top line to 6 lines from the top of the page.

PAPER OUT DETECTOR - Set this for on or off.

SHORT TEAR OFF - Will reverse line-feed so you can tear off a sheet and the return to the top of form for the next printing session.

SKIP OVER PERFERATION - On or off as you choose.

LINES PER INCH - Choose the dip switch default of 6 lines per inch to any other you might wish.

PAGE LENGTH - Choose your page length.

As you can see, many of these were accessed through dip switches in the past. Probably the only time I would ever want to change a dip switch with this machine is if I wanted to use the IBM mode for the IBM graphic characters and it was not easy to do with the software I was using. Should you ever need to get to them, they are set in the front of the printer under a small panel.

If you do a lot of printing of graphics and the printhead gets out of alignment, there is even a feature on the front panel which allows you to go through a routine to make the necessary adjustment and realign the characters.

I decided to go all the way this time and got the color kit. This is a small kit that fits under the ribbon cassette. You just snap it in, and if you don't get it in correctly, the printer prints out a message telling you that it is not attached snugly.

We do not have too many programs which access a color printer, but luckily I received the new II-ARTIST PLUS the same day I got the new printer. I printed out the old opening screen of II-ARTIST 2.01. I used the "high-resolution mode on the Artist menu. It took an hour, but it looks beautiful. I do not have the JIFFY CARD which prints in multi-colors, but the one we have gives you an option of printing the outside of the card in one color and the inside in another. This took no longer than printing a card with no color. Hopefully, soon we will have other programs taking advantage of color printers. If you will check the ads, almost all of the new models offer a color kit.

I have yet to find anything I don't like about my XR1000. The ribbons are slightly higher than the NX1000, but seem to be made to last longer. I got half a dozen which cut the price down to \$7.50 apiece. Also, the price usually goes down after a printer has been out a while and third-parties start offering ribbons. The colored ribbons are \$16.50 each. But, if you purchased ribbons of the seven different colors you can create with this one ribbon, they would come to more than \$16.50 total.



When a program is written on one TI-99/4A console, it's a pretty sure bet that it will run on any other TI-99/4A console - unless the programmer has used some of the special features of the CorComp Disk Controller, Super Extended Basic, or whatever. But when a programmer writes a program to output to his own printer, it is by no means certain that it will work with your printer. As far as printer compatibility is concerned, it's a jungle out there. Anarchy, chaos and total confusion!

To begin with, if the printer has a parallel port it must be opened with "PIO", otherwise with "RS232" followed by the baud rate - or something else again for AXIOM. And you may have to add .LF to suppress line feeds or .CR to suppress carriage returns. Next, its output and its response to control codes is partly controlled by those idiotic, microscopic, inaccessible, fragile-looking inventions of the devil called dip switches. And finally, the output is mostly controlled by the printer control codes in the program itself.

Somewhere among the thousands of publications on computers, someone must have written a comprehensive guide to writing and modifying software for printer compatibility. If anyone knows of such, please tell me! I have read literally thousands of user group newsletters over the past several years, and have seen many mentions of "fixes" to various problems, but never a detailed article. I have called printer manufacturers, and they have been most helpful in suggesting that I buy one of their expensive manuals for each of their models. I have talked to programmers with much more experience in writing printer programs than I have, and they tell me it is very difficult, even with the manual at hand, to modify a program for a particular printer without having access to that printer for testing.

I have no experience in programming for any printer other than my trusty old Gemini 10X, and my few attempts to modify programs for other printers have mostly ended in failure. However, I have borrowed several manuals and attempted to chart the differences. I had hoped to compile and publish a complete conversion chart, until I realized the complexity of the problem. Anyway, perhaps I can pass on a few tips to programmers, to help them make their programs as widely compatible as possible, and possibly I can give users a little bit of guidance to help in modifying programs to suit their printer.

In the following, in order to be brief, I have mentioned control code sequences by their ASCII numbers, such as 27 66 i. This would be programmed as CHR\$(27);CHR\$(66);CHR\$(i) or, since ASCII 66 is within the printable range, it might be CHR\$(27)"B"CHR\$(i). 27 77 n means that for n you substitute an ASCII, within an allowable range, according to what you want to accomplish.

There seem to have been four systems of printer control codes used with the printers commonly found in the TI world - Epson, Micronics, Axiom, and Okidata. The Micronics people tell me that they "used the Micronics emulation until the introduction of the current NX series, when they switched to the IBM emulation". The IBM emulation appears to be the same as the Epson mode except that it has a different set of special character symbols - in fact, many current Epson-compatibles have an optional IBM mode.

The Micronics mode and the Epson mode are quite similar, although with aggravating differences. Okidata and Axiom are way out in left field. Since Micronics, Epson and Panasonic (which is basically Epson-compatible) seem to be by far the most popular in the TI community, and most software is written for them, it might be wise to avoid the Okidata. I have also seen mention of problems with Diablo and Centronics, but I have no information on those.

(CONT. PAGE 9)

Any of the ASCII from 0 to 127 can be used as a printer control code. If the ASCII is above 31, it must be preceded by ASCII 27, known as the escape code, which is universally used to alert the printer that the following ASCII codes are to be interpreted as controls rather than printed as characters. If the printer recognizes an ASCII below 31, or one or more ASCII immediately following ASCII 27, as a valid control code, it acts upon them but does not print them. This is why, if you insert "control U" codes in a line of text, the text will be shifted left. However, if the codes are not recognized as valid, the ASCII below 32 or above 126 are printed as a blank space, the others are printed as the character they represent. This is why that puzzling E, G, S or whatever shows up on the first line of a printout, if a program is not compatible with your printer.

Some printer commands require a sequence of three or more ASCII codes, of which the first is 27, the second could be anything above 31 and the remainder could be anything at all. If your printer does not recognize the second ASCII as valid, but then comes to an ASCII below 31 which it does recognize, it acts on that ASCII as if it was a single command - which is why your printer sometimes "goes crazy".

The ASCII below 27 are quite standardized, and many of them have names, such as BEL for 7 (activates buzzer) which are also commonly used in telecommunications. ASCII 10 (line feed), 12 (advance to next top of form) and 13 (carriage return) seem to be universally recognized. For some reason, Panasonic owners seem to have trouble with line feeds when running programs written for other printers.

ASCII below 27 are not preceded by the escape code 27. Some printers will optionally recognize 14 (double width for one line) and 15 (cancel 14) preceded by 27, but programmers should avoid this since other printers will treat the 27 as a blank space. The NX-10 recognizes 27 10 as a command to reverse the paper one line and 27 12 to reverse to top of page.

The escape code 27 can be input from the TI-99/4A keyboard by depressing the CTRL key and the period key together - the actual ASCII is 155 but printers, other than the Axiom, will accept it as 27. This is handy when opening the printer in immediate mode or writing a routine for your own use, but should be avoided in programs being distributed because the character prints out as a blank space which will probably confuse anyone trying to modify the program.

I have studied the manuals, and attempted to chart some of the codes, for the Gemini 10X, SG-10 and Star NX-10; Epson FX-80, FX-85/185 and its IBM mode; Panasonic KX-P1080; MX Graftrax Plus; Brother M-1009; Seikosha 550A or 550TI by Axiom; and Okidata (model unknown). Due to differences in terminology, it is not easy to relate them to each other.

The IBM mode of the Epson FX-85 seems to be entirely compatible with its Epson mode except that it lacks some features. The FX-80 seems to be entirely compatible with the FX-85 except lacking NLQ and a few specialized codes (and I did not get into comparing graphics capabilities of any of these printers). The Brother M-1009 is also apparently highly compatible. The MX Graftrax Plus, another Epson model, is entirely compatible but lacks some features (no graphics capability?). The Panasonic KX-P1080 is very compatible but also has several unique codes of its own for setting tabs and spacing, etc. The Star NX-10 also seems to be in complete agreement with the FX-85, but with some additional codes for unique features such as reversed paper feed. I would guess that in actual practice these may not be as compatible as they seem. And of course, any maker's newer or more expensive models have additional codes for features not found on older or cheaper models.

The Seikosha 550A or 550TI, made by Axiom, recognizes a few of the common codes between ASCII 7 and 14, but from there on it has entirely its own system of codes; many of these same codes are used by Epson/Micronics for entirely different purposes, so running a program written for either on the opposite

printer can be guaranteed to produce pure garbage. Okidata likewise recognizes a few of the low codes and then goes into its own system, frequently in direct conflict with the Epson standard; due to the terminology used in its manual, I am not sure what some of them do.

The Gemini 10X, made by Star Micronics, has long been superseded by newer models, but stocks are still being sold by discounters. It has been a sturdy workhorse, long popular with TI owners, and a great many programs have been written using its printer control codes. These are 90% compatible with Epson - but that other 10% causes a great deal of trouble. The differences are described below. The Star SG-10/15 was a transitional hybrid, switchable by dip switch 2-2 between the Micronics mode and the IBM mode. The Micronics mode is completely compatible with the Gemini 10X (except for download characters) and with some additional features - NLQ and proportional printing, and a slashed zero option. The IBM mode seems to be very compatible with the Epson standard. This printer was superseded by the Star NX-10, which is again Epson compatible.

A major incompatibility between programs written for the Gemini 10X or SG-10, and Epson-compatible printers, is that Micronics recognizes 27 66 1 to select pica, 27 66 2 to select elite and 27 66 3 for compressed, and on the SG-10 also 27 66 4 to select NLQ and 27 66 5 to cancel it. On Epson/IBM printers, 27 66 is the beginning of a series of codes used to set vertical tabs. Actually, since pica is the default, there is no need to program for it except to cancel condensed print, for which purpose 18 is recognized by both Micronics and Epson. (Avoid using 27 80 to return to pica because Micronics does not understand it and might misinterpret it to change default tabs.) Similarly, 15 will select condensed print on both the Micronics and Epson. Unfortunately, there is no compatible code for elite; Epsoms use 27 77 to select elite, but 27 77 n is used by the 10X, SG-10 to set the left margin n spaces, so that misinterpreting these codes can be catastrophic! The Epsoms use 27 108 n to set the left margin, but this is not recognized by Micronics.

The other major difference is 27 51 n which sets the line feed to n/144" on the 10X and on the SG-10 in Star mode, but to n/216" on Epson compatibles and on the SG-10 in IBM mode. The "fix" here is to multiply the value of n by 1.5 when running a Micronics program on an Epson printer. The same applies to 27 74 n which sets a one-time line feed of n/144" or n/216".

Micronics uses 27 82 n to set the margin at the top of the page, but Epson recognizes this as a command to switch to one of the international character sets, which can produce some interesting results. The Epsoms use 27 114 n to set the top margin, but Micronics doesn't know this one. Micronics uses 27 55 n to select an international character set, but the Epson will read 27 55 as a command to cancel 27 54 which selected a special character set. I'm not sure what that means, but the results will surely be undesirable.

There may also be a conflict between the Micronics 27 98 n, which performs a one-time tab of n columns, and the Epson 27 998 n n 0, which "sets vertical tabs in channel", whatever that means.

Several codes, common to both Epson and Micronics, use 1 as the 3rd ASCII to turn on a feature and 0 to cancel it. For instance, 27 87 1 turns on double width (expanded) print and 27 87 0 cancels it. Also, subscript is selected by 27 83 1 and superscript by 27 83 0. Some of the Epson/IBM compatibles will accept either an ASCII or numeric 0 or 1 (i.e., "1" or CHR\$(1)) for that third code, for which reason you will often see program coding such as CHR\$(27);"W1". These should be avoided when programming for general distribution, because the older Micronics recognize only the ASCII. If I understand my notes from the manual correctly, the Panasonic KX-P1080 also accept ASCII 129 or 177 in lieu of ASCII 49 or "1" and ASCII 128 or 176 in lieu of 48 for "0" !

According to the manuals, ASCII 141 can be substituted for ASCII 13 on the Brother M-1009, and ASCII codes 128 to 255 can be substituted for 0 to 127, respectively, on the Epson - but there seems to be no good reason to confuse the other printers by using those!

Different printers also have different sets of symbols in ASCII 160-254. The Gemini 10X and SG-10 in Star mode has one set, the SG-10 in IBM mode has an entirely different set which I presume is also on the Epson in IBM mode, and I think that the Epson has still a different set. This causes problems when running some banner or graphing programs which access these characters. Different printers also vary in the number of international character sets available and the sequence of their access codes.

I have never gotten involved in graphics printing, and I failed to chart all the graphics codes when I had borrowed manuals available, so I cannot comment on compatibility here. I have not heard of any problems except that some Axiom models are apparently incapable of graphics, and there is also sometimes a problem with thin white horizontal lines through the picture - possibly because of the n/144" and n/216" difference in line spacing between Micronics and Epson?

With downloadable characters, we find another jungle which I'm not too anxious to explore. The Gemini 10X has a quite simple and efficient method, and I once published in Micropendium a DOWNCHAR program to design these characters on screen, dump them to the printer for editing, and save them to disk. I have also written a routine which will convert a sequence of any length of standard or reidentified screen characters into a D/V 80 file of download character printer codes.

But, here the SG-10 Star mode departs from compatibility with the 10X. Its system offers much greater capabilities but is also quite complex and entirely different. I tried, and failed, to convert my routine for use on the Epson FX-85; its system is somewhat similar to that of the SG-10 but again different. I am told that the Epson RX-80 does not support downloadable characters, the LX-80 only allows 6 and some Panasonics only allow 40 of them. I have seen a article describing a method of creating downloadable NLD characters but unfortunately the name of the printer being used was not mentioned.

This article is obviously incomplete and probably inaccurate. Perhaps it will inspire someone to write something better. In the meantime, programmers could help out a great deal by putting REMs in their programs giving the name of the printer they are writing for, and REMs after every printer control command indicating its purpose. I regret that I have not been in the habit of doing that!

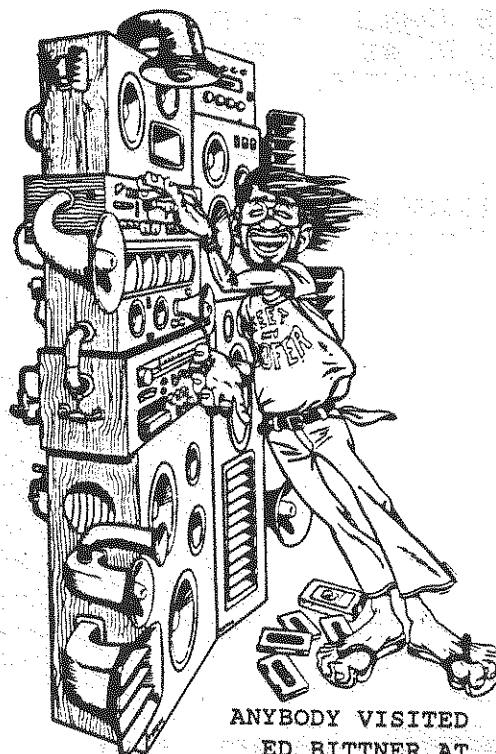
TI BILLBOARD PROGRAM

This program makes an interesting Sprite Banner and it requires Extended Basic.

```
100 MSG$="BRANDON TI-99/4A USERS GROUP"
110 CALL SCREEN(2):: CALL CLEAR :: CALL MAGNIFY(2)
120 FOR I=0 TO 14 :: CALL COLOR(I,16,1):: NEXT I
130 CALL DELSPRITE(ALL)
140 DISPLAY AT(2,3)ERASE ALL
:"T I B I L L B O A R D":TA B(13);"by":" Herman Nieuwendaal": : : : " enter
150 DISPLAY AT(12,4):"or name to display:"
160 DISPLAY AT(22,1):" press any key after all letter
```


s are in motion to abort.

```
"
170 ACCEPT AT(14,1)SIZE(-28)
:MSG$ :: IF MSG$="" THEN 170
180 CALL CLEAR
190 C=.868-LEN(MSG$)*.031+1
200 RANDOMIZE
210 FOR N=1 TO LEN(MSG$):: C
ALL SPRITE(#N,ASC(SEG$(MSG$,N,1)),INT(RND*(14))+3,(N+(28-LEN(MSG$))/2)*6,N*B):: NEXT N
220 FOR N=LEN(MSG$)TO 1 STEP -1 :: CALL MOTION(#N,0,-20)
230 FOR D=1 TO 475*C :: NEXT D :: NEXT N
240 CALL KEY(3,K,S):: IF S=0 THEN 240
250 DISPLAY AT(12,7)ERASE ALL
L:"Do another? :Y"
260 ACCEPT AT(12,20)SIZE(-1)
:X$ :: IF X$="Y" OR X$="y" THEN 130
270 CALL CLEAR
```



ANYBODY VISITED
ED BITTNER AT
HOME LATELY ?

MORE ON THE ZENOBOARD.....

If you are one of the people who are having problems with a dark screen and a loud screaming console after you installed your ZENOBOARD, or that you've blown your CPU power supply, read this. There are little hickeys all over the board that are drawn to look like this . These are meant to represent all the bypass capacitors (.01 mfd) installed on the board rather than their more conventional representation of a "JUMPER WIRE". If you take the latter as the item to be installed, you will short (if all are installed) both +5 and -5 volts to ground. This puts an unnecessary burden on the console power supply which then may just give up. Please be sure that you only install a wire from one location to another on the board to replace a disabling switch and not a capacitor. JFW

-- ANNOUNCING --

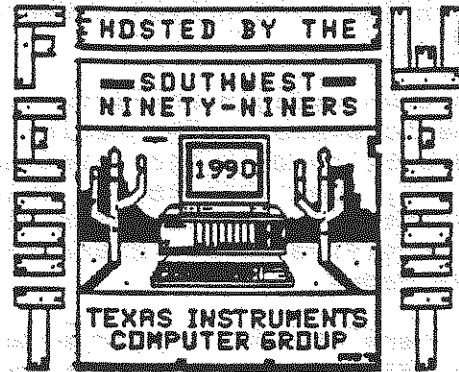
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