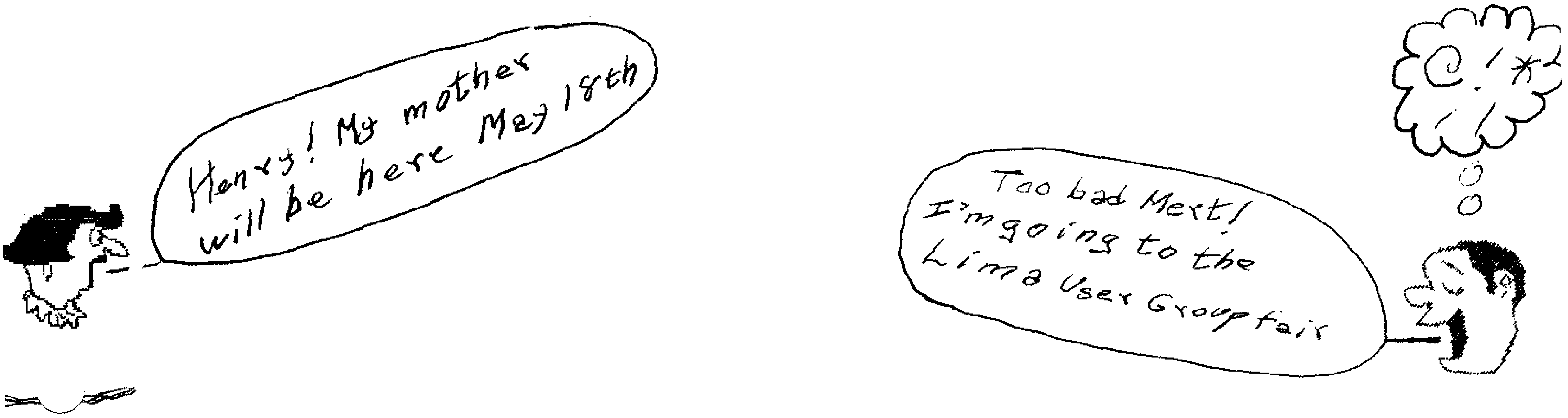
Texas Instrument 99/4A and Myarc 9640 Computers

Spirit of 99

CENTRAL OHIO NINETY NINERS INC.

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

PUBLISHED MONTHLY IN COLUMBUS OHIO


Henry! My mother will be here May 18th
Too bad Mert! I'm going to the Lima User Group fair

$1.50 VOL. 9 NO. 5 MAY 1991

Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

CENTRAL OHIO NINETY NINERS

Spirit of 99 is published monthly for Central Ohio Ninety-Niners Inc. by C.O. N.N.I. members and is the official news letter of C.O.N.N.I. User Group.

Editorial, advertising and subscription address is:
181 HEISCHMAN AVE
WORTHINGTON,OH 43085

Subscription rate (USA) $30.00 /1 year for newsletter and Disk of the Month: $15.00/1 year, newsletter only. Third class postage paid at Columbus, Ohio.

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Central Ohio Ninety Niners Inc. is a non profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related products and have paid a yearly membership fee of $28.00 and whose main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held the 3rd Saturday of each month at Chemical Abstracts, 2540 Olentangy River Road Columbus, OH. Meeting time is 8:30 AM til 2:30PM. Meetings are open to the public. Membership dues ($28.00) are payable yearly to C.O.N.N.I. and cover the immediate family of the member. (An application has been placed in this newsletter for your convenience) Please address it to:

Harley Ryan Jr
4178 Chandler Drive
Whitehall, OH 43213

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1/4 Page:	$25.00
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!!!NEW MEMBERS!!!

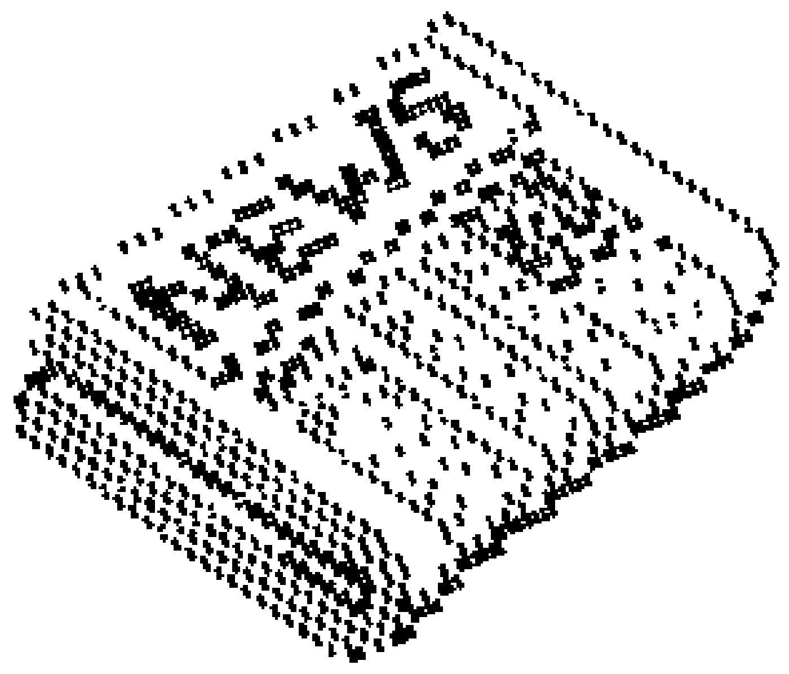
ROBERT J. DAKINS
GARY P. FITZGERALD
MELVIV E. GREENBAUM

NOTICE

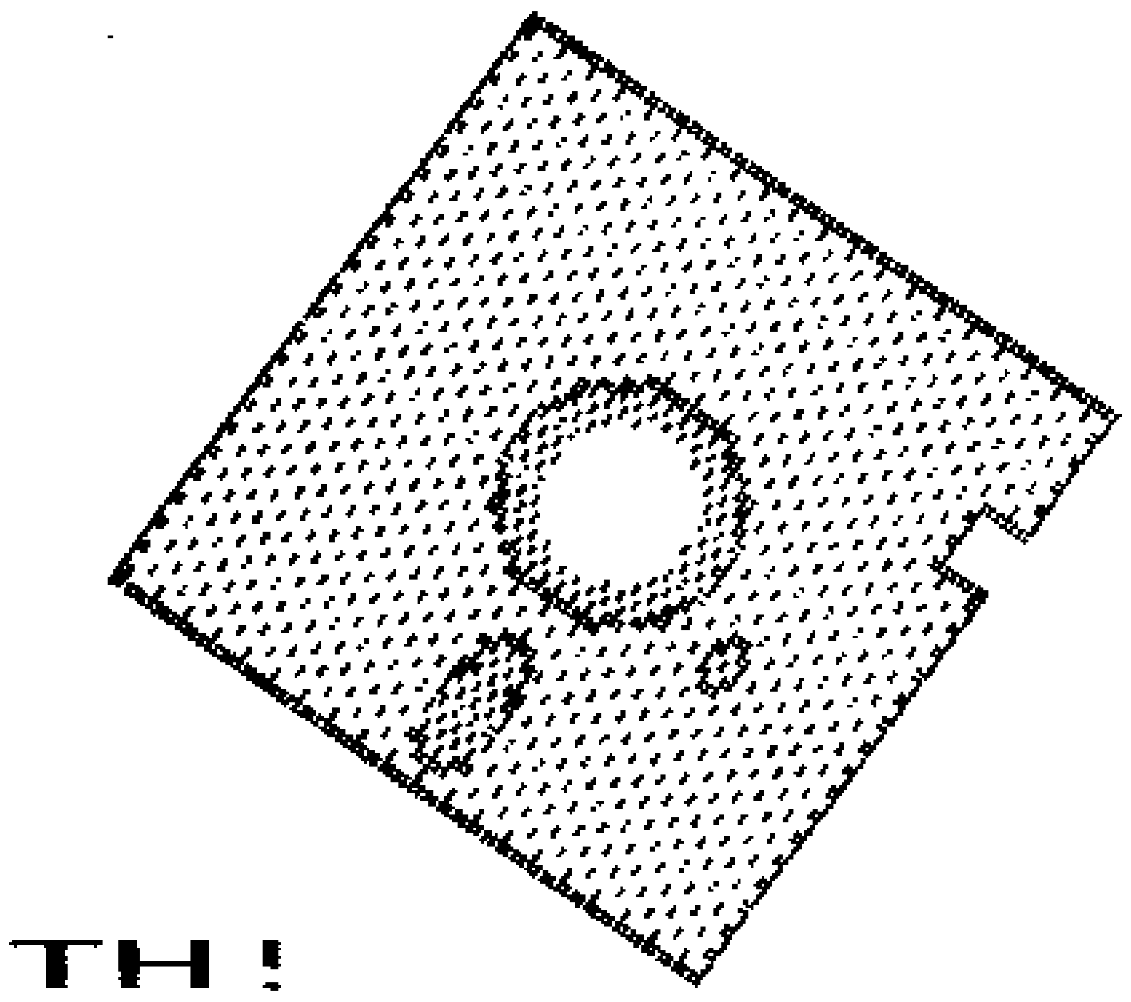
The May 18th meeting of C.O.N.N.I. will be held in Lima at the annual Lima U.G. fair which is held in Reed Hall on the O.S.U. campus.

The best route from Columbus is to take US 33 west past Bellefontaine to Huntsville. Then take 117 north to Lima. At the stop sign in Lima turn right on SR 309 (heading east). Continue on 309 until you come to the OSU Branch entrance which is just east of Mumaugh Road. The first turn to the right (east) off the entrance road takes you to the Reed Hall parking lot. Look for signs.

If you plan to attend the fair and world like to donate some of your time manning the tables please contact Bob DeVilbiss or Dick Beery. We need more help! The more that sign up to help at the tables will shorten the tours so all will have an opportunity to enjoy the fair.



A DEAL
YOU CAN'T
PASS UP!



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Now you can have the best of both worlds--
Keep up to date on the latest news from
the TI-99/4A world with a subscription to
the Spirit of 99 Newsletter AND get an
up-to-date collection of new public domain
and shareware programs with the Disk of
the Month--both brought to you by the
Central Ohio Ninety-Niners, Inc.

SUBCRIPTION RATES

Newsletter only	$15/yr.	(Continental U.S.)
	$25/yr.	(Outside Continental U.S.)
Newsletter PLUS DISK of the MONTH	$30/yr.	(Continental U.S. EXCEPT Delaware, Fairfiled, Franklin, Licking, Madison, Pickaway and Union Counties, Ohio)
	$40/yr.	(Outside Continental U.S.)
CONNI Club membership	$28/yr	(see above information)

CONTACT

HARLEY RYAN, Membership
Central Ohio Ninety-Niners, Inc
4178 Chandler Dr, Whitehall, OH 43213
(614) 231-1497

C.O.N.N.I BUSINESS MEETING
CHEMICAL ABSTRACTS
APRIL 13,1991

President Chuck Grimes opened the meeting and Everett Wade gave the treasurer's report. At the end of our fiscal year in March we had 97 paid members, of whom 46 were out-of-town subscribing members..

SYSOP Irwin Hott gave a report on the status of the Clearinghouse BBS project. ESD has experienced difficulty in getting chips for their new HFDC, but they may be able to send us one in a couple of weeks. If not, it was decided that the Clearinghouse will begin operation temporarily on existing Spirit of 99 BBS equipment, in order to have it up and running at the time of the Lima Multi-User Group Conference.

Chuck read the information from Lima regarding the Conference. Since it falls on the same day as our normal Saturday meeting date, our monthly meeting will be held at the Lima conference, NOT at Chemical Abstract. Chuck stated that we are looking for missing equipment belonging to the user group, which is presumably in the hands of members. This includes a Gemini 10X printer, a P-Gram card, a Mechatronics XBasic module, and several cables. Anyone having knowledge of the whereabouts of this equipment is requested to contact Chuck. Bill Shepard volunteered to prepare an inventory of the groups' equipment. The group has purchased Curt Borders' self-contained portable TI system for use at the meetings.

Jere Singleton stated that he had a P-box for sale, and Dick Beery read a list of items for sale by Bill Wood. Chuck announced the contents of the disk of the month.

Preparation of disks to be sold at the C.O.N.N.I. table at the Lima conference was discussed.

Respectfully Submitted,
Jim Peterson
Secretary

MINUTES FOR WEDNESDAY
March 27, 1991

A number of members ate dinner at the McDonald's above, so the meeting did not start until approximately eight p.m. The Treasurer's report was given, and the minutes, which had been published in the previous newsletter, were approved. There was discussion as to whether the new ESD disk controller would work with the Geneve. It was decided that it probably would not. The address and phone no. of ESD are:
Electronics Systems Development Corp.
P.O. Box 23805
Washington, DC 20026-3805
(301)322-6150

Jim Peterson reported that Bruce Harrison has released his music source code for at least one composition to the public domain. There followed a list of distributors and registered user groups for the Lima Fair to take place on May 18. Members were asked to indicate their intentions concerning their personal participation at Lima. President Grimes discussed the contents of the March D.O.M. Questions were raised concerning the printing of long TI-Writer type files, surge protection, configuring FW 4.31, and the cost of Surge Blasters (app. $75). The catalog for National Computer Accessories was shown. The membership voted unanimously to purchase Curt Border's portable TI computer, refurbish it with the club's two recently-purchased drives, and give the P-Box and some cards to Irwin Hott to replace his own equipment that is currently being used to run our BBS. The members discussed Dave Szippl's idea for placing the names and phone numbers of members of those groups participating in the National Clearing House BBS(to be the successor of the Spirit of '99 BBS)on the board for use by potential advertisers for T. I. products. No decision was reached at this time. There were no demonstrations at this meeting. Questions: who has the club printer and where is it? Also, who is currently borrowing the club's P-Gram card? Anyone having information regarding either of these items please contact Chuck Grimes at once. The meeting adjourned at approximately 11:45 p.m.

Respectfully submitted,
Dick Beery, Wednesday Secretary

To the Editor,

Ref:*FEBRUARY ARTICLE "You don't have it all"*

I read Jim Peterson's article and I must say the opinions set forth were valid and echoes many of the sentiments I have about the TI world that exist today.

The "user", being the home-type can feel frustration when the computer jargon flies in a meeting or conversation. The user's needs are quite straight-forward and simple. The user needs support from a group of fellow TI enthusiast and software to perform the task he or she sets out to accomplish. The hardware situation can give a user "sticker" shock. I can't see spending $200 to $300 for a Hard-drive controller (my opinion) and then try to find a 10 Megabyte Hard-drive to go along with the controller. The Hard drivers are anywhere from $69 (used) to $170 (new). The used price I found here locally included an IBM controller card! The only thing that I would want for my upgrade is a Corcomp disk controller card. Even then, according to my TI associates here in Michigan, I might not get a card that can do quad-density.

It seems that Corcomp made cards with whatever chips that they had available. I am, for justification reasons, like Mr. Peterson weighing the cost of the hardware to use I may receive. Also, in reality, why would I spend money on items that I may seldom use and better spend (sometimes cheaper) on my 386 IBM compatible? It comes down to practicality and add-on costs.

I would tend to "ask" these hardware enthusiasts to come up with inexpensive modification "kits" to solve some hardware upgrades. There may be a way to build your own like, Bud Mills bare board kit for the Ramdisk. I acquired three DSDD drives that I have hooked up to my system. I found a Digital disk box at a swap meet to house my peripheral drives. The cost was minimal. Many swap meets and computer meets have IBM drives (full and half height) that are ancient in the IBM world, but very useable in the TI world. There are alternatives and using the support of the user groups a good buy can be passed on to other users; even ideas for inexpensive upgrades can be communicated to the groups.

I guess the Ohio groups have a communication advantage in group support that the Michigan users are without (speaking from my situation). I depend on newsletters, answers from user groups, and my TI friend, Mike Martinko, to get help and TI answers to my questions.

My opinion, is that hardware minds are needed in our TI realm, but software upgrades and new introductions are desperately needed to carry on the TI through the 90's. So I guess I agree with Mr. Peterson and also applaud him for his undying dedication to the preservation of TI 99/4A. I hope I didn't sound pompous in my letter and I have only the best intentions when speaking and writing about the TI. I work with IBM and Digital equipment every day (programing and developing software), but I still go back to my TI because it truly is a "home computer". Once again, I extend my deep gratitude to all the TI people in Ohio and around the world.

Per Halvorsen

TOURNAMENT SOLITAIRE

Reviewed by Jim Peterson

Tournament Solitaire is a collection of seven different card solitaire games on disk. You can select any of the games from the load menu, or elect to play all seven in sequence as a "tournament", hence the name.

The games were programmed by William Reiss in Extended Basic with assembly links, and the disk is available from Asgard Software (P.O. Box 10306, Rockville MD 20849) for $14.95 plus $2.50 for shipping and handling (U.S. and Canada; $7.50 for airmail elsewhere; 7% additional for credit card orders). The disk is accompanied by a very neatly published 7-page manual of instructions.

As a programmer, I can appreciate the skill and the effort that went into writing these seven programs. The graphics are all that can be done on the TI in Extended Basic, colorful and legible. The programming logic appears to be flawless - in none of the games was I able to make an illegal move, nor was any legal move refused. The manual is well written, although a bit sketchy - I still don't quite understand how to play the "Corners" game.

The seven games are Golf, Pyramid, Klondike, Canfield, Calculation, Pile Up and Corners. As far as I know, only two of these have previously been programmed for the TI - Klondike by Schererville and under the British name Patience by Gadget Man, and Pyramid by Regena. Of the others, Canfield was the only one I had ever heard of.

To evaluate computerized card solitaire games, one must ask two questions - how do they compare with Walt Howe's Chainlink Solitaire, and are they easier and more enjoyable to play on the computer than with a deck of cards?

The first question is perhaps unfair, because I consider Chainlink Solitaire to be the best "brain game" ever programmed on the TI-99/4A.

As for the second, the shuffling and laying out of the cards is far quicker than could be done manually, thanks to the assembly link. Thereafter, action slows down. Moving cards from one stack to another is accomplished by using the arrow keys to move a cursor to the card to be moved, pressing the space bar to select it, using the arrow keys to move to the position it is to be moved to, and pressing the space bar again. Cards on the stack are turned over by pressing the Enter key, and some games also use other keys. The method of playing is the same for all the games, which makes it easier to play a tournament.

Many people would probably much rather use the joystick than the arrow keys. Personally I would very much prefer to simply select a numbered pile by pressing a number key, as Chainlink Solitaire is played.

In spite of the cumbersome method of play, I did find these games to be very entertaining and addictive, and I spent a good deal of time playing them when I should have been doing something more productive.

I liked Pyramid, although it is one of the slowest in play, because it allows some opportunity for strategy. Its rules differ in one respect from Regena's version, which enabled me to actually beat the game once. I also managed to win at Pile Up, a complicated game with 20 piles of cards, which allows two reshuffles and a draw during the game, as well as peeking into stacks.

Calculation is an unusual game which might permit considerable strategy, but would require a great deal of study. Klondike is the well-known solitaire game - it could have been improved by automatically turning exposed cards face up. Canfield is a variant of Klondike. Golf is the fastest playing, and very addictive.

Is it worth buying? Absolutely!

REFORMATTING

by Jim Peterson

With the establishment of the Clearinghouse BBS, newsletter editors will have available more articles on disk, rather than having to xerox them or retype them from other newsletters. This will make it easier for them to reformat articles to their own requirements - but they will have to know how to do so.

I am by no means an expert on this subject, but I will offer a few ideas. It seems to me that the most practical column widths are 28, 40, 60 and 80.

I have always believed that Basic and XBasic program listings should be published in 28-column width, exactly as they appear on the screen. This makes it much easier to key them in accurately, especially when the listing contains strings of blank spaces or long strings of hex codes. For that reason, years ago I wrote a program to reformat listed programs accurately into 28-column width. Nowadays, the Super Extended Basic module will do that much more easily. Since my Tips From The Tigercub newsletters consisted mostly of program listings, I always published them in four columns of 28-character width. However, that is too narrow for primarily text articles, requiring too much hyphenation or creating too many gaps.

The 40-column width is perhaps best of all, because it can be printed in two columns of elite font or three columns of condensed font. The 60-column width can be printed in two columns of condensed font.

The 80-column width is suitable for regular D/V80 files in pica font, but this is somewhat wasteful of space; pica is considerably larger than most printed material. It is possible to write routines to reformat and print D/V80 text in even longer lines, up to 160 characters long in Epson condensed elite, but lines of more than 80 characters are difficult to scan.

Page Pro printing may require other widths, but I know nothing about that; I really do not consider the oversized crowded characters of Page Pro to be suitable for newsletters.

The first step in reformatting should be to separate any program listing portions from the rest of the text, and reformat them separately if at all. For instance, if you load the article THISNTHAT into Funlweb Editor and find that lines 200 to 300 of a 400-line article are a program listing, do this - FCTN 9, SF, 200 300 DSK1.PROGRAM and then FCTN 9, LF, 1 199 DSK1.THISNTHAT and then FCTN 9, LF, 199 301 E DSK1.THISNTHAT and FCTN 9, SF, DSK1.TEXT.

The next step is to make sure that the title and the paragraphs, any line that nothing should be added onto, ends in a carriage return. The carriage return (CR, ASCII 13) in the Funlweb Editor looks like a little square C above and to the left of a little upside-down L.

If the CR's are missing and you have a text file with indented paragraphs and centered headers (i.e., blank spaces before the title, etc.), this tinygram program will add the CR's.

```
100 DISPLAY AT(3,4)ERASE ALL
:"CARRIAGE RETURN ADDER":"":
"  This tinygram program wil
ladd carriage returns to any
 text file which has centere
d"
110 DISPLAY AT(8,1):"headers
 and indented para-  graphs.
"
120 DISPLAY AT(12,1):"Input
filename?":"DSK" :: ACCEPT A
T(13,4):IF$
130 DISPLAY AT(15,1):"Output
 filename?":"DSK" :: ACCEPT
AT(16,4):OF$
140 DISPLAY AT(18,1):"Put bl
ank lines between     paragr
aphs? Y/N" :: ACCEPT AT(19,1
7)SIZE(1)VALIDATE("YNyn"):Q$
150 OPEN #1:"DSK"&IF$,INPUT
:: OPEN #2:"DSK"&OF$,OUTPUT
:: C$=CHR$(13)
160 IF EOF(1)THEN 190 :: LIN
PUT #1:M$ :: IF Q$="Y" OR Q$
="y" THEN 180
170 IF M$="" THEN PRINT #2:C
$:M$;:: GOTO 160 ELSE IF ASC
(M$)<33 THEN PRINT #2:C$:M$;
:: GOTO 160 ELSE PRINT #2:""
:M$;:: GOTO 160
180 IF M$="" OR M$=" " THEN
PRINT #2:C$ :: GOTO 160 ELSE
 IF ASC(M$)<33 THEN PRINT #2
:C$:C$:M$;:: GOTO 160 ELSE P
RINT #2:"":M$;:: GOTO 160
190 PRINT #2:CHR$(13):: CLOS
E #1 :: CLOSE #2
```

Another way to add CR's is to type CTRL U to get the underline cursor, then go through the text with FCTN 4 and FCTN 6 and the arrow keys, typing SHIFT M wherever you need a CR.

Now, here is a tip. FCTN 9, S, 1 to get to the beginning of the file, FCTN 9, RS, / CTRL-U M CTRL-U / CTRL-U M CTRL-U FCTN-W / (slash,carriage return, slash,~,carriage return,slash) to replace each carriage return with a tilde followed by a carriage return. Why? We'll get to that! Hit Enter, then A for All.

In order to use the Funlweb Formatter to reformat a file, it is necessary to print it back to disk - and when you do that, the Formatter can play some very nasty tricks! Any & symbol in the text will simply disappear! An @ in the text will disappear but cause the word following it to be repeated again and again on following lines. An * followed by two or more digits will disappear, along with the first two digits. A caret sign (shift 6) will disappear. And a period at the beginning of a line will cause the entire line to disappear! (and since this article now contains a & and a @, you've got problems already!)

So, to be on the safe side, get back to the top of your text, go into RS again with /&/\/ (the \ is FCTN Z). If you jump to the end of the file, there were no ampersands, so you won't have to restore them after reformatting. You might do the same thing with the @, just in case. The * bug is very unlikely to occur in a text file, and the ^ is also unlikely (except in this article!), but you might scan down through the first character of each line to be sure that a decimal number in the text has not placed a period there. If so, the best solution is to insert a 0 before the period.

There is a better way to prevent the Formatter from garbling your text. I have never understood why Texas Instruments used characters that might appear in text as control characters, when other useless characters were available - and I've often wondered why the McGoverns didn't do something about it. But you can, if you have John Birdwell's DSKU. Copy your Funlweb to a new disk, just in case. Boot up DSKU and select 1. File utilities, then 5. Find string. The filename is FO. Select H for hex. At the prompt for a string, type 2A23214026 and for replacement string type 7C2321605C. Select R for replace, then FCTN W, hit Enter twice to accept defaults, and it's done. From now on, if you want to underline a word, use FCTN Z instead of &, if you want to double-strike a word use FCTN C instead of @, and if you want to input a value from a data file use FCTN A instead of # . You will still have to watch out for those periods, and the caret sign - I don't know the fix for those.

Now, to get Funlweb to reformat the text, open a new line 1 with FCTN 8 and type in .LM 0;RM 79;IN 0;FI . The 79 would give you 80-column text; you can substitute any number, 1 less than the actual column width you want (because the computer is counting from a left margin of 0, not 1). If you wanted a pre-set left margin you could change that 0, and adjust the RM figure accordingly. If the text does not have paragraph indentations, and you want to add them, change the 0 after IN to whatever number of spaces you want to indent; you can also increase the amount of indentation that way. And, if you want Funlweb to insert additional blank spaces in the text in order to justify the right margin (line it up evenly), add ;AJ after the FI . Now save the file to disk, then go to the Funlweb Formatter.

Accept that same default filename; instead of the printer option, enter DSK1. and a different filename, accept all the defaults, and the file will be printed back to the disk under that new filename.

Return to the Editor and load that new filename. You will find that your text has been reformatted to the desired width, but every line now ends in a line feed (a little L to the upper left of a little F); your carriage returns have also been converted to line feeds. And there are now three lines at the top containing nothing but a blank followed by a line feed, groups of similar lines throughout the text, probably a long series of such lines at the end, and sometimes a few lines in the text containing a few dashes followed by a line feed. Some of them also contain a form feed! You will have to go through the text with FCTN 4, FCTN 6 and the arrow keys, deleting those lines with FCTN 3.

Now, to get rid of those line feeds - FCTN 9, PF, C DSK1.(and a new filename). It is best to always use a new filename for each step in the process so that if you make a mistake - as you will occasionally! - you do not have to go all the way back to start over.

Load that new file, and you will find that printing to disk with the C option has apparently stripped out all the line feeds. Actually, it changed them to blank ASCII 32's, which could cause problem in multiple-column printing or concantenation. If you want to get rid of them, SF the file to disk, LF it back and PF it to get rid of the tab line.

You might find it easier to just use this handy-dandy routine to delete the line feed lines and line feeds -

```
100 DISPLAY AT(12,1)ERASE AL
L:"Input filename?":"DSK" ::
 ACCEPT AT(13,4):IF$ :: OPEN
 #1:"DSK"&IF$
110 DISPLAY AT(15,1):"Output
 filename?":"DSK" :: ACCEPT
AT(16,4):OF$ :: OPEN #2:"DSK
"&OF$
120 A$=CHR$(32)&CHR$(10):: B
$=CHR$(12)&CHR$(10)
130 IF EOF(1)THEN 150 :: LIN
PUT #1:M$
140 IF M$=A$ OR M$=B$ THEN 1
30 ELSE IF SEG$(M$,LEN(M$),1
)=CHR$(10)THEN PRINT #2:SEG$
(M$,1,LEN(M$)-1):: GOTO 130
ELSE PRINT #2:M$ :: GOTO 130
150 CLOSE #1 :: CLOSE #2
```

But, now the carriage returns you worked so hard to put in have also disappeared! Not to worry. FCTN 9, S, 1, FCTN 9, RS, / FCTN-W / CTRL-U M CTRL-U / , Enter, A for All, and those tildes will magically turn into carriage returns! Occasionally one will appear at the beginning of a blank line instead of at the end of the preceding line, in which case you will have to delete it and put it where it belongs with CTRL-U SHIFT-M. Why did I use FCTN-W, the tilde? Just because I have never seen it used for anything else in a text file (oops! except in this article!) - I could have used FCTN A, Z, C, etc. In fact, if you want to preserve any CTRL-U type printer codes in the text, you could RS them back and forth in the same way. After CTRL-U to get the underline cursor, FCTN-R is the ASCII 27 escape code, SHIFT-2 is 0 and SHIFT-A is 1, etc.

Rather than go through all that, maybe you would rather just throw the Funlweb Formatter away and use my little handy dandy Text Reformatter in good old primitive Extended Basic. It's slow, but it avoids all those extra steps and all those pitfalls. The text must have carriage returns.

```
100 CALL CLEAR :: CALL SCREE
N(5):: FOR SET=0 TO 12 :: CA
LL COLOR(SET,2,16):: NEXT SE
T :: CR$=CHR$(13)
110 DISPLAY AT(2,7):"TEXT RE
FORMATTER":"":"      by Jim
 Peterson"
120 DISPLAY AT(6,1):"Input f
ilename?":"DSK" :: ACCEPT AT
(7,4)BEEP:IF$ :: OPEN #1:"DS
K"&IF$,INPUT
130 DISPLAY AT(8,1):"Output
filename?":"DSK" :: ACCEPT A
T(9,4)BEEP:OF$ :: OPEN #2:"D
SK"&OF$,OUTPUT
140 DISPLAY AT(11,1):"Presen
t line length?" :: ACCEPT AT
(11,22)SIZE(2)VALIDATE(DIGIT
):LL
150 DISPLAY AT(13,1):"Reform
at to what length?" :: ACCEP
T AT(13,26)SIZE(2)VALIDATE(D
IGIT):R
160 IF R=LL THEN 140 ELSE CA
LL CLEAR
170 IF EOF(1)THEN 290 :: LIN
PUT #1:M$ :: M$=P$&M$ :: P$=
"" :: IF R>LL THEN 230
180 L=LEN(M$)+(POS(M$,CR$,1)
<>0):: IF L<=R AND POS(M$,CR
$,1)<>0 THEN PRINT #2:M$ ::
GOTO 170 ELSE IF L<R THEN P$
=M$&" " :: GOTO 170
190 C$=SEG$(M$,1,R):: CALL L
ASTPOS(C$," ",P)
200 IF P<>0 THEN 210 ELSE PR
INT #2:C$ :: M$=SEG$(M$,R+1,
255):: GOTO 180
210 GOSUB 300 :: GOTO 180
220 GOSUB 310 :: GOTO 180
230 IF POS(M$,CR$,1)<>0 AND
LEN(M$)<=R+1 THEN PRINT #2:M
$ :: GOTO 170
240 IF LEN(M$)<R THEN P$=M$&
" " :: GOTO 170
250 C$=SEG$(M$,1,R):: CALL L
```

```
ASTPOS(C$," ",P):: IF P=0 TH
EN PRINT #2:C$ :: M$=SEG$(M$
,R+1,255):: GOTO 230
260 IF P=R THEN PRINT #2:SEG
$(M$,1,P-1):: M$=SEG$(M$,R+1
,255):: GOTO 230
270 GOSUB 300 :: GOTO 230
280 GOSUB 310 :: GOTO 230
290 PRINT #2:P$ :: CLOSE #1
:: CLOSE #2 :: STOP
300 IF SEG$(M$,R+1,1)=" " TH
EN PRINT #2:SEG$(M$,1,R):: M
$=SEG$(M$,R+2,155):: RETURN
310 PRINT #2:SEG$(M$,1,P-1):
: M$=SEG$(M$,P+1,255):: RETU
RN
320 SUB LASTPOS(A$,B$,Y):: X
,Y=0
330 X=POS(A$,B$,X+1):: IF X>
0 THEN Y=X :: GOTO 330
340 SUBEND
```

I have also written a Formatter+ program which will even reformat text which does not have carriage returns, if header lines and paragraphs are idented. It will also optionally allow you to hyphenate any word which breaks after the second character, and optionally right-justifies the text. It is too long to list here, but will be available on the Clearinghouse BBS and in my TI-PD catalog.

The next-to-last thing to do when reformatting (but, from my reading of many newsletters, often omitted!) is FCTN 9, S, 1, FCTN 9, RS, /- // (replace a hyphen followed by a blank with a null, to fix hyphenated words that have ended up in the middle of a line). DON'T, repeat DON'T do this until you have restored the carriage returns!! Enter, but this time to do not use A for All; use Y(es) and N(o) to go through the text, deleting unwanted hyphens but leaving those at ends of lines or elsewhere if they belong.

And, last of all, PLEASE, PF rather than SF, to print the file back to disk rather than saving it back, to get rid of that pestiferous tab line!

Now, as to reformatting program listings - preferably, don't! A 28-column listing combined with 40-column text isn't going to waste much space.

Remember that program listings are printed so that people can key them in and run them, and the least mistake in reformatting them will usually result in garbage.

Assembly source code and C99 source code (and probably most any other language) MUST NOT be reformatted! However, anything beyond the 25th character of assembly source code is just a comment, usually preceded by an asterisk, and so is anything after an asterisk in the first column. These do not affect the program. If a comment exceeds your desired line length, it is safe to open a new line below it and retype the comment there, preceded by an asterisk.

Basic and Extended Basic programs can be reformatted, but the method described above is not reliable. If you must reformat them, I think that the following program will do a foolproof job. Again, first you must put carriage returns at the end of each program line, and the only practical way is to get the CTRL-U underline cursor and go through inserting them with SHIFT-M. For those of you who are not programmers, I had better emphasize that I am talking about numbered program lines, not the numbered lines of text that appear in the Editor.

```
100 DISPLAY AT(3,6)ERASE ALL
:"PROGRAM RELISTER":"":"  Wi
ll reformat a LISTed    XBas
ic program from any lineleng
th to any other length."
110 DISPLAY AT(8,1):"  Each
program line (not    file li
ne) must end in a    carriag
e return."
120 DISPLAY AT(12,1):"Input
filename?":"DSK" :: ACCEPT A
T(13,4):IF$ :: DISPLAY AT(15
,1):"Output filename?":"DSK"
 :: ACCEPT AT(16,4):OF$
130 DISPLAY AT(18,1):"Presen
t line length?" :: ACCEPT AT
(18,22)SIZE(2)VALIDATE(DIGIT
):A
140 DISPLAY AT(20,1):"Reform
at to what length?" :: ACCEP
T AT(20,26)SIZE(2)VALIDATE(D
IGIT):X :: IF X=A THEN 130
150 OPEN #1:"DSK"&IF$,INPUT
:: OPEN #2:"DSK"&OF$,OUTPUT
:: IF X<A THEN 230
160 IF EOF(1)THEN 270 :: LIN
PUT #1:M$ :: L=LEN(M$):: IF
POS(M$,CHR$(13),1)=0 THEN 18
0
170 IF P+L<X+1 THEN PRINT #2
:M$ :: P=0 :: GOTO 160 ELSE
PRINT #2:SEG$(M$,1,X-P)&CHR$
(13):SEG$(M$,X-P+1,255):: P=
0 :: GOTO 160
180 IF L<A THEN M$=M$&RPT$("
 ",A-L):: L=A
190 IF P=0 THEN PRINT #2:M$;
:: P=L :: GOTO 160
200 IF P+L<X THEN PRINT #2:M
$;:: P=P+L :: GOTO 160
210 IF P+L=X THEN PRINT #2:M
$&CHR$(13):: P=0 :: GOTO 160
220 PRINT #2:SEG$(M$,1,X-P)&
CHR$(13):SEG$(M$,X-P+1,255);
:: P=LEN(SEG$(M$,X-P+1,255))
:: GOTO 160
230 IF EOF(1)THEN 270 :: LIN
PUT #1:M$
240 L=LEN(M$):: IF L+P>X THE
N PRINT #2:SEG$(M$,1,X-P)&CH
R$(13):: M$=SEG$(M$,X-P+1,25
5):: P=0 :: GOTO 240
250 IF M$=CHR$(13)THEN 230
260 IF POS(M$,CHR$(13),1)<>0
 THEN PRINT #2:M$ :: P=0 ::
GOTO 230 ELSE PRINT #2:M$;::
 P=LEN(M$):: GOTO 230
270 CLOSE #1 :: CLOSE #2
```

Another way of reformatting a program listing is to use Curtis Alan Provance's remarkable Textloader to convert the listing to program format and then listing it to disk in the desired format, using Super Extended Basic. However, Textloader can introduce some bugs, so be sure to test the program before you list it, and be prepared to fix the bugs.

Now that you have gone to all that work, are you going to print your article through the Funlweb Formatter and perhaps garble it again? Remember what I told you about the &, @, *, ^ and the leading period! Program listings usually contain those characters. If you have not modified your FO file, and you do not replace and transliterate, you will print garbage!

TIPS FROM THE TIGERCUB

No. 64

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

****

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to $5.00. I am out of printed documentation so it will be supplied on on disk.

My TI-PD library now has over 500 disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename, Basic programs converted to XBasic, etc. The price is just $1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog #5 has now been printed and is is available for $1, which is deductible from the first order.

Back in the days of David Ahl's Creative Computing magazine, when computers were too expensive for hardware hacking and had memory too small to run much of a program, the emphasis was on "recreational computing", and the British TI'ers carry on that tradition. A recent issue of their excellent TI*MES newsletter had this challenge - write a program to set up a circle of any chosen number of objects; starting at one, count them off by 10's, removing every 10th object. What are the numbers of the last two left?

This is my solution. It is not the best one, but it does show how strings can be used to perform math.

```
100 INPUT "NUMBER?":N
110 FOR J=1 TO N :: N$=N$&CH
R$(J):: NEXT J :: IF N<10 TH
EN 140
120 N$=SEG$(N$,11,255)&SEG$(
N$,1,9):: IF LEN(N$)>9 THEN
120
140 FOR J=1 TO 10 :: N$=SEG$
(N$,2,255)&SEG$(N$,1,1):: NE
XT J :: N$=SEG$(N$,1,LEN(N$)
-1):: IF LEN(N$)>2 THEN 140
150 FOR J=1 TO 2 :: PRINT AS
C(SEG$(N$,J,1)):: NEXT J
```

Which reminds me that I forgot to give you the answer to that short CALL SOUND puzzler in Tips #62. A CALL SOUND, even with a positive duration, will be interrupted by a BEEP.

Here's a bit of nonsense I worked up from an idea by Tim Brooks. Save this by SAVE DSK1.BUGS,MERGE . Then when you get a chance, load one of your friend's favorite programs, add this to it by MERGE DSK1.BUGS, and in the middle of the program somewhere put a line with CALL BUGS .

```
32000 !@P+
32001 SUB BUGS
32002 CALL CLEAR :: CALL CHA
RSET :: CALL DELSPRITE(ALL):
: CALL SOUND(225,220,0):: PR
INT "*ERROR 4 IN LINE 150" :
: PRINT "*BUGS IN PROGRAM"
32003 CALL SCREEN(8):: FOR A
=1 TO 500 :: NEXT A :: A$(1)
="997E3CFF3C7EBD99" :: A$(2)
="DB3CBD7E3CFFBD99" :: X=1 :
: CALL CHAR(96,A$(X))
32004 RANDOMIZE :: CALL MAGN
IFY(2):: FOR T=1 TO 2 :: FOR
 A=1 TO 20 :: X=X+1+(X=2)*2
:: CALL CHAR(96,A$(X)):: FOR
 D=1 TO 20 :: NEXT D
32005 CALL SPRITE(#A,96,2,19
5,RND*240,-5,0):: NEXT A ::
NEXT T :: CALL CLEAR :: CALL
 DELSPRITE(ALL):: SUBEND
```

Here is a puzzle game for you brainy types. I worked it up from a game by Jack Sughrue -

```
100 ! PSYCHO by Jim Peterson
110 CALL CLEAR :: RANDOMIZE
:: CALL SCREEN(2):: FOR S=1
TO 12 :: CALL COLOR(S,2,16):
: NEXT S :: CALL VCHAR(1,31,
31,96):: CALL KEY(3,K,S)
120 RANDOMIZE :: Y$(1)="+" :
: Y$(2)="-" :: Y$(3)="x" ::
Y$(4)="/"
130 CALL VCHAR(1,3,32,672)::
 D$="" :: Y(0),X=INT(10*RND+
5)
140 DISPLAY AT(2,11):"PSYCHO
":" Enter P(lus), (M)inus,
   (T)imes or (D)ivided by"
150 FOR J=1 TO 4 :: Y(J)=INT
(10*RND+5):: Z(J-1)=INT(4*RN
D+1)
160 IF Z(J-1)=1 THEN X=X+Y(J
):: GOTO 180 ELSE IF Z(J-1)=
2 THEN X=X-Y(J):: GOTO 180 E
LSE IF Z(J-1)=3 THEN X=X*Y(J
):: GOTO 180
170 IF X/Y(J)=INT(X/Y(J))THE
N X=X/Y(J)ELSE Z(J-1)=INT(3*
RND+1):: GOTO 160
180 NEXT J :: R=6 :: FOR J=0
 TO 3 :: DISPLAY AT(R,12):Y(
J):: R=R+2 :: NEXT J :: DISP
LAY AT(R,12):Y(4)
190 DISPLAY AT(R+1,12):"____
" :: DISPLAY AT(R+3,12):X
200 FOR J=0 TO 3 :: D$=D$&ST
R$(Y(J))&Y$(Z(J)):: NEXT J :
: D$=D$&STR$(Y(4))&"="&STR$(
X):: FOR J=1 TO 4
210 ACCEPT AT(J*2+5,12)SIZE(
1)VALIDATE("PMTD"):A$ :: IF
A$="" THEN 210
220 ON POS("PMTD",A$,1)GOSUB
 270,280,290,300
230 DISPLAY AT(J*2+4,12):""
:: DISPLAY AT(J*2+6,12):Y(J)
240 NEXT J
250 IF Y(4)=X THEN DISPLAY A
T(19,9):"RIGHT!" :: GOTO 260
 ELSE DISPLAY AT(19,9):"  WR
ONG! OFF BY";ABS(X-Y(4)):: D
ISPLAY AT(21,3):D$
260 DISPLAY AT(23,2):"PLAY A
GAIN? Y/N" :: ACCEPT AT(23,1
8)SIZE(1)VALIDATE("YN"):Q$ :
: IF Q$="N" THEN CALL CLEAR
:: STOP ELSE 130
270 Y(J)=Y(J-1)+Y(J):: RETUR
N
280 Y(J)=Y(J-1)-Y(J):: RETUR
N
290 Y(J)=Y(J-1)*Y(J):: RETUR
N
300 Y(J)=Y(J-1)/Y(J):: RETUR
N
```

Someone uploaded the New Testament books of the Bible to Delphi, probably ported over from IBM files. They included a program to break them into individual verses and another to display them on screen. Neither program worked properly, so I wrote this one to do it right.

```
100 CALL CLEAR :: CALL SCREE
N(16):: FOR J=1 TO 12 :: CAL
L COLOR(J,2,1):: NEXT J :: D
ISPLAY AT(2,8):"BIBLE READER
" !by Jim Peterson
110 DIM I$(127),L$(24)
120 DISPLAY AT(24,1):"DRIVE
#?" :: ACCEPT AT(24,10)VALID
ATE(DIGIT)SIZE(1)BEEP:DN ::
CALL CLEAR :: ON WARNING NEX
T
130 X=0 :: OPEN #1:"DSK"&STR
$(DN)&".",INPUT ,RELATIVE,IN
TERNAL :: INPUT #1:N$,A,A,A
140 INPUT #1:F$,A,B,C :: IF
LEN(F$)=0 THEN 160
150 IF C=80 AND ABS(A)=2 THE
N X=X+1 :: I$(X)=F$ :: DISPL
AY AT(X+(X>23)*23,1-(X>23)*1
3):STR$(X);" ";I$(X):: GOTO
140 ELSE 140
160 DISPLAY AT(23,1):"Read f
ile #" :: ACCEPT AT(23,12)VA
LIDATE(DIGIT):FL :: IF FL<1
OR FL>X THEN 160
170 CLOSE #1 :: OPEN #1:"DSK
"&STR$(DN)&"."&I$(FL),INPUT
:: CALL CLEAR :: DISPLAY AT(
3,1):"Press any key at the b
eep" :: X=0
180 LINPUT #1:M$
190 IF POS(SEG$(M$,1,5),":",
1)=0 THEN 220
200 IF FLAG=0 THEN FLAG=1 ::
 GOTO 220
210 X$=M$ :: GOTO 250
220 IF T$<>"" THEN M$=T$&" "
&M$ :: T$="" :: GOSUB 320 EL
SE GOSUB 320
230 IF LEN(T$)>27 THEN M$=T$
 :: T$="" :: GOSUB 320 :: GO
TO 230
240 IF EOF(1)<>1 THEN 180
250 IF T$<>"" THEN X=X+1 ::
L$(X)=T$ :: T$=""
```

```
260 CALL SOUND(1,500,8)
270 CALL KEY(0,K,S):: IF S=0
 THEN 270
280 FOR J=1 TO X :: DISPLAY
AT(9+J,1):L$(J):: NEXT J ::
FOR J=10+X TO 24 :: DISPLAY
AT(J,1):"" :: NEXT J :: X=0
290 IF X$<>"" THEN M$=X$ ::
X$="" :: GOSUB 320 :: GOTO 2
30
300 IF EOF(1)<>1 THEN 180 EL
SE IF X>0 THEN 250 ELSE CLOS
E #1 :: CALL SOUND(1,500,5)
310 CALL KEY(0,K,S):: IF S=0
 THEN 310 ELSE 100
320 IF LEN(M$)<29 THEN X=X+1
 :: L$(X)=M$ :: RETURN
330 IF SEG$(M$,28,1)=" " THE
N X=X+1 :: L$(X)=SEG$(M$,1,2
8):: T$=SEG$(M$,29,255):: RE
TURN
340 IF SEG$(M$,29,1)=" " THE
N X=X+1 :: L$(X)=SEG$(M$,1,2
8):: T$=SEG$(M$,30,255):: RE
TURN
350 P=27
360 IF SEG$(M$,P,1)=" " THEN
 X=X+1 :: L$(X)=SEG$(M$,1,P-
1):: T$=SEG$(M$,P+1,255):: R
ETURN
370 P=P-1 :: IF P>1 THEN 360
 ELSE X=X+1 :: L$(X)=SEG$(M$
,1,28):: T$=SEG$(M$,29,255):
: RETURN
```

Files ported over from IBM lack carriage returns, which can be a problem if you want to do any editing. I think this tinygram will do a good job of adding CRs to any text file which has centered headers and indented paragraphs.

```
100 DISPLAY AT(3,4)ERASE ALL
:"CARRIAGE RETURN ADDER":"":
"  This tinygram program wil
ladd carriage returns to any
 text file which has centere
d"
110 DISPLAY AT(8,1):"headers
 and indented para-  graphs.
"
120 DISPLAY AT(12,1):"Input
filename?":"DSK" :: ACCEPT A
T(13,4):IF$
130 DISPLAY AT(15,1):"Output
 filename?":"DSK" :: ACCEPT
AT(16,4):OF$
140 OPEN #1:"DSK"&IF$,INPUT
:: OPEN #2:"DSK"&OF$,OUTPUT
150 LINPUT #1:M$
160 IF M$="" THEN PRINT #2:C
HR$(13):M$;ELSE IF ASC(M$)<3
3 THEN PRINT #2:CHR$(13):M$;
ELSE PRINT #2:"":M$;
170 IF EOF(1)<>1 THEN 150 EL
SE CLOSE #1 :: CLOSE #2
```

Note that the program does all its work in line 160!

When text files are reformatted to a shorter line length, using the Funlweb Formatter, there are often long gaps at the ends of the lines, or between words if Fill and Adjust is used, due to long words which would have been hyphenated if the text had been originally typed in the shorter length. This little program will reformat text (containing carriage returns) to any shorter length and allow you to optionally hyphenate words which do not fit at the end of a line.

```
100 CALL CLEAR :: CALL SCREE
N(5):: FOR SET=0 TO 12 :: CA
LL COLOR(SET,2,16):: NEXT SE
T
110 CALL CLEAR
120 DISPLAY AT(12,1):"Input
filename?":"DSK" :: ACCEPT A
T(13,4)BEEP:IF$ :: OPEN #1:"
DSK"&IF$,INPUT
130 DISPLAY AT(15,1):"Output
 filename?":"DSK" :: ACCEPT
AT(16,4)BEEP:OF$ :: OPEN #2:
"DSK"&OF$,OUTPUT
140 DISPLAY AT(18,1):"Reform
at to what length?" :: ACCEP
T AT(18,26)SIZE(2)VALIDATE(D
IGIT):R
150 IF EOF(1)THEN 270 :: CAL
L CLEAR :: LINPUT #1:M$ :: M
$=P$&M$ :: P$=""
160 L=LEN(M$)+(POS(M$,CHR$(1
3),1)<>0):: IF L<=R AND POS(
M$,CHR$(13),1)<>0 THEN PRINT
 #2:M$ :: GOTO 150 ELSE IF L
<R THEN P$=M$&" " :: GOTO 15
0
170 C$=SEG$(M$,1,R):: CALL L
ASTPOS(C$," ",Y)
180 IF Y<>0 THEN 190 ELSE PR
INT #2:C$ :: M$=SEG$(M$,R+1,
255):: GOTO 160
190 IF R-Y<3 THEN C$=SEG$(M$
,1,Y):: M$=SEG$(M$,Y+1,255):
: PRINT #2:C$ :: GOTO 160
200 X=POS(M$," ",Y+1):: IF X
=0 THEN X=LEN(M$)ELSE IF X=R
+1 THEN PRINT #2:C$ :: M$=SE
G$(M$,Y+2,255):: GOTO 160
210 DISPLAY AT(2,1):M$ :: DI
SPLAY AT(8,1):SEG$(M$,1,R)
220 DISPLAY AT(12,1):SEG$(M$
,Y+1,R-Y-1)&"-"&SEG$(M$,R,X-
R+1):: Z=R-Y
230 DISPLAY AT(15,1):"Hyphen
ate?" :: ACCEPT AT(15,12)SIZ
E(1)VALIDATE("YNyn"):Q$ :: I
F Q$="N" OR Q$="n" THEN 260
240 ACCEPT AT(18,1)SIZE(Z):H
$ :: IF POS(H$,"-",1)=0 THEN
 240
250 C$=SEG$(C$,1,Y)&H$ :: M$
=SEG$(M$,Y+1+LEN(H$)-1,255):
: PRINT #2:C$ :: GOTO 160
260 PRINT #2:SEG$(C$,1,Y)::
M$=SEG$(M$,Y+1,255):: GOTO 1
60
270 CLOSE #1 :: CLOSE #2 ::
STOP
280 SUB LASTPOS(A$,B$,Y):: X
,Y=0
290 X=POS(A$,B$,X+1):: IF X>
0 THEN Y=X :: GOTO 290
300 SUBEND
```

I really think that all program listings should be published in 28-column format, as my Tips from the Tigercub have always been published, because that is how they appear on screen, making it much easier to key them in accurately. However, if you absolutely MUST reformat them, I think that this program will accurately reformat to/from any length up to 79 PROVIDING that you first put a carriage return at the end of every program line.

```
100 DISPLAY AT(3,6)ERASE ALL
:"PROGRAM RELISTER":"":"  Wi
ll reformat a LISTed    XBas
ic program from any linelenq
th to any other length."
110 DISPLAY AT(8,1):"  Each
program line (not    file li
ne) must and in a    carriag
e return."
120 DISPLAY AT(12,1):"Input
filename?":"DSK" :: ACCEPT A
T(13,4):IF$ :: DISPLAY AT(15
,1):"Output filename?":"DSK"
 :: ACCEPT AT(16,4):OF$
130 DISPLAY AT(18,1):"Presen
t line length?" :: ACCEPT AT
(18,22)SIZE(2)VALIDATE(DIGIT
):A
140 DISPLAY AT(20,1):"Reform
at to what length?" :: ACCEP
T AT(20,26)SIZE(2)VALIDATE(D
IGIT):X :: IF X=A THEN 130
150 OPEN #1:"DSK"&IF$,INPUT
:: OPEN #2:"DSK"&OF$,OUTPUT
:: IF X<A THEN 230
160 IF EOF(1)THEN 270 :: LIN
PUT #1:M$ :: L=LEN(M$):: IF
POS(M$,CHR$(13),1)=0 THEN 18
0
170 IF P+L<X+1 THEN PRINT #2
:M$ :: P=0 :: GOTO 160 ELSE
PRINT #2:SEG$(M$,1,X-P):SEG$
(M$,X-P+1,255):: P=0 :: GOTO
 160
180 IF L<A THEN M$=M$&RPT$("
 ",A-L):: L=A
190 IF P=0 THEN PRINT #2:M$;
:: P=L :: GOTO 160
200 IF P+L<X THEN PRINT #2:M
$;:: P=P+L :: GOTO 160
210 IF P+L=X THEN PRINT #2:M
$ :: P=0 :: GOTO 160
220 PRINT #2:SEG$(M$,1,X-P):
SEG$(M$,X-P+1,255);:: P=LEN(
SEG$(M$,X-P+1,255)):: GOTO 1
60
230 IF EOF(1)THEN 270 :: LIN
PUT #1:M$
240 L=LEN(M$):: IF L+P>X THE
N PRINT #2:SEG$(M$,1,X-P)::
M$=SEG$(M$,X-P+1,255):: P=0
:: GOTO 240
250 IF M$=CHR$(13)THEN 230
260 IF POS(M$,CHR$(13),1)<>0
 THEN PRINT #2:M$ :: P=0 ::
GOTO 230 ELSE PRINT #2:M$;::
 P=LEN(M$):: GOTO 230
270 CLOSE #1 :: CLOSE #2
```

MEMORY FULL

Jim Peterson

PROGRAMMING MUSIC THE EASY WAY

PART 2

by Jim Peterson

In Part 1 I showed you how to set up a musical scale to create notes, and how to merge in various little routines to create a variety of musical effects, but I didn't tell you how to figure out what numbers to put in between those GOSUBs. So, here is the little program that makes it all easy.

```
100 CALL CHAR(127,"000F080F0
B68FB70000F08080B68F87000080
8080868F87000080808086B9870"
):: CALL CHAR(131,"000000000
0609070")
110 CALL CHAR(132,"0000120C4
8302040000221C0810200000201
0201030200000003CFF"):: CALL
 CHAR(136,"000000FF3C")
120 CALL CLEAR :: S$="GFEDCB
A" :: CALL CHAR(45,"00000000
FF"):: A$=RPT$(S$,3):: FOR R
=2 TO 22 STEP 2 :: IF R=12 T
HEN 130 :: DISPLAY AT(R,1):R
PT$("-",28)
130 NEXT R :: CALL CHAR(98,"
0020202B34242830")
140 FOR R=1 TO 21 :: DISPLAY
 AT(R,1):SEG$(A$,R,1);:: NEX
T R
150 DATA 127,127,128,128,129
,129,130,130,131,131
160 DATA 1/16,1/8,1/4,1/2,1/
1
170 FOR R=1 TO 20 STEP 2 ::
READ N :: DISPLAY AT(R,15):C
HR$(N);:: NEXT R :: FOR R=3
TO 19 STEP 4 :: DISPLAY AT(R
,16):".";:: NEXT R
180 C=132 :: FOR R=1 TO 17 S
TEP 4 :: DISPLAY AT(R,17):CH
R$(C);:: C=C+1 :: NEXT R
190 FOR R=1 TO 17 STEP 4 ::
READ M$ :: DISPLAY AT(R,20):
M$;:: NEXT R
200 DATA 35,33,32,30,28,27,2
5,23,21,20,18,16,15,13,11,9,
8,6,4,3,1
210 FOR R=1 TO 21 :: READ N
:: N$=N$&CHR$(N):: DISPLAY A
T(R,6):STR$(N);:: NEXT R
220 G$="b" :: Z=-1 :: GOSUB
320 :: IF F=0 THEN 230 ELSE
GOSUB 330 :: GOTO 240
230 G$="#" :: Z=1 :: GOSUB 3
20 :: IF F<>0 THEN GOSUB 330
240 DISPLAY AT(24,1):"Shorte
st note? 1/" :: ACCEPT AT(24
,18)VALIDATE("12468")SIZE(2)
BEEP:L :: T$="1/"&STR$(L)::
RESTORE 160 :: FOR J=1 TO 5
:: READ L$ :: IF L$=T$ THEN
260
250 NEXT J :: GOTO 240
260 DISPLAY AT(24,1):"Is it
dotted? Y/N" :: ACCEPT AT(24
,19)VALIDATE("YN")SIZE(1):D$
 :: D=1-(D$="Y")
270 T=-3+J*4
280 FOR R=T TO 19 STEP 4 ::
DISPLAY AT(R,11):STR$(D);::
DISPLAY AT(R+2,11):STR$(D*1.
5);:: D=D*2 :: NEXT R
290 GOTO 360
300 FOR R=1 TO 20 STEP 2 ::
READ N :: DISPLAY AT(R,15):C
HR$(N);:: NEXT N
310 GOTO 310
320 DISPLAY AT(24,1):"How ma
ny "&G$&" on upper scale?" :
: ACCEPT AT(24,28)VALIDATE("
01234567")SIZE(1)BEEP:F :: R
ETURN
330 Y$="" :: FOR J=1 TO F ::
 DISPLAY AT(24,1):"On which
letter?"
340 ACCEPT AT(24,18)VALIDATE
(S$)SIZE(1)BEEP:L$ :: IF POS
(Y$,L$,1)<>0 THEN 340 ELSE Y
$=Y$&L$
350 S=1 :: FOR K=1 TO 3 :: P
=POS(A$,L$,S):: DISPLAY AT(P
,2):G$;:: DISPLAY AT(P,6):ST
R$(ASC(SEG$(N$,P,1))+Z);:: S
=P+1 :: NEXT K :: NEXT J ::
RETURN
360 OPEN #1:"PIO" :: FOR R=1
 TO 22 :: FOR C=3 TO 30 :: C
ALL GCHAR(R,C,G):: CALL HCHA
R(R,C,30):: R$=R$&CHR$(G)::
NEXT C :: PRINT #1:R$ :: R$=
"" :: NEXT R :: STOP
```

Get yourself a piece of sheet music and compare it to the screen display from that program. You will see that music is written on two sets of 5 lines. The upper set is marked at the left end with something like a fancy script capital S; it is used to write the higher notes, including the melody, which a pianist plays with the right hand. The lower set, marked with a sort of a backward C, contains the low notes played with the left hand. Your sheet music probably has a wide space between the sets, to make room for the lyrics, but there are really only three notes between them.

The screen display shows letters at the left, which are not on the sheet music. Those are the names of the notes, which we will have to refer to a couple of times to get started; observe that the notes are named A through G and then repeated.

The numbers along the left side are the numbers you will key in to play those notes. However, the screen display is set up in the key of C, which is played entirely on the piano white keys. The sheet music you want to program from may be in a different key, so -

The computer is asking you how many there are of something that looks like a squashed lower case b - I guess that's why they call it a flat? It means that the note will be played a bit lower, on the black key just left of the white key - and we will program it one number lower. So, look next to that capital S and see how many flats there are. If none, type 0. Otherwise, the computer will ask which letters they are next to. Type them in, one at a time, and presto - the computer will put them on the staff and adjust the numbers accordingly.

If there were no flats, the computer will want to know if there are any sharps - those are what you get by typing a shift 3 on the keyboard, and they mean that the note is played on the black key above the white key, and is programmed one number higher.

Now, the computer needs some information in order to help you set up the length of your notes - how long they are sounded. The various notes are depicted at the right. A 1/16 note is a little black egg with a stem (it may go up or down, makes no difference) and two flags on the stem. A 1/8 has only one flag and a 1/4 note has none. A 1/2 note is a hollow egg with a stem and a whole note has no stem.

Those little doodads to the right of the notes are rests, used to indicate a silent pause of the same length as that note - more on that later.

Look through your sheet music and find the shortest note. Tell the computer. It will want to know if any of those shortest notes are dotted -

have a little dot to their right, as the screen display shows. A dotted note is played half again as long as normal.

Presto again, the computer will show you the duration number to key in for each note. Then, if you have a printer attached, it will print out an XBasic screen dump of that screen - you will have to squash your own b's and sketch in the notes and rests.

If your software library contains an assembly screen dump, delete that last program line and put in a CALL INIT, CALL LOAD and CALL LINK to get a better printout - or ask me for it. If you don't have a printer, why not copy those numbers right onto the corresponding lines and spaces on your sheet music, and number some of the notes.

Now we're ready to make music! Let's keep it simple at first, just a single note melody - and I hope you picked a simple piece of music. Clear the TI's brain with NEW, then merge in that line 100 scale from part 1 by MERGE DSK1.SCALE . In the same way, merge in one of those line 1000 CALL SOUND routines. Put in a temporary stopper line 999 STOP, and a line 110 D=200 to set the duration.

The melody is almost always on the upper set of 5 lines. If a note has 2 or 3 eggs on its stem, as they usually do, the upper one is the melody note - we will get into harmony later.

Start with line 110. Check your chart to see what number denotes the length of the first note - maybe 2, if so key in T=2 :: Then check to see what number applies to the position of the upper egg of that note. Maybe 22, so key in A=22 :: GOSUB 1000 Enter RUN, and if you've done everything correctly, you wil! hear the note. You might decide already that you want to change that 200 in line 110.

Now for the second note. If it is of the same length as the first, you don't have to type anything - that's what makes this shorthand method so quick and easy. If the note position is also the same, you don't key that in either - just another GOSUB 1000.

If you have EZ-KEYS or another "hot keys" program, you can program a control key to put in the GOSUB 1000 with just one keypress - wish I had thought of that when I was programming music by the diskfull!

So keep plugging along, keying in durations and notes. After every half dozen notes or so, type RUN to see if everything sounds OK so far - it's easier to catch errors before they are too far back in the music.

You can get up to 5 screen lines on one line number, but you might better stick to 3 lines. You will note that the sets of notes are divided by vertical bars. You might program the notes between bars on a separate line, then add a ! followed by the words of the song that go with those notes - I find that a very good way to track down sour notes.

Regarding those bars - it might help you sometime to know this. At the beginning of the music, right after the big script S and the flats and sharps, you will see something like a 3 over a 4, or a 4 over a 4, or whatever - but often a symbol such as a barred C is used instead. A 3 over a 4, for instance, means that the notes between two of those bars will add up to 3/4 - might be three quarter notes, or two eighth notes and two quarter notes, or whatever, but they will add up to 3/4. Sometimes the very first notes will add up short, but in that case the very last ones will make up the difference.

The notes between those two bars make up a bar of music, and the emphasis is on the first note - for instance, that 3/4 is the 1-2-3, 1-2-3 beat of waltz time.

While you are keying in that music, you might come to one of those rests. You can just key in its T= value and then A=0 for a silent note. However, computer notes stop so abruptly that somehow a rest just doesn't sound right, so I often just use the previous note instead.

You may come across one of those flat or sharp symbols next to a note in the music. Give the note a number 1 lower if a flat, one higher if a sharp, and the same for any subsequent occurrences of that note, until you find next to it a symbol that looks like the sharp sign with half its legs knocked off; that means to go back to normal. You might also come across that symbol to tell you to play a normally flat or sharp note as if it was not.

I think that covers all that you absolutely have to know for now, and I have horrified all serious students of music just about enough. There are all kinds of other squiggles on the sheet music but usually they are not essential in programming music.

There is one other time-saving shortcut that I should tell you about right now. Most music consists at least partly of musical phrases, of a series of notes, which are repeated two or more times within a melody. So, the first thing you should do before you start programming a song is to search through the music for such phrases.

If you find one, of more than a few notes, that is repeated elsewhere - and make sure it is repeated exactly the same - mark it off each place it occurs and label it 500. If you find a second repeating phrase, label it 600, and so on.

Then, when you start programming, start with line 500, key in that series of notes first, and end it with RETURN. If you have another phrase, put it in lines starting with 600, again ending with RETURN.

Now, start programming from the beginning of the song in line 120, but when you come to one of those phrases, just put in GOSUB 500 - the program will jump to that line number, play those notes, and come right back to where it was.

In Part 3, we will get into programming in 3-part harmony, bass notes, auto-chording, and all kinds of things.

GEMINI 10X PRINTER

PRINTER PROBLEMS

by

Allan Cox

For several weeks I had been experiencing a problem of my printer not printing the bottom portion of the letters. Sometimes it would print fine, and at other times is misprinted.

My first thought was the ribbon was causing the problem. After replalcing the ribbon several times, without any good results, I concluded it was the bottom pins on the print head. I had also tried to clean the print head where the ribbon passed in front of it, and kept wiping out ink residue, but it still misprinted.

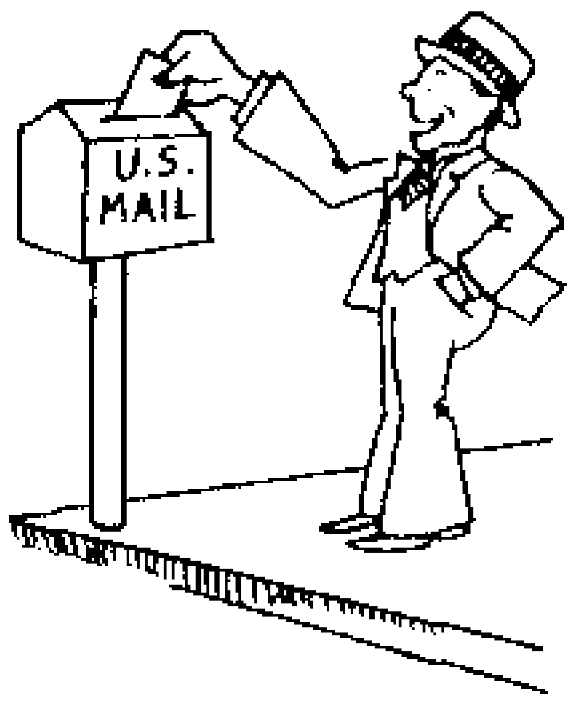
I then decided to remove the print head to see what the problem was. I disconnected the power to the printer and removed the platen knob. To remove the upper casing I removed the two mounting screws that held it in place. I then carefully lifted the casing so that I could disconnect the wiring at the control panel. With that removed, I had good access to the print head and the ribbon cable connected to it. I disconnected the ribon cable, and then removed the 2 mounting screws on the printer head.

Upon examination, I found that on the bottom of the print head, where the needle pins pass thru, was a lot of ink residue. Using my Permatex Electronic Parts Cleaner, I sprayed these cavities thoroughly. I was surprised that there were small lumps of dried ink, as well as the soluable ink, that came out. This evidently caused a restriction on the pins.

Your GEMINI 10X Printer Manual shows how to remove the casing and also instructions on replacing the print head. You should use caution in removing and replacing the ribbon cable, as it is rather fragile.

After remounting the print head I then proceeded to remove the hole punchings that came from the tractor paper, as well as dust that had collected. After reassembling the printer, I tested it and everything worked fine. My problem was solved.

When you consider that I have used my computer and printer almost every day for over 5 years, and over 2 dozen ribbons each year, I think it is remarkable what a small problem this is. I didn't even have to replace the print head, all I had to do was clean it properly. You can do the same.



Thank you Allan, for this interesting article. I am sure others may have the same trouble and are looking for a fix. Letters that are of interest to the TI world are always welcome.-ED.

TIPS 180

By RON WOLCOTT

Review By Ed Machonis

QB99'ers, Bayside, NY

TIPS 180? Ron Wolcott, the author, calls it V1.8, but I prefer TIPS 180. Why? Because it's 180 times better than any earlier version. There just aren't enough superlatives to describe this latest release. Ron has really done it this time. On a scale of 1 to 10, this program deserves at least an 18. But don't take my word for it, run out and beg, borrow or steal a copy and see for yourself. To make it easy, you'll find both single and double sided versions in our group library.

How do you describe 180 times better? I don't know where to begin, but I guess the beginning is generally as good a place to start as any. After loading the program, you are presented with the MAIN MENU screen.

```
CHOOSE FOR MAIN MENU

              LIST
              PROCESS
              READ
              END
              SELECT
              FONT
              GAP
              NOGAP
              DIRECT
              USE-SPOOL


    <CONTROL 0123456SIVODURN>

D=1           ??
F=?     FROM
        TO
```

The neat vertical menu makes menu selection a snap. To make it even snappier, menu selections are made with HOT keys. Merely press the first letter of the desired option and you're on your way! No need to type out the name of the option, no need to press ENTER, just press the initial letter and aaaawaay we go! (Ron Wolcott thanks Earl Raguse for this one.)

On the 20th line of the screen, the HOT Control keys are displayed. These are additional options available to you by simultaneously pressing CONTROL and one of the displayed keys.

The HOT Controls afford a degree of Menu hopping, or more correctly, Menu bypassing. Should you want to change the image name, you would normally go to the PROCESS MENU by pressing P and selecting the Image option from that menu by pressing I. Pressing <Control I> will take you directly to the Image option, bypassing the PROCESS MENU; like an Express train bypassing the local stations. This CONTROL ? display will follow you from menu to menu, so that you can quickly access the HOT options from almost any part of the program.

The digits associated with the Control keys are for designating the primary color to be used with a color printer. The numbers correspond, I believe, with the print codes for the available colors on color printers such as the JX-80 and the NX-1000 Rainbow. You can now change colors from line to line with the press of a HOT Control key. Don't you now wish you had bought a color printer? I do!

That D=1 on the 22nd line, displays the level of Darkness in use. The default value 1 is displayed until a different level is selected. This corresponds to the number of passes the printer will make. The range is 1 to 4 and the level can be changed by selecting the Dark Option from the OTHER Menu. The two question marks on this line are holding a place for the Image name which will be displayed there once it has been selected. Meanwhile they remind you that an image has not yet been selected.

On the next, or 23rd, line, F=? reminds you that a Font has not yet been loaded. Once selected, its number will be displayed in place of the question mark. The FROM will be followed by the name of the first image on the graphics file when it has been processed. TO on the last line will be followed by the last image name on said file. (Or the last name in a following file with the same prefix and on the same disk.)

Returning to the MAIN MENU, you will see some old faces and some new ones. This is actually the old horizontal menu displayed AFTER selecting an image drive and file prefix.

LIST is an old face with new makeup. Where in previous versions it Listed to the printer, in a single column, all the image names on the current image disk, it will now print 4 image names on each line, resulting in a much nicer listing.

TIPS 180 Cont'd....................Page 2

PROCESS is a follow up menu with the print/output program functions.

READ is a new kid on the block and a welcome one indeed. It will list to the screen all the filenames on a disk in a designated drive. In effect it's a catalog of the filenames only.

END is the way you should leave the program as it resets the printer to normal line spacing.

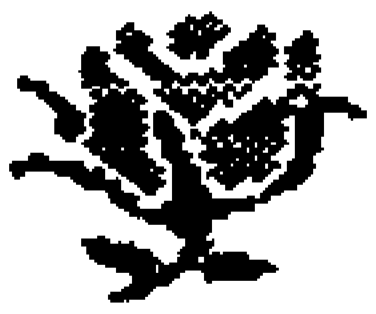
SELECT allows you to specify the drive number and two character filename prefix for processing graphic files. Use this option to load FN## and FT## files as you will not be prompted to specify an Image name.

FONT enables selection of the desired FONTTIPS file. Two new fonts, 7 and 8, are included with this release. They are full fonts with a complete set of keyboard characters available. Very nice!

GAP and NOGAP are old friends to be used for inserting/not inserting space at each end of banner messages.

DIRECT You're gonna love this shiny new face. You can now DIRECT the program output either to printer or DISK! You can spool any of the program outputs to disk and call them up at any time and print multiple copies. Great for invitations, announcements, signs, often used labels, etc. It won't put the copy machines out of business, but when you need multiple copies of an item and the nearest copy machine is miles away and not available till Monday morning, you're gonna smile a Thank You Ron!

Be sure to include a Form Feed, FF, at the end of the Card or Poster spooled to disk so that multiple copies each begin on a new page. Also be sure to reDIRECT the output to printer when you are done spooling so that the file is properly closed. Ron NOTES that spooling creates very large files and setting Darkness to other than 1 multiplies this. A test Card I spooled, with Darkness=1, used up 112 sectors. (Ron thanks Deanna Sheridan for this idea.)



USE-SPOOL will call up files spooled to disk and send them to the printer. You will be asked for the number of copies desired and the name of the spooled file. Forgot it, huh? Now you know why Ron provided that READ function! If you would like to send special codes to your printer, these codes can be contained in a file on disk and called up and sent to the printer with USE-SPOOL. Files must be in a DV-250 format and the author has thoughtfully provided a program, TIPSCMND, to create them for you.

Using TIPSCMND is simplicity itself. If you will just RUN the program as it stands, and enter ITALICON at the prompt, it will write a file to DSK1 called ITALICON which, when called up with USE-SPOOL, will set your Epson printer in Italics mode. Edit Line 7 by pressing 7 and the down arrow. Cursor to the 52 and change it to 53. Press Enter then type RUN. At the filename prompt, enter ITALICOFF. Bingo! You've just created a file to turn Italics Off. Don't like writing to DSK1? Change DSK1 in line 6 to the drive of your choice.

Better yet, copy TIPSCMND onto a blank SSSD disk and name it LOAD. Run it and create all the print commands you think you will ever need, there will be room for 126 more files on the disk. Don't forget to include cancel commands for the different print codes. In less time than it took to write this paragraph, a lot less, I created a complete set of left margin commands from 0 to 70 in increments of 10. Whenever you need to control your printer, just insert the disk and USE-SPOOL. Don't worry about remembering the filenames, READ will display them for you.

Returning to the CONTROL Hot keys; CONTROL SIVODURN provide access to the following options:

<CONTROL S> is the equivalent of SELECT and enables you to call up a new image file for processing. Using this path is more desirable than pressing S for SELECT on the MAIN MENU as it also enables you to select an image name before returning you to the MAIN MENU.

<CONTROL I> corresponds to the IMAGE option on the PROCESS MENU and enables selection of a new image name within the range displayed at the bottom of the screen.

TIPS 180 Cont'd....................Page 3

<CONTROL V> will display the current image on your screen and is a shortcut to the VIEW option on the PROCESS MENU.

<CONTROL O> will take you to the OTHER Menu described below.

<CONTROL D> accesses the DIRECT option described above.

<CONTROL U> enables the USE-SPOOL option described above.

<CONTROL R> is the same as the READ option described above.

<CONTROL N> will bring up the NEG-REV Sub-Menu described below.

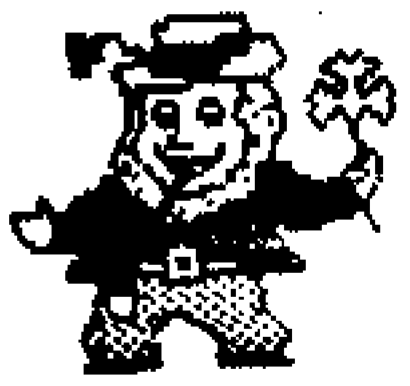
As in the past, you can make all selections with either upper or lower case letters. Where necessary, the lower case is automatically changed to upper case, even for fonts that do not have lower case letters. User Friendly with a Capital U! When you make a selection from the menu, the message "FUNCTION x FOR MAIN MENU" will appear with the letter pressed replacing the "x". Don't be misled, as I was at first, that this is a way to return to the MAIN MENU. This is a reminder of the Function you have selected. (OF or FROM instead of FOR might be less confusing.) A similar message appears when Hot Control keys are invoked.

As you have just read, an awful lot has been packed into that first screen display. If you are going to use options other than Labels, this is a good time to select a font. (Labels use the printer's resident fonts.) If you wish to process an image at this point, use <CONTROL S>, otherwise press P for PROCESS.

In previous versions, selecting PROCESS led to a short horizontal menu from which, if an Image was selected and processed, you arrived at the following menu in horizontal form. The new pathways through the program seem a lot more flexible. Previously you could not reach this menu unless an image was processed, even if you just wanted to print a sign without any image or were returning after loading a new Font and were satisfied with the current image.

```
CHOOSE FOR PROCESS

          1XART
          2XART
          DSK
          +1 -1
          MSG
          VIEW
          PIC
          NEG/REV FFD
          REDO
          CARD
          SIGN
          IMAGE
          LABEL
          END
```



Lines 20 thru 24, as described for the MAIN MENU, follow along, as they also will for many sub-menus.

1XART 2XART enable conversion of TIPS images to Instances for use in other programs such as TI-Artist, etc. Sizes 1X and 2X are 11x14 and 22x24 respectively. Do not enter _I as part of the filename.

DSK will search the image drive for the current prefix and request the image name from the range found. A quick way to process a new image file.

+1 -1 will either advance or back-up one image from the currently selected image. You can move to images further removed by repeated selection of this option.

MSG This and PIC are actually Banner functions. You will be asked to input a message and it will be printed in either Banner or Totem Pole fashion, as requested. The current Font will be used unless you have previously SELECTed an image file with an FN or FT prefix. In such cases you will be asked for a FONT CODE. This should be the number following the FN or FT prefix of the Font you wish to use. If you enter 0 the current FONTTIPS file is used

VIEW displays the current image on your screen in reduced size.

PIC prints a large image for Banners, with choice of Banner or Totem Pole style.

NEG/REV invokes the NEGATIVE/REVERSE Sub-Menu which will allow you to change negative images to positive and vice to versa. It also provides the ability to reverse (mirror) the image so it faces in the other direction. These functions are now available for all print options. (This ability was requested by me and the author Thanks ME for the idea. It's the other way around Ron, THANK YOU!)

The rationale for this is that a label image should lead the eye into the text, Front Card Image lead into the open edge of the Card and Inside Card Image face the verse. (Perfectionism is a sickness!)

[Now if we could just flip the image upside down?????? Hint, Hint. Then we could flip the image, print the Front card image right side up instead of upside down, roll back the paper, and print a different image along side with the Inside Card option. Enabling 2 smaller images, side by side on our posters.]

FFD will generate a Form Feed.

REDO returns you to the MAIN MENU.

CARD will take you to the CARD Sub-Menu with choices for FRONT, INSIDE, OTHER and EXIT. OTHER refers to the OTHER MENU discussed below. Both FRONT and INSIDE have their own sub-menus. Space does no permit a complete description of the Card option. Time and energy permitting, I hope to write separate articles in the future on how to make Cards, Labels, Posters, Banners, etc.

The bottom four screen lines have followed us to this sub-menu and it's time to talk about that 21st line, which up to now has remained blank. When using the FRONT or INSIDE Sub-Menus, it will successively display up to 6 functions as they are entered to help keep track of your entries.

As promised, this version is completely compatible with my RX-80 printer when using the Inside Card Option. Thanks Ron!

SIGN leads to the SIGN Sub-Menu where the options are HEAT, POSTER, OTHER and EXIT. the HEAT Sub-menu has most of the POSTER options except that everything is printed in mirror image so that a heat transfer ribbon can be used to create iron-on messages and images on T shirts, etc. It does have an interesting option named 2IMAGES which will print the image twice, side by side in reduced size. There is no reason why you can't use this option with POSTER by temporarily changing sub-menus. If the mirror image is not suitable you can now reverse it with the NEG/REV menu available with CONTROL N. POSTER is used when you want to create the conventional sign. With 8 fonts and thousands of images, your imagination is your only limitation.

IMAGE will let you select a new image from the current image file. If the image you want is not on the current image file, you should invoke SELECT with CONTROL S instead of IMAGE.

LABEL is one of the most popular options of TIPS and has a brand new feature. You can now offset the print (in effect changing the left margin) by up to 45 spaces. Now you can spot label sized images all over your poster, well the left half anyway. Want to print on the right half? No problem. Call up a reset left margin command with USE-SPOOL. Say you change the left margin to 40, the offset will be added to this value so using an Offset of 25 will start your image at column 65. Don't forget to reset that left margin to zero when you are done.

When printing labels, just print one label and examine it to make sure the label is as desired, if so, Ron has provided a prompt for printing more labels. If a change is required, just enter 0 at the prompt and you will be returned to the beginning.

END provides a graceful exit from the program with a printer reset. Most of your operations will eventually return you to this menu. END here saves having to go back to the MAIN Menu with REDO in order to Exit.

This completes the description of the PROCESS menu. As you can see it is a very important menu, sort of a central nervous system, which enables you to access the different functions of TIPS. Before we leave the menus, we should take a look at the OTHER MENU. This is a sort of fine tuning menu which enhances the appearance of your masterpieces and is nearly always available at the touch of CONTROL O. It looks like this:

TIPS 180 Cont'd...................Page 5

CHOOSE FOR OTHER

- FONT
- PCOLOR
- 2COLOR
- OFFCOLOR
- DARK
- CONFIG
- ALTCOLOR
- BANRBIAS
- RETURN

The options with a COLOR suffix have not been tested by me and are only of interest to those who own color printers. Envy (GREEN) leads me to direct such owners to the Documentation for further information. (It might be prudent not to select OFFCOLOR option in the presence of mixed company.)

FONT allows changing FONT in mid-card or poster without hiking back to the main menu.

DARK controls the number of passes made by your printer and is great for using up those old weak ribbons. The range is 1 to 4.

CONFIG will allow you designate the drive or drives that will be used for FONT, ART (ARTist instances), VERSE (for Inside Card) and SPOOL. You can permanently configure your copy by editing Line 130. The numbers 1,1,1,1 at the end are the default drive numbers for ART, FONT, VERSE and SPOOL.

BANRBIAS permits centering the text on Banners with FT## and FN## files which are centered for text containing descenders and which may not be used in your message. The author thinks 4 might be a good value to use.

RETURN will get you to where you came from.

This completes a quick overview of the menus. Several sub-menus have not been described due to constraints on space and time. Everything about TIPS is BIG. It's a BIG program, 85 sectors with an assembly language 31 sector loader by Irwin Hott, which loads from Extended Basic. It does a lot of things and it does them well. As you can see by this description, it is all menu driven, all you have to do is respond to the prompts, select the images and enter the text.

Included with this release is a file named CSGD2TIPS. Like the name says, it will convert your CSGD graphics, the ones with a /GR suffix, so they can be used with TIPS. You need two drives to run the program. First collect all your /GR graphics that you wish to convert on a separate disk, then RUN the program. You will need a blank formatted disk in Drive 2 to hold the TIPS file that is created. Naming convention for these files uses a 2 character prefix, the first one being the slant bar (/) as in /JAZ. You are prompted to enter the 2nd character of the prefix, the program will add the / and the AZTXT and AZXXX suffixes. This will enable import of TI oriented instances into the TIPS collections.

24 PIN PRINTERS

As noted in last month's Monitor, the Epson print commands for line spacing produce a different line spacing with 24 pin printers. Ron Wolcott has notified me that the published fix, while OK for labels, was not used by the Card option which requires a separate change.

The two places to change in Version 1.8 are Lines 1830 and 1910. As described last month, just change CHR$(65) to CHR$(51) and change CHR$(08) to CHR$(20) in each line.

To update last months fix:

In V1.7, V1.6 V1.6ER change Line 1560 as you did 1480; the trailing CHR$(10) remains.

In V1.4 the additional line number to change is 1840.

THANK YOU RON WOLCOTT!

Although TIPS contains a Copyright notice, Ron Wolcott has made the program freely available to all. Not only that, he has continued to support it in a manner worthy of the McGovern's. This last update is so extensive that it probably took as much time as writing the program from scratch. When you consider that Ron earns his bread as a Mainframe programmer, an occupation prone to the "I'll-finish-it-up-at-home" syndrome, that he should make time to write and support TIPS for our TI-99 is nothing short of fabulous.

Ron prefers to maintain a low profile so he isn't doing it for fame, nor for money. And this presents a problem in letting him know how appreciative we all are for his efforts. So on behalf of all of us Ron, I say THANK YOU! THANK YOU! THANK YOU!

MEETING DATES FOR 1991-1992

3RD SATURDAY
-- 18 MAY 1991 -- Lima Fair Meeting
15 JUN 1991
20 JUL 1991
17 AUG 1991
21 SEP 1991
19 OCT 1991
16 NOV 1991
21 DEC 1991
18 JAN 1992
15 FEB 1992
21 MAR 1992
18 APR 1992

4TH WEDNESDAY
22 MAY 1991
26 JUN 1991
24 JUL 1991
28 AUG 1991
25 SEP 1991

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