THE GUILFORD 99'ER NEWSLETTER

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The Guilford 99'er Users' Group Newsletter is free to dues paying members (One copy per family, please). Dues are $12.00 per family, per year. Send check to P.O. Box 21691, Greensboro, NC 27420. The Software Library is for dues paying members only. (Herman Geschwind , Editor)

OUR NEXT MEETING

DATE: JANUARY 7, 1986. TIME: 7:00 PM
PLACE: Glenwood Recreation Center, 2010 S. Chapman Street.

Our meeting program on January 7, 1986 will feature one of the programs that was reviewed in the December issue of our newsletter. The program is NIGHT MISSION from MILLER'S GRAPHICS. I am sure that you will all be impressed by the sparkling graphics and the rather impressive booklet that goes along with it.

REPLACING A TI99/4A KEYBOARD

by Herman Geschwind

Replacing a keyboard on a 99/4A is really a very simple job that requires no special skills beyond the use of common sense and ordinary prudence, nor are any special tools or soldering required.

A good source for a replacement keyboard assembly is Radio Shack. Evidently TI unloaded their surplus stock of keyboards on Radio Shack (and several other electronic parts houses). The Radio Shack part number is 277-1017. Be warned, however, since the keyboard was selling for $2.95 or less, sales were brisk and the keyboard might no longer be in stock. It seems that people cannot resist a bargain and I know of TI'ers who bought three or four, just in case. If your keyboard needs replacement, check with your friends or a local users group and chances are good that you might find one, if Radio Shack no longer has a supply.

In the way of tools, all that will be required is a medium size (1/8") Phillips head screwdriver and perhaps a flashlight.

First off, inspect your Radio Shack purchase and make sure that the keyboard layout is the same as your 99/4A keyboard. If there are any extra keys or if the keycaps are labelled differently, STOP. Under the same part number Radio Shack also sold non-99/4A keyboards. Adapting a non-99/4A key board for use with a TI home computer requires special skills which are beyond the ken of the average layman, if it can be done at all.

TI had subcontracted for keyboards from various sources in Japan and Korea. Thus the shape and texture of the keycaps might be different. Don't let that put you off, the main thing is that the number of keys and the layout are the same as your original.

If your keyboard passed this test, unpack it and test all keys. Look for keys that might be binding or feel "sticky".

Try to get a feel for the key action. Once you are satisfied that your replacement passed this test, go on.

Disconnect all cables from the console (power, video, PE box, etc.). Your console should be cool. If you had just used it, allow some time for it to cool down and for whatever residual electrical charges there might be to dissipate. Observe normal precautions about static electricity!

On a clean working surface turn the console over. There will be seven Phillips screws to undo. Four are at the narrow end of the console, three are at the other end and recessed. After undoing the screws, the bottom shell should come off. If it does not, recheck and make sure that you have removed all seven screws.

Once the bottom shell has been removed, three components will be visible: A printed circuit board, approximately 4" square, which houses the power supply; the keyboard assembly, which runs from the power supply board to the edge of the console; and a larger assembly which runs parallel to keyboard and power supply all the way across the console, the motherboard.

The power supply is held in place by two Phillips screws along the edge closest to the keyboard assembly. Remove these two screws and gently move the power supply board an inch or so to the side. Don't force anything since there are wires attached to the power supply board.

Next, locate and undo the four Phillips head screws that secure the keyboard assembly. Gently lift the keyboard assembly an inch or so. You might have to lift the edge of the motherboard just a little to allow the keyboard assembly to clear.

At this point you will notice that the keyboard is attached to the motherboard by a ribbon cable. Locate the connector at the motherboard side. Use a flashlight, if necessary. GENTLY pry the connector loose by pressing down with a screwdriver. Do this in several small steps along the length of the connector. The idea is to remove the connector without bending any of the pins on the motherboard.

Once the connector has unsnapped, remove the old keyboard assembly. Take time to take a good look at the row of gold pins that were uncovered when the connector came off. Make sure that all pins are straight and evenly spaced. If not, very gently try to straighten whatever pins were bent. If this is necessary, proceed with caution and use a minimum amount of force!

Insert the new keyboard assembly without forcing it into place. Line up the connector of your new keyboard with the pins. GENTLY start connecting the pins with the connector. Visually double-check that all pins mated with the connector. If not, pry the the connector loose and try again. Being too hasty at this step could result in a broken pin, so do be careful! Once you are sure that everything is lined up properly, firmly but gently press the connector down on the pins.

Relax now, the most ticklish part of the job is behind you! Next, observe that there is approximately one to two inches of extra ribbon cable. This extra length needs to be folded up and into the space between motherboard and console housing as you simultaneously seat the keyboard assembly in place. To seat the assembly you also need to lift the motherboard edge just a bit for the edge of the keyboard assembly to slip under it, simultaneously try to get the extra length of ribbon cable to fold as described. If this sounds like a job for three hands, you are right and a helper at this point of the installation does make things easier.

Now, line up the screw holes and secure the keyboard assembly with one screw. Lift the console a little bit (remember, everything should still be upside down) and test the row of keys with the numbers on it. There should be full travel for all keys, particularly the keys numbered 4 through 8. If any of these keys appear to bind or feel different from the 1 or 0 key, then the ribbon cable is not folded properly. Undo the one screw and recheck the ribbon cable. Remember, any extra length of the ribbon cable should not touch the keyboard assembly but be tucked into the empty space above the motherboard.

Once the keys check out, replace all four screws on the keyboard assembly.

Relocate the power board, make sure that the ON/OFF switch connects properly. If necessary lift the board just a little and observe the switch action. Once the switch works properly, secure the power board with its two screws.

Replace the console bottom cover. Make sure that it lines up properly with the top before replacing the screws. Seat all seven screws and then tighten by working over cross.

Your replacement keyboard is now installed and should be working properly. Don't throw your old keyboard away just yet. If it is only a few keys that refuse to work, take it to your friendly radio or tv repairman. Quite often the judicious application of contact cleaner and a good general cleaning can restore a balky keyboard to pristine health.

TI SHOPPER
by Bob Carmany

I hope that all of you are "subscribers" to "The Everything Book" from TENEX. If you aren't, you should be. The latest issue of the catalog is out and there are some truly outstanding bargains contained within its pages.

To start off with, they are running a "half price" sale on some of the QUALITY 99 SOFTWARE programs. Among some of the better deals are QS-ASSEMBLER and XB-FORTH. The first of these allows you to run the E/A disk from Extended Basic and the second allows you to run TI-Forth from Extended Basic. They are $9.95 each -- that's one of the better deals around. All in all, there are some 13 or so QUALITY 99 programs listed in the catalog and a good number of them are at half price.

TENEX also carries the line of products from MILLER'S GRAPHICS. They have NIGHT MISSION, ADVANCED DIAGNOSTIC, and EXPLORER. In fact, they might be a couple of dollars below suggested retail.

There are other bargains throughout the catalog and it is well worth the time and effort to write and request your copy. The address is: TENEX, P.O. Box 6578, South Bend, IN 46660.

If you can get a copy of MICROpendium, you might want to look over the TEX-COMP ads scattered through the magazine. They have the COR-COMP 9900 expansion system with a SS/SD drive for $379.95. There are some software bargains as well. Check pages 17, 19, 21, and 31 for some software package deals. They also have a combination deal of the Editor/Assembler plus the Navarone "Widget" for $38.95. Most of these also appear in the main ad on pages 28 and 29.

On the horizon are some "soon to be released" products. The GRAM KRACKER from is now being shipped and Craig Miller has said that he will introduce a GPL (Graphics Programming Language) utility sometime this spring. It looks as if he intends to keep supporting the TI-99/4A for some time to come.

For those of you who would like to add some modules to your MBX systems, there are three possible sources. TEX-COMP has all of the modules available as does TRITON. The going price is about $9.95 each. TENEX has some of them for about the same price.

If you are in the market for a printer, TENEX once again has some real bargains. They have a "new" printer listed, the LEGEND 808. It is a dot-matrix 100 CPS printer with a variety of type styles and both text and graphics modes. It sells for a fraction of what you would expect - $159.95. They have also reduced the 60 CPS, thermal dot-matrix STX-80 to a mere $149.95. They also carry the full STAR MICRONICS, EPSON, and AXIOM lines as well.

If you are in need of some disks, TENEX also has "the $.79 disk". They have SS/DD disks for $39.95 in a box of 50. The disks come with sleeves, labels, and write protect tabs.

There is also a variety of computer accessories available both in the catalogues and locally. Look for bargains on disks in boxes of 10 at MONEYSWORTH and BEST. There are disk files in various sizes (10 to 100 disks), printer paper, and other items of interest available.

Well, I had better get this column saved to disk so Herman can get the newsletter out. 'Til next month . . .

STAND-ALONE EXPANSION
by Bob Carmany

When I started to expand my system a couple of years ago, I elected to go with stand-alone expansion rather than the more expensive (at that time) Peripheral Expansion Box.

The first thing that I added was a 32K Memory Expansion made by Tachyon Systems. It had its own power supply and plugged into the side of the console. Next, I added a parallel printer port (the Paraprint 18A) and an STX-80 printer from Star Micronics. Of course, a TI PHP 1800 stand-alone disk controller soon followed along with a PHP 1850 disk drive. In fact, there are still some of them around from various sources. These stand-alone disk systems were produced before the advent of the PEB when the TI-99/4A was expanded solely by stand-alones.

Then it occurred to me that life would be much easier if I had a second disk drive. The problems really started!! I quickly found out that adding a Tandon 100-A disk drive was not as easy as the manual said. In fact, if you followed their instructions, you might never get it up and running.

After much experimenting, swearing and frustration, I finally found out what needed to be done. You will need a power supply for your second drive (unless you already have one) and a cable other than the one that came with your PHP 1850 disk drive. Tenex has the cable that you need (I wish the portion between the controller and the first disk drive was longer). It is listed in the catalogue as a "cable for two external disk drives" part number 10182. It is a non-polarized cable (ie. it doesn't have the notches in the connectors).

The rest of the procedure is straight-forward and fairly simple. I used the TI PHP 1850 disk drive as "DSK1" and the Tandon drive as "DSK2". First, open the PHP 1850 and remove BOTH the resistor pack and the strapping pack (contrary to what the manual says). Alternatively, you can break the connections in the strapping pack except for the first two. This allows the PHP 1850 to be addressed as "DSK1". If you don't want to "tamper" with the strapping pack, simply remove it and use a two regular paper staples to jump the first two pairs of pin sockets (marked HM and DSK0). Plug the middle connector directly into the back of the disk drive.

The resistor pack in the Tandon drive is in the middle of the circuit board at the top (with the drive door facing you). It should have a 16-pin 150 Ohm resistor pack in it. If there is not one there, they can be purchased for a couple of dollars at an electronics store. The strapping pack (or shunt pack) is on the right side of the circuit board near the top. To designate this drive as "DSK2" you will need to jump the third set of pin contacts again with a paper staple (the second set for "DSK1", the fourth for "DSK3", etc.). Then, plug the end of the cable directly into the second disk drive.

If you have done everything correctly, the drives will come up briefly when you power up the system. If they come on and stay on, you have the cable connected backwards. You simply turn the end over at the controller.

To test the drives, type in "OLD DSK1.LOAD" and disk drive 1 should come on (the light will light). If you didn't have a disk in the drive, you will get an error message but it won't matter. Then, type in "OLD DSK2.LOAD" and the other disk drive light will come on. If everything checks out at this point, you are home free.

If you have problems, check your cable connections and check to make sure that you have the proper pairs of IC pins jumped.

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CHARACTER INPUT
by Bob Carmany

Have you ever wondered which character was defined in which DATA statement? If you want to find out the various character definitions and what the generated character looks like, this short program might help you out.

All you have to do is enter the character definer and the program will do the rest. It will even re-print the definer that you entered so that you can check to make sure that you got it right.

Just type in the following program:

```
100 CALL CLEAR::INPUT "TYPE IN CHAR CODE: ":A$
110 CALL CLEAR::CALL CHAR(35,A$):: CALL HCHAR(12,14,35)
120 FOR DELAY=1 TO 2000::NEXT DELAY
130 DISPLAY AT(14,7):A$
140 DISPLAY AT(22,1):"ENTER ANOTHER CODE (Y/N)?"::ACCEPT
AT(22,36)VALIDATE("YN"):B$
```

```
150 IF B$="Y" THEN 100 ELSE 160
160 CALL CLEAR::FOR DELAY=1 TO 1000::NEXT DELAY::END
```

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CASSETTE PROGRAM LOCATION

by David Cohen

A while ago I wrote about the two types of program storage. I compared disk and cassettes, mentioning the problem of finding specific programs on a cassette. However, I recently came upon a solution to this problem in the 99/4A National Assistance Group newsletter.

The idea itself comes from H. L. Edwards. Here are his suggestions: (1). Pull out the audio input (red wire) to the cassette recorder. (2). Note counter number on the program list to be included with the tape. (3). Make a brief voice recording of the program title. This can include date, length of program and any other relevant data. (4). Rewind tape to the counter number at the beginning of the voice recording. (5). When the computer prompts, press <RECORD> and press <ENTER>, press <PLAY> and then <STOP> immediately after the voice recording ends. (6). Replug the audio input into the cassette recorder, then press <RECORD> and <PLAY>. This records the program, preceded by the voice message. Leave about five seconds after saving one program until you begin the voice recording for the next program on the tape. (7). When looking for a program on the tape, note the counter number from the program listing. Return the tape to the end of a program and listen for the voice message. (8). Calculate the difference in counter numbers to the beginning of the desired program and run <F-FWD> or <RE-WIND> for that interval. This should put you near a quiet interval and sets you up to load the desired program.

If any of you have similar ideas for making the TI easier to use, why not send them in to the newsletter so others can share in your discovery. As the saying goes:"A stupid man doesn't learn from his mistakes. A smart man learns from his mistakes. But a wise man learns from the mistakes of others." If we share our mistakes and our discoveries we can all become wiser, and none of us has the time or inclination to make all the mistakes alone. So let's share all those mistakes and solutions with each other. In this way we can all get smarter in the use of our TI's.

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COLOR EDITOR

contributed by Bob Carmany

At our last meeting, one of our members asked if there was a way to combine two of the 16 basic TI colors to get a third different color. As it turns out, there most certainly is!

The following program uses double sized sprites to form the color selections. When you are at the color of your choice, press the 'fire' button on joystick number 1 or any key except the 'up' or 'down' arrow keys. The program uses your first choice as the foreground color and the next color that you choose as the background color. This program was printed some time ago in THE SMART PROGRAMMER. We hope that you enjoy it!

```
1 ! COLOR EDITOR for mixing any desired 2 colors with joyst or keyboard.
2 ! With Greetings E.H. REITINGER Vienna, Austria
3 ! TI-99-Journal-Klub A-1150 Wien Felberstrasse 24/26
10 CALL SCREEN(16)::CALL CLEAR
20 M$="55AA55AA55AA55AA"::A=122
30 CALL MAGNIFY(2)::CALL CHAR(64, RPT$("F",16),34,"FF8181FFFFFF",
128,"FFFFFFFFFFFFFF",73,M$):: CALL COLOR(3,16,2,4,16,2,6,1,1,5,2,1)
40 CALL VCHAR(1,27,64,192)::CALL HCHAR(23,1,64,162)::H=1
50 G=-2::FOR I=3 TO 16::CALL SPRITE(#I,64,I,(G+I),230):: NEXT I::CALL
SPRITE(#2,34,16,5, 230)
60 CALL SPRITE(#1,42,2,A,231)
70 FOR S=4 TO 22::CALL HCHAR(S,3, 73,24)::NEXT S
80 CALL JOYST(1,X,Y)::ON (SGN(Y) +2) GOTO 90,130,110
90 A=A+12::IF A>170 THEN A=2
```

```
100 CALL LOCATE(#1,A,231)::GOTO 130
110 A=A-12::IF A<0 THEN A=170
120 CALL LOCATE(#1,A,231)
130 CALL KEY(1,K,S)::IF S=0 THEN 80
140 IF K=5 THEN 110::IF K+1=1 THEN 90
150 F=INT(A/12+2)::CALL SOUND(200, 660,2)::GOTO 160
160 CALL COLOR(6,F,H)::DISPLAY AT (24,9)SIZE(7):USING " ## ## ":
F,H::H=F::GOTO 80
```

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COMPUTER CHARACTER FONT

contributed by Bob Carmany

Here are some character definitions that will provide you with a set of capital letters that look as if they were "computer generated".

For those of you with Extended Basic, you can combine the lines and resequence if you wish. The program can then be saved to disk in a MERGE format and MERGEd back into the beginning of a program in which you want these characters to be displayed. I would suggest that you resequence the lines beginning at 1 with an interval of 1.

```
90 ! COMPUTER CHARACTER FONT
100 CALL CHAR(37,"E2A4E8102E4A8E")
110 CALL CHAR(40,"0E18101010180E")
120 CALL CHAR(41,"E03010101030E0")
130 CALL CHAR(46,"00382838")
140 CALL CHAR(48,"7C82829A9A827C")
150 CALL CHAR(49,"60602020207878")
160 CALL CHAR(50,"FE0202FE8080FE")
170 CALL CHAR(51,"FC0404FE0606FE")
180 CALL CHAR(52,"C0C0C0C6FE0606")
190 CALL CHAR(53,"FE8080FE0202FE")
200 CALL CHAR(54,"F88880FE8282FE")
210 CALL CHAR(55,"FE8202043E0808")
220 CALL CHAR(56,"7C4444FEC6C6FE")
230 CALL CHAR(57,"FE8282FE060606")
240 CALL CHAR(58,"00181800001818")
250 CALL CHAR(63,"7C86860C180018")
260 CALL CHAR(64,"7C82BAAAAAAABC")
270 CALL CHAR(65,"7E42427EC2C2C2")
280 CALL CHAR(66,"FCC4C4FEC2C2FE")
290 CALL CHAR(67,"7E46464040427E")
300 CALL CHAR(68,"FEC2C2C2C2C2FE")
310 CALL CHAR(69,"FE8080FEC0C0FE")
320 CALL CHAR(70,"FEC0C07E404040")
330 CALL CHAR(71,"FEC6C6C0C6C2FE")
340 CALL CHAR(72,"848484FEC6C6C6")
350 CALL CHAR(73,"10101010303030")
360 CALL CHAR(74,"04040406C6C6FE")
370 CALL CHAR(75,"828488FEC6C6C6")
380 CALL CHAR(76,"404040C0C0C0FE")
390 CALL CHAR(77,"C6AE968686B6B6")
400 CALL CHAR(78,"C2A2928A86B2B2")
410 CALL CHAR(79,"FE828286868 6FE")
420 CALL CHAR(80,"FE8282FEC0C0C0")
430 CALL CHAR(81,"FE8282C2CEC3FE")
```

```
440 CALL CHAR(82,"FC8484FEC6C6C6")
450 CALL CHAR(83,"FE0280FE0202FE")
460 CALL CHAR(84,"7E181818181818")
470 CALL CHAR(85,"868686868686FE")
480 CALL CHAR(86,"86868686462418")
490 CALL CHAR(87,"86868696965428")
500 CALL CHAR(88,"42422418244646")
510 CALL CHAR(89,"42422418181818")
520 CALL CHAR(90,"7E42047E10207E")
```

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FORTH FORUM

by Bob Carmany

This month, I thought that I would start off a series of disk utility screens. For those of you with the Wycove Forth system, it is interesting to note that these screens were free for the asking from Tim McEachern of Wycove Systems, Ltd. It seems that he was displeased with a review that appeared in MICROpendium last year and offered them to anyone who would write and request them. The first of the screens is a disk DSR screen, the second is a direct sector read and write, and the third is a routine that will allow you to rename a disk.

The entire series includes screens to format disks, set or reset protection, other read and write utilities and a 2 drive backup program. If you want the entire series plus some terminal programs, try contacting Tim McEachern at Wycove Systems, Ltd., P.O. BOx 499, Dartmouth, Nova Scotia, Canada B2Y 3Y8 (phone number 902-465-4339).

Without further delay, here are the Forth screens for this month.

```
SCREEN # 29
( Direct Disk DSR calls with FILES )
( PAB@ : get pab block vdp address )
: PAB@ ( -- vdpadr ) PAB @ ;

( DISK-DSR : Call disk dsr subroutine )
( Warning -- uses top two free bytes of
  VDP RAM for operation code )
: DISK-DSR ( m -- f )
  >8370 @ 1- SWP OVER !VDP 10 DSRLNK ;

( ?DISK-DSR : get alternate err code )
: ?DISK-DSR ( divisor n -- f )
  >R DROP >8350 C@ R> / ;

( FILES : set maximum number of open
          disk files, from 1 to 16 )
: FILES (n -- )
  R/W-CLOSE
  >834C C!
  >116 DISK-DSR >20 ?DISK-DSR
  14 ?DSRERR ;

   -->



SCREEN # 30
```

```
 0 (Direct Sector Reads and Writes )
 1
 2 ( Read or Write disk sectors
 3   sector# from 0 to 359 if single sided
 4   to 719 if double sided or density and
 5   to 1439 if double sides and density.
 6   disk# from 1 to 3 )
 7 : DR/W ( sector# disk# r=1/w=0 -- f )
 8   >834D C!    >834C C!
   9 >8350 ! PAB@ >834E !
10   >110 DISK-DSR 1 ?DISK-DSR ;
11
12 (RDS : Read a disk sector to the pab
13        block in vdp )
14 : RDS ( sector# disk# -- f )
15   1 DR/W ;
16
17 (WDS : Write a disk sector from the pab
18        block in vdp )
19 : WDS ( sector# disk# -- f )
20   0 DR/W ;
21
22
23
24
25
```

SCREEN # 31

```
 0 ( Rename disk file )
 1
 2 ( Copy a RAM-based filename to VDP)
 3 : !FN>VDP ( adr len vadr -- )
 4   DUP 10 BL VFILL SWAP RAM->VDP ;
 5
 6
 7 : RENAME ( adr1 ln1 adr2 ln2 disk# -- f)
 8              ( old      new )
 9   >834C C!
   10 PAB@ DUP >834E ! !FN>VDP
   11 PAB@ 10 + DUP >8350 ! !FN>VDP
12   >113 DISK-DSR >20 ?DISK-DSR ;
13
14
15 ( example of use:
16 : GG " oldname" " newname" 2 RENAME. ;
17   note: this is hard to use with "IN" )
18
19
20
21
22
23
24
25
```

MODEM TALK
by Herman Geschwind

RALEIGH (919)851-8460. 300, 1200 and 2400 (!) baud. Seven days, 24 hours. Amnon Nissan without doubt has one of the better TI boards in the country. His callers include some of the better "names" in the TI world. The download sections of this board are excellent and include some of the best free- and shareware currently available for the TI. (Mack McCormack's excellent disk cataloguer (in assembler), a new version of an XB TI-Writer loader, to name just a few). The "D" download section is for members only ($15 contribution) but the "M" section which is open to the public is excellent, too. Amnon was one of the first to offer both TEII and XMODEM support for downloads. XMODEM is really a pleasure to use once you get the hang of it. The big benefit is that file transfer time is at least twice as fast as TEII (sure saves on phone bills!). Ever since offering XMODEM Amnon can now also accomodate the IBM, Sanyo, Apple and Commodore crowd (with special download sections). This means it is no longer a true TIBBS but it evidently helps Amnon in broadening his base of support and we TI'ers benefit from that, too.

DURHAM (919)383-8707. 300 baud. Seven days, 24 hours. This is a new TI board which was started only recently by Ron Guerly. Ron use the Fowler BBS software so if you have used one of those before it is not difficult to navigate around. Ron is doing an excellent job of making it a attractive board for local TI users. He is updating his "F" section frequently and the number of available downloads is growing rapidly.

CHARLOTTE (704)541-3776. 300, 1200 baud. Another Fowler-type board. This one has been down for a while. The operator is in the process of installing a 10 Meg hard-disk (!). This should be quite a board when it cranks up again.

SOURCE. If you are tired of TEXNET, try PARTI. At the command level key in PARTI R 85.15036. This is one of several PARTI branches dealing with TI. After the welcome message key in N <ENTER> and the R 85.15036 85-87. The other TI PARTI branches are 83.10646 85.15027, 85.15032, 85.15033, and 85.15013. These various branches deal in subjects such as TI-Writer, MultiPlan, Forth, Basic/XB, Assembler,etc. In opening message look for ANSWER, this number will tell you how many "answers" there are. They all can be accessed with the "R" command as described. PARTI takes some getting used to but you will find interesting contributions by such luminaries as Craig Miller, Ron Albright, John Clulow, etc.

SOFTWARE UPDATES
by Herman Geschwind

DM1000: The truly superb Disk Manager 1000 is now available in Version 2.2. The major change is internal, the program has been recompiled so that it no longer requires an intermediate loader for XB. The documentation has been rewritten and now is of professional quality. The documentation both in contents and presentation without doubt is the best of any "freeware" program that I have seen.

XB TI-WRITER. Gary Russel has come up with an XB loader for TI Writer. Unlike Tom Knights effort, this version supports the (S)earch (D)irectory function. With so many "freeware" XB loaders around for TI Writer there is no excuse for not using this excellent wordprocessor. We also have a "mini-documentation" for TI Writer if that is what might have kept you from using this program.

Assembler XB Screen Dump by Danny Michaels. There are a number of screen dumps floating around but of all that I have seen Danny's is the best. By passing parameters with the XB "Call Link" statement, dumps can be made double-sized, rotated, tabbed on the page, etc. (Note: The version that I have only supports PIO to Epson compatible printers.)