

THE NATIONAL NINTY-NINER

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THE 99ER'S ASSOCIATION
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DON VEITH - EDITOR/PRESIDENT

\$1.50

CREATED FOR TI 99/4A HOME COMPUTER OWNERS

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ANNOUNCEMENTS

THE 99'ERS ASSOCIATION BULLETIN BOARDS

By Don Veith, Editor

Bulletin Boards # 3 and #4 have joined our Primary Bulletin Board Network. The total complement of four (4) BBS's completes our primary network. We have placed these BBS's in an effort to make them accessible to the majority of our subscribers. Each Bulletin Board will have articles from THE NATIONAL NINTY-NINER and articles of interest from local writers. Articles will be available for downloading and your personal use. The BBS' will be utilized for announcements, product updates, and information releases from our organization and other firms. Each Bulletin Board's telephone number, location, and system operator's name (SYSOP) are listed in the table at the end of this article.

Advertising space is available on our Bulletin Board System. Any firm supporting the TI-99/4A Home Computer with software, hardware, or retail sales of products may place advertising on our Bulletin Board Network. Please contact Don or Luci Veith at THE 99'ERS ASSOCIATION; 3535 SO. H ST., # 93; BAKERSFIELD, CA 93304; (805) 397-4361; for more information about advertising on the Bulletin Board Network. PLEASE DO NOT CONTACT the SYSTEM OPERATORS about advertising rates for our Bulletin Board Network.

The Bulletin Board telephone numbers, SYSTEM OPERATORS, and their locations are listed in the table below:

<u>BBS #</u>	<u>TELEPHONE #</u>	<u>OPERATOR</u>	<u>LOCATION</u>
1	(617) 321-8214	RUSSELL MEDEIROS	MALDEN, MASS
2	(509) 328-0553	SCOTT DARLING	SPOKANE, WASH
3	(713) 227-4128	BOB BAKER	HOUSTON, TEX
4	(205) 767-5490	JOHN MOODY	FLORENCE, ALA

NEW SOFTWARE AVAILABLE UNDER FREWARE CONCEPT

Joseph Bartle has several programs available for distribution under the freeware concept. Additional information about the software offered is outlined below:

CS1INDEX+ - CS1DOC and CS2DOC are included with this package. CS1INDEX is the original program which contains all the documentation. This program is for cassette users who do not have an Expansion System. CS1INDEX is an Auto Program Finder which maintains a catalog of programs on the tape.

ENVELOPE+ - This program creates an envelope for mailing a disk complete with the TO and FROM addresses. Simply input the prompted information and then cut and paste the envelope when printed. The author suggests using a glue stick to paste the envelope together.

DSKLABEL+ - This program prints up to 21 file names on a standard 15/16" label. Paper or larger labels will print longer lists of files. You are also able to control what types of programs may be listed.

DSKJACKET+ - A disk jacket outline is printed by this program. When complete, the disk jacket also contains a disk catalog printed on the jacket's front side. Disk jackets can be color coded to represent the different types of programs contained in your library.

Mr. Bartle is requesting a very nominal fee of \$5.00 for all four of these programs. Please forward your cassette or disk enclosed in a mailer to the address listed below. Sufficient postage to insure the return mailing of your disk/cassette must be included in the package. Mr. Bartle would appreciate the inclusion of a \$5.00 donation. The donation does not have to be forwarded until after you receive the software and find it useful. My personal policy is to include a donation each time I forward a request for software under the freeware concept. The address to obtain the software is:

NORTHCOUNTRY SOFTWARE
C/O MR. JOSEPH BARTLE
16 S AND E TRAILER CT.
PARISH, NEW YORK 13131

DataBioTics UPDATE

By Bill Mosoid

4A/TALK OWNERS - The authors have modified 4A/TALK to operate with the TI-WRITER module. If you are interested in adding this option to your copy of 4A/TALK, forward your original disk plus \$3.50 to DataBioTics. The updates will be placed on your disk. The original disk will then be returned.

MINIWRITER II AND III are now in stock and available for delivery to interested purchasers. MINIWRITER II retails for \$39.95. MINIWRITER III, which includes a built-in parallel printer interface, retails for \$99.95. MINIWRITER II and III are available from your local dealer or DataBioTics, Inc.; P.O. Box 1194; Palos Verdes Estates, CA 90274.

MORNING STAR SOFTWARE ANNOUNCES A NEW 128K RAM EXPANSION BOARD

By Scott Swanson

Morning Star's 128K Memory Expansion Board is dramatically different. It provides the missing link in the 99/4A memory environment. Now you may enjoy bank-switching up to 160K of memory - or more! Adequate space for ROM-resident control software. With 48K of direct access expansion box memory on-line, you have programming elbow-room. Keep your 32K in the PEB and use it - the 128K Memory is added on for a total of 160K. Leave your Foundation 128K in the PEB utilizing 96K for disk emulation and 160K for program memory. The potential for serious, leading-edge programming techniques is here!

The Morning Star 128 Ram Expansion Board:

Provides 16 banks of 8K or 8 banks of 16K plus your 32K for 40K/48K expansion RAM online (64K total including VDP RAM)
160K/288K total expansion memory
Use with TI 32K or Foundation 128K memory (still functions as disk emulator)
2 sockets for 8K/16K of EPROM
6 modes of operation

The board contains 128K of RAM plus sockets for two 8K ROM chips. Unlike substitute boards for the TI 32K Module, this board switches in either 8K or 16K in addition to the 32K card. Since it makes 40K or 48K available in the PEB at all times, it allows running larger programs than was formerly possible. The facility for "bank switching" 16K at a time while 32K remain "resident" affords true program overlay techniques in programs up to 160K long.

The Morning Star 128K memory expansion board is operated by selecting one (1) of six (6) software-controlled modes:

MODE 1 - 8K of ROM (type 2764 ultraviolet erasable) is switched into the DSR space at >4000 to >5FFF and may be used to implement power-up and device service routines. CRU bit 0 enables and disables the ROM while CRU bit 4 selects the second 8K ROM for large DSR's. (See the Editor/Assembler manual for more information.)

MODE 2 - 8K of RAM (type 4164 dynamic) is switched into the DSR space instead of ROM. CRU bit 0 still enables and disables the RAM so that other devices' DSR's may be activated. CRU bits 4..7 select one of 16 RAM banks for code and data selection in very large programs.

MODE 3 - 8K of RAM is switched into the cartridge space, >6000 to >7FFF. CRU bits 4..7 again select one of 16 RAM banks to be made available to other devices' DSR's. The RAM remains accessible in the cartridge space at all times with this mode selected.

MODE 4 - The 8K of ROM #0 is switched into the DSR space, >4000 to >5FFF, while simultaneously 8K of RAM is switched into the cartridge space, >6000 to >7FFF. (This mode combines modes 1 and 3.) CRU bit 0 enables and disables the ROM, but leaves the RAM accessible. CRU bits 4..7 select one of 16 RAM banks to be made available to the DSR or other routine in the first on-board ROM.

MODE 5 - All 16K of ROM is switched simultaneously into the combination of DSR and cartridge spaces, >4000 to >7FFF. Programs then may make use of the FMX mechanism in the console ROM to access subroutines in any part of this 16K.

MODE 6 - Any one of the eight 16K RAM segments may be made to appear in the combination of DSR and cartridge spaces, >4000 to >7FFF, instead of ROM. As in all modes, CRU bit 0 enables and disables the RAM in the DSR space, but the upper 8K remain accessible at all times with this mode selected. CRU bits 5..7 select the bank. Of course, none of the last four modes may be used while a cartridge is inserted.

32K of RAM (either TI or Foundation 128K) **MUST BE PRESENT** to use the Morning Star 128K Memory. It allows the Foundation board to continue its disk emulation.

The board may be strapped to any of the standard CRU addresses for resolving conflicts in DSR assignments between third-party PEB modules. For systems without excessive power supply loading, two Morning Star 128K boards can be installed at separate CRU addresses for memory needs up to 288K. The Morning Star 128K RAM Expansion Board design includes full card edge signal buffering to continue the high standards found in TI's modules. We utilize the same clamshell for quality and durability.

Requires PEB, 32K memory expansion (TI or Foundation 128K)

Loading programs requires Extended BASIC cartridge OR Editor/Assembler cartridge OR CorComp disk controller or on-board DSR EPROM (not provided)

Requires assembly language programming (not provided) for use with Extended BASIC.

Price: \$199.00 plus shipping - MASTERCARD, VISA, and AMERICAN EXPRESS accepted - 128K Ram Board available from:

MORNING STAR SOFTWARE
4325 S.W. 109TH AVE.
BEAVERTON, OR 97005
(503) 646-4695

EDITOR'S NOTE: Morning Star Software currently has several 128K Memory Boards on loan for Beta testing. We hope to place software for operating the MSS Memory Board into the Public Domain. Another unit is on loan to a Mid-Western Bulletin Board System for Beta testing.

New Bulletin Board Software is currently under development by DataBioTics including an option to utilize the MSS 128K Memory Expansion. This software, named 4A/TALK BBS, is expected to be available for Beta testing in the near future. It will be available for purchase in September, 1985. A new development will be implemented with this software. The software will allow the BBS operating system to determine and automatically adjust to the type of terminal emulation protocol being used by the caller. The software will support BOTH Terminal Emulator II and the X-MODEM protocols. The TE II protocol developed by DataBioTics in their 4A/TALK operates at a faster response time than the module developed by TI. Results of the Beta Testing Phase on this new Bulletin Board Operating Software will be published in this newsletter when all tests are completed. Feel free to contact our organization for more information at 3535 So. H St., #93, Bakersfield, CA 93304.

NATIONAL SOFTWARE LIBRARY PROGRAM DISTRIBUTION

THE 99'ERS ASSOCIATION is making a disk of Public Domain Software from our Library available for distribution to our subscribers. We plan to release a disk of software during the months of February, May, August, and November of each year. Software Release # 001 will be available to all subscribers this month. Our ability to release programs on a continuing basis is dependent upon your efforts to provide software for release. Read the next article if you are interested in donating software to our National Library. We have established a catalog of exchange programs. You may select an exchange program from the list for each program submitted to our librarian.

The procedures to obtain a copy of the programs contained in Software Release # 001 are outlined below:

1. Forward a SS/SD initialized disk to the address located at the end of this article.
2. Please include two (2) address labels inside the package. One label will be for your return address. The second label should have the address listed at the end of this article.
3. Sufficient postage MUST BE included for the return of your diskette and mailer.
4. THE 99'ERS ASSOCIATION or Keith Felix, our Librarian, ABSOLUTELY WILL NOT pay the postage to return your disk.
5. If you fail to include sufficient return postage, we will mail a courtesy post card reminding you of this fact. The disk and software will be mailed upon receipt of the postage.
6. Your subscriber number must be included in the software request. An excellent idea would be to place it on your enclosed labels. The number will be verified against a subscriber list before the software is returned.
7. Please allow two (2) to four (4) weeks for your disk to return after it is initially mailed.
8. The only programs available from the Software Library will be those preselected by our staff. Do not disturb Keith with requests for additional programs not already released to the Public Domain.

The address to contact for the disk of software is:

SOFTWARE RELEASE # 001
C/O KEITH FELIX
43 MUIRFIELD CT.
SAN JOSE, CA 95116

THE 99'ERS ASSOCIATION NATIONAL LIBRARY

Our organization is seeking programs for inclusion in THE 99'ERS ASSOCIATION National Software Library. The programs forwarded for inclusion in the Library must be accompanied by a Public Domain Statement. The Public Domain Form may be obtained by writing to our Bakersfield address or to Keith Felix, our Librarian.

The Library is accepting Extended Basic, Forth, Assembly, and Pascal programs. Forward all programs to our Librarian, Keith Felix, at the address below. We have been asked by some individuals what they will receive for donating programs to our National software Library? A catalog of exchange programs is available to individuals who submit software for inclusion in our Library. Forward the programs you wish to donate to Keith at the address listed below. Please include a self addressed, stamped envelope with the programs you forward on disk or cassette. The envelope will be used to mail the exchange catalog and order blank back to you. Select the programs you desire and return the list to Keith. He will load the selections marked on the order blank onto your disk or cassette and forward the complete package back to you once more. Please select an equivalent number of programs for those you donated. Do not write letters to Keith requesting an Exchange Catalog prior to submitting software. All such requests will graciously be declined. Contact Keith Felix at the address below. We appreciate your support of our efforts to create a National Software Library.

THE 99'ERS ASSO. SOFTWARE LIBRARY
C/O Keith Felix
43 Muirfield Ct.
San Jose, Ca 95116

FROM THE MAILBOX

Items appearing in this section were received in the mail unsolicited. We print the information here as a courtesy to our readers. The listing of a firm's offer within this section of THE NATIONAL NINETY-NINER does not constitute an endorsement by this publication or THE 99'ERS ASSOCIATION.

OPEN LETTER TO TI USERS FROM NAVARONE INDUSTRIES

By Will Madley, Director Of Marketing

As you know, Navarone Industries has been developing products for the TI-99/4A home computer for the last three years. I'm sure you also know that, in the last 12 months, the 99/4A has become an orphan in the truest sense of the word. There are no major publications servicing the 99/4A. There are no editorials, no product reviews, and no advertising reaching 4A users. Micropendium and MiniMag99 seem to be the only serious magazines out there, but their combined readership is less than 20,000.

You may have also noticed the dealer and distribution channels for 4A products appear to be drying up. And if that is not enough, be informed that LaFara's TI-International User's Group in Bethany, OK has just filed for protection under Chapter 7 of the Federal Bankruptcy Act. Not a pretty sign for those of us who enjoy using our TI's. We feel the 4A is a better computer today than it was two years ago. And that is because hardware peripherals and software is so much better. Unfortunately, a few people look at it that way because the media has decreed, "THE 99/4A IS DEAD!"

When you look at the facts, the 4A is not dead but it does look like it has a terminal disease. We asked the following questions of several user groups: (1) When was the last time you visited your local TI-99/4A dealer and got a demonstration on a new software program? (2) When was the last time a major developer asked to participate in the program of your monthly meeting? (3) When was the last time you had an opportunity to tell a developer what you wanted to see in a product rather than having the product crammed down your throat? There wasn't a positive response from any club we questioned.

Navarone, who has built its reputation on quality products for the 4A, is fed up with this information blackout, erosion of the marketplace, and is committed to reversing this downward trend. So, we are in the process of putting into place a program that will give the qualified TI User Groups a first hand opportunity to see, touch, and feel new products for the 4A before they're released.

Users will also have an opportunity to let developers know what they think of the product, what features they would like to see, and what types of new products need to be developed. Users Groups will benefit in another way as recipient of free evaluation units. These can be possibly be raffled off to generate income for the club.

Quite frankly, we're really excited about the possibilities! We feel this type of dialog is long overdue and that the single most important resource in the TI market, its dedicated users, has been all but ignored. We're going to hopefully correct this injustice.

If you guys really want to see the 4A fly, Navarone is willing to work with you to make it happen. So, contact your nearest TI User Group and let them know that you're excited about this program too!

One more thing of special interest to TI developers. Navarone has a new program available to encourage new product developers to publish their programs through this channel. The royalties are aggressive and the opportunities for experienced developers is unlimited. So, if you know someone who has developed a software program and who might be interested in this channel of distribution, please have them contact Navarone directly and we'll help them review the possibilities.

We hope you are as excited about this program as we are. We know this will have significant impact on the way products are developed for the 99/4A and we look forward to your participation.

Editor's Note: Navarone Industries' new address is : 19968 El Ray Lane; Sonora, CA 95370; (209) 533-8349

Editor's Note: We regret to inform you that Mr. Hadley is no longer employed by Navarone Industries. We had the privilege of working closely with Mr. Hadley in a recent mailing to Users Groups in the United States. His excellent perspective and refreshing attitude will be missed.

RIDGE SERVICES

This firm's catalog features software, diskettes, and surge suppressors. Programs offered by the firm are Personal Social Register-\$35.00, Pro Football Analyst-\$35.00, Personal Inventory Program-\$25.00, and Lotto Picker-\$35.00. Wabash Diskettes are featured: SS/SD-\$14.00, SS/DD-\$16.00, DS/DD-\$20.00 for a box of ten (10) diskettes. A six (6) receptacle surge suppressor is available for \$39.95. Add a six foot cord and a master switch for \$79.95. Contact the firm at: Ridge Services; 170 Broadway, Suite 201; New York, NY 10038; (718) 833-6335

FLOPPY DISK MAILERS

Bulldog Container Co. has two types of Disk Mailers available. A single size for one disk or a multiple size for up to five (5) disks are available from the firm. The Mailers are constructed of corrugated cardboard for rigidity and cushioning with a self-locking flap for positive closure. Details on quantity and prices are outlined below:

Per Bundle Of	25	50	100	
Single	Price	.69 ea	.59 ea	.49 ea
Or				
Multiple	Shipping	\$2.00	\$3.00	\$5.00

No shipping or handling charges are assessed on orders of 300 or more Disk Mailers. California residents must add funds to cover a 6.5% State sales tax. Users Groups are offered a price of \$0.45 for disk mailer orders of 1000 units minimum. The firm will pay all shipping and handling for orders of 1000 units. Contact the firm at: Bulldog Container Corp.; 4213 Glen Haven Rd.; Soquel, Ca 95073

ODDS 'N ENDS

NEWS 'N VIEWS

By Edgar Dohmann

Perseverance really does pay off. So far 1985 promises to be one of the best in the history of the TI-99/4A. While some software companies site poor sales and are exiting the /4A market, others are taking their place so the number of sources for new software seems even greater than before.

What is even more encouraging is that the variety and quality of /4A software is even better than before. Already this year has given us two of the best software packages ever developed for our computer. These two packages are Advanced Diagnostics from Miller's Graphics and BITMAC from Databiotics. I highly recommend both of these products and both companies assure me that more similar quality products are on the way.

The May issue of the MICROpendium has a review of eight (8) software products which are currently available from the authors under the FREEMARE concept. Under this marketing concept, you are free to obtain and distribute copies to anyone but if you like the product and find it useful you are asked to send a stipend (usually up to \$10.00) directly to the author. This is a unique marketing concept and I encourage anyone who gets such a product and finds it useful to send a contribution to the author. The more we support people like Danny Michael (NEATLIST and SCREEN DUMP), John Taylor (SPRITE BUILDER), Tom Knight (TK Writer), Fredrick Hawkins (X DISASM) and others like them, the more high quality software we will have to choose from and the longer our computer will survive.

Speaking of the MICROpendium, I highly recommend that everyone subscribe to this magazine. It gets better every month. It contains reviews, news, hints, programs, ads, and subscribers comments. It is devoted entirely to the TI-99/4A. The May issue was 40 pages long and the editor expects to expand to 48 pages very soon (perhaps as soon as June). The cost is only \$15.00 for a 1-year (12 issues) subscription. This is for third class so if you prefer first class, the price is \$18.50. Thanks to our State Legislature, Texas residents must add 5.125% sales tax because the magazine is published right here in Texas. The address is:

MICROpendium
P. O. Box 1343
Round Rock, TX 78680

ARTICLES

THOSE CONFUSING VARIABLE NAMES

By Jim Peterson

A variable name is just a name, a symbol, a "handle", which represents a number and is used in place of the number in a program. So, why not just use the number itself? Here's why -

```
100 FOR J=1 TO 20      110 PRINT J      120 NEXT J
```

Line 100 tells the computer to make the variable name J represent 1 the first time it reads the line, and to add 1 to that value each subsequent time until it passes 20. Line 110 tells the computer to print the current number represented by J. Line 120 says to go back and do it over again, until the 20 loops have been completed. So, in 3 program lines we have told the computer to print the numbers from 1 to 20. That is easier than -

```
100 PRINT "1"      110 PRINT "2"
```

and so on for 20 times!

To continue, a string variable name is just a name, a symbol, a "handle", used to represent a sentence, a word, a group of letters, a single letter, or even a group of numerals not being used as a number. Some beginning programmers get the idea that certain variable names must be used for specific purposes, such as IR for "interest rate" and PR for "principal", etc. Not so! You could just as well use X, XY, WWWW or \$7.

A variable name can be up to 15 characters long, if you want to use up that much memory. Unlike other home computers, the 99/4A will read and use the entire name (not just the first four characters). However, the variable name must begin with a letter, the "at" symbol (@), the left or right bracket ([,]), backslash (\) or the underline (_). For the remainder you can use letters, numbers, (\$) or (.). If you try to use lower case letters, the computer will change them to upper case. The variable name cannot contain a blank space, and it cannot be a word which is already part of the Basic language, such as LIST or RUN, etc. And, a string variable name must end with the dollar sign (\$). Those are the rules, and if you break them the computer will call you a BAD NAME!

It will also call you a BAD NAME if you copy a program from another BASIC dialect which allows the same name to be used for a simple variable and a subscripted variable. We won't get into that, but if the program has something like C=1 and C(1)=2, just change that plain C to C\$. Finally, the computer will also insult you if you try to run a Basic program in Extended Basic and the programmer has used a variable name which happens to be a part of the Extended Basic language, such as MERGE.

Some programmers like to use complete words as variable names, i.e. INTEREST=RATE*PRINCIPAL. Maybe that does make the program easier to understand, but it uses up a lot of memory. Other programmers like to use abbreviated words. That saves memory, but it can result in bugs crawling all over your program if you abbreviate PRINCIPAL as PRN the first time and as PRIN the second time. Still others prefer single letter or two-letter variables, assigned arbitrarily. This works just fine, if you keep a piece of scratch paper handy to record what you used for what. Some programmers start with A for the first name they need and work through the alphabet. Others start with X, Y and Z, and then take off in all directions.

It really doesn't make any difference. BUT - with 24 other letters and hundreds of combinations available, why do programmers insist on using I and O? They are so easily mistaken for 1 and 0, especially in the tiny print of magazine listings or the fuzzy print of mimeographed newsletters! Come to think of it, I also have trouble with B and 8. It is probably a good idea to get in the habit of using certain letters for certain purposes, such as R and C for row and column, K for key, J for loops, D for delay loops, etc., and then don't use those letters for anything else.

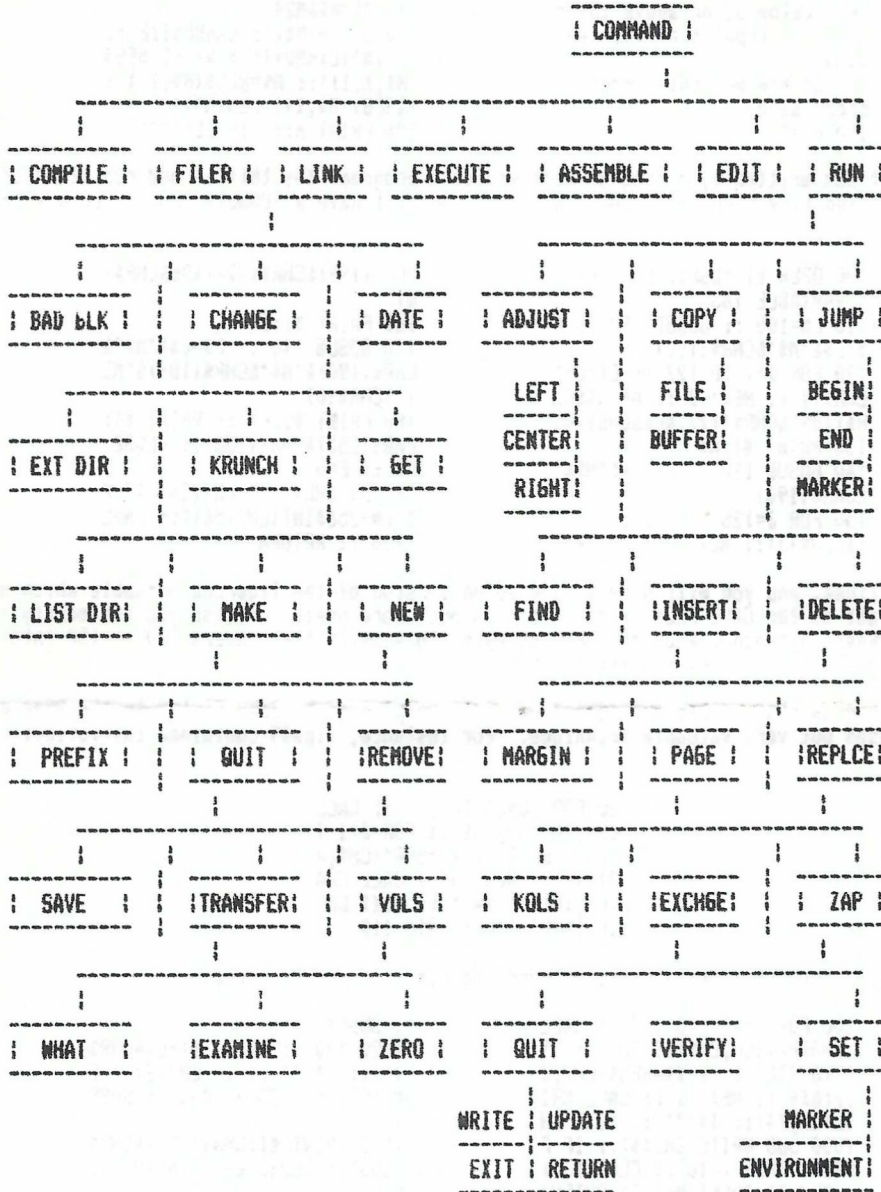
I don't normally use the (\$) symbol in programs, but I try to include it in variable names when I write a utility subroutine or subprogram which I will save to merge into other programs. I also use the (\$) in temporary debugging routines, in modifying other people's programs, etc. That way, I can be fairly sure that I'm not duplicating a name that is already used in the program.

PASCAL NOTES

By Edgar Bohmann - JSC Users Group (JU6)

The p-System is a menu driven hierarchy of programs. The Executive or Command level is the highest level from which various commands and sub-modes can be requested. Some of the sub-modes have further levels of features available. The menu of commands available at the current level are presented on the top line of the display. Since more commands are usually available than will fit on one line, the "?" key can be used to "page" through the rest of the commands.

The chart below provides a convenient reference to all of the commands that are available in the TI-99/4A version of the p-System.



TIPS FROM THE TIGERCUB # 22

Copyright 1985
TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

Distributed by Tigercub Software to TI-99/4A Users Groups for promotional purposes and in exchange for their newsletters. May be reprinted by non-profit users groups, with credit to Tigercub Software. The entire contents of Tips from the Tigercub Nos. 1 through 14, with more added, are now available as a full disk of 50 programs, routines and files for just \$15.00 postpaid! Nuts Bolts is a diskfull of 100 (that's right, 100!) XBasic utility subprograms in MERGE format, ready for you to merge into your own programs. Contents include 13 type fonts, 14 text display routines, 12 sorts and shuffles, 9 data saving and reading routines, 9 wipes, 8 pauses, 6 music, 2 protection, etc., and now also a tutorial on using subprograms, all for just \$19.95 postpaid! And I have about 140 other absolutely original programs in Basic and XBasic at only \$3.00 each! (plus \$1.50 per order for cassette, packing and postage, or \$3.00 for diskette, PPH) Some users groups charge their members that much for public domain programs! I will send you my descriptive catalog for a dollar, which you can then deduct from your

first order. This challenge was printed in Tips #21 -

```
100!The Unprintable Unkeyabl
e Program!
110!To shuffle the numbers 1
to 255 into a random sequen
e without duplication
120!The strings contain the
ASCII characters 1 to 127 an
d 128 to 255
130!Most of the ASCII charac
ters below 32 or above 159 c
annot be input from the keyb
oard
140!So how was this program
programmed?
150 M$=""
```

```
!"#$%&'()*+,-./0
123456789:;<=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[\]^_`abcdefg
hijklmnopqrstuvwxyz{|}~"
160 M2$=""
```

```
170 M$=M$&M2$
180 L=LEN(M$):: RANDOMIZE ::
X=INT(L*RND+1):: N=ASC(SEG$
(M$,X,1)):: M$=SEG$(M$,1,X-1
)&SEG$(M$,X+1,LEN(M$))
190 PRINT N:: IF LEN(M$)=0
```

And here is the answer - It was written by a program that writes a program! Key this in and run it to create a MERGE format disk file. Then type NEW, then type MERGE DSK1.LONGSTRING and you will have a RUNable program consisting of lines 150-170 of the puzzle!

```
100 OPEN #1:"DSK1.LONGSTRING
",VARIABLE 163
110 LN=100 :: GOSUB 190 :: A
$=L$&M$&CHR$(190)
120 FOR J=1 TO 127 :: C$=C$&
CHR$(J):: NEXT J :: A$=A$&CH
R$(199)&CHR$(127)&C$&CHR$(0)
130 PRINT #1:A$
140 GOSUB 190 :: B$=L$&"M2$
"&CHR$(190)
150 FOR J=128 TO 255 :: D$=D
$&CHR$(J):: NEXT J :: B$=B$&
```

```
CHR$(199)&CHR$(128)&D$&CHR$(
0)
160 PRINT #1:B$
170 GOSUB 190 :: F$=L$&M$&
CHR$(190)&M$&CHR$(184)&"M2
$"&CHR$(0)
180 PRINT #1:F$ :: PRINT #1:
CHR$(255)&CHR$(255):: CLOSE
#1 :: END
190 L$=CHR$(INT(LN/256))&CHR
$(LN-256*INT(LN/256)):: LN=L
N+10 :: RETURN
```

Now type in the remaining lines, and you will have a speeded-up version of the Tigercub Scramble which was published in Tips #10. It is still not as fast as the CALL PEEK versions but is much more useful because you can modify it to scramble a sequence of any length anywhere between 1 and 255. For example, to shuffle the numbers 100 to 150 into a random sequence without duplication, just add a line 175 M\$=SEG\$(M\$,100,50).

The method of writing a "program that writes a program" was fully explained by John Clulow in the 99er magazine Vol. 1 Nos. 3 and 4. It is a little-used but very valuable technique. For instance, Tips#9 contained the following routine to turn the alphabet upside-down.

```
100 FOR CH=33 TO 127 :: CALL
CHARPAT(CH,CH$):: FOR J=1 T
O 16 STEP 2 :: X$=SEG$(CH$,J
,2)&X$ :: NEXT J :: CALL CHA
R(CH,X$):: X$="" :: NEXT CH
110 INPUT A$ :: GOTO 110
```

The only trouble with that is that it takes about 50 seconds to run. Try this instead -

```
100 FOR CH=33 TO 127 :: CALL
CHARPAT(CH,CH$):: FOR J=1 T
O 16 STEP 2 :: X$=SEG$(CH$,J
,2)&X$ :: NEXT J :: CALL WRI
TE(CH,X$):: X$="" :: NEXT CH
1000 SUB WRITE(CH,X$):: IF F
LAG=1 THEN 1010 :: FLAG=1 ::
OPEN #1:"DSK1.WRITE",OUTPUT
,DISPLAY,VARIABLE 163 :: LN
=3000 :: GOSUB 3000
1010 X=X+1 :: L$=L$&CHR$(200
)&CHR$(16)&X$ :: IF X<5 AND
CHK127 THEN L$=L$&CHR$(179)::
```

```
: SUBEXIT
1020 X=0 :: PRINT #1:L$&CHR$
(0):: L$="" :: IF CH=127 THE
N 1030 :: GOSUB 3000 :: SUBE
XIT
1030 PRINT #1:CHR$(255)&CHR$
(255):: CLOSE #1 :: GOTO 301
0
3000 L1=INT(LN/256):: L2=LN-
256*L1 :: L$=CHR$(L1)&CHR$(L
2)&CHR$(147):: LN=LN+10 :: R
ETURN
3010 SUBEND
```

RUN that, type NEW, then MERGE DSK1.WRITE, and you will have a program consisting of DATA statements containing the hex codes for all the upside-down characters. Add a line 100 FOR CH=33 TO 127 :: READ CH\$:: CALL CHAR(CH,CH\$):: NEXT CH, and you can turn everything upside-down in only 12 seconds.

Someone sent me a classified ad, clipped from an unknown publication, which read - TI-WRITER COMPANION. Loaded with ingenious ways to make your TI-Writer more effective. Well written. Send \$2.50 to Dr. Bill Browning, 7541 Jersey Avenue North, Brooklyn Park, MN 55428. Money back guarantee. I sent off my money and have just received 29 pages, 3-hole punched, loaded with useful and ingenious tips and ideas for getting more out of TI-Writer. I recommend it - it's worth twice the money and then some!

The K-Town newsletter recently published a utility routine that is so useful that I want to pass it on to everyone. If a program is not resequenced after it is modified, this will compare it with the original and prepare a MERGE format file of all the changes, for the use of others to update their copy.

```

100 !*****
110 ! COMPARE PROGRAM *
120 ! by Mike Dodd *
130 !*****
131 ! In K-Town 99'er V.2 #1
    April 1985
140 !Version 85.0406.1XB
    Requires disk drive.
    Compares two programs,
    gives list of all diff-
    erences.
150 !SAVE old program in
    MERGE format (SAVE DSK1.(ol
    dfilename),MERGE). SAVE up-
    dated program in MERGE for-
    mat (SAVE DSK1.(newfilename)
    ,MERGE)
160 !RUN this program, answe
    r prompts for OLD FILE name,
    NEW FILE name, and a differ
    ent OUTPUT FILE name.
170 !When finished, type NEW
    , then MERGE DSK1.(outputfil
    ename) and ENTER
180 !Can be MERGED into othe
    r copies of OLD program to
    update them
190 DEF I(I$)=ASC(SEG$(I$,1,
    1))$256+ASC(SEG$(I$,2,1))

```

```

200 A$=CHR$(255)&CHR$(255)::
    DISPLAY AT(1,1)ERASE ALL:"0
    LD FILE:" : "NEW FILE:
    " : "OUTPUT FILE:"
210 ACCEPT AT(1,13)BEEP:B$ :
    : ACCEPT AT(3,13)BEEP:C$ :
    ACCEPT AT(5,13)BEEP:D$ : OP
    EN #1:B$,INPUT ,VARIABLE 163
220 OPEN #2:C$,INPUT ,VARIABLE
    LE 163 : OPEN #3:D$,OUTPUT,
    VARIABLE 163
230 LINPUT #1:I$ : LINPUT #
    2:E$ : F$=SEG$(I$,1,2):: G$
    =SEG$(E$,1,2):: A=I(F$) : B=
    I(G$)
240 IF F$=A$ AND G$=A$ THEN
    CLOSE #1 : CLOSE #2 : PRIN
    T #3:A$ : CLOSE #3 : STOP
250 IF B>A THEN PRINT #3:F$&
    CHR$(131)&" ##DELETED LINE #
    I$&CHR$(0):: LINPUT #1 : I$
    : F$=SEG$(I$,1,2):: A=I(F$
    ) : GOTO 240
260 IF A>B THEN PRINT #3:E$
    : LINPUT #2:E$ : G$=SEG$(E
    $,1,2) : B=I(G$) : GOTO 240
270 IF I$<E$ THEN PRINT #3:
    E$
280 GOTO 230

```

Thanks to some ideas from Joyce Corker, I have made some more improvements to the Tigercub Menuloader, and I have used the above utility routine to list all the changes made since it was published in Tips#15.

```

100 !by A. Kludge/M. Gordon/
    T. Boisseau/J. Peterson/etc.
    modified in Tips #22
102 OPTION BASE 1 : DIM P6$(
    127),VV(127),VX(127):: GOTO
    110
105 I,A,A$,B,C,D$,FLAG,I,J,K
    ,KD,KK,N$,NN,P$,P6$(I),Q$,S,S
    I,T$(I),TT,VT,VV(I),VX(I),W$,X
    ,X$,K2,S2
106 CALL INIT : CALL LOAD :
    : CALL LINK : CALL PEEK :
    CALL KEY : CALL SCREEN : C
    ALL COLOR : CALL CLEAR : C
    ALL VCHAR : CALL SOUND : !
    #P-
110 !##DELETED LINE ##
160 T$(1)="d/f" : T$(2)="d/
    v" : T$(3)="i/f" : T$(4)="
    i/v" : T$(5)="pro" : ON WA
    RNING NEXT
170 IMAGE ###
180 DISPLAY AT(1,4):"TIGERCU
    B MENU LOADER"
210 D$="DSK1." : OPEN #1:D$
    ,INPUT ,RELATIVE,INTERNAL :
    INPUT #1:N$,A,J,K : DISPLA
    Y AT(1,2)SIZE(27):SEG$(D$,1,
    4)&" - Diskname="&N$:
230 FOR X=1 TO 127 : IF X/2
    0<>INT(X/20)THEN 260
240 DISPLAY AT(24,1):"Type c
    hoice or 0 for more 0" : AC
    CEPT AT(24,27)VALIDATE(DIGIT
    )SIZE(-3):K : IF K=0 THEN 2
    50 : IF VV(K)>5 THEN 411 :
    : IF K>0 AND K<NN+1 THEN 420
    ELSE 240

```

```

290 DISPLAY AT(X+4,2):USING
170:NN : DISPLAY AT(X+4,6):
    P$ : PG$(NN)=P$ : DISPLAY
    AT(X+4,18):USING 170:J : DI
    SPLAY AT(X+4,22):T$(ABS(A))
291 VV(NN)=ABS(A) : VX(NN)=A
    BS(B)
295 X$="" &STR$(B) : DISPLA
    Y AT(X+4,26):SEG$(X$,LEN(X$)
    -2,3) : VT=VT+J
350 DISPLAY AT(X+6,1):" C
    hoice?" : ACCEPT AT(X+6,16)
    SIZE(3)VALIDATE(DIGIT):K :
    IF K<NN AND K<NN+1 THEN 41
    0
410 IF K<1 OR K>127 OR LEN(P
    G$(K))=0 THEN 320
411 IF VV(K)=5 OR (VV(K)=4 AN
    D VX(K)=254)THEN 420
412 ON ERROR 417 : CALL CLE
    AR : OPEN #2:D$&PG$(K) : CA
    LL SCREEN(16)
413 LINPUT #2:W$ : IF EOF(2
    )THEN 416 : PRINT W$
414 CALL KEY(0,K,S) : IF S=0
    THEN 413
415 CALL KEY(0,K2,S2) : IF S
    2<1 THEN 415 ELSE 413
416 CLOSE #1 : CLOSE #2 :
    END
417 DISPLAY AT(12,10):"UNLIS
    TABLE" : CALL SOUND(200,110
    ,0) : RETURN 400
430 ON ERROR 417 : CALL INI
    T : CALL PEEK(-31952,A,B) :
    CALL PEEK(A#256+B-65534,A,B
    ) : C=A#256+B-65534 : A$=D$
    &PG$(K) : CALL LOAD(C,LEN(A$
    ))

```

The Menu Loader will now list up to 127 programs and files, showing the number of sectors in each and the file type, record type and record length of each file. It will stop at the end of each page, and continue on a default value of 0, or will stop for selection when any key is pressed. It gives disk name, number of sectors used and available. It adds up sectors actually used and gives a warning if all sectors are not accounted for. It will load and run any program which can be loaded from Extended Basic, displaying the program being loaded.

It will delete any program or file, after first displaying the filename and requesting verification. It will list any listable file to the screen, pausing on any key input, and can be very easily modified to list to a printer. If a file is not listable, it will inform you so, and restart the menu selection. It has the pre-scan option to speed it up.

Fairly often, the disk directory will lose track of one or a few sectors during the process of loading records, even though the Disk Manager showed all 358 were initialized. That's why I put the checking routine in the Menu Loader. The figure shown as "used" is actually 358 minus the number of sectors still available, and is checked against the total sectors of all files. The loss of a few sectors is no serious matter, but once in a great while you may notice that the "available" and "used" sector quantities have obviously been reversed. I have found that this is a signal that the disk is about to go haywire and you had best back it up immediately!

Programs and files are loaded in the first available sector, and continued in the next available sector. If a number of small files are deleted from a disk, and a long file is then loaded, it may thus be fractured into many parts. If you have a work disk on which you continually add and delete files of various lengths, it will become badly fractured. This can cause disk errors, and it also badly overworks your drive. It is a good idea to recopy your work disk occasionally - file by file, not sector by sector with a quick copier.

MEMORY FULL! - Jim Peterson

CPM - Part V

By Leonard Lanigan

Now I've done it! I really crashed Personal Pearl this time! And in so simple a manner it was painful to see. It seems that in the process of creating a form, swapping data disks prior to form installation will cause the entire system to lock up - no keys will function, and the computer must be turned off to recover from the crash. Of course, this doesn't mean the loss of any work that was involved in the creation of the form as the form has been saved to disk already, but the program must be reloaded, and the form then installed using the correct data disk. It is amazing how long it has taken me to find this weak point. It simply occurred to me that I wanted the form installed on a disk other than the one I had used in creating it, so I just stuck a new (formatted) disk in the drive, and told Pearl to install. Don't do this - it doesn't work.

Now for the new stuff. You may have read that it is possible to add a terminal via the RS-232 port to get an 80-column line. I had never tried this, due to the cost of terminals, but it certainly seemed that it should be a simple procedure. Well, I recently attended a computer swap meet in Sacramento, and acquired a functional Heathkit M-9 terminal. I even got change from my \$20 bill! In any case, I am now in the process of finding the correct method of connecting the two machines to see what can be done. The real limitation of the M-9 monitor is the fact that it uses a 12 (yes, twelve) line display. Therefore it displays the same number of characters as the TI 24x40 screen. I have heard that the terminal is easily modified to display 24 lines, and as soon as I get more info, I'll give it a go. The M-9 allows baud rates from 110 to 9600. I expect to start with a transfer rate of 600 baud and try increasing toward the 9600 baud limit as each rate is made to work. For those who would prefer the convenience it offers, there is an 80-column display card available for the PEB. I had intended to buy one at the originally advertised price of \$160, but somehow the price doubled before it actually became available, putting it out of reach and reason.

A couple of days ago I received my membership card for the First Osborne Group, and hope to be able to take advantage of their software library shortly. This should give us an opportunity to fully explore the possibilities of the Morning Star Software CPM card at minimal cost. Somehow my wife insists that the kids be fed and clothed - expensive luxuries that reduce the funds available for really important stuff like new programs. The F06 library consists of over 260 disks of public domain software for the single density Osborne CPM format supported by the MSS card. So much for the rumor that there is no software available in that format. The latest offerings include an application for Personal Pearl, tax templates for SuperCalc, and a program generator for dBase II. MSS has provided Personal Pearl (oh, you knew that), and I have found a source for both dBase II and SuperCalc, though I need to transfer them from 8" disks designed to run on the Xerox 820. My hope is that this may be done in the next month or so, and combined with the 80 column monitor may give us a lot to look into. Morning Star Software may never get this card away from me now, and a more generous disk format would clinch the matter. I have about 150 hours of actual run time on the card now, and I am still impressed with the quality of the design and execution of the processor card.

REVIEWS

HBMPRINT

By John Phillips

I thought I would postpone another assembly language article and replace it with a review of a new, exciting, FREE product from Buehrer-Wahn Software. This product is called HBMPRINT and it does exactly what you think it does: it prints the results of your calculations from the Household Budget Management!

Ever since HBM was released by TI, there have been complaints about not being able to print the results. I personally have wished time-after-time that a utility would be developed so I could make a hardcopy of my expenses. It would be great for tax purposes. Nothing had ever been written to perform such a task. Well, faithful HBM users, the miracle has happened. Written by Bob Lawson, HBMPRINT is now available. This nifty little utility is written using TI-FORTH and is a treasure! The best part of all is that it is FREE! That's right. . . absolutely free.

This software is in the domain of FREEMARE: software produced by dedicated individuals who ask very little in return. Mr. Lawson has kindly agreed to allow this software to be copied freely and distributed to anyone desiring a copy. I am making a personal request: Anyone receiving a copy of this program and using it please send a contribution of up to \$10.00 to Mr. Lawson at the address listed below. This software is worth much more than the asking price, I assure you.

To describe the program is relatively simple. One needs a full TI expansion system with a printer and an Editor/Assembler cartridge. The program is loaded via option 3 LOAD AND RUN and is self-starting. A title screen is displayed and then your output device is requested.

Once the output is secured, the software is nice enough to ask if you have a one or two-drive system. If you have only one, the software prompts you for the disk swapping. From this point, your HBM file is loaded into memory.

As with HBM, the header information is displayed showing the household name, year, and last activity date. A very nice touch. There is a prompt asking you if this is the correct data. If not, you get another chance to try a different disk.

Once the header is verified, the software prompts you to adjust the top-of-paper. From there it proceeds to the print option menu, which contains many entries.

You may print your data in a variety of formats (all chosen from the menu). For example, one category by month, all categories by month, all categories for year-to-date, all categories for the entire year, etc. There are also some options to load different data from this menu.

A very nice feature of the program is the ability to divert the output to any device you want. For instance, if you are unhappy with the formats given, you may divert the output to the disk (DIS/VAR 80 format). Then you can edit the data using TI-WRITER or EDITOR/ASSEMBLER. In my opinion, this is a very important feature.

All-in-all, this is a much needed, long overdue utility to help the users of HBM. I want to personally commend Mr. Lawson on his efforts to fill this gap.

As I mentioned before, if you are planning to use this software, please send Mr. Lawson whatever you feel the software is worth. You may send your contribution to:

BOB LAWSON
16223 MILL POINT DRIVE
HOUSTON, TEXAS 77059

If you cannot locate a copy of the software, please contact Mr. Lawson at the address listed above. Be sure and include a contribution which will cover his time, disk cost, and mailing cost.

RATING: * * * * (out of 5)

John

MORNING STAR 128K CARD

By Edgar Dehaann

I had the opportunity to participate in the beta testing of the Morning Star 128K RAM Expansion Board and am currently working on some follow-on products that can be used with this board. I would like to offer some of my impressions and thoughts concerning this product.

First of all let me say that this is a very professional product. Morning Star's design includes full card edge signal buffering in accordance with the high standards of TI's own modules. I think this is a very important feature and I am always glad to see when a third party developer follows the standards TI established for 99/4A products. Morning Star also uses the same sturdy clamshell for the board that TI used. The board artwork layout is very clean, well organized, and obviously professionally done. My board has been working flawlessly for several months now.

I cannot comment too much on the manual for the board because so far I have only seen the preliminary version. However, even the preliminary manual contains all of the information a program developer needs to use the board. In fact there are even some example Assembly Language routines to show how to perform the bank switching for each of the operating modes the board supports. The manual also includes instructions on changing the CRU address of the board if that becomes necessary. It also includes a chart showing how the various addressing modes work. I really like this because I can follow pictures and charts much easier than I can follow extensive descriptions.

Next I want to point out that this board is dramatically different from all other 32K or 128K memory expansion boards on the market. Other 128K cards use the same memory area (>2000->3FFF and >A000->FFFF) as the TI 32K memory card. What these other boards do is essentially overlay 4 sets of 32K memory in this address space. If you use one of these other 128K cards, you have to remove the TI (or other manufacturer) 32K card. Some of the other third party 128K cards have a DSR which provides "pseudo-disk" emulation which basically means that the DSR does the necessary bank switching and memory accessing to store data in the other 96K area of the board.

The Morning Star board however, uses the address space from >4000 to >7FFF. This means that you can leave your 32K card or other manufacturer's 128K card in your Peripheral Expansion Box while using the Morning Star card. In fact, you can even use 2 or 3 Morning Star cards if you have enough room and power capacity.

Now you may have recognized that >4000->5FFF is the area used for peripheral DSRs and that >6000->7FFF is the area used by cartridge ROMs. Because these two 8K blocks are used this way normally, the Morning Star board supports 6 addressing modes to avoid conflicts and provide compatibility with other products. I won't go into detail on the 6 modes here because they were discussed in the product announcement section of the Vol II #4 issue of THE NATIONAL NINETY-NINER. Let me just say that the 128K of RAM can be treated as 8 banks of 16K (from >4000 to >7FFF) or as 16 banks of 8K in either the DSR or cartridge ROM memory space. An application program can use whichever of these modes is appropriate.

In addition to the 128K of RAM, the board also contains two sockets which can be populated with 8K EPROMs. If this is done, the board actually would contain 144K of memory. These two ROMs also share the same memory space as the RAM. One ROM can only occupy the DSR memory space, but the other ROM can be switched into either memory space.

As a stand-alone product, the board is primarily useful to Assembly Language tinkerers because it requires Assembly Language routines to perform mode switching and special Assembly Language application programs to use the memory space. Morning Star is attempting to make the board more useful to all 99/4A owners with Peripheral Expansion Boxes by offering a selection of add-in application programs with the board.

These add-in products are what will really make this board a viable product for the average user. At this time, I do not know how many add-in products are under development. I have heard of a BBS, a Print Spooler, and a Disk Fixer/Debugger but these are unconfirmed and you should contact Morning Star for details or continue to watch the National Ninety-Niner for further announcements.

I can discuss a DSR ROM that I am working on for this board. When the computer is reset, the board is automatically in Mode 1 which enables the DSR ROM when power-up or DSRLNK scan is performed. The DSR ROM will check if a cartridge ROM is present and if not, the board will be put into a mode that maps RAM into the cartridge ROM space and will copy a menu routine into this RAM. This will provide a start-up screen key selection into the board. If a cartridge ROM is present, there will still be a DSRLNK call that will allow a menu to be presented. The DSR ROM will provide a linkage to application programs in the second ROM space. Documentation will be provided with the DSR ROM explaining this technique. The DSR ROM will also include a set of utilities but at this time they are not finalized so I will only say that they include routines to select any of the 6 modes the board supports. Since the DSR ROM is still under development, marketing and distribution have not yet been determined. Continue to watch THE NATIONAL NINTY-NINER for announcements on this add-in product.

In conclusion let me say that this is a very professional, thorough, and flexible product for the 99/4A. It is totally unique in the realm of 128K cards. It is ideal for software developers and assembly language tinkerers. Most other 99/4A users will require some of the add-in products currently under development to be able to really use this board. One nice thing about this board is that it is not limited to a single application. I suspect that the add-in market for this board could become quite extensive as its popularity and use increases.

HINTS 'N TIPS

EDITOR'S NOTE: All technical projects require varying skill levels and some test equipment. ALWAYS read any article involving a modification to equipment at least three (3) times before attempting to utilize the information. Proceed carefully using the advice provided by the writer denoting specific instructions or procedures. Do not attempt any modification that appears too complicated. Ask for assistance from someone in your Users Group if you are unsure about part of a task. Many times these questions may be handled with a telephone call. This is not to state you are technically incompetent, just wise enough to ask some questions to insure success in completing a task. The five minutes invested in a telephone call for assistance may save \$35.00 to exchange a console and several hours of aggravation for you and your family. Don Veith

MAKING YOUR CONSOLE RUN COOL

By Richard J. Bailey
New Hampshire Users Group

If you have an older console that runs hot on the right side near the cartridge port, there is relief available. Radio Shack has available a replacement switching regulator type power supply (Part # 277-1016, Price - \$5.00) to replace the linear regulator power supplies used in the older units. The newer power supplies are more efficient thereby dissipating less energy as heat.

The new power supply is equipped with the proper connectors but may not possess the LED (Light Emitting Diode) that indicates the 99/4A is on. The power on indicating LED and its associated voltage dropping resistor generally are not supplied with the replacement power supply. Check the location of these items on the old power supply and note where the LED must be added on the new unit. One lead of the LED is connected to the ground plane with the other lead connecting to a run that goes toward the middle of the power supply circuit board. The 220 Ohm, 1/4 watt, voltage dropping resistor must be added where this run ends. You may transfer the existing LED from your old power supply or purchase a complete new LED. If the LED does not turn on after being connected, you probably have it installed backwards.

CHECK YOUR SUPPLY VOLTAGE BEFORE YOU INSTALL THE NEW POWER SUPPLY IN YOUR CONSOLE!!! If the voltages are incorrect, adjust VR1 (Voltage Regulator # 1) with about a one (1) amp load on the +5V supply lead until your voltmeter indicates +5.3 volts. The other two voltages supplied by the unit are -5 and +12 volts.

Replace the power supply by following the steps listed below:

1. Disconnect the power and ALL cables.
2. Remove the ON-OFF switch by pulling it straight out from the console (towards the front).
3. Turn the 99/4 console over and remove the seven (7) Phillips head screws that hold the lower and upper halves of the computer case together.
4. After writing down the exact location of each of the power supply leads, disconnect the main board (or mother board) and set the power supply to one side.
5. Reassemble the console, after making the modifications to the new power supply board, by reversing steps one (1) to four (4) above.
6. Check to insure the plastic ON-OFF switch slides properly and the LED lines up in its proper location.

It is advisable to recheck the voltages before reassembling the console completely. If all voltages are correct, your console should operate properly and run much cooler. (Hope it will still maintain the temperature of my coffee during the winter months!!). Article copied from the June, 1985 issue of The New Hampshire 99'ers Newsletter.

24K OF DATA STORAGE

This article was downloaded from CompuServe by Scott Darling.

If you need to work with quite a bit of data or would like to change programs, but save the data after you press CALL QUIT then you can set up the 24K of High-Memory in the PEB as a single data file called "EXPHEM2", you open this file just as you would a disk file with one exception - you must PRECEED the OPEN statement with a CALL LOAD to the location -24574 as follows:

```
For INT/VAR files - 24
For DIS/VAR files - 16
For INIT/FIX files - 8
For DIS/FIX files - 0
```

Here's an example:

If you want to open up the Expansion Memory for Display, Variable 80 files this is what you'd do:

```
100 CALL INIT
110 CALL LOAD(-24574,16)
120 OPEN #1:"EXPHEM2",RELATIVE,UPDATE,DISPLAY,VARIABLE 80
```

Then continue on as you normally would. If you want to store both data and assembly language routines at the same time do this:

```
100 CALL INIT
110 CALL LOAD(-24574,-16)
120 OPEN #1:"EXPHEM2"
130 CALL LOAD ("DSK1.ASSM1")

-31744 , 0 TO 15 CONTINUATION OF LAST SOUND (0=LOUD AND 15=SOFT)
-31748 , 0 TO 255 CHANGE THE CURSOR FLASHING AND RESPONSE TONE RATES
-31788 , 160 BLANK OUT THE SCREEN (MUST PUSH A KEY TO ACTIVATE)
```

In the above example the 24K of high-memory was saved for use as a DATA file (DIS/VAR 80 format) then the assembly routines were loaded. The computer will look for the best place to put the routines and will adjust the pointer accordingly. After the routines are loaded, a LINK statement starts the first routine and off we go.

If that's not enough, you can also use the MINI-MEMORY for 4K more of storage of assembly routines! Now that's 16K of program space, 12K of assembly routine space!

TEN COMMANDMENTS OF DISK CARE AND COMPUTER OPERATION

Author Unknown

- I. THOU SHALT USE DISKS IN THE FORMAT SPECIFIED FOR YOUR COMPUTER AND NO OTHERS.
- II. THOU SHALT LABEL ALL THY DISKETTES AND WRITE ON THEM ONLY WITH A FELT TIP PEN.
- III. THOU SHALT NOT EXPOSE THY FLOPPY DISKS TO MAGNETIC FIELDS, EXCESSIVE HEAT, MOISTURE OR OTHER FORMS OF TORTURE OR ABUSE.
- IV. THOU SHALT NOT TOUCH THE EXPOSED AREAS OF THY FLOPPY DISK.
- V. THOU SHALT REMEMBER TO PRESS THE RETURN KEY AFTER ISSUING A COMMAND TO THY COMPUTER.
- VI. THOU MUST INSTALL ALL NEW APPLICATION SOFTWARE BEFORE IT WILL RUN PROPERLY ON THY COMPUTER.
- VII. THOU SHALT RUN NO PROGRAM LEST THOU HAST FIRST MADE A BACKUP COPY.
- VIII. THOU SHALT SAVE THY WORK FREQUENTLY, VERY FREQUENTLY.
- IX. THOU SHALT NOT KILL THY DATA BY PULLING DISKS OUT IN THE MIDDLE OF A WORK SESSION.
- X. THOU SHALT ALWAYS MAKE BACKUP COPIES OF THY DATA DISKS.

*****THAT'S ALL FOR AUGUST, FOLKS !*****

10 - 100%
 10 - 100%
 10 - 100%
 10 - 100%



SUBSCRIPTION FORM
FOR "THE NATIONAL NINETY-NINER"
PUBLISHED BY THE 99'ERS ASSOCIATION

NAME: _____ **DATE:** _____

ADDRESS: _____

CITY: _____ **STATE** _____ **ZIP** _____

SUBSCRIPTION TYPE	AMOUNT	CHOICE
THIRD CLASS - BULK RATE	\$12.00	_____
FIRST CLASS - US AND CANADA	\$17.00	_____
FIRST CLASS - OVERSEAS	\$22.00	_____

PLEASE MAIL CK./M.O. FOR SUBSCRIPTION CHOICE SELECTED ABOVE TO:

THE 99'ERS ASSOCIATION
 ATTN: LUCI VEITH
 3535 SO. H ST., #93
 BAKERSFIELD, CALIF. 93304