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January 1987

THE HUGgers NEWSLETTER

Volume 4, Number 10

Officer's Comment

The next meeting of HUG will be Sunday, January 11 at St. Ann's School. A map is on the next to last page, that the school location.

There have been no volunteers to give workshops and no workshops are scheduled. This will be a library session and question/answer session if anyone has questions.

Check the mailing address label on this issue, if there is a yellow highlighter mark on the label you will receive one more issue until your renewal is received. If there is a red highlighter mark on your mailing label this is your last issue until your renewal is received. When your current membership in HUG expires, if you have a password on the HUGbbs, it will no longer be valid; however, you can still sign-on as a guest.

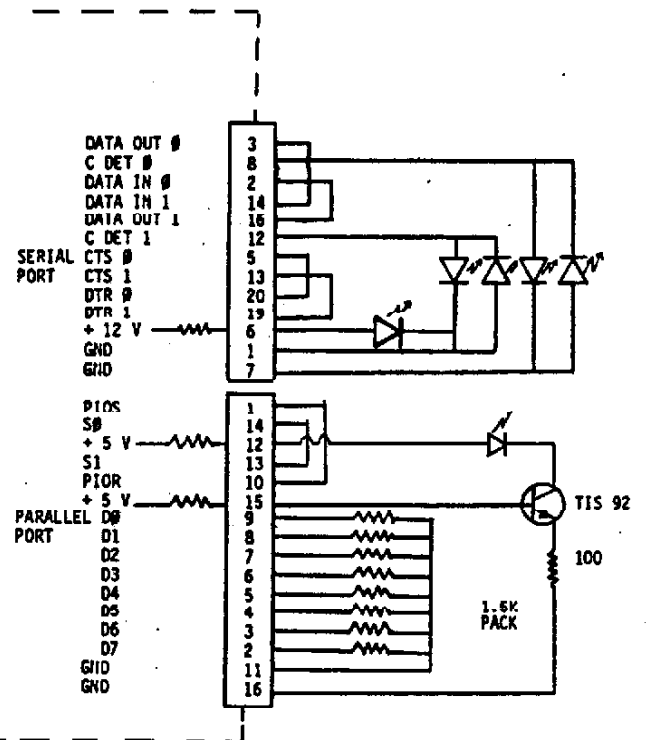
HUG needs a volunteer to type the documentation to disk, we received from Texas Instruments for the Diagnostic package. The RS232 schematic in the lower right-hand corner is part of that documentation.

New library additions include DM1000 version 3.5, Funweb version 3.4, Mass-Transfer version 4.0, C99 release 3, Director 99, DM99, Archiver version 1.21, TEPDCP (P-Code required), Pilot (Editor/Assembler required), TI/W/Help, and FORTH*V8 (Supercart version). There may be more that I missed as disks are always being added to the library.

Special thanks to Andy Armstrong for his many contributions to the HUG library. I do not mean to slight anyone for their contributions; however, I am particularly aware of Andy's commitment to HUG.

USER GROUP SURVEY can be obtained at the meeting and filled out. Have you returned your **USER GROUP SURVEY**?

William M. Lucid-v.p.



LIBRARY BITS

by Dennis Sherfy

STAR is a new Fairware program in our library. Freeware and Fairware mean the same thing. Try the program, and if you decide to use it, send the author a modest payment.

STAR stands for Super TI Assembly Routines. It is a collection of 53 routines that are loaded into a section of your memory expansion, and can be used in your Extended Basic programs whenever you need them.

Using STAR is delightfully simple. Place the STAR disk in drive 1, and turn on your computer using the Extended Basic module. STAR will load automatically. If you are already in Extended Basic, type RUN "DSK1.LOAD". After STAR is loaded, you will see a graphic screen, (press ENTER), then you will see a screen telling you about the distribution of the program as Fairware, (press ENTER). Next, it will look like you have no program in memory! You can load and run an Extended Basic, modify an Extended Basic program, using the STAR routines, or write a new program, using the STAR routines.

STAR routines are used in your programs by entering CALL LINK("CHIMES"), for example, and chimes will sound at that point in your program. Any of the 53 routines can be called, as many times as needed, whenever needed. The only requirement is that you pre-load the STAR program before running a program that uses the STAR routines.

I will list the different categories of STAR routines, and describe one sample routine.

Four **CHARACTER SETS** CALL LINK("LOW") produces a true lower case character set, with decenders.

Three **SOUNDS** CALL LINK("HONK") produces the sound used by Extended Basic when an error is encountered.

Two **CASSETTE CONTROL** CALL LINK("CSION") starts your cassette recorder running. It would allow you to start or stop

music or text to accompany your program.

Four **COLORS** CALL LINK("COLORS",foreground #, background #) instantly changes the foreground and background of all 15 character sets.

Three **VDP ACCESS** CALL LINK("POKEV",ADDRESS BYTE!) allows you to write to as many as 15 VDP memory addresses.

Seven **SCREEN ACCESS** CALL LINK("SAVSCR",filename) Saves the contents of an entire screen, including sprites to disk, or to the Myarc RAM-DISK.

Seven **CONTROL** CALL LINK("NOQUIT") disables the QUIT key.

Five **KEYBOARD DETECTION** CALL LINK("KEY",variable) scans the keyboard to see if one or more designated keys have been pressed.

Six **CHARACTER DEFINITIONS** CALL LINK("INVERT",character,[number]) produces a negative image, switching the foreground and background colors of the designated characters

Two **STRING HANDLING** CALL LINK("CAPS",string-variable) changes all lower case characters to upper case.

In addition, the HELP program will print the Display, Variable 80 instructions to your printer, and eight short Extended Basic programs will demonstrate all of the STAR routines.

As an added benefit, anyone who has paid for the program, can buy the source code for \$20 which are claimed to provide many assembly language programming tips, and methods of using assembly language routines with Extended Basic programs.

SOUTH SIDE REGIONAL MEETING

The South Side meeting will be held Wednesday, January 21, 1987 from 7:30 P.M. to 10:00 P.M. Additional information can be obtained by calling 881-5918.

SPEEDY MULTIPLAN OR HOW FAST IS FAST?

by Jim Ellis

Recently I got the idea that I could speed things up on Multiplan if I set a few things up a certain way. Such as, the interlace on the disk track, which is programmable with the CorComp disk controller, perhaps others. So using 10 disks, I initialized them using as a value of interlace 1 through 10. I then placed the Multiplan program on the disks in alphabetical order. Then I timed the loading from the time you press <enter> until the cursor appears behind 'ALPHA'. All tests were made on the same disk drive, a TEAC 55BV, using 3 ms head step on the CorComp and 20 ms with the TI card, that being its ONLY value. After that I selected two of the faster speeds and placed the files on these disks using the order that the Multiplan module calls them namely: MPCHAR, MPDATA, MPINTR, MPBASE, OVERLAY, and MPHLP. This did not have the effect that I expected. However, I have included the results in a chart below for your consideration. So the next time you ask if you can get something to execute faster, the answer is just to try it differently and check the results.

MULTIPLAN SSSD					
I	CC	3MS	GROM ORD.	TI 20MS	GROM ORD.
11		35.28		35.44	
12		22.76		25.60	
13		19.91	21.38	19.70	19.91
14		27.70		27.97	
15		36.70		35.38	
16		21.60		19.73	
17		21.00	19.54	21.79	22.12
18		24.91		25.12	
19		33.00		35.41	
10		27.91		27.85	

As you can see, there are some results that you might not expect. I know they sure fooled me. Yes, you can run the TEAC drives and probably many of the newer drives at 3ms head step. Even though it doesn't seem to make much gain in this particular case, it sure does make the drives quieter. Some time

back, in one of my articles I told how to modify Multiplan so that the default drive was DSK2. See March 1986 Newsletter, page 3. I later saw a note from someone regarding this change. I would like to clarify the modification at this time. First, it does change the default to 'DSK2'. Second, it does NOT display this on the screen under the TRANS command. There is no reason why it should. It never displayed the original option of DSK1. But, rest assured it will access DSK2 just the same as if you had performed <TRANS>, <OPTIONS>, <CTRL A>, 'DSK2', <ENTER>. Of course, just the same as the original default could be changed, you can change it to another drive. As usual if you have any questions, just leave me E-mail in box 7 of the HUG bbs or have a friend do it if you don't use a modem. Later.....

Multiplan Users Note Original author unknown

The time it takes to initialize Multiplan and the response time when it is working with the OVERLAY file is effected by the location of the files on the disk. You can load the files in the desired order by copying them one at a time to a newly initialized disk named TIMP. The best order seems to be: OVERLAY, MPHLP, MPCHAR, MPDATA, MPINTR, and then MPBASE.

(Editor's comment: There is a series of MULTIPLAN help files in the HUG library on the disk named MULTIPLAN2. The filenames are MUTIPHELP1 thur MUTIHELPS.)

RETURN YOUR
USER GROUP
1986 SURVEY?

NEW PRODUCTS FROM MILLERS GRAPHICS

EK UTILITY I - \$10.00 (INCLUDING S&H)

This Utility Disk adds the following new enhancements to TI Extended Basic and the Editor/Assembler Modules for Graa Kracker Owners:

Extended Basic Enhancements:

LIST Now allows you to specify the column length (i.e. 28,132,etc.)
RES Resequence all or just part of a program.
TRACE The output from TRACE can now be sent to a printer or any other output device.
COPY Copies a block of program lines to another location in your program.
DEL Deletes selected blocks of program lines.
MOVE Moves blocks of program lines and automatically adjust all GOTOs, GOSUBs, etc. to point to the new location.
CALL LOAD No longer checks to see if CALL INIT has been executed
CALL PEEKS For peeking values from GRAM or BROM addresses.
CALL POKES For poking the values into GRAM addresses.
CALL PEEKV For peeking values from VDP memory.
CALL POKEV For poking values into VDP memory.
CALL QUITON Enables use of the QUIT key.
CALL QUITOFF Disables use of the QUIT key.

New Cursor Control for program Line, Inputs and Accept A/s editing. FCTN-Shift and the Up and Down arrow keys now allow you to move up and down screen rows within a program line listing on the screen. FCTN-Shift and the Left and Right arrow keys move you to the beginning and end of the program line listing on the screen.

All Error Messages are now in Upper and Lower case.

Auto-Load of the file DSK:\LOAD can now be bypassed with the press of ANY key.

ALL of the XBCALLS from the MILK disk are still available (NEW, BYE, CLSALL, CLOCK, CLKOFF, CAT).

A new lower case character set with better ascenders and descenders is placed in GRAM 0.

Editor/Assembler Enhancements:

For E/A input prompts, the Auto Repeat and Erase (FCTN3) are now active.

Clear (FCTN 4) will erase the input line from the cursor to the end of the line.

FCTN-Shift Left and Right Arrow will place the cursor at the beginning and end of the input line.

Automatic Filename Recall - The last filename input will always be retained (even after powering off).

3 new items have been added to the E/A menu: (6) Extended Basic - directly executes XB without going through the Title Screen. (7) Format RAMdisk - Formats the Myarc Ram disk by doing a CALL PART and CALL EMDK; (8) Catalog Disk - Catalogs a disk or Ram disk without leaving the E/A module.

NEW PROM SET FOR CORCOMP DISK CONTROLLER CARD - \$34.95
(incl S&H)

This new PROM SET enhances the usefulness of the Double Density Disk Controller Cards. The following NEW features have now been added and can be accessed from TI BASIC, Extended BASIC and a GRAM KRACKER NSAVED Basic program. This will allow you to build a menu of all your favorite software and load it with a single key press. These new enhancements will allow you to load any type of assembly program without using the Editor/Assembler module. The new CALLS added to the card are:

1. CALL ILR - Loads the standard E/A utilities into Low Memory.
2. CALL LR("DSKx.filename") - Loads a DIS/FIX 80, compressed or uncompressed, auto start or non-auto start Assembly Language Program. (This is exactly the same as option 3 - Load and Run, on the E/A menu, including the automatic loading of the E/A utilities)
3. CALL LLR("startname") - This starts a non-auto start program. This is the same as option 4 - Run, on the E/A menu.
4. CALL RUN("dskx.filename") - This loads Assembly PROGRAM IMAGE files like option 5 - Run Program, on the E/A menu. This CALL also automatically sets up the E/A environment in VDP Memory. (i.e. Characters, colors, registers, etc.)
5. CALL RUN - This CALL without brackets or a filename automatically loads DSK1.UTIL1.
6. DELETE "XILR" - Sets up the E/A utilities into low memory from a running Extended Basic Program. It also sets up the Link names for the above CALLS and the other Tool Shed Utilities so they can be accessed from a running program!

Other enhancements include: (1) Removed "9900 Disk Controller" Title Screen which eliminates the lockup problems with some modules; (2) Improved error handling on all utilities; (3) decrease error time out; (3) The Disk Manager will now auto load; (5) For the advanced user we have added a DIRECT CPU RAM SECTOR I/O ROUTINE for faster loading; (6) For Graa Kracker Owners we have modified the Tool Shed Utilities to allow them to be used in a running NSAVED program.

HAVE YOU RENEWED YOUR
HUG MEMBERSHIP ?

CorComp PDM99-Diagnostic Module A review. By Terry Atkinson

Some years ago, TI produced a diagnostics module for the TI99/4a which, although limited in scope, served a usefull purpose in it's own right. Though this review will eventually lean towards the PDM99, I feel it necessary to do a comparison between the two modules so that potential readers of this article can draw their own conclusions and perhaps purchase one of the modules for their own use. I will not go into the other diagnostics programs which are available. Most notably, the MG Advanced Diagnostics, and at least two other disk-based diag programs. I will comment, however on their limited usefulness. Being disk-based, you would need a WORKING system in order to load and execute those programs. In other words, 32K, disk-drive and consol. With the module based diagnostics, one only needs a working consol to be able to CHECK OUT those other peripherals... which is the whole purpose behind a diagnostics program in the first place! I am going to touch briefly on the TI Diagnostics Module (PHM3000, circa 1979). I find this module excellent for comprehensive tests of the consol itself but useless for peripherals and external memory. Some of the tests performed are keyboard, RAM, video, sound, calculation, cassette and joystick ports. A final test is for maintenance personnel only, and requires a signature analyser in order to evaluate this test. The question may be asked; "Well, if the consol is not working, why have a diagnostics module to check it out?". My response is very simple. For most faults other than a power supply fault, the module would indeed work. In fact, a long time ago, I had a fault with my computer and this module told me where the fault was. Replacing a chip solved the problem, which has not recurred. Also, it was brought to my attention the TI technicians used the module to initially identify trouble areas when computers were returned for repair. Now on to the more recent trouble shooting diagnostics module released in Dec 85 by CorComp. Called the PDM99 (Peripheral

Diagnostics Module), it goes beyond where the PHM3000 left off in that it checks out the external equipment, such as disk-drives, RS232/PIO and 32K expansion. Since it is menu driven, it is very easy to use and the results easily interpreted. The opening screen allows you to select the above tests, along with which disk-drive to access. Drive tests include formatting in 1S1D, 1S2D, 2S1D, or 2S2D format. Once the disk is initialized, it will randomly check a number of sectors for correct information. If an error is found, the program will let you know where the problem is. You can also check to see what the track-to-track access time is set at. This is not so important with the TI controller as the time is fixed at 10 or 20MS. However, the CC controller and the later 9900 systems allow a variation on access times. I have mine set for 3ms access using Teac half-heights, and find it works excellently using all formats and have had virtually no problems with other TI systems reading/writing to my disks. Like the MG AD, the PDM99 will also check drive motor speed. No fancy graph-like display, though. The PDM99 give you an indication of motor speed with real numbers negating any error of interpretation. The 32K test has two parts. First the program writes to the full 32K memory and reads the information back to see if it is the same. If so, the memory is good. The second part of the memory test is a refresh test. The program writes information to the full 32K and then counts down from 20 and goes back and reads the information. This ensures that data is not being lost due to a bad refresh. The final major check is for the RS232 card, in that a test is sent to either RS232 port or the PIO port if desired. A printer is required for these tests. Another feature is the loop-back test. Supplied with the PDM99 is a DB25 plug, already wired for this test. This connector is hooked to your RS232 port, and the test executed. Data is sent from port 1 through port 2 and checked for accuracy. Although I find these modules usefull, I would not recommend purchase of them by individuals. Rather, I would suggest that users groups purchase the modules

for loan to their members as required. The cost of the PDM99 is about \$25 (U.S.) and is available at CorComp or TexComp. However, the TI version may be hard to come-by. I had to borrow one from the Ottawa 99/4 Users Group in order to refresh my memory (no pun intended) as to it's capabilities. I certainly wish I had not sold my original as I have had occasion to use it in the past, and probably will in the future. The documentation supplied with the PDM99 is adequate. Since the program is menu-driven, it is extremely easy to use anyway. Once a problem has been discovered and diagnosed with the PDM, however, there is no further instructions on how to correct the problem, or to even narrow it down further. The only way out at that point would be to take it to a technician, or a member of the users group who is technically inclined. Later... Terry Atkinson/TI6450/75376,1277/A147E

DM1000 REVISION RECORD

 MODIFIED BY RALPH ROMANS:

VER 3.0 FIXES TO VER 2.4: - INCORRECT FILE COUNT WHEN GOING FROM 'M' TO 'C' - FILE COPY WOULD GIVE YOU A BAD COPY IF THE FILE BEING COPIED WAS STORED ON THE MASTER DISK AS A NON CONTINUOUS FILE AND THE SIZE OF THE FIRST SEGMENT WAS EXACTLY 39 SECTORS WITH ADDITIONAL SECTORS IN ANOTHER SEGMENT ON THE DISK.
 VER 3.1 FIXES TO VER 3.0: - FILE COPY WOULD GIVE YOU A BAD COPY IF THE MASTER FILE WAS A FRACTURED FILE OF EXACTLY 39 SECTORS AND THE SAME FILE NAME WAS ON THE COPY DISK. - WHEN ENTERING A FILE NAME IN VARIOUS MODES, IT WAS POSSIBLE TO MESS IT UP. UNFIXED BUGS IN VER 3.1 - UNABLE TO DISPLAY SOME DIS/VAR 80 FILES THAT ARE FULL OF CONTROL CHARACTERS. COMPUTER HANGS UP!

VER 3.3-CHANGED DEFAULTS ON SWEEP AND DISK INITIALIZATION - DISK INITIALIZATION WORKS FOR MYARC AND CORCOM - READ/WRITE ERRORS GETS CLEARED AFTER 1ST USE ON DISK COPY - FILE 'MGRI' MAY NOW BE CALLED ANY NAME AND ALL FEATURES OF DM1000 WILL WORK!! THIS WILL ONLY WORK WITH TI CONTROLLER AND CORCOM CONTROLLER - THE LOADER FOR MYARC CONTROLLER IS CALLED LOADMY - DURING DISK INITIALIZATION MENU, YOU CAN USE THE UP ARROW TO GO BACK TO PREVIOUS QUESTION.

VER 3.4- ABLE TO DELETE/MOVE/COPY 1 SECTOR FILES - ADDED 'UP ARROW ACTIVE' NOTICE WHEN UP ARROW WILL TAKE YOU BACK TO PREVIOUS QUESTION.

VER 3.5- ABLE TO TYPE/PRINT DISPLAY VAR 80/FIXED 80 FILES WHILE THE FILE LISTING IS ON THE SCREEN BY PRESSING A 'T' FOR TYPE(DISPLAY) FILE TO SCREEN OR 'P' FOR PRINT TO LIST DEVICE WITH OPTIONAL CONTROL CODES SENT TO PRINTER FIRST. THE 'P' AND 'T' FOR PRINT OR TYPE ARE ONLY VALID IN THE LEFT MOST FIELD. - 'EOF' noticed added in lower left corner of screen

- DISPLAY VAR 80/FIXED 80 MENU REMOVED

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Horizon RAMdisk

User has choice with Horizon card

By JOHN KOLOEN

As far as I know the Horizon RAMdisk is the only peripheral expansion box card that is being marketed in kit form. To be sure, the card also comes fully assembled (which is the version I reviewed). The assembled version is about \$60 more than the kit when all expenses are figured in. The kit includes a PC board, manuals, parts list and software and costs \$53. The buyer purchases other parts locally, including memory chips, getting the best price he can find. The parts should be easily obtainable at most electronics supply houses. While the kit does not have a warranty, the assembled version carries a 90-day warranty.

What is a RAMdisk? Simply, it is a device that emulates a floppy disk. The RAMdisk is used to store programs and files like a floppy, but accessing this data using the RAMdisk is much faster. Loading and saving programs and files with a RAMdisk is 5-10 times faster than a floppy disk. The principal difference is that when you turn off the system the data on the floppy disk is still there while the data in the RAMdisk is wiped out. However, the Horizon RAMdisk is battery backed, which means that anything stored in the RAMdisk remains there even when the computer is turned off. The card uses rechargeable batteries that are recharged while the computer is on, thus insuring that the contents of memory will remain intact for as long as the batteries remain in place.

Unlike several other RAMdisks, the Horizon RAMdisk requires a 32K memory expansion. It appears to be compatible with the TI, Foundation and Myarc memory expansions. (Others, such as the CorComp memory expansion, were not available for testing.) However, there may be problems associated with some disk controller cards and other peripheral cards. This is primarily due to the fact that the RAMdisk operates best when using the CRU base address of >1000.

Review

Report Card

Performance	A
Ease of Use	A
Documentation	A
Value	B+
Final Grade	A

Cost: \$53 kit; \$165 (360-sector assembled version), \$210 (720-sector assembled version)

Manufacturer: Horizon Computer Ltd., P.O. Box 554, Walbridge, OH 43465

Requirements: Console, monitor or TV, memory expansion, disk drive system, Extended BASIC, Mini-Memory or Editor/Assembler

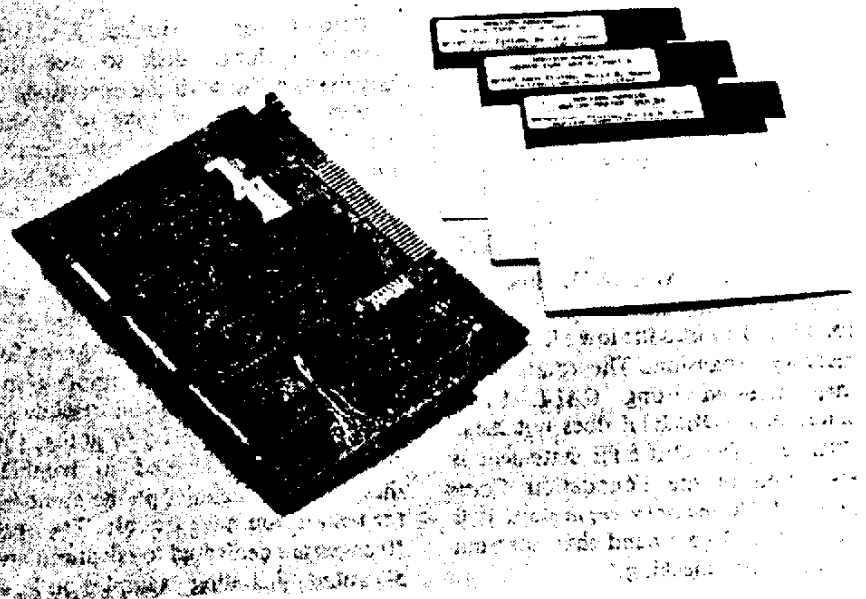
This is done so that the RAMdisk is the first device checked on any input/output operations. Some peripheral cards use the same CRU address for the same purpose. When two devices use the same address the result may be a

lockup of the computer or the locking out of one of the devices. Because of this I strongly recommend that anyone ordering the card inquire first about compatibility with his existing PEB configuration. Unlike most other cards, the RAMdisk includes a DIP switch to allow users to change the CRU address.

Performance: The Horizon RAMdisk comes with a disk-based operating system. Once loaded operation of the RAMdisk is transparent to the user.

The RAMdisk also comes with DM-1000, a disk manager distributed by the Ottawa TI99/4 User Group. This is used to initialize the RAMdisk. Disk Manager II may also be used. The RAMdisk is available in two configurations: 104 kilobytes and 192 kilobytes. The 104K configuration is the equivalent of a single-sided floppy disk. The 192K configuration is the equivalent of a double-sided floppy disk.

After initialization the RAMdisk is
(Please turn to Page 34)



HORIZON RAMDISK—

(Continued from Page 33)

available for use as a storage device. A number of subroutines are provided to aid the user. They include:

—CALL DN(n). This is used to set or change the disk drive number of the RAMdisk. When installed, the RAMdisk is referred to as DSK3, though it can be changed to anything from 1 to 6.

—CALL MS(n). This is used to set the maximum number of sectors the operating system recognizes. For a 104K RAMdisk, the statement would be CALL MS(360).

—CALL WO. This write-protects the RAMdisk. It's analogous to placing a write protect tab on a floppy disk.

—CALL WF. This turns off the write-protect.

—CALL EX(adr). This is used to transfer control of a BASIC or XBASIC program to a specific address of CPU memory.

—CALL CO. This turns the card on by enabling the RAMdisk operating system.

—CALL CF. This turns the card off. The CALL CO/CF statements when used with the CALL EX subprogram allows users to link to the operating system from BASIC.

—CALL DM. This is used to load DM-1000 when the two disk manager files are loaded into the RAMdisk.

—CALL NF(n). This is used primarily when the CRU base is not 1000. The "n" is set to a number greater than the maximum number of drives the disk controller can access. This allows BASIC and other programs to access the RAMdisk. When the CRU address is 1000, NF is of little use.

—DELETE "XBCALL". Executed after entering CALL INIT, this statement downloads the machine language for all CALLs into the low 8K of the 32 memory expansion. The routines are then accessed using CALL LINK statements. (DELETE does not mean "delete." The DELETE statement is also used in the Foundation Computing 128K memory expansion. It is the only I/O command that does not include error checking.)

The DELETE can be run from an Extended BASIC program, allowing RAMdisk CALL LINK statements to be used in auto-loading programs. This is a very interesting feature in terms of its usefulness in chaining programs together.

—CALL ? Enter user-defined subroutines in place of the question mark. Assembly language programmers can have a field day with this one.

The RAMdisk operates much like a floppy disk drive, using the same conventions for disk access—OPEN, CLOSE, deleting and saving files and programs, etc.—as a floppy and may be accessed by disk name or drive number. The contents of the RAMdisk may be cataloged with the same programs used to catalog floppies.

Among the more common uses of a RAMdisk is to store applications files for such cartridge-based programs as TI-Writer, Microsoft Multiplan and Editor/Assembler. Loading the editor or formatter files for TI-Writer, for example, is much faster when the files are located in the RAMdisk than on a floppy. Of course, access to files written by these and other programs is much faster when writing or reading from the RAMdisk compared to similar operations on a floppy.

Ease of Use: The Horizon RAMdisk mimics a floppy disk so well that anyone familiar with the operations of a disk drive should take to it very quickly. It provides considerable potential for very sophisticated hobbyists yet can benefit virtually any user.

Documentation: The manual easily earns an "A." It serves first as a tutorial and secondly as a reference for the card. It goes from the simple to the complex, and is very well organized. The first 12 pages get you going, the next three are devoted to troubleshooting, and include phone numbers for help if you have trouble. The next 10 pages are dedicated to advanced applications, including examples on how

to write CALL routines. Subsequent to this is a self-contained section on assembling the RAMdisk kit. Also included is a manual for DM-1000, which is included with the RAMdisk. The manual is printed on 8½ x 11 paper and is punched for a three-hole binder.

Value: Perhaps the only disadvantage to the Horizon RAMdisk is that it requires a 32K memory expansion to run. Those who already have a memory expansion would not be affected by this, but those who have yet to buy a memory expansion may want to think twice about this. Offsetting this to some extent is the fact that the RAMdisk is available as a kit, as well as fully assembled. The hobbyist who enjoys do-it-yourself hardware projects certainly will find the Horizon kit to represent a good value and will probably learn a lot about the operations of his computer.

While the Horizon RAMdisk doesn't offer features found in some other RAMdisks (it doesn't function as a print-spooler), this device is well-designed and easy to use. The fact that its batteries are constantly recharged while the computer is running is an extremely useful feature. I wish that other battery backed devices were designed to be self-recharging.

How well the Horizon RAMdisk is supported is a question that I cannot answer, since this is the first product of Horizon Computer Ltd. This product started out as a user group project with the principal participants including John Clulow, Ron Gries and D.R. Romer. (Clulow is no longer affiliated with the RAMdisk project.) The company claims that hundreds have been sold. Its designers apparently have confidence in it or else they wouldn't have published their home telephone numbers in the manual.

Overall, I like what this card does and how it does it. It lives up to the claims made for it by its manufacturer.

HOOSIER USERS GROUP DIRECTORY

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Meetings open at 2:00 PM

NEWSLETTER EXCHANGE

The HOOSIER USERS GROUP is participating in a Newsletter Exchange program with other TI Users Groups. This offer is made with the understanding that, with proper credit, your Users Group can reprint articles from the HOOSIER USERS GROUP Newsletter, and with proper credit, we can reprint articles from other TI Users Groups Newsletters.

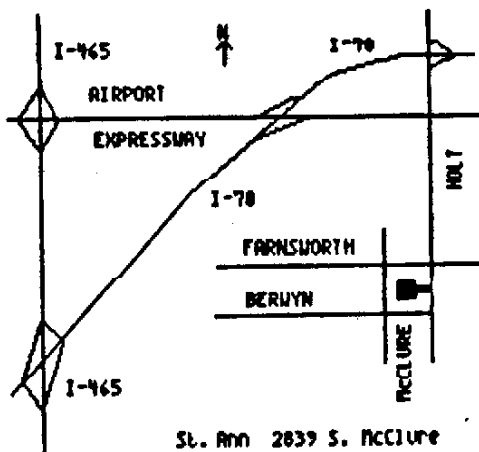
BACK ISSUES

Back Issues purchased at the monthly meeting are \$1.00 each. Mail order price is \$1.50 per Newsletter (postage included). Orders will be filled within 3 weeks of receipt.

PRINTOUTS

Library listings can be ordered for \$.25
 6 X 9 self addressed envelope with \$.66 postage.

Please send orders to our P.O. Box.
 SORRY, PRINTOUTS WILL BE SENT TO ACTIVE MEMBERS ONLY.



HUGbbs INFORMATION

317-631-994A 300 baud only

The HUGbbs operates on a 24 hour basic.

SPONSOR THE HUGbbs: Any member or retail business can sponsor the HUGbbs. For \$5.00 donation, you get 5 (40 column) lines on the Log-on Title Screen for a week (or for a \$10.00 donation, you get 10 (40 column) lines plus a 24 line by 40 character ad in the Sales option of the file module. To sponsor the HUGbbs, send a check or money order to our P.O. Box (or turn in at our Monthly meeting) specifying how many weeks (and how many lines) you want to sponsor, your name (or company name), address, phone, what you want to say, and the week (and an alternate week) you want the ad to appear.*

ADVERTISING POLICIES

There will be no charge for advertisements submitted to the HUGger Newsletter by members (for private sale only). Format for the advertisements is 45 characters wide by 10 lines long. The Ad should be typed or hand printed exactly how it is to appear in the Newsletter. Deadline for an Ad to appear in next month's Newsletter is the 2nd Saturday of the month.*

For companies who wish to advertise in the HUGger Newsletter, our rates are as follows:

Pre-Printed Inserts (one page):	\$20.00
One Full Page (one sided) Ad:	\$25.00
One Half Page Ad:	\$13.00
One Quarter Page Ad:	\$ 7.00

All Ads must be in ready to print condition. Advertisements must be in our P.O. Box before the 2nd Saturday of the month to appear in the following month's Newsletter.*

*NOTE: The officers of the HOOSIER USERS GROUP reserve final approval on all advertisements submitted for the HUGger Newsletter and the HUGbbs. The officers and the Newsletter committee are not responsible for typographical errors due to illegible advertisements. All proceeds are accepted as donations to the HOOSIER USERS GROUP.

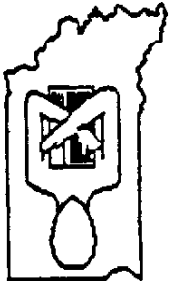
TIME DATED
January 11, 1987
MATERIAL

Doc Eicher
4410 Cardinal Drive
Indianapolis, IN 46227

87/08 427DE

Forwarding and Address
Correction Requested

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222



APPLICATION FOR MEMBERSHIP

Below you will find an application for membership to the Hoosier Users Group. Active membership entitles you to the Newsletter, up and download on the HUGbbs, attendance and voting rights at regular club meetings, access to the HUGger Library of Programs, special club activities and special guest speakers for one year. Subscribing members will receive the **NEWSLETTER** only.

Make check or money order payable to **Hoosier Users Group**. Send completed application to:

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222

(Cut on dotted line)

Check One:

Active Member

New: \$20 _____

Renewal: 15 _____

Subscribing Member

New: \$10 _____

Renewal: 7.50 _____

Amount Enclosed: \$ _____

Name: _____ Today's Date: _____

Address: _____ Apt. # _____

City: _____ State: _____ Zip: _____

Phone: (____) _____ - _____

Interests/Comments: _____

* _____ D _____
S _____ O _____