NORTHWEST OHIO
99'ER NEWS

This newsletter is published jointly by OH-MI-TI and New Horizons TI-99/4A Home
Computer Users' Groups. Material may be reproduced without permission provided
the author and source are acknowledged. For more information concerning TI
Users' Groups in the Northwest Ohio area, contact:

Roger Biddle   Bill Sager
President, OH-MI-TI   President, New Horizons
218 Dillrose Dr.   612 Meadow Spring
Northwood s, Oh. 43619   Maumee, OH 43537
(419) 666-4945   (419) 893-7962

```
XXXXXXXXX    TICOMM BBS  385-7484    XXXXXXXXXXXXX
     X       SYSOP>>>BUD MILLS<<<    X
     X     !!!!!!! 24-HRS. !!!!!!    X
     X                               X
     X            USING A            X
     *       HORIZONS RAMDISK        X
     X                               X
     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

THE NEWSLETTER STAFF

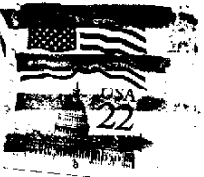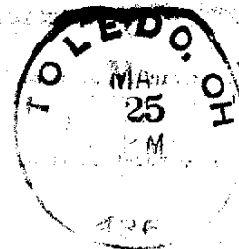---

Kent Sneets   John Clulow
Roger Biddle   Bill Tiep
Earl Hoffsis   Phil Bennis
Marilyn Schafstall   Dave Burkett

WILLIAM L. SAGER
612 MEADOWSPRING RD.
MAUMEE, OHIO 43537
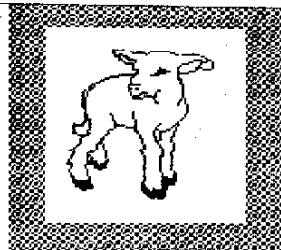
DON'T BE A STRAY -
JOIN THE FLOCK AT YOUR
TI USERS GROUP MEETING

Dallas TI Home Computer G.
1221 Mosswood Place
Irving, TX 75061

PRESIDENTS CORNER

by Roger Biddle
OH-MI-TI

This month I'm going to address an area that I have mixed feelings on.

A week ago I was on Compuserve and was greeted in the TIFORUM by a bulletin that told about a track copy program that was in DL1 (Data Library 1). A track read, write type copy program can virtually copy any disk based software on the market for the TI.

I learned that a few software developers for our machine were quite upset, which I can understand. But the capability has always been there, it just took someone very intelligent to to take the time and figure it out.

The program was taken off compuserve very quickly, but at least 30 or 40 accesses were made in which those same 30 or 40 people downloaded it. This program is advertised as Freeware. Send the author $10.00 and he will send you the source code. I suspect tat this program spread throughout the TI community from coast to coast very quickly. So what does that mean ?

There could be several implications. 1. users will backup the hell out of everything they have which wasn't possible with other backup type programs, (which software writers fear). I feel there is nothing wrong with this has long as YOU BUY THE ORIGINAL and would like to have a backup for your OWN insurance. I have a couple of programs one by Millers Graphics (Advanced Diagnostics), and one by Databiotics (4/A Talk) that are worth every cent and should be bought by everyone that require these types of software. These two programs cannot be hacked up because of protection schemes installed on them. The track copy program will do the job.

These two programs for me would be greatly missed if they got destroyed or lost. It would require me to notify the manufacture for replacement at usually a small charge. This would be a real inconvienance to me in the time it would take and the money involved. I consider my time as valuble as anybody elses. The backup program will alow me to make a backup for my personal use.

The software people say "the TI market is to fragile" for this program to exist? Every other computer I can think of has had this type of Utility Program for a long time. Lets face it you have to have the program to back it up, which

means you have to buy it first. What worth is a program without nice and neat documentation anyway? I could understand the software manufactures if it were for any of the other brand of computers   ex: Commodore,Apple,Atari, or IBM where when you go to flea markets and find tables full of pirated software for sale at a fraction of the retail value. This I feel will not happen with TI software. Our clubs have been involved with such flea markets, and hamfests in the past, and we never offered commercial software and never will. From our experiance Yes a lot of TI-99/4a's were bought by the public but they were never EXSPANDED with a disk drive, 32K ,E/A,or even EXTENDED BASIC etc.etc. So what can we offer these people in the way of disk based software that this backup program could give.

Our club has NEVER and will NEVER sell any COMMERCIAL software at our meetings or condone pirating. But this Program will be distributed at our next meeting under FREEWARE for which it is, at a small duplicating charge. I feel this program is a UTILITY for which there is a usefulness, and something to be learned from it.

At our next meeting there will be an introduction presentation on MULTI-PLAN by Dave Burkett, and demos of different software the club has to offer by kent Sheets. I hope everyone can attend. My attendance is questionable, my son is scheduled to have his Tonsils removed that day, but if possible I will try to be there. If not Bob Peters will conduct the meeting. Please extend Bob all the support you have given me, which I'm sure you will.

Our next meeting will be March 14, 1986 at 7:00 pm. Oregon firestation No.2, Wheeling St. Oregon Oh.

NEW BBS FOR TI's

Don Turner has had a version of the TECHIE BBS in operation for a couple of months. Don's BBS is called "Late Night" and is in operation from 7 - 11 every evening.

Don's BBS is very easy to use and has upload and download capability as well as E-Mail.

If you have a modem, you can call the BBS from 7 - 11 pm seven days a week at:

537-1454

NEW HORIZON NEWS

by Bill Sager

Response to the offer of a free disk or tape of programs for writing an article for the newsletter has been underwhelming. BUT, I am hopeful that the last minute submissions will turn things around. We have always given our members first claim to our pages, rather than reprint articles from other sources. We'll get it typed if you can't. We'll help with editing or rewriting, but only if requested. More members are interested in the content than the grammar anyway. There are no rejection slips, so come on and get that well deserved byline. Express your opinions. Give us your thoughts. Tell us about the programs you use. Explain what you get out of the users group. WRITE something! Your fellow members will appreciate it, especially the newsletter staff.

Current membership rosters are available at the meeting. If you missed picking one up last month there are more. All members and guests or visitors should register at the check-in table in the main meeting room. That's also the place to get your name tag. If you take your name tag home, please be sure to bring it with you the next month. Better yet, let us keep track of it for you. Return the exchange newsletter notebooks so everyone interested can have an opportunity to see them. And while you are looking through these newsletters maybe you will get an idea for an article that you can do for OUR newsletter.

Thanks to Mike Roadruck and Les Koth for the fine presentations at the February meeting. Les has indicated a willingness to dig deeper into FORTH at a future meeting.

Much like the original "Frosty the Snowman", who brought happiness to the children, our own "TI Frosty", brought happiness to three members last month. He drew their names from our membership list for prizes. Winners were: Paul Martin, Linda Peters, and Marilyn Schafstall. "TI Frosty" comes to life through computer magic rather than top hat magic.

A thank you to Bill Tiep for his donation of one of the prizes. And just to snow you how dedicated Bill is to the group, read this. On the day of the coldest and worst February snowstorm Bill was without his car, but scheduled to pickup the New Horizon newsletters for delivery to our mailer. Rather than have the newsletters be late, Bill hiked out on foot at the height of the snowstorm about a mile and a half to pickup the newsletters. Now that's real dedication!

We understand from a telephone call placed by a member that HOME COMPUTER magazine is now only publishing every other month instead of the ten issues a year they claim. Boy, you could have fooled me! I counted six issues last year rather than ten. (It does say ten issues per year in the magazine — I looked.) If they tell us six does that mean three? No doubt the next edition will have an editorial about how less is more. And readers will will be quoted on how much they enjoy less. It's all wearing very thin.

A good monthly publication that is devoted solely to the TI 99/4A is MICROPENDIUM. It's not available on the newsstands so you must subscribe. A order form was in the newsletter a while back or we'll get it for you if you need it. It arrives monthly rather than every so often and has up to date information.

Don Turner has stepped forward to become Library Coordinator for New Horizons. Don and John Clulow have been working with the library material and hope to have it ready for borrowing again. Don may be looking for some assistance with this project so don't be bashful and call Don if you would like to be a part of this endeavor. You might want to call Don on the new BBS system he is operating from his regular telephone number during the hours of 8 PM to 12 midnight only. Don is running the board from his TI system with two drives and plans to add a Horizon RAMdisk to further enhance the operation. Don's BBS allows up and downloads via Xmodem but you can call using TE II and leave messages. A shareware program the club has, called Fast-Term, has the Xmodem protocol.

Reports of a new track copier disk duplicating program that runs with a TI disk controller card have surfaced. This program is suppose to be capable of copying any so called protected disk now on the market. It copies the "funny" sectored disks I am told. Of course, some of the ways to defeat simple protection means have long been known. What will be the consequences of such a program in the hands of TI users? One west coast company has already said that they have placed a hold on all software development. They believe that they will not be able to sell enough programs to justify the extensive work and development needed to turn out a quality piece of software. Whether or not this will doom the few remaining commerical TI software publishers is not known. Can the public domain and shareware programers fill the void? Perhaps. Time will tell.

See you at the meeting March 15, 2PM, Unity Church, 3535 Executive Pkwy just off Secor in the Westgate area. As NBC says- Let's All Be There.

TRANSFER PAPER

by Ed Menasian
OH-MI-TI

Hello again. I have found something that you might like. It is called TRANSFER PAPER.

The way it works is as follows.

(1) Load in a program thats like the print shop or something of that kind.

(2) Put this TRANSFER PAPER into the printer.

(3) Now all you have to do is make your designs on the screen.

(NOTE) If you do not have the print shop or a program of that kind then take any char or sprite program and make your design(s) . Then put your design(s) in a program. To run this off to a printer use a screen dump program.

(4) After you are done and you have run off your design(s) to the printer all you have to do is iron your design(s) to a T-shirt.

good luck!

You can buy this paper at almost any place that sells printer paper.

COMING COMPUTER EVENTS

- MARCH 14 -

OH-MI-TI Meeting, 7:00 PM Oregon Firestation #2 Oregon, Ohio

- MARCH 15 -

NEW HORIZONS Meeting, 2:00 PM Unity Church, 3535 Executive Pky Toledo, Ohio

TI COMPUTER OWNERS FUN FEST 9:30 AM to 4 PM Roselle Park HS Roselle Park, NJ (we have maps)

- MARCH 16 -

COMPUTER AND HAM FEST 10:00 AM to 4 PM Lucas County Recreation Center-Key Street Maumee, Ohio

- APRIL 5 -

TI SIG, BOSTON COMPUTER SOCIETY Lexington, Mass (no details now)

- APRIL 12 -

TI METRO AREA REGIONAL CONFER-ENCE of USERS GROUPS 1:00 PM to 6:00 PM Queensborough Community College Bayside, NY(more info available)

MARK'S WORLD

by MARK F. LAMB
OH-MI-TI & NEW HORIZONS

THE DEMOS

At OH-MI-TI there appears to be a thirst among us for basic answers. Witness Don Turner's discussion and demo on Basic and the flux of questions after. So give us a hand. If you finally mastered a part of Basic, say a command that in itself seems simple but through proper handling may have far reaching efects in the program , show us. Dave Weldy's first time program showed some real ingenuity. Load up a slew of quick menus from the three basic food groups and let the computer plan out your weekly menus including telling you what to get at the store. At the New Horizons we got to see more about "CSGD", thanks to Mike Roadruck. For those who saw the demo and didn't have David Rose's "CHARACTER SETS AND GRAPHICS DESIGN" program should be able to attest to the bargain price being offered to the two clubs for buying in quanity. Now I'm not giving up my Assembly Language learning but "Forth" - oh you kid! There wasn't enough time for Les Koth to show what he had. He has got to give us more--in particular how to run that screen disk I bought about a year ago!

SGT. @ ARM's

Neither club has a sargent-at-arms but maybe they should. The background noise got a little heavy at both clubs and the disheartening thing is; by people who should know better; in some cases by people who have vocalized complaints themselves.

LETTER WRITING MADE EASY

The following "tip" found in November 85 issue of "Ozark 99'er News" apparently copied from an article by Gary Fuguay in "Topics", the newsletter of the LA99'ers' U.G. This is an example of some of the fine material you might find in reading newsletters from other user groups throughout this land of ours.

If you use TI-writer to write letters, you have probably found yourself typing the same things (like your return address) over and over again, each time wondering if the placement on

---

thepage was going to look the way uou wanted. Well, all your problems can be remedied by the simple little "template" below.

```
.FI
.LM 6:RM 72
.IN +40
+
+
JOHN DOE
1234 MAIND STREET
SPRINGFIELD, OH 43600
+
+
+
DATE
+
+
NAME
ADDRESS
ADDRESS
+
+
DEAR SIRS.
+
+
+
+
SINCERELEY,
+
+
+
+
YOUR NAME
```

To use this "template" simply type it in as it appears above (substituting your name and address for John's of course) using the Editor and save it to disk. (The +'s are marking blank lines--just leave those lines blank except for a carriage return.) Then, when you need to write a letter, load the file back into the editor. Move down to the date and type the date over what is there. Move down to name, address, address and type in the name and address of the person you are sending the letter to. Then, move to ".in +5" and press FCTN 2 to insert the body of your letter. That's all there is to it. Save the new file to disk (with a new name of course) and then run it through the formatter. You'll have a professional-looking letter every time.

```
         FOR SALE
     By: Jim Hindley
     Phone: 535-9878

EXPANSION BOX                    250
CONSOLE                           40
RS232 CARD                        50
EXTENED BASIC MODULE              40
DISKS 30 AT .40 EACH              12
TERMINAL EMULATOR                 10
EDITOR/ASSEMBLER MODULE           10
TI-ACCOUSTIC MODEM                30
9" HI-RES MONOCHROME MONITOR      40
15" HI-RES MONOCHROME MONITOR     60

NOTE: Both monitors have sound.
All modules and cards with
manuals. Expansion box includes
32K and disk drive.
```

LAWS & MAXIMS

compiled by
Bill Tiep
New Horizons

WESCOTT'S POSTULATIUMS AD NAUSIA

ON EDUCATIONAL PROGRAMS:

The ability of modern computer software to instruct and teach preschoolers in basic logic and reasoning has indeed progressed vastly. Most preschoolers can now using a computer , hold their own in a battle of wits with most household appliances.

ON CHEAP PROGRAMS:

<censored>

GREENBURGS FIRST LAW OF EXPERT ADVICE:

Don't ask the barber whether you need a haircut.

PAULSENS PRESUMPTION:

There is nothing to fear but fear itself - and, of course, the bogyman!

LEWIS'S LAW:

No matter how long or how hard you shop for an item, after you've bought it it will be on sale somewhere cheaper.

COLES'E LAW:

Thinly sliced cabbage.

THE FAIL SAFE SYSTEM:

When a fail-safe system fails, it fails by failing to fail safe.

A complex system designed from scratch never works and cannot be patched up to make it work. You have to start over, beginning with a working simple system.

FOR COMPUTER PROGRAMMERS:

Programs never run the first time. Complex programs never run.

FUNDAMENTAL LAW OF ADMINISTRA-TIVE WORKINGS (F.L.A.W.)

Things are what they are reported to be. The real world is whatever is reported to the system. (If it ins't official, it didn't happen).

SYSTEM-DELUSION:

If it's made in Detroit it must be an EDSEL.

NEW SOFTWARE

by ASGARD
taken from
MICROpendium
supplied by Roger Biddle

Artist companion

Now, from the makers of the highly acclaimed GRAPHX Companion (see review in the Sept. '85 issue of micropendium) a companion product for the latest advance in 99/4A graphics, TI-Artist. All others aside, only our companion features art work from some of the best artist in the TI-99/4A world - Warren Agee, Chris Bobbitt,and many more fine craftsmen. Only our companion features not only the best artfor GRAPHX (including the winner of the MICROpendium graphics contest) but also a collection of all new art work designed specifically for TI-Artist. Finally, our companion is also the least expensive available. only $7.00

for a two-disk package. Requires TI-Artist Version 2.0

$7.00

Recipe Writer

Now available, the ultimate kitchen aid for the TI-99/4A! This useful utility for home-maker and chef alike is written entirely in the Forth language. Not only is it blindingly fast, it is also easy-to-use with one-touch menus and full prompts in English, not computer-ese. Its many powerful functions allow easy recipe entry and editing,printout and organization. Included are options for easily converting recipes to different serving sizes, and for printing stored recipes on index cards as well as regular paper. Ideal for maintaining a collection of recipes without messy, unorganized pen and paper! Requires Extended BASIC,32K and disk drive.

$12.00

Quick Dialer

At last, an easy-to-use automatic telephone dialing program designed for use with popular terminal emulator programs such as FAST-TERM and P-TERM! Store up to 100 names and numbers in a single directory file for dialing at the touch of a single key. Features automatic re-dialing if a number is busy, full name and numberediting options as well as complete print and display functions. The package includes a pre-written version for use with FAST-TERM, an easily modified generic version for other TE programs, and extensive documentation. Great for use with Compuserve, Source, and local BBS systems. Requires Extended BASIC, 32K, disk and a modem.

$10.00

ASGARD SOFTWARE
POB 10306
ROCKVILLE, MD. 20850

BUILDING A HORIZONS RAMDISK

by Roger Biddle
OH-MI-TI

About a month ago I purchased a HORIZONS RAMDISK in kit form. the kit includes the printed circuit board, Operating system disk, User's Manual with constuction section, and full documentation including source code of operating system disk (complete open architecture).

After purchasing my parts that were needed to build the Ramdisk from Bud Mills Services,166 Dartmouth Dr., Toledo,Oh. 43614 phone 1-419-385-5946 I was ready to build the Ramdisk.

If you have ever built any electronic kits ex: Heathkit or are a Electronics hobbiest you should have no trouble in building this piece of hardware. The steps and schematics given from start to finish were well thought out and planned, and should not give anyone qualified a problem in building this Ramdisk.

I followed the steps and handled the memory chips as suggested and within 3 hours had a perfect running Ramdisk. It has not given me one bit trouble in the month I have had it, in fact I am using it right now as I write this Review, and it is fantastic with TI-Writer going from the Editor, Formatter, and Text files at lightening speed compared to a Floppy.

If you are interested in a Ramdisk I strongly suggest the Horizons Ramdisk. It is also available completed and warranted from the manufacturer.

REPORT CARD

Performance...........A
Ease Of Use...........A
Documentation.........A

Value.................A
Final Grade...........A

Cost:			
kit form	50.00	50.00
parts	105.00	72.00
(see note)*	155.00	122.00

Manufacture:

Horizon Computer Limited
P.O. Box 554,
Walbridge. Oh. 43465

Requirements:
TI-99/4A console,TV or monitor
99/4 Peripheral Expansion Box
TI Compatibible Disk Controller Card
At least one floppy disk drive
one of the following Command Modules Editor/Assembler, TI Extended BASIC, Mini Memory command Module
32K Memory Exsp. (recommended)

* this is the cost of double sided capacity
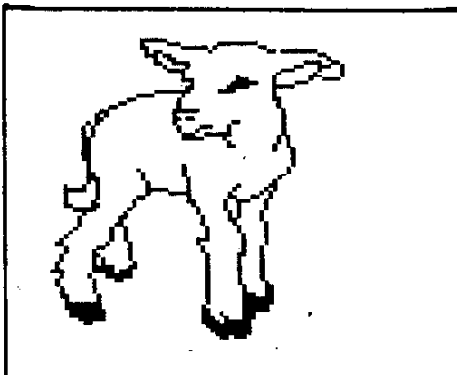
HAM FEST

by Roger Biddle
WB8YVR
OH-MI-TI

The 31 ST. annual Toledo Hamfest will be held on March 16, 1986 at the Toledo Recreation Center. The doors will be open from 8:00 AM. to 5:00 PM. to the public. Tickets are $2.50 in advanced, $3.00 at the door, and children under 12 are free admission.

Many different types of computer related hardware, software, and peripherals are available at this event at usually below average prices. If you are interested in communications, computers, electronics,or gadgets this is show you shouldn't miss.

NUMBERS—
INDUSTRIAL
STRENGTH

Andy Andrews
New Horizons

The largest 'big-buck' game in town comes from the Lottery Commission. For many months we have had 'Lotto'. This past month, Lotto's big brother, Super Lotto, made it to town. They have many family similarities. Each has a six digit selection and large dollar values for perfect picks. Both have smaller pay-offs for near misses. The near misses are for four and five correct choices.

Big brother, 'Super Lotto,' also pays for three valid choices. It also pays off at about five times the equivalent rates for its kid brother. A critical difference between the siblings is the total numbers from which the players may choose. 'Lotto' has a field of 40 choices and the newcomer has four more; 44 in all. That small 10% addition to the choices makes a heckuva difference in the mathematics of the outcome.

I have already commented that the larger field of choices multiplies the pay-off (as well as the odds against a big-buck pay-off) by a factor that rounds out to five times. Here is an apt example of 'leverage,' where a marginal change in the causation has a disproportionate effect in the result. To ease the understanding in this arena it would help to know something of the mathematics of 'probability.'

The mathematics of probability are the numbers that every poker player learns or ignores at his peril and expense. They include the concepts of combinations and permutations. Briefly, combinations deal with the use of all of the given numbers of unique individual units. The object is to determine the total possible arrangements or alignments of all those units. The pertinent math uses the concept of 'factorial.'

The standard notation for the factorial is the variable or the constant followed by the exclamation mark, e.g.:

A! or 3!

The notation requires that the integers from unity (one) through the value indicated by the variable or the constant be serially multiplied. 3! would appear as:

$$3 * 2 * 1 = 6$$

7! would appear as:

$$7 * 6 * 5 * 4 * 3 * 2 * 1 = 5040$$

Distinctive to the 'combination' is that all of the available choices be used, aligned and realigned to the total possible combinations. Lotto has 40 choices. This would total 8.1592e47 choices. Super Lotto with 44 units has 2.6583e54 combinations. Another way of saying that is the 44 choices in Super Lotto have a total of:

2,658,300,000,000,000,000,000,000, 000,000,000,000,000,000,000,000, 000,000 choices.

The effect of the last four units in Super Lotto is to multiply the possible combinations by a factor of 3,258,024. There is both real leverage and numbers in the industrial strength range.

Odds of this magnitude are monstrous and overwhelming. They are incomprehensible.

Thank heavens, the odds for Lotto are far shorter than these mega-numbers. As long as the real odds get, they look skinny compared to the total combinations cranked out by 40! and 44!. For the more manageable numbers we encounter in both Lotto and Super Lotto, we can thank the approaches defined for us by the mechanics of 'permutation.'

Permutations are a first cousin to combinations. However, permutations use something less than all of the possible choices to arrive at the total possible alignments. Both forms of Lotto and Super Lotto use only six choices. The available choices are from fields of 40 and 44 respectively.

Like its cousin, combinations, permutations make great use of factorials. The difference between the two cousins is that combinations multiply factorials to reach enormous products. Permutations uses division to reach more manageable figures. In the two permutations involved in the Lottery, the available choices (40! and 44!) are

divided by the factorials of the unchosen (34! and 38!). With six choices from a field of 40 possibles, the situation would be:

$$40! / 34! = 2.7636 e 9$$

$$44! / 38! = 5.0825 e 9$$

Both of these calculations assume a unique significance in the order in which the six choices are drawn and arrayed. Consider that the six choices themselves would array:

$$6! = 642*1 = 720$$

possible alignments. For the purpose of both Lotto and Super Lotto, the order of choosing or selection is immaterial, insignificant. No matter the order of choice, they will be arrayed in ascending order. All that is needed are the six winners irrespective of the order of selection.

Therefore, we adjust the permutations by removing the significance of the order of selection, viz.:

$$40! / 34! / 6! = 3.8384 e 6$$

$$44! / 38! / 6! = 7.0591 e 6$$

The odds in the Lotto game are futher adjusted by the requirement of a minimum of two games. The adjusted equation would read:

$$40! / 34! / 6! / 2! = 1.9192 e 6$$

Those numbers are still large. Compared to the mega-numbers of combinations they appear like dwarfs. At least they are reasonably comprehensible.

The following routine will calculate the appropriate odds for both games. It will also work out the numbers for games with 3, 4, and 5 choice winners. The subroutine starting at line 200 accumulates the factorials.

```
100 REM  LOTTO ODDS
102 PRINT :::

110 REM  NOTE: N = 40 OR 44
120 INPUT "   FIELD ";N
122 N3=N
124 GOSUB 200
126 N5=N4

130 REM  NOTE: W = 3 4 5 OR 6
140 INPUT " WINNERS ";W
142 N3=W
144 GOSUB 200
146 N6=N4
```

```
150 REM  NOTE: G = 1 2 OR MORE
160 INPUT "    GAMES ";G
162 N3=G
164 GOSUB 200
166 N7=N4

180 PRINT :::"    FIELD ",N,"
WINNERS ",W,"    GAMES ",G,"
    ODDS ",INT(N5/N6/720/N7)
182 PRINT :::" ANOTHER RUN ?
<ENTER> "
184 CALL KEY(0,E,S)
186 IF E=13 THEN 100 ELSE 184

200 REM  THE FACTORIAL
202 N4=1
220 FOR F1 TO N3
222 N4=N4#F
224 NEXT F
226 RETURN
```

RAPID SCROLL

Ed Menasian
OH-MI-TI

Hello, How are you? Well I picked up a real fine program called RAPID SCROLL. I plan to have this program available at the OH-MI-TI meeting, and Steve Patterson will have it at the New Horizons meeting.

This is a program that reads dis/var files. The keys to opperate the program are as follows...

```
(E) for UP
(X) for DOWN
(S) for LEFT
(D) for RIGHT
```

When using these keys you will see a number in the upper left hand corner. This number is the line that you see at the top of the screen.

The numbers you see at the top of the screen are the carrage numbers or tab numbers. When using this program you will see that it is faster and easer to use then E/A or even TI writer.

This program is nice becouse you can go right to the line(s) you want to read, you don't have to wait for the disk drive to load it.

TO LOAD IN EXT. BASIC.

To load this program in Extended basic. Type in the command mode:

>RUN "DSK1.RAPID40"

This will go into a 40 coloum mode. Change the 40 to 64 and it will load in a 64 column mode.

TO LOAD IN E/A.

Go to option (5) and type in DSK1.UTIL40. You can also load the file in TI Writer. This will load in the same program as rapid40. You can change the 40 to 64 here to. That will load the same program that will work in 64 coluom mode.

NEW HORIZONS' NEXT MEETING IS...
Saturday, March 15 at 2:00 PM.
Unity Church, 3535 Executive Pky

In addition to this months presentations, we'll have two new disks. Blank disks will also be available at $6.60 for ten.

```
!------------------------------------------------!
!                                                !
! MIKE AMUNDSEN will describe a program he wrote to !
! assist you in that awful task of preparing your !
! Income Tax.  The program will be available for !
! $5.00 at the meeting.                          !
!                                                !
! RON GRIES will demonstrate a program he wrote to !
! print names and addresses in multiple columns from!
! a TI Writer file.  This program makes an easy to !
! read roster for organizations.                 !
!                                                !
! STEVE PATTERSON will demonstrate the programs on !
! the club disk which he has put together for this !
! month.  The programs include RAPID SCROLL, FORTH !
! COPY, WEATHER STATION, and a game program.  The !
! disk will be available for $2.00 at the meeting. !
!                                                !
!------------------------------------------------!
```

NUTRITION/DIET

DAVE WELDY 3/86

OH-MI-TI

As a physician, I am quite interested in nutrition and exercise for a number of reasons. They are both factors in weight control, heart disease, control of diabetes, feeling of well being and self image as well as many other disease processes. Even though I have a high interest, not all of my patients share my egthusiasm. In that regard I am always looking for ways to motivate and reinforce the education I try to give in the office. It seems that a computer program used in the home might make the process of weight control, diet management, and exercise more enjoyable and self-motivating.

Unfortunately, I am not aware of many programs of this nature written for home computers of any nature. I would appreciate help in locating programs on diet, weight control, nutrition. exercise, or any other related health topic (e.g. evaluation of risk factors for heart disease) you might be aware of.

I will be happy to write monthly (or so) updates on my findings in this newsletter on the TI programs but am collecting names of programs for all types of home computers. Please call or write to Dave Weldy, 859 National Ave., Toledo, OH 43609, 419-381-1846.

Let's try to stay healthy together.
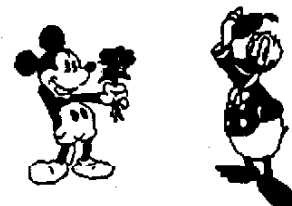
REVIEW

by Bill Tiep
New Horizons

WHAT APPEARS TO BE A FAIRLY SIMPLE GAME TO MASTER IS "T? RUNNER" BY EB SOFTWARE REALLY ISN'T SIMPLE AT ALL. THIS GAME IS LOADED WITH EDITOR/ASSY. CARTRAGE OPTION #5. IT HAS ITS OWN DEMO THAT TAKES YOU THROUGH TWO SCREENS. THIS SHOULD GIVE YOU ENOUGH OF AN IDEA OF HOW TO PLAY THE GAME.

THE OBJECT IS TO ACCUMULATE THE TREASURES WITHOUT TOUCHING ANOTHER PERSON OR FALLING TO FAR. THRU THE USE OF THE FIRE BUTTON YOU CAN MAKE BRICKS DISAPPEAR. I DO BELIEVE I FORGOT TO MENTION THAT YOUR PERSON IS RUNNING ACROSS BRICKS AND UP AND DOWN LADDERS.

IT IS A GOOD GAME AND NOT TO EASY TO MASTER WHICH SHOULD KEEP IT FROM GETTING TO BOORING. MY MAJOR OBJECTION IS THE PROGRAM KEEPS GOING BACK TO THE DISK TO REFRESH OF GET NEW SCREENS.

ALL IN ALL IT IS SIMPLE TO USE,FUN AND SOMEWHAT ADDICTIVE.

TAXFILE99 TO THE RESCUE!

Michael Amundson
New Horizons

IT'S THAT TIME OF YEAR

About this time every year, people get a little cranky when you start talking about money — why is that? Because it's time to lock yourself in a poorly lit room with a temperental adding machine, a stack of dull pencils, and a pile of undeciferable government forms in order to try and convince the IRS that you are poorer than than you really are and to convince yourself that you are richer than you really are. Of course it never really works either.

You end up paying more than you think you should and hoping the IRS doesn't look too hard at your forms and figure out you paid less than they wanted you to. The result is you never get a good night's sleep until after July 4th and you always swear to keep better records for next year's bout with the IRS.

TI99 TO THE RESCUE

Convinced that I could save money on my taxes without giving myself massive headaches or a case of the guilts, I decided to put my TI99 to the task with a program that would help me 'what-if' my way through the tax forms until I got the refund I was looking for!

What I needed was an easy way to fill out the dreaded 1040 'long form', calculate how much Uncle Sam expected from me, then (after recovering from the shock), a simple way to go back and 'tweek' the numbers around (all according to legal tax deductons, of course) until I arrived at a bottom line that I could live with (or at least survive!).

The result of this wishful thinking is the program disk TAXFILE99 and below is a brief description how the system works.

HOW TAXFILE99 WORKS

The TAXFILE99 program disk takes you step-by-step through the 1040 tax form and allows you to jump from one section of the form to another making it easier to complete and easier to change later if you need to. In addition to the 1040 form itself, the disk also contains some general instructions on program operation.

There are eight different screens in TAXFILE99, each corresponding to the eight major divisions in the 1040 form:

1) Filing Status;
2) Income Report;
3) Income Adjustments;
4) Tax Computation;
5) Tax Credits;
6) Other Taxes Owed;
7) Tax Payments; and
8) Summary of 1040.

Each of these screens prompts you for input and, if you wish, can be printed out to disk or to a printer for later inspection. Data can be entered into any of the modules in any order. This makes it possible to record your tax payments right away rather than have to wade through 3/4s of the form before you write it in. It also makes it possible to go back and change a figure if you happen to discover you left something out. This is where TAXFILE99 really shines.

WHAT-IF YOUR WAY TO TAX SAVINGS

One of the things that I like about TAXFILE99 is the possiblility of trying out different deductions, etc. to see if I can save a few more dollars from the clutches of the IRS. I have always wanted to figure out my taxes a couple of different ways to see if I could save some dough, but until TAXFILE99 it was usually too time consuming to do the whole form all over again. Here's an example of what I mean taken from a similar experience I had with TAXFILE99 last year:

I just did my taxes and found out that Uncle Sam expects a check for $350 real soon — I panic! Even if I had the $350, I sure don't want to give it to the government unless I have to.

Where can I find some advantageous deductions? How about starting that IRA I always talked about? Would that make a difference? Let's try putting $2000 bucks into and IRA and see if it helps. Go back to the INCOME ADJUSTMENTS section of TAXFILE99 and enter $2000 on the IRA line. Now call up the 1040 SUMMARY to see how I did. Lo and behold, I now get a $250 refund! It took me all of two minutes to save $600 on my taxes!

TAXFILE99 MEANS TAX DEDUCTION

In the last few weeks I have run a dozen or so tax forms through the TAXFILE99 and, even tough I can't find tax savings that aren't there in the first place, it's been a lot easier to 'route around' the tax code and test possible savings than it ever was before. And if that isn't enough to get you to try TAXFILE99, remember that any expense paid toward tax management is tax deductible. The purchase of TAXFILE99 would give you a $5.00 deduction automatically!

FOR MORE INFO ON TAXFILE99

I will be demonstrating TAXFILE99 at the New Horizons Use Group meeting in March. Copies of the TAXFILE99 disk will be available at the meeting. Or if you'd like to order a copy from me directly just send $5.00 to:

ADVENTURES IN BASIC — 2.2

Steve Patterson
New Horizons

Well here it is!!! proubly faster than you expected it to be, the second version of 'DISK SWEEPER'. This version I feel is twice as good as the old one. It can delete 42 (familiar number) files off of a disk at once. Which most of the time would be the entire disk. What this program does that is different then the last one is instead of reading the files and deleting them; it reads them all first, buts them into arrays, and then deletes them of the disk. It is the same size almost and still runs in Council Basic. It also uses the subprogram I told you about in 'Adventures in Basic #1'.

I hope you find this version more useful than the last.

```
100 CALL CLEAR
110 CALL SCREEN(15)
120 DIM A$(42)
130 PRINT "        DISK SWEE
PER            VERSION 2
RSON"
140 PRINT
150 PRINT "       ERASE AN EN
TIRE         DISK IN 1 M
IN."
160 FOR Y=1 TO 8
170 PRINT
180 NEXT Y
190 PRINT "   PRESS ANY KEY T
O DELEE"
200 CALL KEY(0,K,S)
210 IF S=0 THEN 200
220 CALL CLEAR
230 OPEN #1:"DSK1.",INPUT ,I
NTERNAL,RELATIVE
240 R=2
250 T=1
260 C=3
270 INPUT #1:B$
280 A$(1)=B$
290 GOSUB 610
300 R=R+2
310 FOR T=1 TO 43
```

```
320 IF T=43 THEN 330 ELSE 35
0
330 AG=1
340 GOTO 400
350 INPUT #1:A$(T)
360 IF A$(T)="" THEN 400
370 GOSUB 610
380 R=R+1
390 NEXT T
400 R=3
410 C=13
420 FOR U=1 TO T-1
430 DELETE "DSK1."&A$(U)
440 R=R+1
450 IF R=24 THEN 460 ELSE 48
0
460 R=2
470 C=26
480 CALL HCHAR(R,C,68)
490 NEXT U
500 IF AG=1 THEN 510 ELSE 55
0
510 R=4
511 AG=0
520 C=3
530 CALL CLEAR
540 GOTO 510
550 PRINT "    COMMAND COMPL
ETE"
560 PRINT "  PRESS ANY KEY T
O END"
570 PRINT "    (C) JANUARY 1
986"
580 CALL KEY(0,K,S)
590 IF S=0 THEN 580
600 END
610 IF R=24 THEN 680
620 FOR I=1 TO LEN(A$(T))
630 N$=SEG$(A$(T),I,1)
640 A=ASC(N$)
650 CALL HCHAR(R,C+I-1,A)
660 NEXT I
670 RETURN
680 R=2
690 C=13
700 GOTO 620
```

ADVENTURES IN BASIC - 5.0

Steve Patterson
New Horizons

Here I am again with another article on the wonderful language of basic. You may think that Basic is a terrible language because of speed, graphics, ect. but to tell you the truth I think it is much better than alot of fancy languages. I have been programming in Basic now for about two years and I'm very comfortable were I am.

To get back to why I am writing to you. I have listed in this newsletter a very nice catalog program. I know what you are thinking 'not another one of these disk catalog programs that I type in it ends up being like all the rest'.Well maybe not but I think that I am close.

I believe that you will like this catalog for several reasons. First of all it is written in Console Basic (of course), It prints everything on the screen equally (no numbers of the side of the screen), at the end it gives you the number

of files and the number of sectors those files take up(so if there are bad sectors on the disk the number of file sectors will be less the the number of Used sectors at the top). And last of all when it is done it does not quit it gives you a chance to list another disk.

Maybe you still think it is just another catolog that will colect dust but at least I tried to convince you that it won't.

Here she is:

```
100 CALL CLEAR
110 CALL SCREEN(15)
120 DIM TP$(5)
130 PRINT "       *** BASCAT *
**        Steve Patt
erson"
140 FOR T=1 TO 18
150 PRINT
160 NEXT T
170 INPUT "DISK DRIVE(1-4):"
:SK$
180 TP$(1)="DIS/FIX"
190 TP$(2)="DIS/VAR"
200 TP$(3)="INT/FIX"
210 TP$(4)="INT/VAR"
220 TP$(5)="PROGRAM"
221 HI=0
222 FL=0
230 CALL CLEAR
240 OPEN #1:"DSK"&SK$&".",IN
PUT ,INTERNAL,RELATIVE
250 INPUT #1:A$,A,B,C
260 PRINT "DISKNAME:";A$
270 PRINT "FREE:";C;"USED:";
B-C
280 PRINT "---------------
----------FILENAME    SIZE
TYPE    P ----------------
---------"
290 INPUT #1:B$,G,H,I
300 IF G=0 THEN 640
310 IF G<0 THEN 340
320 P$=" "
330 GOTO 360
340 G=G*-1
350 P$=" Y"
360 C=FN(R$)
370 ON C GOTO 390,410,430,45
0,470,490,510,530,550,570
380 GOTO 620
390 CD$="             "
400 GOTO 580
410 CD$="             "
420 GOTO 580
430 CD$="             "
440 GOTO 580
450 CD$="             "
460 GOTO 580
470 CD$="             "
480 GOTO 580
490 CD$="             "
500 GOTO 580
510 CD$="             "
520 GOTO 580
530 CD$="             "
540 GOTO 580
550 CD$="             "
560 GOTO 580
570 CD$="             "
580 IF H<10 THEN 590 ELSE 61
0
```

```
590 L$="   "
600 GOTO 620
610 L$=""
620 PRINT B$;CD$;H;L$;TP$(G)
;I;P$
621 HI=HI+H
622 FL=FL+1
630 GOTO 290
640 PRINT
650 PRINT "NUM OF FILES:";FL
660 PRINT "TOTAL FILE SECTOR
S:";HI
670 CLOSE #1
680 INPUT " ANOTHER?":M$
690 IF M$="Y" THEN 170
700 END
```

In closing I would like to make you aware of an article in Micropendium that I am very pleased about. I missed it the first time and no doubt you did to. It is a listing of my program 'Disk Sweeper version 1'. It is located in the User's notes on page 43 of of the Febuary issue.

I would also like to nomanate Bill Tiep for the crudest article of the year (Laws of Maxims) in the February issue. I am confident he will win even though we have 10 issues to go.

DEAR STEVE,

BILL TIEP IS SIMPLY TRYING TO CARRY ON A TRADITION BEGUN LONG AGO BY JOHN RADSCHEID. OVER THE PAST SEVERAL MONTHS JOHN HAS PERSISTENTLY SUBMITTED MATERIAL FOR OUR NEWSLETTER WHICH HAS BEEN FOUND TO BE "IN POOR TASTE" AND WHICH HAS NOT APPEARED HEREIN. ACTUALLY SOME OF THIS MATERIAL WAS IN EXTREMELY POOR TASTE.

BY COMPARISON, THE ARTICLE TO WHICH YOU REFER IS QUITE MILD, ACTUALLY. WE TAKE UMBRAGE AT YOUR NOMINATION BECAUSE IT FAILS TO GIVE US PROPER CREDIT FOR THE STACKS OF TASTELESS MATERIAL FROM JOHN RADSCHEID AND OTHERS WHICH WE HAVE TO WADE THROUGH EVERY MONTH AND DECIDE NOT TO PUBLISH.

- ED ASS

HOW TO CONVERT ASSEMBLY PROGRAMS TO
PROGRAM FORM FOR FASTER LOADING AND
LESS DISK SPACE.

Written by Darren Leonard PUG
on an idea by Marty Kroll Jr.

If you have ever loaded an assembly prog-
ram with editor/assembler option #3 you may
have noticed that it takes quite a while to
load. With some programs this can take over
2 minutes. These types of programs are in
Dispay/Fixed 80 format which we are going to
change to PROGRAM format to load with OPTION
#5. In addition to loading 3 to 5 times
faster, programs stored in program format,ie
Memory Image, take as little as 1/4 the disk
space of D/F 80 files.

The method outlined in this article will
work on 95% of all Assembly D/F 80 programs.
Prior to writing this, I tried it on 20 pro-
grams and it worked on 19 of them. It will
even allow you to save a ASSEMBLY program to
cassette. Thus people with and E/A and 32K
can run assembly programs!

To begin with read page 420 of the Editor/
Assembler manual. Try your program the way
they outline it. If you get an error then
read on and I will explain in detail how to
get around it.

This section describes the procedure for
D/F 80 files that DO NOT AUTOSTART!, if your
program does autostart read down a few para-
graphs on how to remove it with DISKO.

1) Plug in your E/A and call up TI-BASIC,
   your E/A must be plugged in!

2) Type " CALL INIT"
         " CALL LOAD("DSK1.FILENAME")

3) If your program has more that one file
   type in all the remaining files in
   order as follows:
         " CALL LOAD("DSK1.GAME#1")
         " CALL LOAD("DSK1.GAME#2")
         " CALL LOAD("DSK1.GAME#3")
      get the idea?

4) Type "CALL PEEK(8228,A,B)"
         PRINT A,B

5) Now 2 numbers will appear on the screen
   , one on the left and one in the middle
   of the screen. This number corresponds
   to the first free address in the memory
   which is also the last address of your
   program.

6) Convert this numbers to hex and add A+B
   to come up with a 4 digit hexadecimal
   number. Since you program is normally
   loaded in memory from addresses
   >A000->FFD7 if you get A000 for A+B
   then you program has an Absolute Origin
   statement (AORG) and you will not be
   able to convert it with this method.
   Similiarly, if A+B is A780 or smaller
   then the program is loaded in a unusual
   manner since it cannot fit in the small
   area from >A000-A780. But if you come
   up with A+B=8000 or greater then this
   method will work 99% of the time.

7) Type " BYE " and call up the editor.
   Now type in the small assembly program
   listed here:

           DEF SFIRST,SLAST,SLOAD
   SFIRST EQU >A000
   SLOAD EQU >A000
   SLAST EQU >A780 (the value of A+B)
          END

   NOTE!! PUT THE HEX NUMBER OF A+B IN
           THE PLACE WHERE A780 IS!!!!!

   Hit Fctn 9 twice and save to disk.

8) Load the Assembler.

   For source file enter what you save in
   step 7.

   For object file type DSK1.GAME#4 or
   what you want.

   Hit return for the printer output.

   TYPE "RC" when it prompts for assemb-
   ler directives.

   It will then assemble the program. You
   shouldn't get any errors.

9) Now load E/A option 3.
   Enter your filename DSK1.GAME#1
                        DSK1.GAME#2

   Then enter the asse-
   mbled filename from DSK1.GAME#4
   step 8.

10) Insert E/A disk #2 into drive one
    and load file " DSK1.SAVE".
    Hit enter and type "SAVE" for the
    program name. Follow the screen input
    prompts.

11) Now hit FCN + and call up E/A option
    #5 and type   DSK1.YOURFILE and wala!

132PRINT/DOC

"132PRINT" was designed mainly to read Two(2) Column-Type files and print them side by side on either 8 1/2" paper in condensed form or on 15 1/2" paper in standard form. By Column-type I am refering to "Part Lists","Catalog Lists", or "Spread Sheet" type material.

Instructions for program use are as follows.

(1) Using TIWRITER Text Editor create the first column type file up to 79 columns in width.

(2) Do not save it but print it to disk.
EXAMPLE: FCTN-9, F (ENTER), PF (ENTER),
At PF,enter device name type: DSK1.FILEONE

(3) Now back to TI-WRITER and create the second or right hand file for the printout.
NOTE: Subtract the length of the longest line in FILEONE from 132 and the balance is the amount left for the width of the second file.   [132 - 79 = 53]

(4) After entering the second file follow steps one and two to save it using another name such as FILETWO etc.

(5) To complete the process run the program 132 PRINT and follow the prompts as you go.

NOTE: This page was made up from FOUR (4) separate files using 132PRINT .

If you are interested in this type of program, or file handling I will try to improve on this program or create new programs and submit them for pub- lication as often as time will allow.

GOOD LUCK #### MS

```
100 ! ##### 132PRINT ##### By: Martin A. Smoley ##### For EPSON Printer #####
105 !              ##### NorthCoast 99'ers UG  #####
110 ! PROGRAM TO READ TWO FILES OF COMBINED DATA LENGTH EQUALING LESS THEN 132
115 ! AND COMBINE THEM INTO ONE PRINTOUT. #### USING TI-WRITER AND XBASIC ####
120 LINEFEED$=CHR$(13)! CHR$(13) = "CR"
125 LINE_END=0
140 CALL CLEAR :: CALL SCREEN(6)
150 PRINT " Printer setting is:": :"       PIO, VARIABLE 132": :
160 PRINT " Enter File One (All Caps)": :" Example: DSK1.FILE_NAME1": :
170 INPUT "          ":D1$
175 PRINT
180 PRINT " Enter File Two (All Caps)": :" Example: DSK1.FILE_NAME2": :
190 INPUT "          ":D2$
195 PRINT :: PRINT " Checking Line Lengths" :: !     <= ----------------------
200 OPEN #1:D1$,INPUT !                              ! Lines 195 through 220 !
205 LINPUT #1:FIRST$ :: IF EOF(1)THEN 220 !          ! are used to find the  !
210 IF LEN(FIRST$)>LINE_END THEN LINE_END=LEN(FIRST$)!! length of the longest !
215 GOTO 205 !                                       ! line in FILE_NAME-1   !
220 CLOSE #1 !                                       <= ----------------------
230 PRINT
240 INPUT " IS YOUR PAPER 15in.  Y/N ":WIDTH15$
245 PRINT
250 INPUT " IS THE PRINTER READY Y/N ":Y$
255 PRINT
260 IF Y$="N" OR Y$="n" THEN 140 ELSE 300
300 OPEN #9:"PIO",VARIABLE 132
320 IF WIDTH15$="N" OR WIDTH15$="n" THEN PRINT #9:CHR$(15);! CONDENSED PRINT ON
350 OPEN #1:D1$,INPUT
400 OPEN #2:D2$,INPUT
490 LINPUT #1:FIRST$ !                               READ A STRING FROM FILE ONE
500 LINELENGTH=POS(FIRST$,LINEFEED$,1)!                         FIND LINE LENGTH
510 FIRST$=SEG$(FIRST$,1,LINELENGTH-1)!                           CHOP OFF "CR"
550 LINPUT #2:SECOND$ !                              READ A STRING FROM FILE TWO
560 PRINT #9:FIRST$;
565 PRINT #9:TAB(LINE_END);
570 PRINT #9:SECOND$
580 IF EOF(1)OR EOF(2)THEN 585 ELSE GOTO 490
585 PRINT #9:CHR$(18);!                                       CONDENSED PRINT OFF
590 CLOSE #1 :: CLOSE #2 :: CLOSE #9
600 INPUT " WANT ANOTHER COPY Y/N ":Y$
650 IF Y$="N" OR Y$="n" THEN STOP ELSE GOTO 250
```

"FILEONE"   "FILETWO"

```
                  132PRINT-DEMO    CATALOG          #                                          !
                                                    #<= [ This is Column 90 ] [ This is Column 132 ] =>!
               D ! PART            [ This is Column 79 ] =>!#                                   !
               E !      !                             !#                                 ! C !
Line!          ! Customer ! N ! NUMBER !  DESCRIPTION       ! Shipping ! Parts   ! Price ! Total       ! O !Line
No.! Date      ! Number   !   !        !                    ! Date ! Shipped ! Each  ! Price       ! D ! No.
====!==========!==========!===!========!====================================!==========!=========!========!============!===!====
    !          !          !   !        !                                    !          !         !        !            !   !
1-- ! 01/12/86 ! JM 46278 ! Y ! TM 7045 ! 1 1/2"x 90deg. Aircraft Fitting --- ! 01/13/86 ! - 125 - ! 142.87 ! 17,858.75 ! N ! --1
    !          !          !   !        !                                    !          !         !        !            !   !
2-- ! 01/14/86 ! JM 46276 ! Y ! TM 8904 ! 50 ft. NO. 27  Aircraft Tubing ---- ! 01/14/86 ! 50 ft. ! 12.4/f ! -- 620.00 ! N ! --2
    !          !          !   !        !                                    !          !         !        !            !   !
1234567890123456789012345678901234567890123456789012345678901234567890123456789123456789012345678901234567890123456789012345678901234567890
    !   1   !   2    ! 3!      4!      5       6       7            1!        2!      3         4 !   ! 5
```

HARDWARE HINTS

HALF HEIGHT DRIVE INSTALLATION
By Ken Gladyszewski

When installing a pair of half height floppy disk drives in the peripheral box, extra connectors for both the interface and power cables are required for the second drive. The interface cable can be handled by adding a 34-pin card edge connector (Radio Shack 276-1564) to the existing ribbon cable (the cable is just barely long enough), or by removing all the connectors from the existing cable and re-installing on longer cable. (Orientation to colored stripe is important. Improper installation causes drive to improperly run continuously, but with no apparent damage.)

KEYBOARD REPLACEMENT TIP
By Ken Gladyszewski

When a beige keyboard is installed in a black and silver console, great care must be used to center the keyboard to eliminate binding of the outer keys. Ron Minadeo has discovered that the overlay strip above the number keys is held in a plastic extrusion which is fastened to the computer with double sticky tape. It can be repositioned higher for more key clearance by filing or sanding the upper corners of this extrusion and refastening it.

EXTERNAL DISK DRIVE POWER SUPPLY
BY Ken Gladyszewski

When I bought a case and power supply for an external disk drive, I was amazed at how simple and uncomplicated the power supply was. I present the circuit and parts list here for those wanting to build their own, because they already have most of the parts. These parts are expensive and total $21 (without a recommended on-off switch and fuse). Better and less expensive complete power supplies or these same parts can be purchased from a surplus house by mail. Sheet metal enclosures can be obtained similarly. Any power supply with 12 volts DC @.5 AMPS min, and 5 volts DC @1.0 AMPS min. should power most any single full height drive.

NOTE: REGULATORS 7805 & 7812 MUST BE MOUNTED ON SUITABLE HEAT SINK!
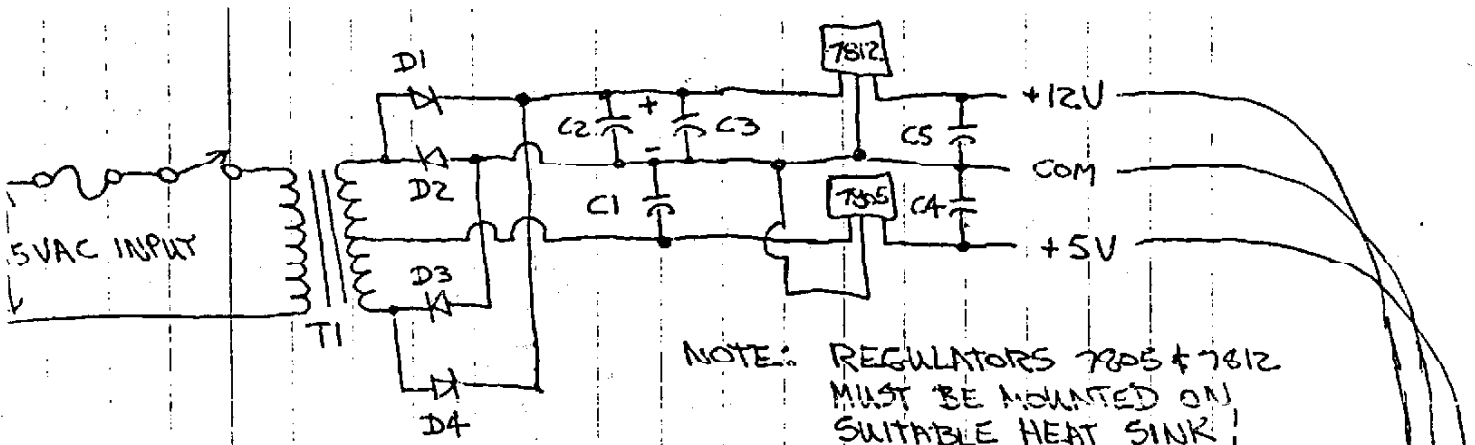
	QTY	DESCRIP.	PART NO.	COST
T1	1	TRANSFORMER 16VCT @2.0A	273-1515	$6.99
C1,C2,C3	3	CAPACITOR 2200 µf@35V	272-1020	$2.49 EA.
C4,C5	2	CAPACITOR 100 µf@35V	272-1016	.79 EA.
D1-4	4	3 AMP BARREL DIODE 1N5402	276-1143	2/89¢
	1	5V FIXED REGULATOR 7805	276-1770	$1.59
	1	12V FIXED REGULATOR 7812	276-1771	$1.59

+12
COM
COM
+5
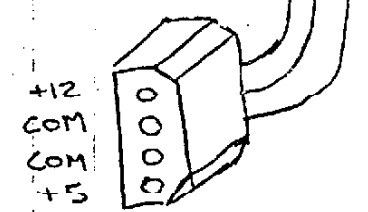
NORTH COAST 99ers

K. GLADYSZEWSKI
12-31-85

CLEVELAND USERS GROUP