NEWSNET99ER

Newsletter of the NET99ER TI 99/4a
& Geneve 9640 Computer Users Group

VOL 9 NUM 6 June 1991

Next Meeting: Saturday July 13th

9:30 AM at the
NRH Community Center
Loop 820 at Rufe Snow Dr.

Club Officers

Barbara Massey	President
James Crosson	Vice Pres
Lee DeForest	Treasurer
Tom Collins	Secretary
Barbara Massey	NL Editor
Tom Collins	BBS SysOp
Gary Owens	BBS SysOp
Jeff Drinan	Librarian
Bill Duncan	M/S Chrmn

Call the SUPERNET BBS
2400/1200/300 bps 457-7043
7E1 - 24 hours

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P.O. BOX 534
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PO Box 29863
Dallas, TX 75229
exchange

NOTE: THE NEXT MEETING IS JULY 13TH-THE SECOND SATURDAY!

-----BAM'S BABBLES-----

These past few months have brought some majors changes in my live. By the time you receive this, I will have started a new job and will be in the middle of training in Florida. The training is for a total of three weeks and I will be returning sometime during the Friday before the next meeting. Stacy and Travis, my daughter and son, volunteered to make sure the Newsletters were mailed, and I trust they will be.

Last month someone mentioned they would like to see the new *SPELL IT!* program demonstrate. Since I have the program, and have used it I will attempt to show just what a wonderful program this is. I use *SPELL IT!* with My-Word on my Geneve, and now that I have it, wondered how I got along without it. So far I have only used the programs dictionary. *SPELL IT!* allows you to start and add to your own *users* dictionary. *SPELL IT!* comes in both floppy and hard drive versions. The hard drive version is extremely fast, and has a dictionary of over 200,000 words! Jim Lesher has this fantastic program for $30.00 (the hard drive version). If you use your word processor, this program is a must.

----SysOp's RAMblings----

The BBS is back on line, after a one and a half week hiatus due to yet another console biting the dust.

Gary Owens lent another console to us, so we need to give him back another TI 99/4A console. Any body got a good working spare for this purpose? I have uploaded and IBM program (merely to test it out, mind you), and it does work. However we cannot support the IBM on the BBS due to the sheer size of the programs the IBM uses. The one I sent was a clock routine that puts a clock on screen on a clone much like the one we have for the *BOOT* program. I find it a lot easier than looking at the clock on our VCR to find the time, or using ALT-T on Procomm.

The system is still waiting for your call and your participation. We need this most of all!!!! So give us a call.....we are ALWAYS there (barring console problems, that is).....

CALL 457-7043 - 3/12/24 - 7E1 - 24 hours - Your SysOp - Tom Collins

-----MINUTES OF NET99er MEETING of JUNE 1, 1991-----

The meeting was called to order at 9:15 by President Barbara Massey. The minutes from the last meeting were read and accepted as well as the current Treasury Report. At the beginning of the meeting, member Mike Bowen donated some TI hardware to the club, consisting of the older "train" type peripherals, etc. Much thanks, Mike. Barbara then discussed her upcoming new job, and asked for volunteers to help with club activities in the coming months. We need others to do some demos and help co-ordinate the meeting. James also will be beginning his electronics class and needs help working on the DOM for the coming months. A hearty motion was made to put Tom Collins on the spot for a demo of the older version of *WINDOWS* for the 9640

(a program I am not impressed with so far), but I will try. Barbara plans a demo on the disk based *SPELL IT!*, a spelling checker.

James and Tom demo-ed the DOM, a disk containing several games and utilities for both the 99 and 9640. (sorry for the sloppy demo, but one days notice for the demo wasn't enough for me to study up on the programs). Chuck Tolsma got some hands on experience with de-Arcing the software for the demo. A Buy Sell Swap session was held, focusing on the surplus hardware the club owned. Other did some horse training on their own.

After the break, James demo-ed a program lent by Jim Lesher, called *FOIN SHOP*. Although short the printout proved that this program has potential. Give Jim a call, he deserves our business! Afterwards, James went through more of the items asking for bids and offers to build the club bank account.

The meeting adjourned at 12 noon. ***Submitted by Tom Collins - Thanks JoNell for covering for me last month!!!!***

----TREASURY REPORT----

We started the month with $962.79 and had an income of $59.00. Total expenses for the month were $151.92, leaving the club with a balance of $869.87.***Lee DeForest - Treasurer***

-----NEW-AGE/99-----

by Jack Sughrue
Box 459, East Douglas, MA 01516
$11

THE LADY FROM LOWER BURRELL

Mickey Schnitt, president of the West Penn 99ers, is a young lady with extraordinary varied TI interests and talents. She is an ardent fairgoer, ranging along the eastern seaboard inland to Lima, Ohio, and north to Canada, visiting with her hundreds of TI friends and fans and oftentimes representing groups or companies who couldn't attend.

Mickey is an author, programmer, tutor, collector and adventure *aficionado* whose great sense of humor shows through almost all her activities. For example, in a very cleaver adventure she wrote for the TI Adventure Module (OLIVER'S TWIST - cassette or dist, Asgard, $7.95), she requires the player to PUT BACK treasures in order to win the game. Her latest Asgard adventure, RATTLESNAKE HEND, is like John Wayne playing Viva Zapata. Wild, hilarious stuff. But hidden beneath the jocularity is a mean adventure guaranteed to please, pardner.

Adventuring seems to be in Mickey's blood. She is THE expert in the field. If there is an adventure for the TI she hasn't uncovered and played, it was probably written this morning.

A few years ago we had a chance to talk for awhile at one of the computer fairs, and she felt there was a real need to compile a listing of all the various adventures available for the TI so that users could have some kind of idea what is out there. I agreed but felt the task was formidable. Mickey didn't, fortunately for the TI community. She began collecting, sorting, doing, evaluating, and compiling every available adventure for the TI.

The result of this massive undertaking is THE ADVENTURE REFERENCE GUIDE, a 62-page, 8"x11" commercially printed, easy to read book that not only gives a complete alphabetical listing of over 200 adventures but breaks them down into different sections by language (XB, E/A, etc.) and type (INFOCOM, Educational, Role-playing, etc.). There are astute reviews of selected adventures and sections on sources, utilities, and adventuring history. There is also a checklist for solving and comments. This is an indispensable guide for any adventuring TIer (from Asgard, Box 10306, Rockville, MD 20848; $9.95 / $2 S&H). Last I heard, Mickey was continuing to test new and new-found adventures for updating this magnum opus.

If you own Scott Adams' ADVENTURE MODULE or the disk loader interpreter of this module available from user groups. I'd highly recommend investing in Mickey's two games.

Life is strange. At least the life that goes on inside my head. When I sat down to write this article I was planning a review of Mickey's newest book on cassette systems. But I pulled out THE ADVENTURE REFERENCE GUIDE from the Mickey Schmitt section of my TI library by mistake and couldn't resist rereading it. Then I couldn't resist playing SORCERER (an INFOCOM game reviewed in the book my Mickey which I had started but never finished). Then I couldn't resist eating lunch, still thinking of the spells and magic items I needed to get out of the SORCERER.) Finally, I put all that stuff behind (more form frustration than feeling the noble urge to return to task) and got back to doing this review. But I couldn't resist writing about this woman's profound adventuring influence first. Now, the "real" topic of this review: GETTING THE MOST OUT OF YOUR CASSETTE SYSTEM.

GETTING is based on the series of articles by the same name that appears in newsletters throughout the world. This entirely rewritten work is a professionally published, 8'x11'. 51-page, loose-leaf package, containing all the original (though updated and revised) articles that first appeared in her group newsletter.

Not only is this book handy for what it does, but Mickey had provided a way for user groups to make a few kopers on it. She is offering this project for $9.95 plus $2.50 S&H to any individual or user group. User groups need only purchase a single copy. She grants them the rights for the group to reproduce it entirely for members of the group free or as a fund raiser, providing no copies are given or sold to persons outside the group. Neat idea. Hope it catches on. The package must be ordered directly from the author: Mickey Schmitt, 196 Broadway Avenue, Lower Burrell, PA 15068.

Now, what does GETTING get you?

First, a chance to rethink your group membership and future growth, because the cassette is still a powerful tool for a beginner or basic user. This book might just show your group new ways to attract new (or old) members into the fold.

Second, it opens one's eyes to lots of possibilities of cassetting previously unexplored. One of my TIs at school is cassetted, for example, and this book proved an immense help in ways I never dreamed of. More on this later.

Finally this book made a multi-system user to me. I really only need one disk drive system to do all the tasks I do, but many times the system is tied up with heavy-duty printing or converting graphics or any number of long-time chores. Rather than sit and wait or go watch TV or clean my wallaby's teeth, I just move

over to my OTHER TI SYSTEM! That's right. I have set my other console ($3 at a yard sale) onto a TV with a tape recorder hookup. Many nights I now just use the SILENT tape recorder system for some utilities or recreational use. And I'm finding more and more uses, including lots of cartridge (MINIMEM, LOGO, etc.) activities I had forgotten were so exceptional, even with tape. I have a sidecar 32K, though many people are putting the chip right in or making that chip part of a Zenoboard package. Anyway, with 32K and Bill McGovern's CASSTRANS I can load ASSEMBLY games and utilities into my computer from tape. I can AUTOMATICALLY!!! locate and RUN programs from my tape recorder with Joseph Bartle's CSI:FINDEX. I have my cassette boxes labels and a catalog on each tape, thanks to Mickey's LABEL and CATALOG programs. All this stuff, by the way, is in the book in short, easy to type in, cleaver programs. (Bill's program is Fairware and in all group libraries.) No more being restricted to BASIC and XB files. Now I can play FREDDY from my tape recorder. No more searching for programs. Now, like the Timex/Sinclair user, I can automatically run a program anywhere on a C-60 tape after locating it in the FAST FORWARD speed mode! In short, tape recorders have come of age. They can be powerful and fast and reasonably efficient and orderly.

Mickey's book is extremely non-technical. She explains everything about computer taping from the VERY beginnings to the state of the art. And it really might get you into that SECOND system.

(If you use new-age/99 please put me on your exchange list.)

-----MEASURING-----

by Jim Lesher

There are books in my house, that have formulas for all kinds of geometric shapes, from simple circles to cones, pyramids and frustrums, but not a one gives a formula for a spiral. Especially the parameters I'm looking for. Suppose you want to wind a length of tape on a spool and you have the spool size and you want to know what the diameter of tape and spool after 100 feet has been wound upon said spool. Of course we must also know the thickness of the tape. Or if you wanted to know the length of tape on a certain roll, you can measure the core then the thickness of the tape and use this program to find the answer. The first prompt is the size of the core of the spool. The second prompt is the thickness of the tape. The third prompt is how many turns or layers of tape you may have. The print out to the screen will be first, the total length of the tape, the next number will be THE Diameter for it's respective number of turns. The third number will be the circumference at a given number of turns and the last number on the screen is the actual number of turns the spool has completed. The accuracy of this program is not guaranteed.

```
50 ! This program is for calculating the length of a ribbon wound on a spool.
Two factors must be known: the DIA. of the spool and the thickness.
60 ! of the ribbon.
100 CALL CLEAR
110 INPUT "       DIA    ":D
120 INPUT " INCREMENT:   ":I
130 INPUT "  REPETITIONS ":R
140 PRINT : :
```

```
150 PRINT "TOTAL "
160 PRINT "LENGTH DIA.CIRCUMFERENCE"
170 FOR K=1 TO R
180 C=PI*D
190 N=N+C
210 C=100*(C+.005)
220 C=INT(C)/100
230 N=100*(N+.005)
240 N=INT(N)/100
250 PRINT N;D;C;K
260 PRINT
270 D=D+I
280 NEXT K
290 PRINT : : :
300 END
```

-i-i-i-i-i-i-i-i-i-i-i

I would enjoy hearing from TI users all over the country.
If you are a member of GEnie, my address is B.MASSEY.
I would love to exchange club news as
well as any new TI news that come along.
Drop me a line!

-i-i-i-i-i-i-i-i-i-i-i-

----THANK YOU---THANK YOU---THANK YOU---
A special thanks to Mrs. Kemper of
Highland Park Presbyterian Church for
the generous donation of TI hardware.
----THANK YOU----THANK YOU----THANK YOU----

----Programming Tips----

(Reprinted from the "SPIRIT OF 99", May 1990)

Here are a few tips on the TI99/4A for the beginners and experienced programmers alike:

1. If you have the speech synthesizer and the TE-II cartridge, here is a trick for debugging programs: All you have to do is enter your program, type LIST "SPEECH" and press ENTER. The computer will read your listing back to you as you check it with the original.

2. If you want to disable the Quit key (FCTN-+), type in CALL INIT :: CALL LOAD(-31806,16) and press enter. You must have Extended BASIC)

3. If you are going to save a program to tape and accidently typed OLD CS1 instead of SAVE CS1, don't panic! Press FCTN-8 and press ENTER. This will take you out of the tape loop.

4. You don't have to enter each line number separately in either TI BASIC or EXTENDED BASIC. Before you start, enter NUM. The computer will automatically enter the line numbers for you starting with 100 going up by tens. If you wish to start at ten, type NUM 10. If you wish to start at 550, type NUM 550. Starting at line 45 and counting by fives requires this command: NUM 45,5.

5. In both TI Basic and Extended Basic, you can edit a line by entering the line number and press the FCTN-E Keys. After editing that line, you may edit the previous line by pressing the FCTN-E keys again or press the FCTN-X keys to proceed to the next line down.

6. You can list a specific line or block of lines by typing LIST 140 or LIST 20-80. If you wish to list only the first 10 lines, type LIST -100. To list all the lines above 2000, type LIST 2000-.

7. If you need to renumber the lines in a program either to make it neater or to create room for more lines, enter RES followed by the first line number and the interval between the lines (RES means resequence), for example, RES 10,10 resequences the line numbers of the programming beginning with 100 and counts by 10 thereafter.

8. If you have several lines that are the same in the Extended Basic program, you can save time by typing in the first line and press ENTER. Then press FCTN-E (redo). Change the line number and make the appropriate changes before pressing enter.

9. Have you ever pressed ERASE by mistake and lost the whole line? Don't panic and don't hit ENTER. Instead, press FCTN-7 and ENTER. Your line will reappear.

10. In Extended Basic, you can use ! instead of REM to put documentation in a program.

11. In Extended Basic, type in RUN CS1 to load the program and run it all in one operation.

12. To stop a listing on the screen in Extended Basic, just press any key. To restart, press any key.

----PC PS in the PEB----

by John F. Willforth

Got a dead P.E.B. (Peripheral Expansion Box)? Are your Myarc HDFC or 9640 cards turning brown and operating when they feel like it? Does carrying that heavy PEB to meetings cause regular trips to the chiropractor? Does putting another disk drive or more hardware in the PEB cause you a head ache or sleepless nights, not to mention an empty wallet? If you can relate to any of the above, you may want to read on.

A L Beard wrote an article explaining generally the placement of an IBM power supply in a PEB replacing the TI transformer and regulator card. The transformer being the HHB3EAAAVVYYY unit. I intend to include enough information to accomplish the same thing with the New Style PEB, which Mr. Beard said he knew little about. The New Style PEB can be identified easily by the ON/OFF switch. The New Style PEB switch rocks, push on the top to turn PEB on, push the bottom to turn the PEB off.

The power supply in both styles of PEB are linear, not switcher, and are heavy, inefficient (low power and high heat), and costly to repair. If your transformer

is bad let's say, you must either order one (over $75.00), or you could send the PEB back to TI for a guaranteed repair at something between $50.00 and the cost of the transformer.

Availability of the PC power supply as well as it's cost must be considered before you begin this hardware modification to your PEB, as well as your ability to do it. I used an old PC power supply taken from the original IBM PC. The power that is available is considerable less than is available from newer XT and AT power supplies. This one was free! You should get a 135 watt or greater power supply. I can't imagine you being able to stuff enough of ANYTHING inside a PEB and add external power (DC) for stand-alone drives to draw excessively on a 150 W. PC power supply. I'm going to describe in the next couple pages what I learned putting the Pc power supply in the N.S. PEB.

Opening the PEB to gain access to all it's wonders involves, first making sure the AC POWER IS REMOVED. Lift the lid to gain access to the cards. Remove ALL (including the interface card attached to the firehose) the cards and any disk drives in the drive port. Turn the PEB over and remove all screws with the exception of the two that hold the black plastic block that rested under the disk(s) in the drive port. Turn the box upright and remove all in the rear except the two that hold the top cover latches. There remains just two more to remove, they are located on the outside left and right rear corners of the PEB. Now hold down on the center of the PEB (area where the circuit cards plugged into the PEB, called the system bus), and slide the outer housing (side and front), away from the main PEB assembly.

Observe locations of the large transformer and the regulator card mounted to the left of the transformer from back to front. Note the routing of the floppy/hard disk power cable, as well as where three unregulated DC voltages and ground enter the system bus, (identified with brown, yellow, black, and green wires attached, just to right of the transformer).

Carefully remove the regulator card, by first disconnecting the three snap on connectors that connect to the card, and with a long phillips screw-driver remove the two screws that hold the plastic mounting bracket. Four screws must then be removed from the circuit card to free up the bracket for use later to support the new PC power supply safely. Remove four nuts that hold the PEB transformer to the base. As you lift the transformer pull each spade lug connector from it's connection in the PEB. NOTE: If you are chicken, mark and diagram all wires and connections first, just in case you find a reason to try to put this back together the way it was. You will probably have to cut several wire-ties in order to remove the transformer since TI while assembling tried to tidy up things.

If you want and feel confident as a good experienced hardware constructor, you may want to remove the system bus board so you can remove the four wires attached, and clean the holes properly as well as do a good job soldering the new wires from the PC power supply into these four eyelets. These four holes could give you problems if attention is not given to wire dressing and proper soldering. GROUND is all around each hole!!! The BLK hole is ground however.

If you are not adventuresome, you can always cut these four wires two or three inches from their attachment to the card and use either shielded crimp couplings to join the wires (available from Radio Shack) or even heat shrinkable tubing placed over soldered connections. I used both types of connections.

I'm going to label all major components with an alpha designator, followed by an identified point on that component to make a list of point-to-point wiring and for text references. I'll explain as we go along.

First, with the items I've already described removed, be sure you have a RED wire going from item "I" point "L" in Fig. B to item "S" point "2a" in Fig. C, in other words: IL to S2a. That is easy isn't it? The next is a WHITE wire from IN to S1a. Study it. Here is the entire AC wiring list:

I120 to S2 IL to S2a IN to S1a
S1 to TPC2# S1 to F#* IF to TPC1#
IF to FC* (# * means no polarity and may be exchanged to it's like point)

FIG. A
"ITEM E"

Fig. A is only included here so you can see the FUSE and it's special way of being inserted to select for input of AC voltages. Pulling and rotating the fuse actually selects different taps on the transformer you removed. This means that if you have LOW AC voltage you can just by rotating this fuse, so that 100 is located at the top, increase the internal DC voltages. If you have 220 VAC at your home, rotate the fuse to put 220 at the top. Fig. A is an external view.

FIG. B
"ITEM I"

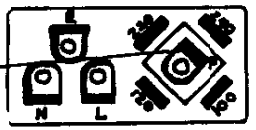
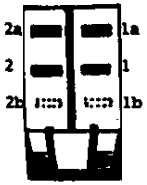


Fig. B is an internal view of the power input and fuse connectors - "I".

FIG. C
"ITEM S"



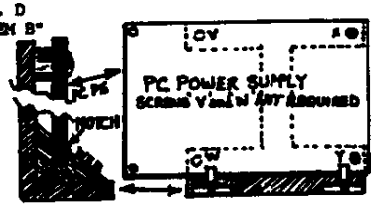
Power Switch Double-Pole Single Throw Contacts 2a and 1a are at the bottom near the base.

The RED and White wires I described in the column to the left and down one, are already in place and will be located under the new circuit board. The rest of the AC wiring will have to be done after the PC power supply board , the system bus board and fan items are prepared.

I mention the fan, remove it especially if you intend to reverse it's direction to quiet the PEB operation, otherwise you may want to leave it in place so that when you install the PC power supply, you can refer to it for contention of space.

The plastic bracket that held the regulator in place may now be examined to see how you might mount the new PC power supply in very much the same way as was the the original regulator. See Fig. D for a suggestion on notching the plastic support webbing to provide a new slotted area on the bracket which can act as a guide and as support for the bottom of the new card. The top of the card and any already existing mounting holes should be taken into consideration when making this study.

FIG. D
"ITEM B"



I'm running out of space for this month so while your looking for the PC power supply, I'll be finishing this article and maybe making corrections to what I've already written. If you already have the idea you may want to go ahead. If you do, you may want to get in touch because ALL PEB cards must be modified. Next Month - JFW

-----TI WRITER-----

by Stan Katzman

Part 9

This time I wish to discuss the dot commands. These commands format the text formatter. They are entered in the document, and for the sake of brevity, occupy a line of their own. The commands I want to discuss are for setting margins, right adjust, indenting the beginning of a paragraph and centering text headings. All dot commands (even those discussed last time) do not show up in the final document when put through the text formatter.

All dot commands must start with a period and end with a carriage return symbol.

To set the left margin, at the head of your document type .LM 15 followed immediately by a carriage return. To set the right margin, type .RM 70 followed by a carriage return. This lets the left margin at 15 and the right margin at 70. Then type .FI and carriage return. The .FI(fill command) says to fill the line with as much text as possible between the margins. You must have the .FI command to have the margin commands effective.

If you want to indent a paragraph, type .IN +5(carriage return) and this will indent the start of a paragraph 5 spaces. The indent command must follow the margin settings.

To center a line of text, type .CB(carriage return) before the line of text to be centered. If you want 2 lines of text centered, type .CB 2(carriage return).

In order to right justify your margin, type .AD(carriage return). In order to right justify you must also have the .FI command on.

Now I realize this might be a bit abstract so I have provided some copy that I used in my work in order to illustrate these commands. At the top of figure 1 on page 7, you will see the dot commands. On the screen, the carriage return symbols show, but they do not show on the printed copy. The centering command works only for the line designated, while the margin and adjust commands work until turned off. (To turn off the right adjust, enter a .NF(no fill) command on the area where you do not want the margin right justified.) To change margins just type the appropriate changes on a separate line using the numbers for the margins you want.

Figure 2 on page 8, shows the final copy after being put through the text formatter. s.k.

Editor's Note-The rest of the articles in this series deal with the formatter dot commands. Something that is not mentioned or demonstrated is the ability to put several commands on the same line to conserve space in your already long documents. this can be done as illustrated below:

On one line type:

.FI;AD;LM 15;RM 70;IN +5;CB(carriage return)

The line must begin with a period and each command must be separated with a semicolon. Again, an order must be observed. The .FI command must precede the .AD command and if centering is required for the next line or lines, it must be the last command on the line.

After having said the above, there are several commands that cannot be entered with other commands on the same line and must be entered on lines by themselves. These are the .DP(define prompt) command, the .IP(include file) command and the .TL(transliterate) command, all discussed later in this series.

Another point not mentioned is the fact that the commands must be entered in capital letters or they will be ignored. This is very important if you want the formatter to do its job correctly. j.e.

Figure 1

```
.LM 6
.RM 70
.FI
.IN +5
.AD
.CE
OPTICAL ROTATION EXPERIMENT

In this experiment we will determine the optical
rotation of two substances. One of these substances
will be studied in different concentrations to
determine the effect of concentration on optical
rotation. The second substance will be studied in
different solvents and different concentrations to
see the effect of solvent and concentration on its
optical rotation.
In our first experiment we will study the effect of
concentration versus the optical rotation.
Accurately weigh out three samples of sucrose (table
sugar) in order to make three 100 ml solutions. The
first solution will be approximately 0.2 M, the
second solution will be approximately 0.4 M, and the
third solution will be approximately 0.8 M.
For our second experiment we will use camphor in
different solvents and concentrations as a subject of
a polarimetry study in order to study the effect of
solvent and concentration versus optical rotation. In
the case of camphor, accurately weigh out six (6)
samples with the following approximate molarities,
two at 0.2 M, two at 0.4 M and two at 0.8 M. Again
weigh out enough camphor to make 100 ml of each
solution. Three of the samples (0.2M, 0.4M and 0.8M)
will be dissolved in acetone and three of the samples
(0.2M, 0.4M and 0.8M) will be dissolved in 95%
ethanol.
Place each solution (made from the sucrose and the
camphor) in a dry polarimeter tube (dry the tube
between readings) and take its optical rotation in
the polarimeter. (Your instructor will show you how
to use the polarimeter.) Record the concentration and
the optical rotation (Be sure to include the sign of
the rotation, (+) for dextrorotory and (-) for
levorotery.) in your notebooks. When you have
finished be sure to wash the polarimeter tube
thoroughly, including the screw caps and threads on
the ends of the tube.
      For this experiment we want to do three
things 1) compute the specific rotation of each
solution, 2) make a plot of optical rotation vs.
concentration and 3) make a plot of specific rotation
vs. concentration.
      The formula for computing specific rotation is

.NF
.CE
s=(a)lc

            where
             s=observed rotation (degrees of arc)
            (a)=specific rotation (deg ml/dm g)
             l=length of cell (decimeters)
             c=concentration (g/ml)
```

Figure2

OPTICAL ROTATION EXPERIMENT

In this experiment we will determine the optical rotation of two substances. One of these substances will be studied in different concentrations to determine the effect of concentration on optical rotation. The second substance will be studied in different solvents and different concentrations to see the effect of solvent and concentration on its optical rotation.

In our first experiment we will study the effect of concentration versus the optical rotation. Accurately weigh out three samples of sucrose (table sugar) in order to make three 100 ml solutions. The first solution will be approximately 0.2 M, the second solution will be approximately 0.4 M, and the third solution will be approximately 0.8 M.

For our second experiment we will use camphor in different solvents and concentrations as a subject of a polarimetry study in order to study the effect of solvent and concentration versus optical rotation. In the case of camphor, accurately weigh out six (6) samples with the following approximate molarities, two at 0.2 M, two at 0.4 M and two at 0.8 M. Again weigh out enough camphor to make 100 ml of each solution. Three of the samples (0.2M, 0.4M and 0.8M) will be dissolved in acetone and three of the samples (0.2M, 0.4M and 0.8M) will be dissolved in 95% ethanol.

Place each solution (made from the sucrose and the camphor) in a dry polarimeter tube (dry the tube between readings) and take its optical rotation in the polarimeter. (Your instructor will show you how to use the polarimeter.) Record the concentration and the optical rotation (Be sure to include the sign of the rotation, (+) for dextrorotory and (-) for levorotory.) in your notebooks. When you have finished be sure to wash the polarimeter tube thoroughly, including the screw caps and threads on the ends of the tube.

For this experiment we want to do three things 1) compute the specific rotation of each solution, 2) make a plot of optical rotation vs. concentration and 3) make a plot of specific rotation vs. concentration.

The formula for computing specific rotation is

$$a=(a)lc$$

where

a=observed rotation (degrees of arc)
(a)=specific rotation (deg ml/dm g)
l=length of cell (decimeters)
c=concentration (g/ml)

TO YOU, HAPPY BIRTHDAY FROM ME

TO YOU, HAPPY BIRTHDAY FROM ME

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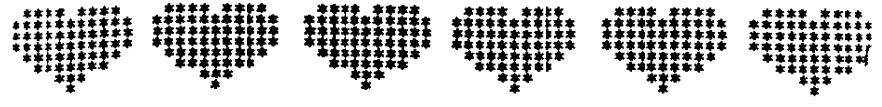
* BIRTHDAY WRAPPING PAPER *
*       by Jan Knapp       *

100 REM SAVE DSK1.BIRTH/WRAP
110 REM CHANGE LINE 310 TO Y
OUR PRINTER STATEMENT (EX:"P
IO")
120 CALL CLEAR
130 PRINT :"  MAKE YOUR OWN
BIRTHDAY"
140 PRINT "  WRAPPING PAPER
PROGRAM": : :
150 PRINT :TAB(7);"*********
*****": : :
160 PRINT
170 PRINT "     PRESS<ENTER>
AFTER":TAB(8);"EACH REPLY.":
 : :
180 PRINT :TAB(7);"*********
*****": : :
190 PRINT
200 PRINT "GIFT IS FROM?";
210 INPUT FR$
220 PRINT "GIFT IS FOR?";
230 INPUT FO$
240 CALL CLEAR
250 PRINT "WHEN YOUR PRINTER
 IS READY,"
260 PRINT "PRESS ANY KEY TO
START PRINTING."
270 CALL KEY(0,KEY,STATUS)
280 IF STATUS=0 THEN 270
290 CALL CLEAR
300 PRINT "TO STOP PRINTING,
 HOLD DOWN ANY KEY."
310 OPEN #1:"PIO"
320 PRINT #1:CHR$(27);"1";
330 FOR A=1 TO 6
340 READ T$(A)
350 NEXT A
360 FOR P=1 TO 9
370 PRINT #1:T$(P);T$(P);T$(
P);T$(P);T$(P);T$(P)
380 GOSUB 430
390 NEXT P
400 PRINT #1:TAB(24);"TO ";F
O$;", HAPPY BIRTHDAY FROM ";
FR$
410 PRINT #1:
420 GOTO 360
430 CALL KEY(0,KEY,STATUS)
440 IF STATUS=0 THEN 460
450 STOP
460 RETURN
470 DATA "  **** ****  "
480 DATA " ********** "
490 DATA " ********** "
500 DATA " ********** "
510 DATA "  *********  "
520 DATA "   *******   "
530 DATA "     ***     "
540 DATA "      *      "
550 DATA "             "
```

TO YOU, HAPPY BIRTHDAY FROM ME



COMPUTER BRIDGE (FEBRUARY 1991)