

## SINCLAIR-TIMEX USER GROUP NEWSLETTER

Volume 2, Issue 2

February 1983

This newsletter is produced to inform group members of the agenda and logistics for future meetings, as well as to recap and amplify the information provided at the last meeting. It also provides a forum for members and interested parties to communicate what they have learned or developed relating to Sinclair and Timex computer products.

### USER GROUP MEETINGS

Date: Wednesday, February 16, 1983  
Time: 7:00 p.m.  
Place: Large Science Auditorium  
UMass, Harbor Campus  
(Directions on last page)



We are planning on reviews of a number of different products purchased by members. Included are ZXFORTh from Gladstone, the deluxe video monitor interface from Random Access, and the modem from Byte-Back Company. Mike Coughlin will review ZXFORTh which is a version of FigFORTh. It occupies approximately 8 K of RAM and uses very little of the BASIC ROM. John Kemeny will review the video monitor interface. Previously, he reported that he couldn't get the unit to work. (We think he's learned how to solder.) He'll also go over the features to look for when buying a monitor. Peter Nickols will tell us about his modem. If you have additional items to review contact Sue or Cliff.

In addition, the Library Committee wants to report their progress and solicit your suggestions. As in past meetings, we plan to break up into groups to discuss topics of special interest following the formal presentations. Tentatively, we will break into a Library group and a FORTh group.

The March meeting will be held on the 16th, the third Wednesday of the month. If you have items to discuss at the meeting or suggestions for presentations, contact Sue or Cliff.

### HIGHLIGHTS OF THE JANUARY MEETING

The highlight of the last meeting was the introduction of the TS-2000, the Timex version of the Spectrum. Sue Mahoney, whose photo is above and who now works for the Timex Computer Corporation in Waterbury, Connecticut, had just returned from the Winter Consumer Electronics Show (CES) in Las Vegas, Nevada. At the CES, Timex made the formal announcement of the TS-2000.

HIGHLIGHTS -- Continued

The TS-2000 will be basically the same as the Spectrum. The Spectrum is the successor to the Sinclair ZX-81. It sports a larger keyboard; 10 octave, 130 semi-tone sound; 8 colors; high-resolution graphics; and upper and lower case letters. It uses the single keystroke commands like the ZX-81. And ZX-81 software can be easily transported to the Spectrum. However, the Spectrum uses a faster, but not compatible, cassette recording technique.

Timex does plan to do some modifications to the Spectrum. First, it must be modified to use the National Television Systems Committee (NTSC) standard used by U.S. television instead of the PAL system used in the United Kingdom. Also, Timex will be creating a plug-in slot for what they are calling solid-state software. Matchbox-size cartridges (like for the Atari game, only much smaller) will plug into the top of the machine. The solid-state cartridges will sell for \$12.95 to \$24.95, versus \$9.95 to \$19.95 for tape cassettes.

Sue demonstrated a TS-2000 prototype. The unit was in a Timex case, but did not have the cartridge interface or NTSC color. Sue brought her own PAL television. Two models of the TS-2000 will be sold. One will have 16 K of RAM and the other 48 K. They both will have a 16 K ROM. They will list for \$149.95 and \$199.95, respectively. The announced availability is the second quarter of 1983. Sue expects at least 20 software titles to be available when the TS-2000 gets to the market.

Sue also demonstrated the TS-2040 printer. It is a 32-column dot matrix thermal printer. It can use the Sinclair-Timex LPRINT, COPY, and LLIST commands. It will list for \$99.95 and was expected to be in the stores by the end of January. It didn't make it! The printer will be compatible with the TS-2000.

The TS-1050 Communications Interface Device (300-baud modem) has been delayed and will not be available until the third quarter (September?). Sue also stated that the Timex Computer Club newsletter will be out soon.

Other Sinclair-Timex related companies at the CES were Sinclair Research (which is looking at the international marketplace), Mindware, and Softsync. We have no reports from those companies.

Cliff Danielson spoke to the group about volunteering. He outlined several specific jobs that need to be done. The most important outstanding job is that of newsletter publisher. He, she, or they would be responsible for managing newsletter advertizing. There are many organizations that would like to pay for ads in this newsletter. This, of course, would be of benefit to the whole group.

Cliff also asked for a librarian, and, as you can see on the back page, a Library Committee has been formed. Other jobs include: a 'one day a month' job to sort and mail newsletters; contributions to the newsletter (of articles, artistic creations,...); and a program chairman to arrange for speakers and handle logistics at our meetings.

Representatives of the Computer Advertising Network demonstrated their service during the break. The service, which is paid for by the advertizer, allows access via a telephone line and 300-baud modem to a wide variety of information. For access dial 423-6300.

REVIEW OF MATRIX PLANNER by J. N. Kemeny

Matrix Planner is a spread sheet program distributed by Mindware. It requires the 8 K ROM and 16 K RAM. The early version we got cost \$45.00, but this was before Sinclair and Timex introduced their spread sheet product, VU-CALC, which was reviewed in the December newsletter. Matrix Planner is very different from VU-CALC.

Firstly, Matrix Planner is written entirely in BASIC. This means you can examine and change the program, even add new features. Comments in the program help you understand how it works. For example, the program gives you 30 rows by 8 columns of cells, but you can change this. Formulas are entered as strings, and are evaluated using the VAL function. This offers the advantage of being able to use all the BASIC functions, such as SIN and PI, in a formula. Also formulas can be any length up to 30 characters, and each cell can have its own, different, formula.

Matrix Planner displays four columns of data at a time (see figure). Each cell is displayed as seven characters, but the actual precision of the stored data is the same as that of a BASIC variable (VU-CALC truncates at eight digits).

One of the delights of VU-CALC is that moving from cell to cell is such a smooth operation. Because it depends on INKEY\$, Matrix Planner is not smooth. Worse, in Matrix Planner, if you move the cursor off the screen, it takes several seconds to paint a new picture. This situation is ameliorated by a "go to" function, which takes you to a particular cell with only the delay required to paint one new screen.

The cursor in Matrix Planner is confusingly displayed -- in the figure it is the inverted character in cell B4. There is an annoying bug that sometimes leaves the inverted character after the cursor has moved on. This is not the only bug in the early version of the program we got. For example, line 1350 should be GOTO 307.

But the biggest problem with Matrix Planner is in its use of relative formulas. There is a "replicate" function which allows inserting a relative formula one cell to the right of the last formula. But there is no way (other than cell by cell) to create relative formulas along a column! Thus, the additional function, "sum" (which could easily have been computed via relative formulas) had to be included just to get the sum of a column.

In conclusion, Matrix Planner is an interesting first pass at writing a spread sheet program in BASIC. In many ways it is more powerful than VU-CALC. But if you are looking for a practical spread sheet program, we recommend VU-CALC over Matrix Planner.

```
B4 N(1,4)+N(2,2)-N(2,3)
MATRIX PLANNER G ASHER 1981
-----
1 EXAMPLE JAN FEB MAR
2 DEPOSIT 200.87 102.22 23.95
3 CHECKS 100.8 44.44 200.85
4 500.500.07 657.85 480.95
5 = >>=
6 PREUBAL BALANCE
7
8
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10
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19
```

Figure printed by  
Mindware MW-100 Printer.

## SAVING AND LOADING PROGRAMS -- TRIAL AND ERROR?

You may find as a beginner with the Sinclair-Timex computers that you have problems loading programs from cassette tapes. Even as an old hand, you may frequently have problems. This article provides some suggestions and hints.

Most problems occur when the tape recorder used to load a program is different from the tape recorder used to save it. Once you master load and save procedures with your tape recorder, you should have little trouble with the tapes you record. It should not matter what tape recorder you use. However, there may be problems with older or cheaper ones.

A very old recorder may work fine for saving and loading programs you write, but may not be able to load commercial tapes. This turned out to be the case for your editor's old recorder, which, due to the years of wear, was running approximately 30 percent too slow.

Cheaper recorders can also cause problems. One member had three different tape recorders each of which could load programs written by a good recorder. But, they could not save programs properly. If you suspect tape recorder problems, borrow one and experiment. A new recorder could solve your problem. The portable ones are generally easier to use and normally have the proper earphone and microphone jacks. Your editor currently has an inexpensive (\$32.00) Radio Shack Model CTR-37, and it works fine. Several members are using the mini- and micro-cassette recorders without problems.

The choice of brand and quality of cassette tape doesn't seem to be too critical. We have heard reports of short dropouts on high-fidelity tapes, so perhaps its best to stick to the cheaper tapes or data-grade tapes. You can buy C-20 tapes for under one dollar by mail order. C-20 tapes are long enough to save two copies of most programs on a side, while still short enough to conveniently use both sides.

Equipment layout and interconnect are perhaps more critical during tape save and load than at any other time. You should have your computer on a wood (nonmetal) table. All cables and peripherals should be securely connected. The RAM pack should be taped or secured so that it doesn't "wobble" when you press keys. Until you have reliably mastered tape save and load, you could leave the RAM pack off. However, don't make a practice of removing it too often or the connector will loosen, leading to other problems.

The cassette recorder should be connected to the same electrical outlet as the computer and television, to reduce induced 60 cycle hum. Turning one plug over in the socket can also affect 60 cycle hum. If your tape recorder will operate from batteries, try running it on the batteries. The recorder and computer should be positioned such that the cable connecting them does not run under the computer or memory pack. Keep the computer, recorder, and television separated by some distance to minimize interference. Make sure that the connectors are clean by wiping with a clean dry cloth.

When loading a tape, the cable provided with the computer should be connected from the ear jack on the computer to the ear jack on your recorder. No cable should be connected to the mike socket. Connecting both the ear and mike at the same time can cause ground loops which could interfere with loading. For saving a tape, connect the cable from the mike socket on the

SAVING AND LOADING PROGRAMS -- Continued

computer to the mike socket on your recorder. Unplug the ear jack cable. Later you may find that you can leave both ear and mike jacks plugged in, but initially use only one at a time. Use an ohmmeter to check that the cables are not defective. Your problem may be just a broken wire.

Here's a short program to start with:

```
1 DIM A$(500)
2 SAVE "A$"
```

If you do not have an automatic record level feature on your recorder, set the recording level at 3/4 full volume. If you've got a record level indicator, do a test recording and set the level such that the needle is near its top but still vibrates or the light is near its full brightness but still flashes. This should put the recorder near the top of its linear region. Again make sure that the cables are firmly connected. Rewind the tape and begin the recorder. Remember to press the record button! Wait about 4 or 5 seconds to ensure that the tape has advanced past the leader. Now RUN the program. Note the pattern on the television. There are distinct light and dark bands and passing spots. The pattern is not washed-out grey, nor is it heavily black. When 0/2 appears on the screen, stop the recorder and rewind the tape.

Before you connect the cable to the ear jack of your recorder, play some of the tape you just recorded. First, you should hear a buzzing or popping noise, followed by a 5-second silent period. There may be a small 60 cycle hum during the silent period, but it shouldn't be too loud. If it is, turn the volume down. Next comes the loud high pitched buzzing of the actual data you recorded. Adjust the volume to a level where this sound is loud, but not distorted. This level will probably be between 1/2 and 3/4 full volume. Rewind the tape.

If you have tone controls, set the bass to minimum and treble to maximum. If you have a single tone control, this is usually the maximum setting. Check that the ear jack plugs are securely in place. Now do a trial load to adjust the volume. Type LOAD "TEST" and Newline (Enter). This won't load the tape since the program was given the name A\$. Play the recorder. After the initial noise and silent periods, you should see a pattern on the television which is similar to that when you created the tape. The television sync lock may not permit the identical pattern, but it will have the same quality of not washed-out grey, not heavily black, but distinct light and dark bands. If you don't see these patterns, adjust the volume control to just above the level where the pattern first appears. Rewind the tape.

Now, if everything works right, you should be able to load the tape. Enter LOAD "A\$" and start the recorder. You should get a return of 0/0 indicating proper load. Press Newline to see the original program. Enter PRINT A\$. You should get a screen full of blanks. If you don't get the 0/0 indication or if A\$ contains nonblank data, you have a problem. Rewind the tape and begin adjusting the load volume (probably up, a little at a time) until you load. In loading a commercial tapes, follow the same procedure as for your own tapes.

Very important hint -- once you get a commercial tape to load, save a copy of it with your own recorder. Unfortunately, this is not always possible because some manufacturer's programs are designed so that they cannot be saved.

YOUR REMs

LOOSE CONNECTION: R. F. Valle of East Boston writes that it is exasperating to lose programs because the nine volt miniature 3.5 mm power plug connector is loose. He says the problem occurs because the tip of the jack is considerably smaller than the sleeve. His solution is to replace the plug with an American manufactured one (such as a Switchcraft) whose tip is the proper diameter.

DATA STATEMENT STATEMENT: Bob Smith of Needham found a, ugh, bug (calling it a typo won't get us off the hook) in the "Wherefore the Data Statement" article from the November newsletter. In line 540, variable DI should be DJ. Bob also writes that the program solution we published is really an oversimplification. He says some BASICS use READ, DATA, and RESTORE in more complex forms, arbitrarily combining string and numeric data.

OLD ROM ADDS UP: Gary Preston, editor of Slug, the newsletter of the Franklin County Virginia Users Group, was the first to send in the checksum for the old 8 K ROM for the ROM TEST program we published in the December newsletter. He also listed the differences between the old and new ROMs:

<u>OLD ROM</u>	<u>NEW ROM</u>
Checksum = 854885	Checksum = 855106
<u>SQR</u> .25 equals 1.359	Gives correct answer.
.25 ** 2 equals 3.1423844	Gives correct answer.
<u>PEEK</u> 54 gives 132	<u>PEEK</u> 54 gives 136
<u>POKE</u> 16437,255 required after <u>PAUSE</u>	Not needed.

Thank you all for your REMs.

P-ARY "DECIMALS"

8 K ROM

Last month we introduced you to "binary decimals." Here's a short program to convert denary (base ten) fractions to binary.

```
10 LET P=2
20 INPUT F
30 PRINT "THE DECIMAL FRACTION ";F-INT F,
  "IN ";P;"-ARY IS APPROXIMATELY 0.";
40 LET F=P*(F-INT F)
50 PRINT INT F
60 IF F>0 THEN GOTO 40
```

RUN the program. Enter 0.5 and note that the answer is 0.01111111 111111111111111111111111111111110, which is only an approximation to the correct answer 0.1; this is due to round-off error in the floating point representation. Enter 1/2 and you'll get the exact answer. Entering SQR 2 shows that 1.0110101 is an excellent binary approximation to the square root of two.

If you want P-ary, instead of binary, change the value of P in line 10. Try P equal to 7. RUN the program and enter the function PI. Be sure to review the difference between precision and accuracy before interpreting the results.

SINCLAIR-TIMEX RELATED BOOKS FOUND IN THE GREATER BOSTON AREA  
Compiled by R. F. Valle

Baker, Toni. Mastering Machine Code On Your ZX-81.  
Reston, Virginia: Reston Publishing Company, 1981.

Campbell, Siminoff, and Yates. The Timex Personal Computer  
Made Simple. New York: New American Library, 1982.

Chiu and Mullish. Crunchers - 21 Simple Games for the  
Timex/Sinclair 1000 2K. New York: McGraw-Hill, 1983.

Giarratano, Joseph C. Timex/Sinclair 1000 User's Guide,  
Volume 1. Indianapolis: Que Corporation, 1982.

Harrison, Mark. Byteing Deeper Into Your Timex/Sinclair  
1000. New York: John Wiley and Sons, 1982.

Hartnell, Tim. Making the Most of Your ZX-81. Reston,  
Virginia: Reston Publishing Company, 1981.

Hartnell, Tim. 49 Explosive Games for the ZX-81. Reston,  
Virginia: Reston Publishing Company, 1982.

Hartnell, Tim and Jones. Mastering Your Timex Sinclair  
1000 Personal Computer. New York: Bantam Books, 1983.

Hergert, Douglas. Your Timex Sinclair 1000 and ZX-81.  
Berkeley, California: Sybex, 1982.

Hurley, Randle. The Sinclair ZX-81, Programming for Real  
Applications. Beaverton, Oregon: Dilithium Press, 1982.

Milgrom, Alfred. 30 Programs for the Sinclair ZX-80 1K.  
Melbourne House.

Norman, Robin. ZX-81 BASIC Book. Indianapolis, Indiana:  
Howard W. Sams and Company, 1982.

Toms, Trevor. The ZX-81 Pocket Book. Reston, Virginia:  
Reston Publishing Company, 1981.

Vickers, Steven. Timex User Manual. North Attleborough,  
Massachussets: The Communications Company, 1982.

QZX CQ

QZX is a newsletter for people who have a combined interest in amateur radio and the Sinclair-Timex computers. They are also know by the none-too-kosher term, hamhackers. The newsletter contains a lot of good information, especially about hardware. There are ads for systems which encode and decode Morse code using our computer. Also, there are meetings for hamhackers on the air. For example, a Sinclair-Timex net meets Wednesday nights at 10 p.m. EST on the 20 meter band at about 14.345 MHz.

Subscriptions to QZX are \$12 (\$19 foreign). Write to Alex F. Burr, KSXY, 2025 O'Donnell Dirve, Las Cruces, New Mexico 88003.

73 (that's ham talk for ciao).

## GENERAL INFORMATION

Meetings are open to the public; however, attendees are encouraged to join the Boston Computer Society (BCS). This newsletter is free to members. Backissues are one dollar each.

## FOR MORE INFORMATION

Sue Mahoney, Director of the Sinclair-Timex User Group  
c/o The Boston Computer Society or call (203) 573-5816.

Cliff Danielson, Newsletter Editor  
14 Davis Road, Chelmsford, MA 01824, (617) 256-4638.

John Kemeny, Contributing Editor & Correspondent With Other User Groups  
284 Great Road, Apt. D5, Acton, MA 01720.

Library Committee: Beth Elloitt, Sean O'Rahilly, and Bob Sanchez.

## DIRECTIONS TO THE MEETING

The Sinclair-Timex User Group meets in the Large Science Auditorium (Room 8/2/009) of the University of Massachusetts of Boston, Harbor Campus. The Harbor Campus is only 3 miles from downtown Boston and easily accessible by public and private transportation. From the north or west, take the Southeast Expressway to Exit 17. Turn left onto Columbia Road. Enter the rotary and take the first right (Morrissey Boulevard). Bear right on the traffic island, following UMass/Boston sign. Turn left into the Campus. From the south, take Morrissey Boulevard northward to the campus. On the MBTA, take the Red Line (Ashmont Train) to Columbia Station. Transfer to the free University shuttlebus in the T parking lot.

**IMPORTANT NOTICE !** If the mailing label on this newsletter is handwritten (except if your a user group), then you are not on the mailing list of the Sinclair-Timex User Group. You need to either join the BCS or, if you are a BCS member, contact Mary McCann in the BCS office to be added to the Sinclair-Timex mailing list.



Three Center Plaza  
Boston, MA 02108  
617-367-8080