

## MAINTAINING A TAPE LIBRARY

By Al Spencer

Here are some hints for the storage of computer programs and data. With the proper equipment and procedures tapes can be a reliable and inexpensive storage medium.

### THE BASICS

Above all else, use a recorder with an index counter. Unless you can fast forward or rewind to the particular program or data of interest, you can't conveniently store more than one or two programs per tape. Get a tape recorder head cleaning kit consisting of a cleaning solution, a head lubricant solution and lint free swabs. Also get a tape head demagnetizer.

Dust is one of the worst enemies of tapes and recorders, you should get proper dust tight cases for groups of cassettes (which should, in turn, be stored in their individual plastic cases) and dust covers for the recorders. If you plan to reuse any tapes buy a bulk tape eraser, and erase any previously used tapes before re-using them.

### ON THE LEVEL

Even if the recorder has an automatic level control (ALC), it should have a recording volume indicator of some sort. A meter is preferable, but even a "winking" LED will indicate whether the cable plugs are

## NOVEMBER GROUP MEETING

Wednesday, November 16, 1983  
7:00 p.m.  
Large Science Auditorium  
UMass, Harbor Campus  
(Directions on page 2)

## October Meeting Highlights

by Susan C.T. Mahoney

On Saturday October 22 we celebrated our second anniversary with a gala celebration at the Boston Park Plaza Hotel.

It really kept on growing until the day of the show with over 25 exhibitors and twenty different seminars. We had representatives from San Francisco, California to London, England and from Atlanta, Georgia to Toronto, Ontario. Our celebration truly was a national/international event!

Attendance is hard to really say, but in the morning there was barely room to walk - there was probably around 800 people who actually came to our celebration.

There were so many people who contributed to the success of the celebration. Let me take this opportunity to thank a few of them.

I would like to thank Dan Ross, V.P. from Timex and Maggy Bruzelius, Exec. V.P. from Sinclair for attending and speaking, it really made a difference having their support.

## 10 REM

This issue marks the debut of a new managing editor of the publication. Cliff Danielson, who has led the newsletter through its formation and growth, has decided to step down to devote more time to other projects (computer and otherwise). Fortunatley for us he has consented to continue contributing articles so we still have him to kick around a little.

In the year I've been with this newsletter, I've seen that Cliff and John Kemeny have crafted a concise, respected, and well-read journal. I take over their job with not a little hesitation. It's quite an act to follow. But it's an act I'll follow with the help of people like Cliff and all of our readers. We continue to encourage the group's members to get very involved in creating this newsletter. That is what has made it as good as it is and will help it to get even better.

Our new "look" is mostly the result of changes in our method of production (paste-up, typesetting, etc.) that will allow us to create an even more attractive and informative publications than we've had in the past. It makes it easier for us to include photos and diagrams, program listings, and much more. It'll be a little rough for the next few months while we get the bugs out but I think you'll appreciate the evolution.

A final note:

Q. Why does a computer hacker have a hard time remembering the difference between Halloween and Christmas?

A. Because Oct(al) 31 = Dec(imal) 25.

— JGH III

## The Sinclair Timex User Group

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DIRECTIONS TO MEETING: The S-T User Group meets in the Large Science Auditorium (Room 8/2/009) of the University of Massachusetts, Boston Harbor Campus. It is located 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. Follow construction signs to get to Morrissey Boulevard in the direction of UMASS and the Kennedy Library. Bear right on traffic island, get in the right two lanes, following UMass/Boston signs. Turn left at the light into 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.

## HIGHLIGHTS

Also thanks to the three national computer specialists from Timex Computer Corp. Linda Dell'Orto, Western Region, Kathy Fitzgerald, Southeast Region, and Dan Kopp, Northeast Region who demonstrated the TS2068 and its cartridge software.

Thanks to Greg Coffin, Ph.D., Director of the Urban Schools Collaborative at Northeastern University, for lining up a whole day's worth of educational seminars and demonstrations with the expertise of his staff members Maria Trozzi and Thomas Clark as well as Donald Duncan, an instructor at Milton Academy and Judy Field, teacher at Timilty Middle School in Boston.

These people gave us real live demonstrations using the TS1500 in the classroom with students from the Boston Public Schools as well as some discussions and demos of videotape computer instruction.

Let me thank all the exhibitors that participated and mention four that joined us too late to be mentioned in last month's issue: Cambridge Computer Consortium, Cambridge, MA; Down East Computers, Greenville, NC; SiriusWare, Lexington, MA; and Verada 214, Providence, RI. Also not mentioned in last issue were three presentors: Brint Jeffries, Paul McGarry, and Peter Nichols.

It took the help of a great many people from our group to mount this celebration. To all of them I extend my sincerest gratitude, but especially to: Will Stackman who co-ordinated the Exhibition area; Jack Hodgson who supervised the celebration's promotion and watched over the

## NEW IMPROVED ROM BUGS— TS1500 BUG #1

by John Kemeny

Here we go again. No sooner has Timex introduced their TS1500, with the new improved ROM that corrects the mistakes of the TS1000 ROM, than new bugs appear. It is a common occurrence in computer programming that fixing one bug causes another. Unfortunately, when you put the programs on a ROM, there's not much to do about it. This bug will affect people who use the area above RAMTOP to save data between LOADs.

Specifically, the bug, discovered by Dave Wood, occurs when a LOAD command aborts. In the TS1000 ROM, if a LOAD aborts, a jump is made to the initialization routine at 03E5h, which is part of NEW. This routine resets the machine stack which is just below RAMTOP.

The TS1500 ROM jumps to an address which is actually in the middle of an instruction! The problem is that address 0362h has been changed E5h to E3h instead of E2h.

This bug causes unpredictable results upon LOAD failure. Even if the system doesn't crash, the stack may be reset above or below RAMTOP. So if a LOAD fails, you may corrupt the stuff above RAMTOP.

We should point out that this bug is not such a problem if you don't have stuff above RAMTOP. Then it is just an inconvenience making you pull the plug and perhaps re-reset RAMTOP. Let's just hope that the LOADs on the TS1500 are MUCH more reliable than on the TS1000.

## TAPE HINTS

connected properly. A volume indicator is also helpful if you plan to use tapes from different sources. This reduces the amount of trial and error in setting the playback volume.

A recorder without ALC gives the user complete control over the recording process but leaves them the full responsibility of volume setting. However, for computer applications, this is a preferable situation, since the signal volume, once set, is constant. A very important thing to remember is that once the tape is rolling (either in record or play) it is too late to change the volume, because it will cause noise (these controls are "scratchy"). A better technique is to dry run first, just to set the volume.

Most of us assume that the most expensive tape has the best quality or that leaderless tape is preferable. The truth is that leaders prevent breakage, stretching and twisting at the end of fast forwards and rewinds. As for price, don't forget, you can easily spend more for tapes in one year than you did for the computer itself. My advice is always run the tape to "10" on the counter to bypass the leader when saving data. What length should you buy? Avoid long play tapes, those with designations of greater than C60. The long play tapes are made of thinner tape. They stretch, are too fragile to survive mid-tape start-stops, and are subject to more "print through" from adjacent layers. Any tape with a designation less than C60 simply has a lesser amount of the C60 thickness tape wound onto it.

## HOW TO WRITE RIGHT

Since the contents of any given tape will probably change many times, it is best not to identify the contents on the tape's box or paper label, doing that implies either overlaying the label with more stick-on labels ('til the layer gets too thick) or writing on the label with a pencil then erasing it later and fouling up the works with eraser crumbs! Better you should identify each tape with a permanent serial number (0000, 0001, 0002, etc.) and keep track of the contents elsewhere, like in a notebook or card catalog.

One copy of anything is as good as none! Two copies on one tape are better than one copy but not by much. One extra copy on a separate cassette is even better but, to preserve sanity, make two copies each on separate cassettes, of anything that would take more than 30 minutes to enter.

Use AC power, not batteries. If the AC power adapters cause too much noise, replace or return the recorder. The cost of the effects of weakening batteries can far exceed the cost of adapters and recorders combined.

Use only one side of a tape. This reduces the amount of high-speed fast-forwarding to the far end. Never remove a tape from the recorder unless it has been rewound completely. When inserting a cassette, always wiggle it back and forth to set and center it.

Always press STOP on the recorder before switching

## THREE SOFTWARE REVIEWS

by Will Stackman

ZX PRO/FILE from Thomas B. Woods Software (ZX81, TS1000, 16K)

This is a versatile text and information filing system. It will store random length files from 1 to over 10,000 characters. It displays 12 lines of 28 characters at a time and can be used with either the Timex printer or a Centronics interface. It can search very quickly for one or two "words" anywhere in the file. The files can be sorted by code number if it is the final element in the file unit.

Pro/File has extensive documentation and instructions complete listing for BASIC and machine code, plus a short course in data handling and machine language.

I do have a couple of minor quibbles with the program. The documentation is so extensive that it really ought to have an index (there are instructions for using Pro/File to prepare one). The program uses a 28 character line length and this takes a little getting used to and it doesn't allow you to insert info into the middle of a file unit without retyping all the data which follows. Also, it takes at least six minutes to load but it's comparable with FASTLOAD which can reduce time to less than a minute and a half. On the positive side: although the 59 page instruction book is occasionally somewhat idiosyncratic, it contains very little "computerese" and it openly discusses modifications to the program.

The author is providing a quarterly newsletter for \$9.95

per year which will cover updates and further modifications. I highly recommend Pro/File.

CRITICAL PATH ANALYSIS from Timex

The concept of "Critical Path Analysis" is a business utility from Pert-CPM that is useful in simulating complex projects where sequencing of subtasks is important. The Timex version can be run from minimal documentation provided, but you have to know how to use the method to understand the results.

The program has some major shortcomings. It doesn't allow manipulation of the model once the paths have been calculated. All data must be re-entered to try variations. Completed models cannot be saved, although the results can be copied to the TS printer. Also all inputs and results are numeric, no labels or scales can be used, you must prepare and keep track of tasks yourself. Overall, I'd say this program is adequate for special use it is not for the unprepared.

THE FANTASTIC MUSIC MACHINE from Simulusion (2K or more)

The ZX81/TS1000 has a voice (as do most processing systems). This program lets you use it. You can listen by turning up your TV's sound but you will hear static. Connect the MIC output on your computer to the monitor circuit of a tape recorder and you will get a loud adjustable sound. You can also buy a small amp from Radio Shack to do the same thing.

Using The Fantastic Music Machine, the top three rows of

## THE CHESS EXHIBIT

by John Kemeny

Chess is a challenging game, and a number of people at the recent TS Celebration enjoyed the challenge of taking on the TS1500 and 2068 computers in a match. Computer chess can be made to run at various levels, with the higher levels taking more time for each move and therefore playing better chess. All the games at the show were played at the lowest level, so that the computer's responses were almost instantaneous. Nevertheless, the machines won over half the games.

The TS1500 was programmed to play SUPERCHESS. Linda Moran, from the Capitol Area Timex/Sinclair Users Group (CATS) beat SUPERCHESS (with some help from bystanders) in an exciting game.

Later Fredrick Z. Gregorian, who works at Intercomputer Inc., is a rated player and plays at

the Norseround Chess Club, tamed SUPERCHESS Level 0 in just 12 moves (see game).

The TS2068 played Softsync's new chess program. It has high resolution pictographs of the pieces and color. We understand that a talking version, just using the 2068 (no attachments!) is also in the works.

We'd like to thank Jules Gesang from CATS, Mike Coughlin, Cliff Danielson, and Dave Miller for loaning equipment and software. We'd also like to thank Roy Glasser, Linda Moran, Yossi Chodin and Susan Sealy for helping man the exhibit.

And finally we'd like to thank Peter Kuhl and the Boylston Chess Club for loaning us a large demo board which added much to the exhibit and Peter for his comments on the game below.

### QUEEN'S GAMBIT OPENING

Gregorian white	Superchess black	Analysis by Peter Kuhl Boylston Chess Club
1. D2-D4	D7-D5	
2. C2-C4	B8-C6??	(Not best according to opening theory G8-F6 is more correct)
3. B1-C3	D5xG4	(E2-E3 is better protecting the D pawn and winning back black's C4 pawn) (A blunder. Allows white's next move)
4. E2-E4?		(Why allow black to save his piece? D5xE6 is clearly called for)
5. G1-F3	C8-E6??	
6. D4-D5	E6-G4	(Why give up the piece? G4-D7! offers the most resistance)
7. F1xC4??		(Black is in dire trouble because of the pin on his king. The bishop on G4 should be saved for defense at D7 or H5)
8. D1-A4ch	C6-E5	(This is the time to resign!)
9. D5xC6	E5-C6	(F6-D7 prolongs the agony)
	G4xF3?	
10. C6xB7ch!	C7-C6	
11. A4xC6ch	D8-D7	
12. B7xABmate		

## HIGHLIGHTS

money; Beth Elliot for co-ordinating the volunteers; Jeff Parker who was a great help with promotion, Bob Masters for his help organizing and being a presenter; John Kemeny who conceived and supervised the chess exhibit; Bob Heath and the MC sub group for their fascinating exhibit; Judy Richland who provided graphic arts assistance; Allan Cohen for making many of the celebration's signs; Cliff Danielson for providing the support of the newsletter; Kathi Kuehn and the BCS staff; Rosemary Fortin who opened her home to me to stay when I was in Boston; Sinclair Research Ltd. for their support, financial and otherwise; and finally but perhaps most important, Reston Publishing who provided invaluable supports without which the celebration couldn't have taken place.

We had a very successful anniversary. I would like to thank all the individuals who gave their time to make it a success and I would like to encourage even greater participation by more of our members in the future.

## TAPE HINTS

directions from forward to reverse or vice-versa, otherwise you may stretch the tape. Always leave at least 10 seconds of space between files because the tape index counter is affected by "tightness" of the winding of the tape on the take-up reel.

Overall, by using a little common sense and basic maintenance you can reliably take advantage of this economical and simple mass storage medium.

## TS1000 BUG #5 DIVISION

by John Kemeny

Internally the computer stores numbers as normalized binary floating point fractions. In order to maintain accuracy in division, the computer calculates two extra bits for a quotient. A bug at 1BD0h caused the second excess bit to always be reset to zero. This bug has been corrected in the TS1500 ROM.

## REVIEWS

the keyboard 1-8, Q-I, A-K become three octaves of notes, 9, O and L become rests. The 10th key in each line become melodic end markers. All notes sound as long as the key is depressed. This duration is recorded by the program. To sharp or flat a note use Shift, which raises the pitch by half a tone.

2K of memory stores 400 notes. The bottom line of keys lets you edit this composition. Each note is numbered, you can step through a composition and change any note. Compositions can be saved, erased, played continuously between end markers. Tempo, tone and attack can be modified during playback.

With 16K expansion, over 7000 notes can be stored, since each takes up merely one byte poked to a location.

The screen reacts like it does during save and load so this technique will not produce a musical score for your favorite game or even an entry beep. All scoring must be done by hand and there is only one voice. Yet the possibilities are fascinating.

**\*\*\* ZX PRO/FILE \*\*\***  
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