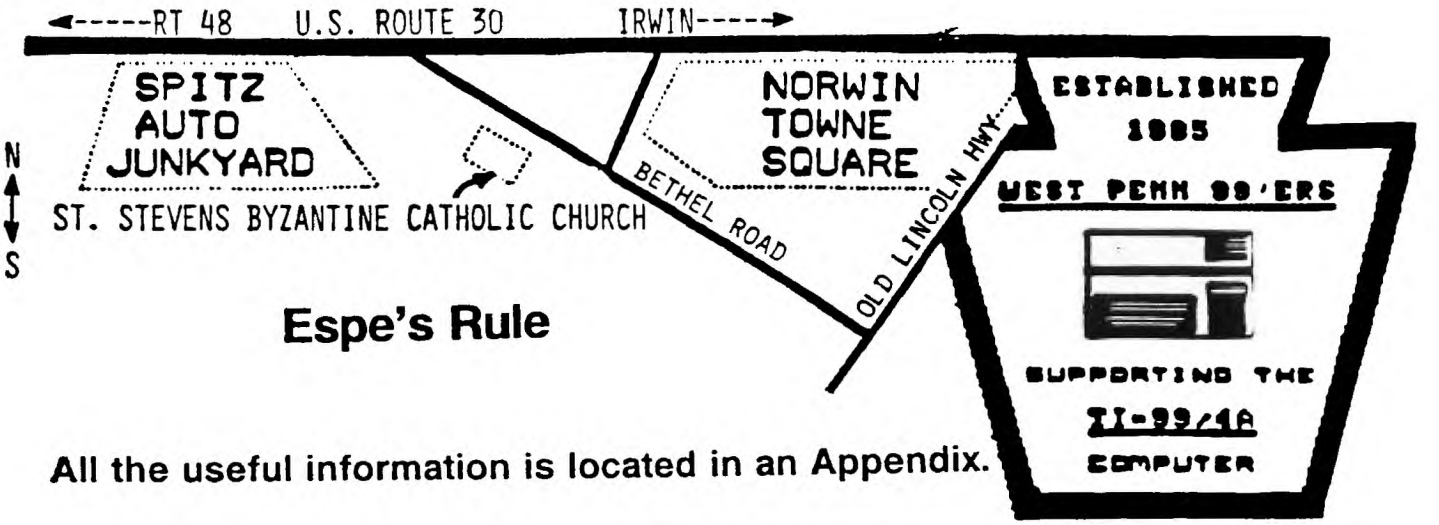


Espe's Rule

All the useful information is located in an Appendix.

FOR THE RECORD

BY FRANK N. ZIC
(ACTING SECRETARY)

ISSUE # 56 APRIL 1990

THE MARCH 20, 1990 MEETING WAS CALLED TO ORDER BY PRESIDENT MICKEY SCHMITT AT 7:15 PM. SHE STARTED THE MEETING WITH THANKS TO FRANK SHOEMAKER FOR HIS RECENT HELP AND TO JACK SKINNER FOR THE GOODIES!! BOB GAVE THE LIBRIAN'S REPORT SAYING THAT 7 NEW PROGRAMS WERE ADDED, INCLUDING; HARRISON MUSIC, 40 COLUMN UTIL AND CONTACT BRIDGE. AS AN AFTERTHOUGHT, HE STATED THAT THE PREVIOUS MONTH'S REVIEW SHOWED THAT COKE SALES OUT-NUMBERED PEPSI BY 2 TO 1, HUM. GARY AND GENE BOTH DISCUSSED THE BBS SET-UP AS FOLLOWS; PUG BBS PHONE # 341-4820 AND GENE'S BBS # 824-6779. AT PRESENT MORE UP-LOAD SPACE IS AVAILABLE ON GENE'S BOARD. GARY HANDED OUT FREE PRODIGY KITS FOR BBS SERVICE THAT NORMALLY COSTS $49.95. DON'T FORGET TO TAKE ADVANTAGE OF OUR NEW RIBBON RE-INKER. ALSO TAKE ADVANTAGE OF OUR FREE LARGE MODULE LIBRARY. PLEASE CHECK OUT FOR ALL LOANERS. CHECK THE FEB. MICRO ON PAGE 37 AND SEE MORE ACCOLADES FOR OUR INTER NATIONALLY KNOWN AND LOCALLY ADMIRED JOHN WILLFORTH. ON PAGE 41, CHECK THE SWAN'S SONG FOR GENEVE OWNERS. SURE HOPE THE NEW ISSUE IS INFORMATIVE AND USEFULL AS MIGHT BELIE THE TITLE. NEXT MONTH STAN KATZMAN WILL DEMO THE NEW COMPUTER MOUSE, WHICH WILL THEN BE RAFFLED. SHOULD YOU LIKE THE DEMO, ADDITIONAL UNITS CAN BE SPECIAL PURCHASED FOR $54.95 DELIVERED THROUGH OUR CLUB. MANY PIECES OF ADVERTISEMENTS WERE PASSED AROUND FOR: TEXAMENTS, RAVE, QUALITY 99 AND J.P. SOFTWARE. NICE REACHING OUT BY OUR PRES., MICKEY.

PLEASE TAKE CAREFUL NOTE THAT THE PRICE OF A HARD DISK CONTROL CARD (HFDCC) CAN NOW BE PURCHASED FOR $180. THIS IS NEARLY 1/2 OFF. YOU WILL IMMEDIATELY BE ABLE TO WRITE TO DISK IN DOUBLE DENSITY AND EVEN QUAD IF YOU HAVE SPECIAL DISK DRIVES. A HARD DRIVE CAN BE ADDED LATER FOR THE ULTIMATE IN FAST AND EASY COMPUTING. ON APRIL 28 A USERS GROUP DEMO WILL BE HELD AT THE ROSS PARK MALL IN THE NORTH HILLS SPONSORED BY THE PACC GROUP OF PITTSBURGH. ANOTHER POPULAR SELL-OFF OF LOW PRICED COMPUTER COMPONENTS WAS HELD, WITH PERHAPS YET MORE COMING NEXT MONTH. VARIOUS DEMOS WERE PRESENTED ON LEGENDS II, DOOMS GAME III AND T.O.D. NICE JOB EVERYONE. RUNNING OUT OF SPACE AGAIN, SO - MAY THE GOOD 4'S BE WITH YOU.

WEST PENN 99'ERS CLUB INFORMATION

NEXT MEETING DATE: APRIL 17 1990

MEETING LOCATION: ST. STEPHEN'S BYZANTINE CATHOLIC CHURCH

JUST OFF ROUTE 30
BETHEL ROAD, NORWIN

TIME OF MEETING: 7:00 P.M.

LIST OF WEST PENN OFFICERS FOR 1990

PRESIDENT:	MICKEY	335-0163
VICE PRESIDENT:	SCOTT	523-3754
TREASURER:	LYNN	835-4304
RECORDING SEC:	ED	864-4924
CORRESPONDING SEC:	GENE	829-0469
LIBRARIAN:	BOB	863-5672
NEWSLETTER EDITOR:	JOHN	527-6656

GENERAL ITINERARY OF THE CLUB'S MEETING

6:45 P.M.	DOORS OPEN
7:00 P.M.	GENERAL MEETING
7:45 P.M.	DEMOS AND NEW INFO
8:45 P.M.	HARDWARE & PRINTERS
8:45 P.M.	INTRO TO ASSEMBLY
11:00 P.M.	DOORS CLOSE

MEETING HIGHLIGHTS FOR THIS MONTH

LATEST T.I. NEWS AND SOFTWARE DISCOUNTS

MICKEY'S CASSETTE BOOKLET NOW AVAILABLE

ASGARD'S NEW MOUSE DEMO BY STAN KATZMAN

WEST PENN "LIBRARY DEMO" BY BOB SADUSKY

LATEST SOFTWARE DEMOS BY JOHN WILLFORTH

PASCAL CARD FOR SALE $40 -MEMBERS ONLY-

RENEW YOUR MEMBERSHIP DUES!

$15.00 PER YEAR FOR INDIVIDUAL / FAMILY
$10.00 PER YEAR FOR JUST THE NEWSLETTER

TREASURER'S REPORT FOR MAR. 21,'90

FROM LYNN GARDNER

3/20	CASH ON HAND	$ 50.00
	LIBRARY SALES	23.00
	MICROPENDIUMS	49.25
	DISKS & CASES	60.00
	RAFFLE	284.00
	DUES	120.00
	TOTAL	$586.25
3/21	DEPOSIT	536.25
3/21	CASH ON HAND	$ 50.00
2/21	BANK BALANCE	$1944.49
3/22	INTEREST	+ 9.38
		1953.87
3/20	POSTAGE (JOHN)	- 65.25
3/21	MICROPENDIUMS	- 37.50
3/20	RAFFLE	- 300.00
		1551.12
3/21	DEPOSIT	+ 536.25
	BALANCE	2087.37
TOTAL CASH BALANCE		$2137.37

THE INDEX OF ARTICLES.....

ED. CORNER. I AM INCLUDING SOME INFORMATION CONCERNING TELECOMMUNICATIONS FOR THOSE WHO ARE JUST GETTING INTO IT. YOU SHOULD GET A PROGRAM CALLED TELCO, AND USE A LOCAL TI BBS (PUG) 412-341-4820 TO GET STARTED.

JACK SUGHRUE HAS BECOME ONE OF THE THREE MOST PUBLISHED WRITERS ON THE TI. I WILL, FOR THE NEXT TWO OR THREE MONTHS, REPRINT THE MAJORITY OF HIS NEW SERIES OF ARTICLES. JFW
PS. I'M STARTING WITH #4 IN THIS SERIES. THANKS JACK!

W-AGE/99 * NEW-AGE/
99 * NEW-AGE/99 * N
EW-AGE/99 * NEW-AGE
/99 * **NEW-AGE/99** *

* by JACK SUGHRUE, Box 459, East Douglas, MA 01516 *

#4

Many of my computer correspondents have a basic 4A system upgraded to include a tape recorder and that's where they want to (or have to) stay. Though I could hardly imagine life without multi-drives, RAMdisk, ugraded controllers, and all the rest, computer life in the slower lanes is not all that bad. After all, Harry Wilhelms (E-Z KEYS) and Eric LaFortune (ROCK RUNNER) produced two of the most powerful items in TI software using just the tape recorder. In the process they both discovered unknown (and thus untapped) potentials of our great machine. Most tape sources have dried up: IUG, Amnion Helpline, Tigercub. User groups, Triton, Asgard, Texcomp, and Kidware are about the only regular tape sources left. Some user groups (like Lima and MUNCH) still have extensive tape libraries for members. TI fairs everywhere still have piles of tapes available. At last year's New England Fayuh, for example, I purchased a dozen new (still in packages) tapes:

BEGINNER'S BASIC TUTOR (from TI), far better to use with a novice or kids than TI's TEACH YOURSELF BASIC (which is too mathematical for most casual users).

BEST COMPUTER COACH: TEXAS INSTRUMENTS (from Boston Electronic Systems Training) extremely clever. It comes with two cassettes - one with programs and data and the other an audio tape to listen to and easily follow along while computing.

LEMONADE (from Kidware), though less graphic than Apple's version, is many times better. I use both in my classroom. Kids prefer Kidware with more options and more intelligent control. All Kidware tapes have Side Two. LEMONADE contains a super code-breaker game. . Kidware stuff is always good TI stuff.

THE WIZARD'S DOMINION (from American Software Design and Distribution Co.) fantasy adventure with a superb manual (unusual for adventures) making it a joy to play.

COSMIC CAVER (from CompuTech Distributing Inc.) timed space arcade game with twists, including a possibly-bottomless pit.

COSMOPOLY (from Not-Polyoptics) has got to be the most bizarre form of Monopoly ever devised. The setting is the Universe of the future and the options in this fast-paced, ingenious game are wonderful.

HANG-GLIDER PILOT (from Maple Leaf Micro Ware) up to four players test "gliding/landing" skills.

STARSHIP CONCORD (from Futura) another spaceship game with a good manual and so-so graphics.

MISSILE WARS (from Asgard) by John Behnke is one of the best of this genre on tape.

AZTEC CHALLENGE (from Cosmi) well-done, multi-level ancient obstacle course game tha's fun and quick.

CAVERN QUEST (from Moonbeam) about as "acadey" as you'll get on tape and one of the best multi-level graphic obstacle games.

My final tape purchase that day, ROMEO (from Extended), was lost or stolen after I gave a demo of it a few years ago. I'm not very good about making backups of my originals, unfortunately. By the time ROMEO disappeared, it couldn't be purchased anymore. So my joy at seeing one

CONTINUED ON PAGE 4

CONTINUED FROM PAGE 3

for sale at the fair was great. Cute Romeo has to get past a series of sand dunes via balloons, is unceremoniously dropped into a shark-ridden sea, swims into a dangerous cave, and so on in his quest for the fair Juliet. It's one of those delightfully addictive, nonviolent games. Now a new generation (my 5th-graders) are discovering the joys of noble quests.

These twelve tapes are things I didn't own but now use and enjoy. Original prices on these items were from $49.95 to $9.95. I picked up most for under $2 (not counting the ones from Kidware and Asgard still being distributed today).

When I came across these tapes in class the other day, I realized how often the kids continue to use most of them, along with some other tapes that I have in large bookcase-style tape racks. Tapes get used a great deal: Jim Peterson's always exceptional educational tapes; Intellestar's (CELLS), early TI's (HAMMURABI, WORD SAFARI), and many others. I teach ASL (American Sign Language) in class, and the kids use the PD FINGERSPELL program to learn, review, write, and decode through the manual alphabet. This is in EVERY user-group library.

Last week we were studying the skeletal system.I put on Regena's "Name That Bone." I often use the tape recorder on the disk-system TI I have at school, also. Once a program is loaded into memory, I take the little tape recorder to the next machine and repeat the process. Sometimes I bring a third computer in from home, but I still just go from one to the other with the same tape recorder.

But that day I loaded up "Name That Bone" by tape into the two TIs, and all the kids during the day had a chance to successfully complete this great program.

There's no problem using tape. I load them into the computers before school, while I'm getting my other stuff ready for the day. I keep the volume on the TVs high so I can hear when one computer had loaded; then I repeat the process for the others. By the time the kids arrive, I've had my coffee, put up the computer schedule, and we're all rarin' to go. I still think the 4A is the best educational computer tool in existence.

I often think about users with the basic diskless systems. There are still tapes readily available for the Adventure, Tunnels of Doom, and LOGO modules (though the last requires 32K). Triton still has cassettes of all kinds for as low as $1.99. I just bought a SAMS book for $2.49 (TI-99/4A GAMES) that included a cassette of all the games. I usually pay more for blank cassettes alone.

Peruse the mail order palaces to see the number of extremely low-priced MODULES still available. Triton's start at $2.49 and go up to $29.95 (for Extended BASIC). There are recreation (MOONSWEEPER, FATHOM, MUNCHMAN), productivity (PERSONAL REAL ESTATE, HOME FINANCIAL DECISIONS); education (READING FLIGHT, NUMERATION I); and other cartridges. TEXCOMP's module prices start at $4.95 and have many more cartridges not listed by Triton, including the last of the Atarisoft ones like Donkey Kong.

So a person with a very basic 4A system (console, TV, Extended BASIC cartridge, and tape recorder) still has an extremely powerful tool at his or her command with options for many other diskless peripherals. But most early owners have closeted or tossed their TIs. Recently, I went to a flea market in a nearby town and picked up a used (but very new looking) silver and black console with cables for $3! <u>That's</u> what I'm writing this article on right now. So DON'T QUIT! Your 4A is alive & well & kicking up its heels all over the world.

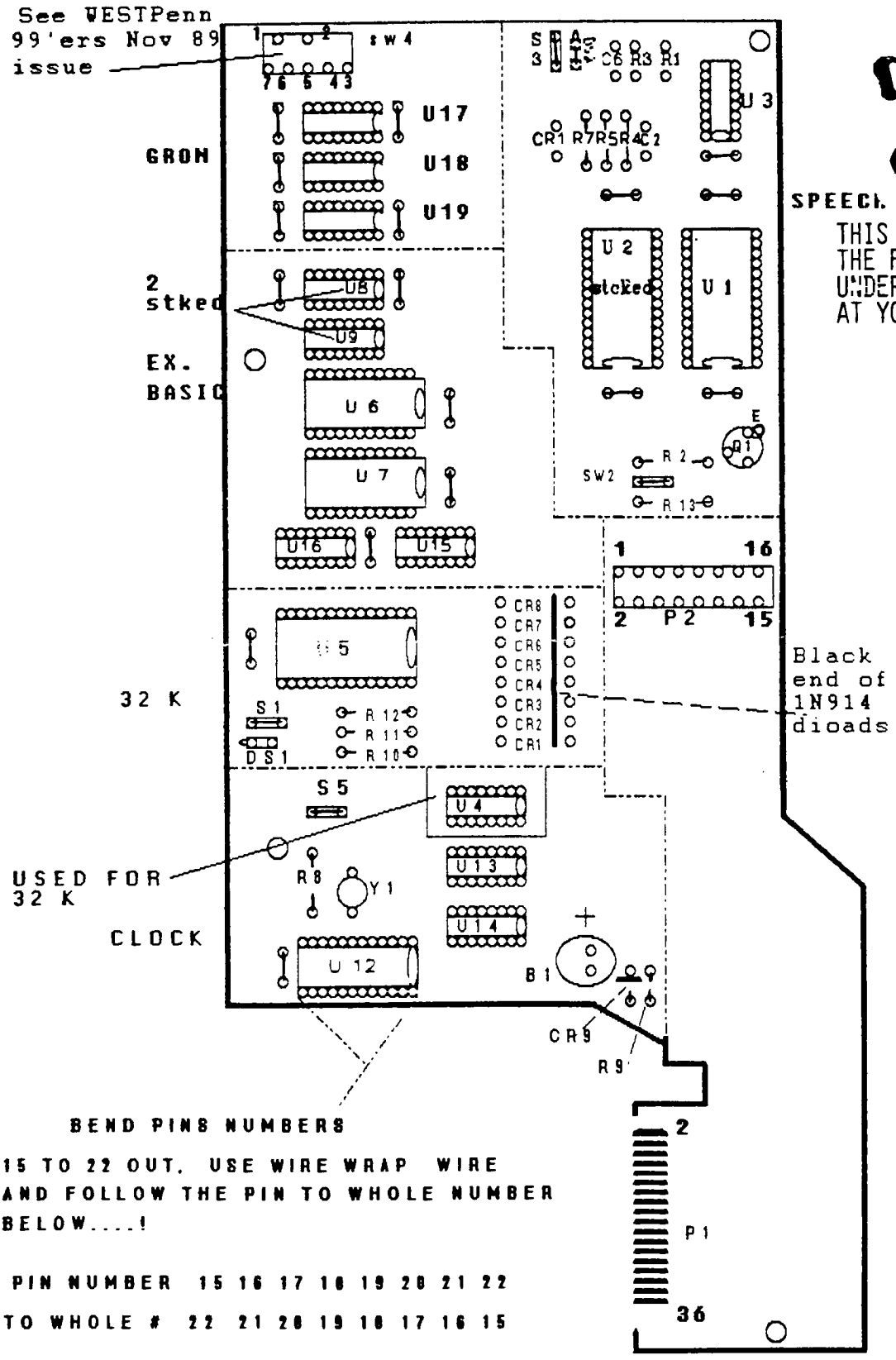
[If you use MBW-AGE/99 please put me on your exchange list.]

ZENO BOARD CORRECTIONS

BY MARK REED OF WEST PENN 99'ERS

WARNING!

THIS PROJECT IS NOT FOR THE FRAIL OF HEART. YOU UNDERTAKE THIS ADVENTURE AT YOUR OWN RISK.



BEND PINS NUMBERS

15 TO 22 OUT. USE WIRE WRAP WIRE AND FOLLOW THE PIN TO WHOLE NUMBER BELOW....!

PIN NUMBER 15 16 17 18 19 20 21 22

TO WHOLE # 22 21 20 19 18 17 16 15

Drawing not to scale

Wellings' Maxim

Never read the manual first. Plug the thing in, turn it on and try it out; that's exactly what the guy that wrote the manual did.

CONTINUED ON P. 6

CONTINUED FROM P. 5

****
** Notes: **
****

GET THE NOVEMBER 1989 ISSUE OF THE WEST PENN 99'ERS NEWSLETTER. Follow John Wilforths article to the letter, and DON'T build a Zeno board without his suggestions he makes in the article on the Zeno board...

Use caution when soldering chips sockets to the Zeno board. The traces are incredibily close. To solder a chip socket onto the board follow this suggestion. Solder the chip socket to the Zeno board so that the socket sits off the board [not flush with the boards surface] like you usually would any other project. This will help you better inspect the traces after you've soldered the socket. If you soldered it flush with the board you'd never see if you had spillage onto another pad causing a short...!

R4,R5, = EXAMINE the Speech Syn board to see if the values for these two resistors are the same... If they are different use the resistors on your Speech board in these locations....!

You must cut plastic away from the GROM port where the GROM connectior slides up into the upper shell of the TI-99. Get an X-Acto knife and a pair of dikes [wire cutters] and cut away the plastic that interferes with the proper seating of the Zeno board and the GROM connector, don't go crazy with this now. Just take your time and think about what your doing. When installing John Wilforths idea on the P2 connector's wire harness be carefull not to strip too much wire from the wire ends attaching to the chips... When routing the wire around the metal shield this could cause a short to occur. It HAPPENED TO ME!!!!!!! This caused my 32K to do some crazy things...

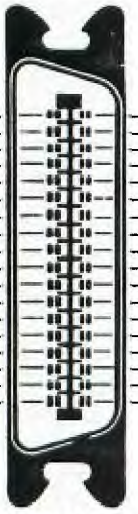
It's imperative that you cut away all the plastic in the way of the Zeno board. Don't force or stress the board. This may cause some of the traces to break and render the board useless... You follow these ideas and hints at your own risk.

****
** LEGEND **
****

= 0.1uf 25 volt capacitors
THESE AREN'T JUMPERS. Use capacitors or nothing

Don't forget U 4. You'll need this to get the 32 K going.

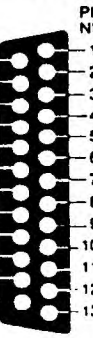
Parallel Interface (Centronics type)



SIGNAL DESIGNATION	PIN NUMBER	PIN NUMBER	SIGNAL DESIGNATION
+5V	18	36	UNDEFINED
CHASSIS GND	17	35	UNDEFINED
LOGIC GND	16	34	UNDEFINED
OSCXT	15	33	UNDEFINED
SUPPLY GND	14	32	FAULT
SELECT	13	31	INPUT PRIME
PAPER END	12	30	(R) INPUT PRIME
BUSY	11	29	(R) BUSY
ACKNOWLEDGE	10	28	(R) ACKNOWLEDGE
DATA BIT 8	9	27	(R) DATA BIT 8
DATA BIT 7	8	26	(R) DATA BIT 7
DATA BIT 6	7	25	(R) DATA BIT 6
DATA BIT 5	6	24	(R) DATA BIT 5
DATA BIT 4	5	23	(R) DATA BIT 4
DATA BIT 3	4	22	(R) DATA BIT 3
DATA BIT 2	3	21	(R) DATA BIT 2
DATA BIT 1	2	20	(R) DATA BIT 1
DATA STROBE	1	19	(R) DATA STROBE

(R) INDICATES SIGNAL GROUND RETURN

RS-232 Interface



SIGNAL DESIGNATION	PIN NUMBER	PIN NUMBER	SIGNAL DESIGNATION
		1	PROTECTIVE GROUND
		2	TRANSMITTED DATA
		3	RECEIVED DATA
		4	REQUEST TO SEND
		5	CLEAR TO SEND
		6	DATA SET READY
		7	SIGNAL GROUND/COMMON RETURN
		8	RECEIVED LINE SIGNAL DETECTOR
		9	+VOLTAGE
		10	-VOLTAGE
		11	
SECONDARY TRANSMITTED DATA	14	12	SECONDARY RECEIVED LINE SIGNAL DETECTOR
DCE TRANSMITTER SIGNAL ELEMENT TIMING	15	13	SECONDARY CLEAR TO SEND
SECONDARD RECEIVED DATA	16		
RECEIVER SIGNAL ELEMENT TIMING	17		
	18		
SECONDARY REQUEST TO SEND	19		
DATA TERMINAL READY	20		
SIGNAL QUALITY DETECTOR	21		
RING INDICATOR	22		
DATA SIGNAL RATE SELECTOR	23		
DTE TRANSMITTER SIGNAL ELEMENT TIMING	24		
	25		

THE TWO PIN-OUT DIAGRAMS AT THE LEFT AND ABOVE, ARE INCLUDED SO YOU MIGHT HAVE A COMPLETE LISTING OF PINS FOR THE PARALLEL AND SERIAL (RS232) INTERFACES.

TELECOMMUNICATIONS

Following article is compiled from several sources:

1. Joe White, K-Town 99er, COMMUNICATIONS, 2/88
2. Danny Nelson, LA 99ers, UNDERSTANDING THE MODEM, 5/88.
3. Fred and Amy Mackey, Pittsburgh U/G, Feb 87, (SERIES).
4. Jon Hodges, Dallas 99er Interface, ON RS232.
5. TI RS-232 Card Manual and Schematic

Editors comments/additions/changes are in [...]

Joe White: COMMUNICATIONS:

The two biggest uses for Modems are probably ELECTRONIC MAIL and DATA TRANSFER. Either one can be very exciting if you have the capability. A few things you need are: Computer, RS232 interface, Modem, Phone, Telecommunications program, and perhaps a program to archive and de-archive files.

For electronic mail (sending and receiving messages) you do not need the archiver. You send messages locally by calling one of the many bulletin boards around town. When you first call you will have to be verified before you have full access to the board. Some boards allow you to post and receive mail without being a verified user and some do not. The verify process differs with the board and the host program. Some will have you hang up and immediately call you back, others may allow [limited] use the first time and verify by phone or mail at a later time.

Some reasons for verification: Some boards have different sections for computers other than the host system. Some have adult sections. Some allow game playing with a specified number of calls or plays per day. Some have an upload / download ratio that must be watched. More importantly, the sysops [are] using their time and equipment and fully have the right to know who is using or abusing it.

Be prepared to give your real name, city, state and phone number. And you will have to have a password ready. Don't use your initials or something simple, but remember it--you will have to use it each time you "log on". Some boards also assign you a number and you will have to use both to gain access. And some boards [allow you to] use a "handle" too. When you post a message, it automatically affixes your name or your handle to it. On boards which use handles, the system opertator (sysop) is the only one who knows who you are. It is best to use the same handle on local boards -BUT- always use a different password. I keep a list of the boards I call with my number, password, and handle: it's easy to get them mixed up. Using the same "handle" lets others leave messages to you on different boards. These boards stay pretty busy and it's sometimes difficult to get through. When you leave a message, you have the option of making it public or private. Private ones sometimes have the option of a password too. If someone has left a message for you, you are told when you log on. Some boards remind you to kill old messages while others rotate them off automatically when the message base gets full.

Most boards offer expert and novice levels with the latter having menus to choose from, rather than just a row of letters at the bottom of the screen. You can toggle them usually by pressing "X" [or "/", etc]. If you want to Get Off, try "G" or "O". If you really panic, just sit there. After 60 or 90 seconds of inactivity, the board will automatically cut you off.

You will find some boards "friendly" while others are sort of "Stuffed shirt" type. They also use a lot of graphics that you will not be able to see with the TI, therefore, some of the messages may look a little 'funny'. But, there is information and knowledge to be had on both types. Subjects of conversation run the gamut. And you can just read the messages and log off but before long you will want to join in on something or another. These people are just trying to make use of their computers, JUST LIKE YOU.

[Ed. NOTE: Joe is referring to the Boards run by non-TI-oriented groups. There are many, many Boards and Databases not dedicated to or run for (or by) a particular computer group. These are the subject- or use-oriented Boards ofwhich there are about 400 in the Houston area, plus about 50 computer-dedicated Boards.]

[On some boards,] after verification, there are "doors" you can go through. Some lead to "game rooms" with chess, D and D, etc., others to conferences on topics like Forth and Desktop publishing and the like. You might want to try some of those. [end excerpts of article]

Danny Nelson: UNDERSTANDING THE MODEM:

A modem is an electronic device that allows your computer or terminal to communicate with other computers and terminals using standard telephone lines. In order for computers or terminals to communicate with one another, they have to be "speaking" in a language each computer understands. And in order for phone lines to carry that language, the electronic signal coming out of the computer must be transformed into the format used by the telephone system.

The receiving computer, the one you communicate with, also has a modem. The receiving computer's modem translates the words of data [in "phone" format] back to the digital format the computer understands.

The word "modem" is actually shorthand for MOdulator-DEModulator, and this abbreviation really explains the basic technology of communications. On each end of the conversation, a modem takes the [out-going] digital signal from the computer and modulates it to an analog signal [audio] so that the telephone lines can carry it. At the other end, each modem demodulates the signal, converting it back to digital form for the receiving computer.

As soon as the other computer [modem] you are calling answers the line, it sends a signal that it has answered the phone. This signal is called the carrier signal and lets each computer know the other is almost ready to start a conversation.

Immediately after the carrier signal is sent the two computers begin a process of checking each other to see if they are both able to communicate,. This process of checking is called handshaking, because the two computers are [agreeing] on the common language and basis for communication. If one modem is saying "Hello" and the other "Bon Jour", you'll need to switch the setting on one of the modems to assure clear communication. There are no right or wrong settings for microcomputer communications and modems, but it is critical that both parties have matched settings. Cont.>>>

Communications software is the set of instructions that enable computers with modems to talk to one another. There are a number of different communications software packages available. These include MASS-TRANSFER, [FAST-TERM, TELCO, and even the venerable TE-II module]. [Many Telecomm packages for other computers, including "Apple-talk", Procomm, etc, share common elements of procedure, called "Protocol", with the TI programs.]

Once you are all properly matched up, you're ready to begin communicating. At this point, you're considered to be on-line. On-line means you're properly connected and engaged in microcomputer communications.

Usually, after you are "on-line", you will make one of three communications moves. You will:

* Send a "data file" from your computer to another computer (called uploading). A data file is a program, DV-80 file, or any other information that can be transmitted to a BBS, Computer Service, a friend or club member.

* Receive a data file from another computer to your computer, (called downloading). This is the reverse of uploading. If the data is listed in the "Download" or "Files" section, you should be able to download it.

* Carry on an electronic conversation with someone at another computer [either directly, or by leaving / reading messages from that section of the BBS]. That is, send messages back and forth via your computer. [end excerpts]

To perform these tasks, the computers, modems, and software (telecomm and BBS) all needs to be "configured" and specific instructions passed, sometimes between computer and modem, and sometimes between the computers, through the modem-modem link. The instructions or Commands are used to set the terminal software and/or BBS software to the same set of 'rules' or protocol instructions for proper functioning between the two computer 'terminals'.

Fred and Amy Mackey:

GETTING ON LINE: AN INTRODUCTION TO TELECOMMUNICATIONS:

There is one more thing you need before you can transfer data between computers - the software or telecommunications program designed especially for your computer. This program directs your computer on how to use the modem and how to transfer information between the two computers. For the TI-99/4A most telecomm. programs will require 32k memory and either the E/A or X-B modules.

Any two computers using compatible programs can communicate. Compatibility occurs by setting the "configuration parameters" of your telecomm. program to match that of the computer you are calling, or the "host" computer. When you run your ...program, it will ask you to set most or all of the following. (Some programs will automatically set them for you [or] you will be given the option to change them according to your needs:

1. Baud Rate - 110, 300, 600, 1200, 2400 -- This is the number of bits per second [not Bytes] that can be sent or received. The setting for this parameter depends on the modem and BBS capability, usually 300, 1200, 2400.

2. Data Bits - 7 or 8 -- This is the number of data bits you are going to send for each character (byte) being sent. (TE-II uses 7 bits/byte, X-Modem uses 8 bits).

3. Parity - Odd, Even, None -- Parity is a simple means for detecting errors which might occur during data character transmission. It is only in effect during 7-bit operations--'None' is the setting for 8-bit operations.

4. Serial Port of Modem - 1 or 2 -- This number specifies which "port" or plug of the RS232 the modem is connected to.

5. Printer Device Name - PIO or RS232 -- Device name of the printer you are using. You do not necessarily need a printer to run a telecomm package.

6. Screen Width - 40 or 80 [columns in display]. The screen width used with the TI is 40. Some packages will let you use a lesser number to compensate for monitor or TV screens differences in display size and clarity.

7. Duplex - Full or Half --This controls the source of the characters which appear on your screen. Half duplex assumes 'one way' transmission (no echo of characters sent) and therefore local display of characters being sent is used. Full duplex assumes constant 'two way' transmission and 'echo' of all characters back to the sending terminal, and it is this 'echoed' character which is displayed, thus constantly indicating the quality of both directions in the link.

If your communications attempts get only garbage, or partial garbage, the parameters are probably incorrect. [Ed. NOTE: One further note: The "originating" modem does not originate the carrier tone. The "answering" modem answers with a carrier tone, which the "originating" modem then responds to with a different carrier tone. 300 Baud modems use tones which remain steady when the link is not transmitting, while 1200 bps and higher modems sound like scratchy or noisy tones, with no distinguishable difference when active or idle.]

Part Two: A Guide to Buying Modems and How to Hook Them Up:
by Fred and Amy Mackey:

When buying a modem, there are five basic features you should look for, which are as follows:

1. Direct Connect ## - which means it plugs directly into a modular telephone jack, eliminating all outside noise. The other type is the acoustic modem, the only advantage to it being that it can be used with any STANDARD phone handset, even if a modular jack is not used on that phone hookup [as it often is NOT in motels, real old homes, etc]. (Note# - if your home does not have modular jacks, you can purchase an adapter to make the conversion for about $5.00).

2. Baud (speed) Rating - This is how fast the modem can send and receive data. A 1200 BPS modem is four times quicker than a 300 BPS modem, but costs about [4] times as much. (Note# - although you can receive information four times faster, Compuserve and most "databases" charge extra to send information at this speed.)

[Ed. NOTE: Note also, that all higher speed modems can be used at the lower speeds, and most either have a "speed switch" on the case or can be commanded to the desired speed by software Commands. Many will switch automatically to match the "answering modem" speed, and the 2400 and higher modems will usually also automatically switch to a lower speed if line conditions do not support the high speed transmission. Prices currently (Oct.88) are running: 300 Baud - $25 (used only, no longer being made); 1200 BPS - $75 to $150 for good, Hayes compatible direct-connects; 2400 BPS modems are about $150 up; and 4800 BPS units are $300 to $750. Ed] Cont. >>>>

3. Auto Originate (Dial) ## - This feature causes the modem to dial the number you have entered from the computer keyboard, as opposed to you dialing the phone yourself. (Note! - The real advantage to this is that the modem will also have the ability to keep trying the number if it is busy, which frees you up from dialing over and over.)

4. Auto Answer ## - This feature is necessary if you want to have the ability to receive calls via your computer. (Note! - If you ever want to set up your own BBS, then this feature is a must.)

[Ed. NOTE - all modems can be used to 'originate' calls; many can be set to 'answer' manually or automatically and so act as a 'host' terminal--so long as one modem is in the 'answer' mode and the other in the 'originate' mode on the same speed, they can make the connection, modem to modem.]

5. Full Duplex ## - This is the ability to send and receive signals at the same time. Simply put, the database computer is constantly asking your computer if it is ready, and your machine is constantly responding 'yes'. Without full duplex, there would be a line turnaround delay between each question and answer. (Note! - Full Duplex can be compared to having a conversation on a telephone, as opposed to Half Duplex which can be compared to having a conversation on a CB Radio).

[Ed. Note: the items above marked ## are part of the standard features of the "Hayes (tm) Compatible" modems, along with the standard set of "Hayes Commands" used by the computer to direct the activities of the modem, and the standard hookup connections configuration. Almost ALL 1200 BPS modems claim Hayes compatibility--and they are, to the extent needed by any TI applications. Some of the more exotic features and commands are only of use with highly specialized software (usually for the IBM) and for special installations such as amateur radio repeater hook-ups, and these features are sometimes MISSING in some of the "Hayes compatible" units. Also, and obviously, some modems just plain WORK better than others, given equal line noise, etc. Best advice is to find someone who can give you an actual 'I used it' summary or review of the unit before you buy. Please note that all the newer 1988 models of 1200 BPS modems are substantially BETTER in performance and features than the ones of just a year or so ago, and a lot CHEAPER, due to technology advances, but prices probably won't go down much more since chips are going UP.]

Any modem [Well, almost any external modem] can be used with any communicating computer. However, serial cards (and software packages) are designed for specific computers. To hook up the modem, you need to have a serial card [port]. The job of the serial card, simply put, is to take the internal language of your computer, which is spoken in 8 bit "words" [bytes] and send the "words" out of the computer to the modem one bit at a time, instead of 8 at a time ("serial" for transmitting bits individually in a series, and "parallel" for transmitting bits in parallel, 8 at a time).

[Ed. note: serial ports are pretty universally 8-bit data, regardless of the internal "size" of the processor. Another form of "dedicated" modem is the "internal" unit, designed to plug directly into the "bus" of a particular type of computer, such as the IBM clones or Apples].

There will be a "port" or plug on the serial card, and a port on the modem. Now, just because you bought a modem, that doesn't mean it comes with a cable to connect it to the serial card in your computer! [Or that the cable it came with will work, or even plug into the port! In fact, the 99/4A is cable incompatible' with standard RS-232 cables for modems. Ed.] [end Mackey excerpts]

RS-232 Connections for Modems

The 4A PEB RS-232 Card has three ports, on two plugs. One plug is the 36-pin "PIO" port for parallel output, TTL 5 volt logic signals, primarily to a printer. The other two ports are the serial ports addressed as "RS232/1" and "RS232/2", with RS232 type +/-12 volt signals for both output and input, and are pin-accessible on the DB-25 female plug at the rear of the card.

USUALLY, a DB-25 connector on a computer serial card is set up as a "Data Terminal Equipment device" (DTE), and will hook up to a modem "Data Communications Equip." (DCE), on a straight-across basis: Pin 1 to Pin 1, Pin 2 to Pin 2, etc. HOWEVER, Tx. Instr. decided to set up their ports as DCE devices, to make it "easier" to hook up to a serial Printer such as the MX-80, which is configured as a DTE, using a "one-to-one" 25-pin cable. Which is why the "Impact Printer" will work with the TI and some computers using that cable it came with, and not with others (Since MOST companies like Tandy (tm) set their ports as DTE and their printers as DCE, or played cabling games with the whole thing to try to convince you not to stray from their brand. "See, if you just bought OUR printer and OUR cable to go with OUR computer...." So we have an immense problem as regards hooking up to the so-called "standard" RS-232, of which there are at least 100 variations.

Luckily, around 1978 a guy named Dennis Hayes cornered the market on direct-connect modems, and the system he was using has become the default standard for almost all modems, since "Hayes compatible" means plug compatibility also.

########## PRINTER CONNECTIONS:

Overleaf is the plug Pin-outs for hooking up some of the RS232 devices, such as modems. For a "universal" cable for most any RS232 printer, you should only need a cable as follows:

Printer:	Pin 1	--	RS232:	Pin 1
	Pin 7	--		Pin 7
	Pin 20	-		Pin 6
--- PLUS				
either:	Pin 2 + 3	-	Port 1	Pin 3
for RS232/1	Pin 5 or 6	-		Pin 20
---				
or:	Pin 2 + 3	-	Port 2	Pin 16
for RS232/2	Pin 5 or 6	-		Pin 19

########## >>>>>>>cont.>>>

********** MODEM CONNECTIONS:

```
The "standard" 1200 BPS          TI RS232 card pins:
   "Hayes" modem pins:
Pin  1 --  Frame Ground  ----- Pin  1 -- Ground
Pin  2 --  Transmit Data <<<<< Pin  3 -- RS232/1 Data Out
Pin  3 --  Recived Data  >>>>> Pin  2 -- RS232/1 Data In
Pin  4 --  N/C  ##             Pin  4 -- N/C
Pin  5 --  Clear to Send# >>|<< Pin  5 -- CTS,(CRU bit out)
Pin 20 --  Data Term Rdy <<<<< Pin  6 -- Data Set Ready1/2
Pin  7 --  Signal Ground  ----- Pin  7 -- Ground
Pin  / --  norm. not used   << Pin  8 -- Carrier Detect #1
Pin  9-11  N/C                 Pin  9-11 N/C
Pin  /  --     (used for TI  << Pin 12 -- Carrier Detect #2
Pin  /  --     RS232/2 port) << Pin 13 -- CTS#2, CRU bit #2
Pin  /  --      *  *  *  *   >> Pin 14 -- RS232/2 Data In
Pin 15 --  Transmit Clock >>   Pin 15 -- N/C
Pin 16 --  N/C               << Pin 16 -- RS232/2 Data Out
Pin 17 --  Receive Clock  >>   Pin 17 -- N/C
Pin 18 --  N/C                 Pin 18 -- N/C
Pin 19 --  N/C               >> Pin 19 -- Data Term Rdy #2
Pin  8 --  Carrier Detect +12v> Pin(19)-- Used by BBS only
Pin  6 --  Data Set Ready >>>>> Pin 20 -- Data Term Rdy #1
Pin 21 --  N/C                 Pin 21-25 N/C
Pin 12 --  High Speed Ind.>>   Pin /  -- Used by BBS only
           (+12v on 1200 BPS)
Pin 22 --  Ring Indicator >>   Pin /  -- Used by BBS only
           (+12v on rings)
Pin 24 --  Transmit Clock <<   Pin /  -- from synchronous
                                         terminal only)
Pin 13,14  N/C                 Pin // --
```

****

Actually, to make a working MODEM CABLE, only 6 wires need to be hooked up, for RS232/1 Port:

```
   MODEM:          RS232 CARD
    Pin  1   -----    Pin  1
    Pin  2   -----    Pin  3
    Pin  3   -----    Pin  2    --- Can be
    Pin  6   -----    Pin 20      | a single
    Pin  7   -----    Pin  7      | plug for
    Pin 20   -----    Pin  6      | accessing
and for the Port RS232/2:         | both Ports
   MODEM:          RS232 CARD:    | RS232/1 +
    Pin  1   -----    Pin  1      | RS232/2
    Pin  2   -----    Pin 16      | via two
    Pin  3   -----    Pin 14      | cables into
    Pin  6   -----    Pin 19    --- two RS232
    Pin  7   -----    Pin  7        devices.
    Pin 20   -----    Pin 12 (or 6)
```

****

Note that you CANNOT make a single cable to hook up both Port 1 and Port 2 to a single modem, but you CAN make a double cable which will hook both PORTS, through a single plug at the card, to two separate devices, such as a printer and a modem, sharing ground pins 1 and 7 at the Card-end plug.

This wiring hookup shown for a modem will evade many of the problems people have encountered with the "switch settings" for these modems, which have often been "fudged" to correct for improper cabling, thus leaving the modem partly "out of control" by the card. On the other hand, it is possible to set the switches to "lock on" the Carrier Detect and DTR signals on the Modem, and loop Pin 6 back to Pin 20 at the RS232 card, and ONLY hook up: Pin 1 to Pin 1; Pin 2 to Pin 3; and Pin 3 to Pin 2; on a THREE WIRE cable, and have the modem work, though without proper status display, etc. Whatever "turns you on."

Switch Settings: Another area of confusion. READ the manual with your modem. With a proper cable you want the DTR and the Carrier Detect and the CTS signals from the LINE, not locked on. You want Commands Recognized, Active; Verbal Display of Status Signals, Active; and Display Commands Active. You probably want Auto Answer Defeated; and Single Line selected. You want the Bell (Not CCITT) system; you may or may not want or be able to pre-select the speed default. WITH AN IMPROPER CABLE, you will have to LOCK ON the DTR, CD, and CTS signals, probably. If your modem DOES NOT WORK like your friends, using his cable, it does not mean your modem is bad. Your switches probably DO NOT MATCH his settings in function. PLEASE NOTE that "ON" on a switch DOES NOT MEAN THAT FUNCTION IS "ON". SOME "ON" positions activate a "DEFEAT" of that function, therefore, "OFF" is sometimes "on" on modem functions!!!! ENUF? Clear as mud, huh? GET HELP.

Please note that TI's pins #5 and #13 (CRU extra bits) would have been ever so much more useful if they had been available as "input" bits, for sensing such things as the "Ring", "High speed", "Carrier detect" signals, which NOW have to be read by such places as the cassette port! It actually does no good to hook up things such as pin 12 to pin 12, since the TI card cannot READ at pin 12, but is actually simulating an output AS IF IT WAS A COMMUNICATION DEVICE. Pin #19 CAN be read and is sometimes used with BBS systems to read for Carrier or for Ring or High Speed. With proper utilization of the "smart modem" status signals and switching, only the Carrier Detect needs to be monitored electrically, anyway. ///end Telecomm Oct88--rtl

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GLOSSARY of Terms:

- **Bit** -- One "bit" or piece of data, one position in a byte.
- **Byte** -- Usually 8 bits, together as a GROUP, to create a symbolic piece of information.
- **ASCII** -- American Standard Code for 256 8-bit symbols used for all text transfer.
- **Baud** -- The rate of transmission of data signals. May or may not equal BPS.
- **BPS** -- Bits per Second. The rate of transmission of data bits. On 300 BPS, the audio is at 300 BAUD. two-state, for one "Bit per Baud", equaling 300 BPS. On 1200 BPS, the audio signal is at 600 BAUD, quad state, for 1200 BPS. On 2400 BPS, the audio is at 600 Baud, 8-states, for 2400 BPS rate. The modems for higher speeds (4800, 9600, 19200,etc) mostly function differently, and in fact function as processor-to-processor audio links, with input/output to RS232 ports.

END--HUG NEWS, OCT 88, "TELECOMM/1. TECHNICAL" ///rtl

ATTENTION ALL TI USER GROUPS AND CASSETTE USERS

The popular series, "Getting The Most From Your Cassette System," written by Mickey Schmitt for the TI cassette-based user, is now available directly from the author in an all-new format.

What is this all-new format?

This all-new format is a 52-page, professionally typeset, loose-leaf booklet (without the holes), containing all of the original articles which first appeared in the West Penn 99'ers newsletters (though all have since been updated, corrected, and improved). In addition, new material that surfaced since the release of the original series has been added, making this booklet as complete as possible for the TI cassette-based user.

Why the loose-leaf pages (without the holes)?

This particular format was chosen specifically so that user groups who purchase a copy of this booklet, directly from the author, could use their copy as a "master copy," making additional copies as needed for their own club's membership. Thus, a user group need only purchase one copy of the cassette booklet, the author will benefit by the sale to the user group, and the user group's members will all be able to benefit by their club's purchase.

What more can be said about this new cassette booklet?

This cassette booklet provides an excellent opportunity for all user groups to provide a source of help to those club members who are still using a cassette-based system, as well as providing a source of help to those who are just joining a user group. The future existence of all TI user groups is dependent upon meeting the needs of the membership. This booklet is intended to fulfill one of those such needs.

To order your copy directly from the author, please send $9.95 plus $2.50 shipping and handling in the USA, or $9.95 plus $4.00 shipping and handling outside the USA (in US Funds) to:

Mickey Schmitt
196 Broadway Avenue
Lower Burrell, Pa 15068

Please Note: This copying agreement is not offered to any commercial company, nor are user groups given permission to distribute copies of this booklet outside their own membership.

TRANSFERRING SCOTT ADAMS ADVENTURES FROM CASSETTE TO DISK

BY CARL CHIARENZA
Pittsburgh User Group

When the word "cassette" is mentioned, a lot of moans and groans can be heard, by both cassette users and disk users alike, and many, for good reason.

As most of you know, the Scott Adams Adventure Series is available either on disk or cassette. Unfortunately, for those of you who purchased one of these games on cassette, and have upgraded to a disk system, you may have found out that it was next to impossible for you to transfer your Scott Adams adventures over from cassette to disk.

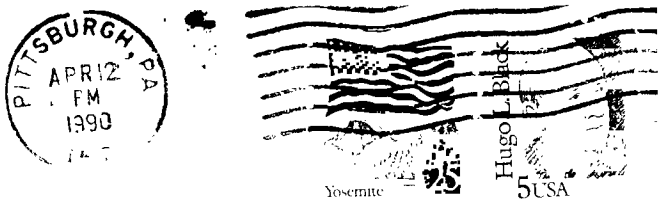
Fortunately, there is a solution to this problem, even if you don't own the Adventure Editor, which was distributed by Tex-Comp.

Believe it or not, you can accomplish this task in less than 10 minutes using the Tunnels of Doom module.

Just "load" the Scott Adams adventure game that you wish to transfer, like you would any regular TOD game, and as soon as it is finished loading, select the "save" option, and immediately save it out to disk. It's as simple as that!

The only drawback using this method is that any adventure module game which is larger than 52 sectors will not "load" into the TOD module, so you will be out of luck when this occurs. Also, you will notice a few odd characters when you go to play your converted games. Do not be alarmed, as this is normal. Your games will execute properly, without any errors, and having to accept a few strange characters on your screen will seem like a small price to pay in order to have your Scott Adams cassette-based adventures now available to you on disk.

If you have any questions, you may get in touch with me thru the Pittsburgh User Group BBS at 412-341-4820, 8,N,1, 3/12/2400 Baud, 24 Hours a day, 7 Days a week. My user ID is #66.



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