

# YESTERDAY'S NEWS

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## 30 Years Ago...

Historical Information taken from Bill Gaskill's TIMELINE

### MARCH 1990:

MICROpendium publishes issue Volume 7, Number 2, consisting of 48 pages.

T.I.C.O.F.F. takes place in Roselle Park, NJ. on March 17th.

TINET on DELPHI advertises for subscribers in MICROpendium.

Asgard Software officially releases Spell It!, a new Spelling Checker for the 9/4A. Jim Reiss is the author. This is only the second such utility ever written for TI-Writer. SPELL IT! comes in versions for SS/SD drives, DS/DD drives, and hard disks operating under Myarc's Hard and Floppy Disk Controller (HFDC).

Texaments consolidates operations at the Patchogue, NY office, moving all phases of their business out of the Vaphank, NY location.

Bud Mills releases ROS v8.0 for the HORIZON RAMDISK, written by Gary Bowser.

Art Green, author of Macro Assembler and the TI-Writer RE-Writes, releases a Multiplan enhancement that speeds up the original Microsoft program. The enhancement also provides a SuperCart version.

Joe Delekto and Jon Dyer release TMS9900 CLIPBOARD, a monthly diskazine of assembly language tutorial information and programs.

Bill Gaskill releases Membership Manager, a TI-Base application designed for computer User Groups to manage membership rosters.

Keith Bergman starts KBCC, Keith Bergman Computer Concepts, in New Philadelphia, OH. New products offered in KBCC's new catalog include Spinner, a wheel of fortune

INSIDE



INFORMATION

THIEF .....	Cover
TI CLASSROOM - Tigercub Tips #10 .....	Page 1
BUNYARD HARDWARE MANUAL .....	Page 2
TYPWRITER .....	Page 3
PRESCAN IT! .....	Page 5

type game, Memory Motel, the object of which is to place alien guests in their proper room, and QUIZZARD, a quiz making and taking utility.

The Boston TI Fayuh date is moved to May 5th, at a different site than originally planned. When the fair does come off it will be poorly attended and not well organized. The lack of Peter Hoddie and his organizing skills is painfully obvious.

MOOS .97h for the Myarc Geneve 9640 is released. YN



## THIEF

MICROPENDIUM  
APRIL 1984  
Volume 1, Number 3

By John Koloen

REPORT CARD	
PERFORMANCE	A
EASE OF USE	A
DOCUMENTATION	C
VALUE	B
FINAL GRADE	B



Thief is a graphic adventure with a two-dimensional perspective. The object of the game is to break into a house and steal a million dollars that is hidden in a safe. You must do this without setting off any alarms.

Performance: The game starts with Stelthful [sic] already in the front room of a two story summer home. Stelthful Smith, the thief, your alter ego, is represented by a black cursor that the player moves about the screen with the joystick.

SEE "THIEF", PAGE 4

# TI CLASSROOM



TIPS FROM THE  
**TIGERCUB** NUMBER  
By Jim Peterson 10

Last month's challenge was to write a one-line program in Extended Basic which would take only 70 seconds to scramble the numbers from 1 to 255 into a completely random sequence without duplication. Well, you do have to shove it, but:

```
100 FOR J=1 TO 255 :: M$=M$&CHR$(J):: NEXT J :: DIM N(255)
:: RANDOMIZE :: FOR J=255 TO 1 STEP -1 :: X=INT(J*RND+1):: N(J)=ASC(SEG$(M$,X,1)):
M$=SEG$(M$,1,X-1)&SEG$(M$,X+1,LEN(M$)): NEXT J
```

The challenge this month - can you unfurl the U.S. flag (49 stars), from the mast out, in 2 lines of Extended Basic?

A tip for you disk drivers flip and back up! Disk sectors don't go bad very often, but it does happen, and the program or file that you lose is usually the one that you can't replace. So it pays to make a backup, but then you need twice as many disks, and disks do cost money. Some folks say that a flipped disk is more likely to go bad, others don't think so, but anyway it doesn't happen very often. So if you back up your program on the flip side of another disk, the chances of both going bad are almost nil, and it hasn't cost you a penny.

And don't spend \$20 for one of those "Disk Flipping Kits". They consist of

a template and a paper punch. You can make a template for nothing from the cover of an old disk that's gone bad. And the paper punch you can buy in an office supply store for about a dollar - try to find one that has a plastic protector on the lower jaw to catch the punchings and to protect the disk. A square write-protect notch is not necessary, a half round one works just as well. A bottle of typist's "white-out" is handy for making the spots to be punched.

Do you want that "arcade effect" in your musical tones or single-note music? Instead of:

```
CALL SOUND(D,N,U) write
CALL SOUND(D,N,U,N*1.01,U)
```

Sombdy actually wrote me a letter and said that they liked the Cryptocoder in the last Tips. So, since Word-search puzzles are so popular as space-fillers in the newsletters...

```
100 CALL CLEAR
110 REM - programmed by Jim Peterson of Tigercub Software, 156 Collingwood Ave., Columbus, Ohio 43213
120 PRINT " TIGERCUB WORDSEARCH MAKER": : "Make your own wordsearch": "puzzles, Use the arrow Keys"
130 PRINT "and W,R,Z, and C Keys to move": "the asterisk around. Hold": "down the CTRL Key when you"
140 PRINT "want to type a letter. When": "you have finished putting in": "words, press ENTER and the"
```

```
150 PRINT "computer will finish the": "puzzle. Then if you want to": "save it on tape or disk,": "press P.": : : :
160 PRINT : "Press any Key to start."
```

```
170 CALL KEY(0,K,ST)
180 IF ST=0 THEN 170
190 CALL CLEAR
200 DIM L$(24)
210 R=12
220 C=16
230 CALL HCHAR(R,C,42)
240 FOR J=5 TO 12
250 CALL HCHAR(J,J,ASC(SEG$("TIGERCUB",J-4,1)))
260 NEXT J
270 CALL KEY(5,K,ST)
280 IF ST<1 THEN 270
290 ON POS("WERSDZX"&CHR$(13),CHR$(K),1)+1 GOTO 430,300,340,330,310,370,390,400,360,460
300 R=R-1-(R=1)
310 C=C-1-(C=3)
320 GOTO 410
330 C=C+1-(C=30)
340 R=R-1-(R=1)
350 GOTO 410
360 R=R+1-(R=24)
370 C=C+1-(C=30)
380 GOTO 410
390 C=C-1-(C=3)
400 R=R+1-(R=24)
410 CALL HCHAR(R,C,42)
420 GOTO 270
430 IF K<129 THEN 270
440 CALL HCHAR(R,C,K-64)
450 GOTO 270
460 FOR R=1 TO 24
470 FOR C=3 TO 30
480 CALL GCHAR(R,C,G)
490 IF (G<>42)*(G<>32) THEN 50
500 RANDOMIZE
510 CH=INT(26*RND+65)
520 L$(R)=L$(R)&CHR$(CH)
530 CALL HCHAR(R,C,CH)
540 GOTO 560
550 L$(R)=L$(R)&CHR$(G)
560 NEXT C
570 NEXT R
580 CALL KEY(3,K,ST)
590 IF (ST=1)+(K<>80) THEN 580
600 PRINT "SAVE TO": "(C) CASSETTE?": "(D) DISK?",
610 INPUT Q$
```

```
620 IF Q$<>"D" THEN 660
630 INPUT "NAME OF FILE? ": Q$
640 F$="DSK1."&QF$
650 GOTO 680
660 IF Q$<>"C" THEN 610
670 F$="CS1"
680 OPEN #1:F$,INTERNAL,OUTPUT,FIXED 192
690 FOR J=1 TO 24
700 IF INT(J/6)*6=J THEN 730
710 PRINT #1:L$(J),
720 GOTO 740
730 PRINT #1:L$(J)
740 NEXT J
750 CLOSE #1
```

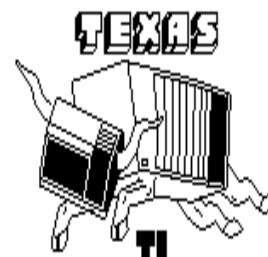
Of course, if you're one of those lucky folks with a printer.....

Here's another musicmaker for you....

```
100 REM TIGERCUB COMPOSER
110 RANDOMIZE
120 DEF A=VAL(SEG$(T$,INT(3*RND+1)*3-2,3))
130 FOR P=1 TO 4
140 ON P GOSUB 200,220,240,200
150 FOR J=1 TO 4
160 CALL SOUND(-999,A,5,A*2,0,A*4,10)
170 NEXT J
180 NEXT P
190 GOTO 130
200 T$="131165196"
210 RETURN
220 T$="123147196"
230 RETURN
240 T$="110131175"
250 RETURN
```

OUT OF MEMORY IN LINE 250

HAPPY HACKIN'  
Jim Peterson



# BUNYARD HARDWARE MANUAL

MICROPENDIUM  
OCT 88, Vol 5, No 9

By Tony Lewis

## REPORT CARD

EASE OF USE	A
DOCUMENTATION	A
VALUE	A+
FINAL GRADE	A

I freely admit that I am a hardware hacker who has cut his teeth on the T199/4A system, and am still learning more about this "orphan" as time goes by. Years ago, I had purchased the Texas Instruments "Technical Data" manual that covers the console and PE Box, but found it wanting in explaining several hardware aspects of the system. Well, the "Hardware Manual for the Texas Instruments 99/4A Home Computer," by Michael Bunyard, is available to fill in most of the missing information that hardware hackers have been searching for. Mike Bunyard is a former Senior Member of the Technical Staff at Texas Instruments, and his manual is the closest that most of us will come to getting inside the file drawers of the 9914A design team.

**Documentation:** Chapter 1 introduces the reader to the organization of the manual, and lists several other sources of information relating to the 99/4A and the chips used in it. Chapters 2-3 cover the various subsystems of the 4A, such as video, RAM, cassette interface and the 9900 itself. Each of the main subsystems is covered in varying levels of detail. There is a large section in Chapter 2 on GROMs that more than justifies the cost of the manual. It explains (indirectly) how devices like the GRAM Kracker and GRAMulator can override the console GROMs: GROMs are made by the PMOS process, not TTL, and are therefore poor line drivers of the data bus. This means that a TTL compatible memory system with the appropriate bus driver chip can "force" the CPU to read its data and not the GROM's data, since the GROM data driving capability is much weaker. Most of the other information concerning data buses, memory maps, and CRU allocation are covered better in the TI Technical Data Manual.

Chapter 4 is on the "Pitfalls" of designing equipment or assembly programs for the 99/4A and PEB system. This is valuable information to help developers avoid some of the idiosyncrasies built into the hardware that might cause an otherwise well-developed hardware project not to function properly. Some of the information is purely hardware. For example, the pinout of the Command Module Port is not the

same as the 36-pin connector on the motherboard. Other information relates to assembly programs, such as minimum wait times between accesses to the VDP or GROMs.

The next couple of chapters cover the TMS9900 microprocessor's control, data and address signals, interrupts, CRU functions, and instruction set. You should note that the description of the signals is oriented towards their use in the design of electronic circuits and do not necessarily cover "all you need to know" about the 9900 signals or their timing relationships. The architecture of the 9900 as it relates to CRU and byte/bit manipulation instructions is covered adequately. About 8 pages in Chapter 6 are used to lightly touch on assembly language instructions. However, this subject is covered better by some of the assembly texts already on the market. Chapters 7-11 cover the Peripheral Expansion Box and the four PEB cards released by TI: the 32K memory expansion, RS232, P-Code, and disk drive controller. The old "sidecar" equivalents are also covered wherever applicable.

The chapter on the PEB isn't much, but each of the four expansion cards is covered in detail. As with other chapters, the information relates to the electronic logic and architecture of the card, and helpful data on various signals and how they are used. The software (aka DSRs) pertaining to each card is not discussed. Schematics of the cards are not provided in the manual, but may be purchased separately from TI. I strongly recommend that if you are interested in studying any of these cards in depth, that you have the schematic of the card prior to reviewing its description in the Hardware Manual; otherwise you'll get lost very rapidly.

Appendices A-C cover the pin definitions for the Command Module Port, 44-pin side port and PEB, respectively. Appendix G is a schematic of the motherboard that doesn't appear to contain any more (and in some cases, less) information than the schematics in the TI Technical Data manual.

A neat and welcome section is the Extended BASIC module schematic and description in Appendix F. The most valuable appendices are D-E, which cover the design basis and schematics for a GROM simulator. I have not (yet) tried to build the circuit, but it certainly looks like everything you need is covered in the schematics and text. The schematic uses an EPROM for memory, but a GRAM simulator could be made by use of a static 8K RAM chip and the addition of a few control lines.

**Ease of Use:** As you may have already noted from my previous comments, the Bunyard Hardware Manual is written for people who like to hack around the 4A and its PEB cards. Don't go looking for help on assembly programming or DSRs here; consult the many books and MICROpendium articles available on the software side of the TI computer.

The Hardware Manual is an intermediate to high level text on the electronic design of the 99/4A system, which means that electronic novices should be forewarned that its author assumes that you have more than a passing knowledge of how modern microprocessor-based circuits function. But don't let that discourage you if you are interested in getting your feet wet in the TI hardware world because several introductory manuals and books are listed in the first chapter to help bring you up to speed.

The text is, in my opinion, very readable, and not as dry as you would expect from an engineer (like myself). The manual has plenty of schematics and some interesting cartoons at strategic locations. The schematics are hand-drawn and the text is not typeset, but I suspect that you would be buying this manual for the "unavailable anywhere else" type of information, and not just pretty pictures.

If you already have the TI Technical Data manual, should you buy the Hardware Manual? Definitely! The TI manual was put out at the last minute (1983) to allow third party developers to work with the previously closed 4A system, but it was obviously just too late to help. The TI manual is quite dry and is oriented toward professional programmers and designers, whereas the Hardware Manual is more like a friend who sits down and explains how the computer is put together. Oddly enough, the two manuals compliment each other, with relatively little information duplicated between them.

Value: At \$19.95 each (\$24 outside the U.S.), the Bunyard Hardware Manual is worth the cost if you'd like to have some help in exploring the 99/4A, developing modifications, or add-on cards. The manual comes in a multi-ring binder, like the TI manual, which makes for a sturdy package that's easier to read. And at 140 plus pages, you probably won't be able to read it all in one sitting.

Final Grade: Despite some minor gaps in certain areas and a light discussion of the 9900 assembly instructions, the Hardware Manual is just the ticket for TI hardware hackers. It contains information that is not available outside of Texas Instruments itself, and it is presented in a readable format. Just about anything you'd like to know about the T199/4A, its PEB and expansion cards, from an electronic hardware viewpoint, is in the book. Well written, with a wealth of useful schematics, this manual is an unbeatable asset, especially when used in conjunction with the TI Technical Data manual and expansion card schematics. YN



## TYPWRITER



99'er  
August, 1983  
Vol. 2, No. 10  
By Walter Hego

The price of word processing is dropping so rapidly, it's hard to keep up with it. Printers are turning up at prices that appeared impossible just a short while ago; this puts word processing hardware within reach of a good many Home Computer owners for whom it was once just a pipe dream. These people will now be looking around for inexpensive word processing software to complete their systems.

Typewriter, a software package from Extended Software, may be precisely what they're looking for. This program allows you to enter text into the computer, then save, recall, edit or print that text. It also provides a number of simple commands which can be inserted directly into the text to control the format of the final, printed product.

### Usefulness

Typewriter comes on either cassette or diskette and is written in Extended BASIC. Although the minimal system limits you to about 600 words of text input at a time (120 lines of text, each line about 5 words long), you can perform an extremely simple conversion which approximately doubles the available text buffer space if you have a memory expansion peripheral card.

Typewriter does not necessarily limit you to short, 600-word documents. Its formatting commands let

you form longer texts by chaining short documents together. When the command @A appears at the end of a text file followed by another file name, Typewriter finds that file and prints it immediately following the file it has just printed. Thus, if you have limited memory space available, you can SAVE documents in sections.

If you need to generate repeated copies of a given document, you can use the @A command followed by a space and the letter R (@A R) to print as many repetitions of the document as necessary. The PROMPT command (@P) lets you generate customized boilerplate documents. If the printer will accept software control codes, the @S command can direct the printer to implement those options. Several other formatting commands allow simple formatting of text as it is being printed.

Entering and editing the text you want to print is straightforward with one exception. Typewriter's text lines are short, and there is no warning before you hit the margin. When I was using it to write this review, I often found myself typing over characters at the end of a line. Although the manual contends that "you can get used to typing lines of about 20 characters and pressing the ENTER key without looking at the screen," that is a procedure I have yet to master. It is especially irritating when a long word, like "straightforward," falls at the end of a line. Is there room or isn't there?

Those of you who program in

BASIC will find Typewriter's editing functions very familiar. Even if you're not a BASIC programmer, it shouldn't take you long to become familiar with all the commands. When you start out, however, you need to know that you can enter and exit the Edit mode only if the cursor is in or at the left margin.

#### Documentation

Typewriter's documentation is quite clear. It covers all the instructions and gives examples when appropriate. The instructions for changing the underlying BASIC code to take advantage of memory expansion devices should be sufficiently clear for even the most timid and computerphobic nonprogrammer. The manual, which is concise and follows the main menu screen, makes it easy to find the information you need and to relate the text to program use. The section on getting started gives novice users a guide to follow, some general hints, and the reassurance that punching the wrong keys as they learn won't cause the computer to go up in smoke.

The manual requires some editing in places - the spelling errors are particularly disconcerting in a word processing manual. In addition, the sections on the DROP and JUSTIFICATION commands are a little mystifying. But some experimentation will make their use clear.

#### Human Engineering

Typewriter provides easy access to all the features of the system. Most users will quickly become familiar with all twelve formatting

and nine editing commands and probably won't need to refer to the manual for help. At every step the menus give clear prompts to direct the user. Typewriter, in its disk-based form, takes advantage of one of the nicest features of Extended BASIC: It loads itself automatically. When the text you've entered reaches the storage capacity of your system, however, you get a cryptic error message:

```
CODE = 57
JUST ENCOUNTERED AN ERROR.
```

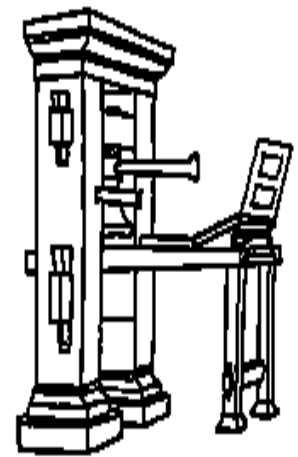
The screen will direct you to the Extended BASIC manual, where you will read another puzzling message. Rather than merely giving you an error message when you hit the limit of text, the program would be much more helpful if it prevented you from entering any more text, and gave you a message that memory was full and you should now SAVE your text.

Not all users can readily take advantage of many of the program's features. Those who have cassette-based systems may be able to use some of the boilerplate features in the formatting commands, but this will require careful planning, and a lot more jockeying around of cassettes.

And there are a number of things you wouldn't want to try with Typewriter. This program's short line length would make it very difficult to set up tables, for instance. Any word processing jobs which require heavy editing, movement of blocks of text, and extensive insertions

would also best be done with other software. This is not to say you couldn't do it - you can shave with a Bowie Knife, after all, but. . .

So if you're looking for low-cost software for a relatively small volume of word processing - software which does what it says it will - Typewriter may be for you. YN



*THIEF CONTINUES. . .*

Other rooms include a Kitchen, dining room, bedroom, closet, living room, maze and walk-in safe. There are eleven rooms in all. Each room includes appropriate furniture, door-ways, windows and walls. Running into a wall automatically sets off an alarm which brings the police, ending the game. Your score is indicated by the number of "years" you must serve in prison.

The cursor serves several purposes. For one, it allows you to move from room to room. When you position the cursor over an object and Press the joystick fire button, the name of the object will be displayed at the bottom of the screen. Pressing the fire button while moving the cursor reduces its velocity, which is critical when moving about in tight quarters such as the maze.

By moving from room to room you can figure out the floor plan of the house, which is always the same. However, locating the safe is more than a matter of moving from room to room. Since you are told you will encounter a locked door somewhere in the house, you may assume that you will need to have a Key to unlock it. Finding the Key can be difficult. Then, too, to open the safe you will need a combination to the lock. This you will find somewhere in the house. The Key and combination are hidden in different places each time you play the game.

The block graphics used in Thief are simple and, for the most part, representational. You can tell a chair from a couch and a dinner table from a coffee table. Color, too, is used to good effect. Each room appears as a single screen so that Thief is actually an eleven-screen adventure.

Joysticks are used as the principal source of input. Input from the keyboard is required to enter the combination to unlock the safe. I found the program to be crashproof except when I was required to enter the combination. I managed to get an error message on my second try, which resulted in half the room I was in at the time scrolling off the top of the screen. I exited the room and then reentered and everything was as it was supposed to be.

**Ease of Use:** What difficulty there is in playing this game lies principally in maneuvering the cursor around the screen, which is not difficult at all. The object of the game is straightforward.

**Documentation:** I was disappointed in the manual that comes with Thief. For example, under the category Alarmed Doors, it reads: "One door is wired and must be disarmed before you can pass through it." There are no hints as to how to disarm the alarm. I managed to figure it out myself but it didn't seem to make much difference because the alarm can be set off at this point without any apparent consequences.

**Value:** Young teens and children seemed most amused by Thief. During the testing stage, I found several roughly drawn floorplans fashioned by young hands littering the computer station. I take this to be a good sign. YN

### 99ER - JANUARY 1983 - VOL. 2, No. 3 - BY STEVE SCHWARTZ

A wonderful graphic adventure game called Thief will surely bring out the crook in you. As Stealthful Smith, burglar extraordinaire, you are breaking into the home of zillionaire Howard Huge. The object of the game is simple - to take the money and run . . . in the shortest time.

You control your movement from room to room with the joystick. It's a big house with 11 locations in all, including a "secret room" I won't tell you about. Each room is filled with beautifully-rendered furniture - just what you'd expect in a zillionaire's house. You are looking for a Key to a room with a safe, and a piece of paper with the safe's combination. To search a household object for the paper or Key, you move a square onto it and press "fire." That's when you find out the name of the object, and whether or not it holds what you need.

Each time you play, the location of the Key and paper is different, and so is the three-digit combination. There's a lot of heart-pounding suspense as you hurry to beat your previous time score. But you'd better not hurry so much that you get careless and trip the alarm.

Now where's that secret combination? I've already found the Key to the safe's room. Time ticks away relentlessly while I hurry on my search. I can't find that paper anywhere in the front room or living room. Running through the doorway into the Kitchen, I examine the Kitchen table and the refrigerator. Wait a minute here it is on the dishwasher! Memorizing the three-digit combo, I make a mad dash for the stairs and then through the upstairs hallway. I unlock the door with my Key, and find myself confronting an intricate maze. I've got to be careful not to touch any of the walls, knowing they are connected to the alarm system. Threading my way with great care through the maze, I am asked for the combination to disarm the safe's alarm system. I quickly punch in 378 and continue through

the maze toward the safe. Making a quick turn, however, I accidentally brush against a wall, setting off a piercing alarm and summoning the police. The judge gave me ten years! I've failed in my mission . . . at least until the next time I type RUN.

Thief by Toni PerKowitz is available in Extended BASIC for \$7.95 on cassette, through Tomputer Software. YN

## PRE-SCAN IT

MICROPENDIUM  
JUNE 1987

Volume 4 Number 5

By Bob Carmany

REPORT CARD	
PERFORMANCE	A
EASE OF USE	B+
DOCUMENTATION	A+
VALUE	A+
FINAL GRADE	A

Did you ever wonder what your Extended BASIC program was doing after the disk drive stopped and before the program began to run? If you have read your XB manual, you will remember that it is pre-scanning the program.

During this period, it is allotting space for arrays, initializing variable and just doing the "housekeeping" chores necessary to RUN the program.

One of the least documented features of Extended BASIC is how to turn on and off this pre-scan to speed up program execution. The process is really quite simple - technically, that is. But you are faced with organizing all of the keywords, variables, strings, arrays and such and inserting them at the front of the program. Then, you have to figure out exactly where to turn on the pre-scan and where to turn it off. If the program is very long, this simple task can take what seems like forever. Fortunately, there is hope! J. Peter Hoddie has marketed a program called PRE-SCAN IT through Asgard Software that does all of this (and more) automatically.

**Performance:** PRE-SCAN IT does exactly what it says it will! That is not too unusual, but in these days of sometimes exaggerated claims, it is refreshing to find a program that lives up to its advance publicity. You must keep in mind, however, that PRE-SCAN IT is written in Extended BASIC itself, so it is not going to set any records for speed. When you consider the alternative (doing the work by hand) it is a real timesaver. Exactly what does it do? Well, starting with a MERGE type program file, PRE-SCAN IT will create another MERGE file from your program, and once SAVED, will boot almost instantaneously after it loads. PRE-SCAN IT functions quite smoothly and I have found that there are very few programs that cannot be easily converted with it. I experienced no problems with any of the options. Everything was relatively simple and straightforward.

**Ease of use:** The program is menu-driven and extremely easy to use. If you follow the instructions, you should have no

problems with it. You simply RESequence the program that you are working on starting with 100 and then SAVE it in a MERGE format in accordance with your XB manual instructions. Once it is SAVED, place the PRE-SCAN IT disk in drive I and chose XB - the program will auto-LOAD. You are presented with a menu of options to choose the version of PRE-SCAN IT that conforms to your system configuration. There is a version for 32K, a "generic" version, a version for 16K and an exit back to Extended BASIC.

Once the choice has been made, it is just a simple matter of following the input prompts. You are prompted for the name of the input file (the one you saved in MERGE format), an output filename and then a prompt for a specialized Extended BASIC file. PRE-SCAN IT has three files on the disk for some of the specialized Extended BASIC variations that contain CALLs that are not found in the TI Extended BASIC module. MYARC is for the Myarc XBII, MECHA is for the Mechatronics XBII+ and MG is for the Millers Graphics Extended BASIC. If your program does not contain any of these versions, enter the null prompt. You also have the option of creating your own specialized files, as well.

Next, it allows you the option of replacing as many as five numbers with variables to save memory. In a long program, the memory savings can be considerable particularly if you use the same number over and over again.

The program will ask if you wish to replace all of the REMs with an "!" for another savings in memory space.

Then, it will ask if you want a complete MERGE file created. If you answer "Y", the program will create a complete file that can be MERGED into memory and reSAVED as a RUNnable program. If you answer "N", PRE-SCAN IT will create a short MERGE file that can be MERGED back into the program with all of the necessary pre-scan information. The advantage is that the program will be processed much faster!

Once you have answered all the prompts, PRE-SCAN IT will begin processing the program. The status window will tell you what PRE-SCAN IT is doing by line number and which variable or word it is processing. At this point, if your program is a long one, it might be wise to go take a coffee break! The program is doing all the work and it may take a while! It is still much faster and more convenient than doing the job by hand.

Documentation: The documentation is adequate for using the program. Some improvements could be made to make reading and finding the discussion of the individual options more convenient. The documentation for the variants of Extended BASIC could have been expanded, for example, and each prompt segment could have been set off by either a Roman numeral or a section number to make it easier to read.

But, all in all, the documentation fully describes the program's function.

Value: The price of a mere \$10 makes PRE-SCAN IT one of the better software buys on the market today. The program is professionally done and worth every penny of the price. The first long Extended BASIC program that you convert will make you happy that you spent the money for PRE-SCAN IT. No more waiting for a program to start after it loads and you don't have to do the tedious job by hand!

Final grade: All of the convenient built-in functions and the fact that the program does not require a fully expanded system are enough to give the program a high "final grade." When these conveniences are coupled with the professional presentation of the program and the easily mastered menu-driven nature of it, the final grade has to be an A. I would heartily recommend PRE-SCAN IT to all of you who write your own programs or would just like someone else's program to boot faster without that seemingly endless wait while it initializes. J. Peter Hoddie has scored again with PRE-SCAN IT! YN



Run? Whaddya mean run!  
If it ran would I be debugging it?



# Yesterday's News Information



Yesterday's News is a labor of love offered as a source of pleasure & information for users of the TI-99/4A and Myarc 9640 computers.

## TI-99/4A HARDWARE

TI99/4A COMPUTER  
MODIFIED PEB  
WHT SCSI AND SCSI2SD  
MYARC DSDD FDC  
MYARC 512K MEMORY  
HORIZON 1.5 MEG HRD  
TI RS232  
CORCOMP TRIPLE TECH  
1 360K 5.25 DRIVE  
1 360K 3.50 DRIVE  
1 720K 5.25 DRIVE  
1 720K 3.50 DRIVE

## TI-99/4A SOFTWARE

PAGEPRO 99  
PAGEPRO COMPOSER  
PAGEPRO FX  
PAGEPRO HEADLINER  
PAGEPRO GOFER  
PAGEPRO FLIPPER  
PAGEPRO ROTATION  
PIXPRO  
PICASSO PUBLISHER  
BIG TYPE  
TI ARTIST PLUS  
GIF MANIA

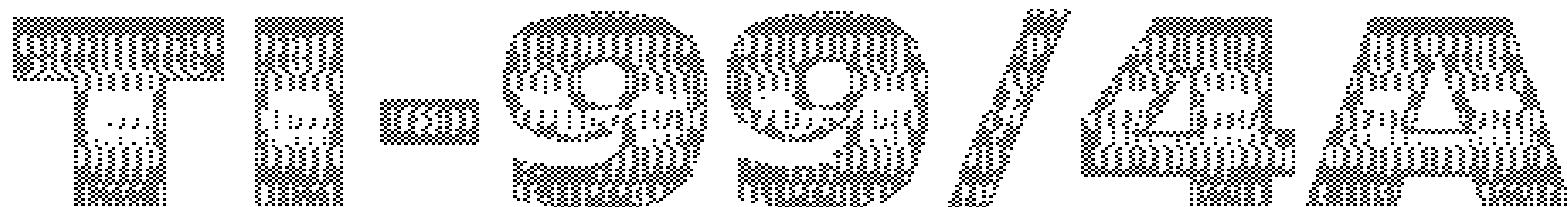
## PC HARDWARE

COMPAG ARMADA 2800  
COMPAG ARMADASTATION  
SAMSUNG SYNCMASTER

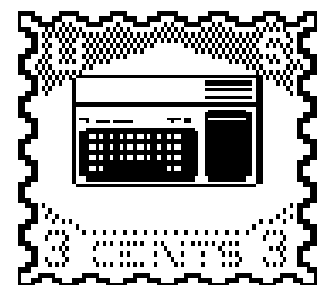
## PC SOFTWARE

DEAD WINDOWS 98SE  
FILECAP  
PRN2PBNS  
IRFANVIEW  
ADOBE DISTILLER  
ADOBE AROBAT

Yesterday's News is composed entirely using a TI-99/4A computer system. It consists of 11 PagePro pages which are "printed" via RS232 to PC to be published as a PDF file.



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