

Eastern House Software

March 1981 #1

THE EHS GAZETTE

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The EHS Gazette 15 æ newsletter published free to supplying Ð. anyone self-addressed stamped envelope (SASE). Since we, a software house publish this newsletter, we make "no bones" about the fact that we are biased in EHS products and favor of certain other products we like. We hope you like our products and find this newsletter of great value. But, we also want this newsletter to provide a source of general PET oriented information, and to do this we need the help of our readers. If you have information that you would like to share, please send it to EHS Gazette, c/o Linda Dr. 3239 EHS, Winston-Salem, N.C. 27106.

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For a free copy of the next issue, be sure and send a SASE to EHS Gazette c/o EHS. Make Sure its an 184 stamp!

Bored with nothing to do?

make some copies for your friends, computer club, etc.

Need communication with a fellow PET enthusist?

back issue of a magazine and send that person a copy of this gazette. Include a note that you thought he might like a copy and describe what you are doing, a problem with the PET you're having, etc. Who knows, you might obtain the information you need, provide him with information he needs, and in the process make a life-long pen-pal.

ASSM/TED to ROM Rabbit Linkage

ASSM/TEI EHS has now working with ROM Rabbit. The standard PET cassette I/O takes about 3 minutes to load 8k bytes - but ROM Rabbit loads 8k in about 30 seconds! (Similar app ly to times. saving programs.) What a convience to auickly load source from tape in only a fraction of the time it did take. ROM Rabbit is truly an inexpensive bridge between cassette and disk. EHS will supply, upon request, these linkages to anyone who purchases or has purchased ROM Rabbit. ROM Rabbit sells for \$49.95 (includes rom chip and manual), works with the Basic Programmers Toolkit, and, like ASSM/TED, versions - H available for 3.0 and 4.0 Roms and 8032 (please specify when ordering).

NOTE: Anyone who purchases ROM Rabbit can purchase the EHS Assm/Ted Scroll package for an additional \$15.00. Scroll allows forward ano reverse scrolling thru ASSM/TEI source files using the cursor up/down keys. For example, cursor to the bottom of the

ROM OR ON CASSETTE	THE P	ET RAB	BIT	4.0 OR 3.0 RON
The PET Rab al commands addition to th for 0.5 secon of characters importantly, an 8K progra minutes and	bit is a program that can be exe e commands, au ds is also provide and provide mo the RABBITs hi m to be saved in 44 seconds in t not be used t	ecuted in BAS tomatic repeat led. This will ore convenient gh speed recor 38 seconds in Commodore's	IC's direct n of any key h greatly aid in cursor contr ding techniq stead of the format. (No	node. In eld down nputtings ol. Most ue allows normal 2 ote— The
ROM. The memory and for 8K PETs, \$7000-\$77FF two different room for tho	bit is 2K of mac cassette version can be ordered i , \$3000-\$37FF (or \$7800-\$7F t versions for th se programmers Note— The cass	occupies the in one of 5 loc or \$3800-\$3FI FF for 32K F e 16K and 32 who use the	top-most pe ations: \$180 FF for 16K P PETs. The re K PETs is to DOS Support	ortion of 0-\$1FFF PETs, and eason for provide t (wedge)
spare socket ROM version 8K, 16K, or the ROM Ra	rsion is a 24 pin D4 and occupies does not occup 32 K 3.0 or 4.0 bbit is that it d p your PET and	s memory \$A0 by user RAM, ROM PET. 1 oesn't have to	00-\$A7FF. it will work the main adv be loaded e	Since the with any antage of each time
work with sc specific, cass will not wor have discover properly. Ho -open up the components, nents, it will istors on the decks will w types. If yc	BBITs high-spee ome of Commo ette decks with k but all other f red that some ne bw do you know cassette deck a If there are IC work with the ork okay since u wish to purc offer an attracti	dore's older c the lift top reatures will w w style casset vif your casse nd look at the packages for RABBIT. If not work. M there are very hase ROM RÅ	assette deck lid (termed o vork. In add te decks will tte will work e printed circo all the active f there are a ost new style few of the	s. To be old style) ition, we row work Simple uit board compo- ny trans- cassette transistor
The RABBIT SS — Save SL — Save L — Load V — Verif E — Lcad	commands are: with short leader with long leader a program y a program and then run memory test	D — Conve H — Conve	monitor o machine	lecimal # t
		GRAMMERS 5 EASTERN 32	HOUSE SO	FTWARE

screen, hit cursor down again, and the next source line appears. Hit again and the next and so on. Cursor to the top of the screen, hit cursor up and a reverse scroll occurs. Since auto-repeat is provided on all keys, cursor up/down may be held down for continuous scrolling. We are very sure you will find SCROLL to be a utility you will find well worth \$15.00. When ordering SCROLL, specify 3.0 or 4.0 roms, or 8032 CBM.

Unimplemented 6502 Opcodes!

An unimplemented opcode is a machine code byte that is undefined to the 6502. For example, the byte FF is unassigned in the 6502. It's execution should never occur and if it is ever executed, the chip manufacturers will not guarantee what will happen. Space Invaders, the most popular same ever written for the PET,

allows execution of one of these unimplemented opcodes. This is caused by a miscalculated branch offset at location \$0AE7. This location should contain an \$FA. Even though Space Invaders allows execution of an implemented opcode, it still works - at least on our PETs. I don't know for sure if all the different manufacturers 6502 chips will behave the same though.

By the way, we found this using the EHS TRAP 65. We also found that our copy of Word Pro II has a bad branch.

Output the Time from Machine Language!

Ever wanted the ability to print the time from machine language code? You can via the following code:

		;OBTAIN A	ND PRINT THE TIME FROM MACHINE LANGUAGE
A9	16	ML.TIME	LDA #\$16
85	13		STA *STR.DES
20	2E CE		JSR TIME.STR ;FOR 4.0 ROMS, CHANGE TO \$BFAD
A0	00		LDY #00
B1	30	LP.TIM	LDA (BOT.STRINGS),Y
09	80		ORA #\$80 ;MAKE INVERSE VIDEO
99	22 80		STA SCREEN.MEM+34,Y ;AND PRINT TO SCREEN
C8			INY
00	06		CPY #06
90	F6		BCC LP.TIM ;LOOP FOR 6 CHARACTERS
		;NOW ADJU	ST "BOTTOM OF STRINGS" SO WE DON'T HAVE
		GARBAGE	COLLECTION PROBLEMS IF THIS MODULE IS
		;REPEATED	LY INVOKED
18			CLC
DS			CLD
A5	30		LDA *BOT.STRINGS
69	Ø6		ADC #06
85	30		STA *BOT.STRINGS
90	02		BCC SK.TIM
C6	31		DEC *BOT.STRINGS+1
00		SK.TIM	BRK

An EPROM Programmer - From K-Z Systems

K-Z Systems, Route 2 Box 473, Manchester, Mo. 63011 has developed an EPROM programmer for PET computers they call the "Branding Iron". It is fully assembled and very professionally constructed. Connection to the PET is via the user port and cassette interface. Even though we are not in any way associated with K-Z, we consider their product of high quality. Contact K-Z for pricing.

The News Column

VIC - Commodore is having production problems with its \$300 VIC computer. We've heard that the VIC is manufactured overseas

and its being redesigned in order to pass FCC radiation requirements. Commodore insiders say the VIC will appear in June 1981.

Soviet MPU - Soviet Microprocessor? - Yes, the USSR has finally developed one. It's dubbed K80IK80.77. A U.S. computer company obtained a copy from an East Bloc country and took a peek inside the chip. They found that it was patterned, though not an outright copy, after the INTEL 8080. The Soviet micro is contained in a 48-pin DIP with eight pins not used. The chip size was rather large -- 42K mils square as compared with INTEL's 26K mils square. It seems that the Soviets were intent on quickly producing a micro with little interest on production cost. Their chip fabrication technology was found to be about 3 years behind the U.S. and Japan.

32-bit MPU - Intel has coined a new term, "micromainframe", to describe its new 32-bit iAPX432 MPU chip set. The iAPX432 is housed in three 64-pin chips and contains approximately 200,000 transistors. The iAPX432 can address a logical space of 4 billion bytes. Initial cost for the three-chip set is planned to be \$1,500.00. Hewlett Packard also announced a 32-bit MPU with 450,000 transistors on a single N/MOS chip - 7 watts are dissipated (hot ain't it!). See Electronics News, Feb 23,1981 for more news on these MPU's.

ASSM/TED Default File Boundaries

Does PET Macro ASSM/TED defaults for text file and label file bother you? They can be changed via the DSET command or permanently if you make the following changes to your copy of ASSM/TED: 354F - lo hi lo hi lo hi lo hi + 5 addresses

to "eas" I I allo	6 '00' I I I I	to "eas" E Findes - Bo "eas" B Findes	te foor it it do in the foor
start	end	start end	start
text	file	label file	R.L. buffer

ASSM/TED Screen Edit Update

Have you ever cursored up on the screen, made a change, hit return, and noticed that the ASSM/TED prompter (">") overwrites the left-most digit of the next lines line-number? Well, we have a fix so this won't bother you anymore. Try entering the following patch: 2178 - 20 94 25

206B	49967		øċ						1
3BQC	*****				C9				
,,,,					97	24	60		A strange
2207			87		4947	### . \$Perso			and unknown
3BA7		36	ЧU:	ЗВ	89	35	31	68	marking!

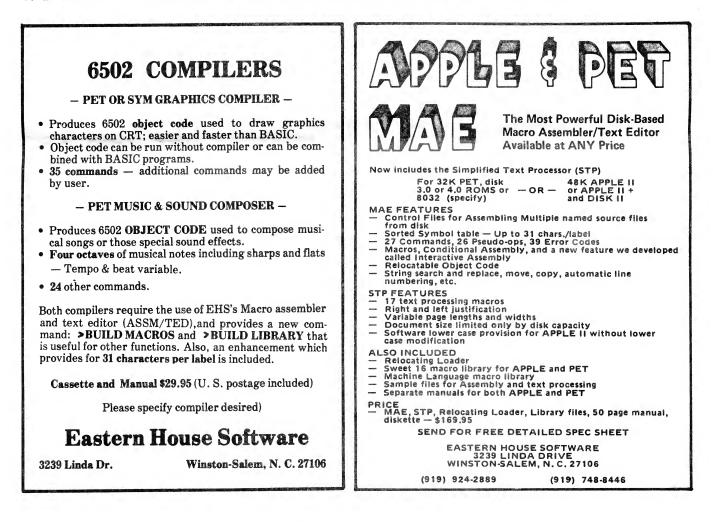
This is not copyrighted material

\$

ALC: NO

6800 and 8085 Cross Assemblers

EHS has 6800 and 8080/8085 Cross-Assemblers available for the PET and A Cross-Assembler is an assembler program Apple computers. that functions on a certain processor but assembles code for a different EHS's MAE6800 Cross-Assembler For example, is an processor. that functions on a 6502-based PET but it assembler/text editor generates machine code for the 6800. You still write your program in Assembly Language the generated object and code must be 6800 down-loaded to a 6800-based system for execution. A good use is in a University or company that already has a PET and must develope a program for say a 6800 based controller. If you've already got æ beats having to shell out another \$10,000+ for a 6800 PET. sure it A Commodore computer, MAE6800, and Motorola Development System. the K-Z EPROM Programmer makes a nice 6800 Development System.

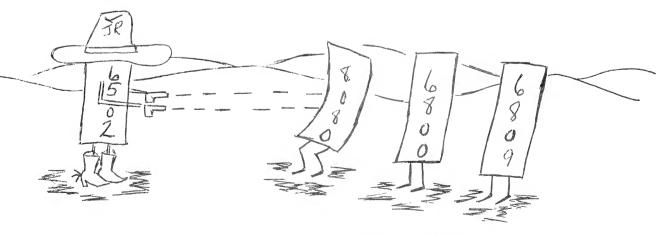


Uperade ASSM/TED from 3.0 ROMS to 4.0 ROMS

If you upgrade your PET ROMs to 4.0, you will find that the copy of ASSM/TED for 3.0 ROMs will not function properly. To modify ASSM/TED 3.0 to 4.0, make the following changes: 3740 - 85 D4 A9 00 85 D1 3E47 - 20 D3 F4 374C - 85 D4 A9 00 85 D1 3E4F - 20 E5 F5 3E3A - 20 95 F6 20 57 F8 3E54 - 20 7B F6 3E40 - 20 49 F4 3E5A - 20 6D F4 20 A3 F8 3E94 - 20 E3 F6

Printer Driver for ASSM/TED

To interface ASSM/TED to the 2022 or 2023 IEEE printer, enter the following: SEI 4000 - 78 PNTR.DVR 4001 - 48 PHA LDA *FA STA FAT ;SAVE FA 4002 - A5 D4 ; 来 4604 - 8D 5B 02 ;IEEE DEWICE #4 LDA #DEVICE 4007 - A9 04 ; * STA *FA 4009 - 85 D4 ; CMD DEVICE TO LISTEN 400B - 20 BA F0 (20 D5 F0) JSR LISTN RELEASE ATTENTION 400E - 20 2D F1 (20 48 F1) JSR SCATN PLA 4011 - 68 4012 - 48 PHA ;SET UP TO WRITE STA *BSOUR JSR ISOUR 4013 - 85 A5 WRITE TO PRINTER 4015 - 20 EE F0 (20 09 F1) JSR UNLISTN ;CMD DEVICE TO UNLISTEN 4018 - 20 83 F1 (20 B9 F1) 401B - 68 PLA CLI 4010 - 58 RTS 401D - 60 Next, link the printer driver to ASSM/TED as follows: 37E2 - 20 00 40



Other items you can buy thru EHS PAGE 7

Supersort/Superbase by James Strasma

Supersort/Superbase consists of the following 2 programs:

1) A machine language Shell-Metzer general purpose sorting program that sorts a Basic programs string and integer arrays at lightning speed.

 A sequential file manager (Superbase) that uses Supersort for sorting. Use Superbase for mail lists and other file management needs. Commands to add and change data, print to screen or printer, sort on a specified item, etc. \$35.00 (Disk only) includes documentation.

Games sold by EHS

Space Invasion - By Richard Mansfield, for 8032 PET. Action-packed shoot-em-down game. Action like Space Invaders but different. Rare category of program as there are few games for 8032. \$14.95

Muon Invasion - By Richard Mansfield, for 2001 series PET. Muon warships have just entered the Milky Way. Its up to you to blast them with your gravitation beams. \$9.95

Hidden Words - By Richard Mansfield, for any PET. Two player word game in which the winner is the player who identifies the greater number of words in the time allowed. \$9.95

UFO Search - By Betsy Robinson, for any 40-column PET. From constellation Cassiopeia and the Big Dipper to Scorpius and Perseus, this program displays graphical representation of one or more constellations. You guess if there is a UFO in the STARS. Its you (Earth) against outer space. \$9.95

Speedy Biorythm - By Betsy Robinson, for any 40 column PET. Plots biorythm on PET's screen. \$9.95

NOTE: All prices for games are for shipment on cassette. Add additional \$3.00 if you want games shipped on diskette.

SPECIAL: Additional 10% off on all CBM hardware



Cassette versions configured for \$1800, \$3000, \$3800, \$7000, and \$7800. (3.0 ROMS only) Cassette and manual – \$29.95

ROM version configured to plug into P.C. board at \$ A000 (3.0) or \$9000 (4.0).

ROM and manual - \$49.95

FREE ROM RABBIT with purchase of 8K PET and tape deck.

SPECIAL - ROM RABBIT and cassette deck – only \$134.95

MACRO ASSEMBLER TEXT EDITOR

Macro and conditional assembly, string search and replace, 10 char./label, AUTO line numbering. MOVE, COPY, DELETE, NUMBER, and much more 20+ commands, and 20+ pseudo ops.

PET cassette version (ASSM/TED) - \$49.95. (Specify 2.0, 3.0, or 4.0 ROMS.) PET disk version (MAE) - \$169.95 (Specify 3.0, 4.0, or 8032)

ATARI cassette version with machine language monitor – \$49.95. Also available on diskette \$53.95.

FREE ASSM/TED and ROM RABBIT with purchase of 32K PET and cassette deck.

FREE MAE with purchase of 32K PET and disk drive.

TINY-C FOR PET

An adaptation of the TINY-C interpreter sold by Tiny-C Assoc. Useful for learning a modern structured programming language. Diskette – \$50.00. Owners manual – \$50.00

FREE MAE and TINY-C with purchase of 32K PET, disk drive, and printer.

COMPILERS

Graphics Drawing Compiler for PET and SYM. Works with Macro ASSM/TED. The GDC is composed of a number of macros which emulate a high-level graphics drawing language. In addition to the macros, GDC provides some very useful enhancements to the ASSM/TED. Manual and Cassette – \$29.95.

Music and Sound Composer for PET. Works with Macro ASSM/ TED. The MSC is composed of a number of macros which emulate a high-level computer music language. In addition to the macros, MSC provides some very useful enhancements to the ASSM/TED. Manual and Cassette – \$29.95.

ORDERING TERMS

Send check or money order in U.S. dollars. Add 2% for postage for CBM orders. Overseas software orders add \$5.00. All software mailed free in USA and Canada. Purchase orders acceptable.

EHS IS NOW A COMMODORE DEALER

EHS offers a number of software products for PET, ATARI, APPLE, and other 6502 computers. Now we sell CBM hardware. If you're in the market for PET products, be sure to look for our FREE software offers. Note: Be sure and deduct 10%.

CBM	PRODUCT DESCRIPTION	PRICE
4001-8KN	8K RAM-Graphics Keyboard	\$ 795.00
4001-32KN	32K RAM-Graphics Keyboard	\$1295.00
8032	32K RAM 80 Col4.0 O/S	\$1795.00
2022	Tractor Feed Printer	\$ 795.00
4040	Dual Floppy-343K-DOS 2.1	\$1295.00
8050	Dual Floppy-974K-DOS 2.0	\$1695.00
C2N Cassette	External Cassette Drive	\$ 95.00
CBM to IEEE	CBM to 1st IEEE Peripheral	\$ 39.95
IEEE to IEEE	CBM to 2nd IEEE Peripheral	\$ 49.95
8010	IEEE 300 Baud Modem	\$ 395.00
2.0 DOS	DOS Upgrade for 2040	\$ 80.00
4.0 O/S	O/S Upgrade for 40 Column	\$ 110.00
VIC Computer	New Commodore \$	Call or Write
EDUO	ATIONAL DICCOU	ALTO

EDUCATIONAL DISCOUNTS BUY 2 — GET 1 FREE TRAP 65

TRAP 65 prevents the 6502 from execulting unimplemented instructions. Have you ever had your system to crash on a bad upcode? This is a real machine language debugging tool and time saver. Also useful for teaching trap vectoring and extension of instruction set in schools. $3\frac{1}{2} \times 4\frac{3}{4}$ printed circuit board which plugs into 6502 socket of any PET, APPLE, SYM. Only \$149.95.

ATARI M.L. MONITOR

Load and save binary data on cassette. Display and change 6502 registers. Will coexist with BASIC. Monitor uses the screen editing capabilities of the ATARI to allow easy use. Cassette and manual – \$24.95 (specify memory size). Diskette and manual – \$29.95 (specify memory size).

ATARI MEMORY TEST

When you purchase a new ATARI or add on new RAM modules, you need to be sure that the memory is working properly. (Remember, you only have a short guarantee on your memory!) Cassette and manual - \$6.95.

APPLE PRODUCTS

Macro ASSM/TED – includes manual, on cassette – \$49.95, on disk – \$55.95

Apple MAE – similar to PET MAE. A powerful assembly development system on diskette for 48K APPLE II or plus. (Requires license agreement) – \$169.95.

PIG PEN – 100% M.L. word processor for use with Apple ASSM/TED. Fast text formatting, vertical and horizontal margins, right and left justification, centering, titles, foots, shapes, etc. Manual and source included, on cassette – \$40.00, on diskette – \$45.00

Apple Mail List System. Provides sorting on zip code or last name. Approximately 1000 names/diskette. Manual and Diskette – \$34.95.

EASTERN HOUSE SOFTWARE

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NOTE: Please describe your equipment so we can properly fill your order:	TOTAL :
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6502 MACRO ASSEMBLER

AND TEXT EDITOR

- Versions for PET, APPLE II, SYM, KIM and ATAR I (1st quarter 1980)
- Written entirely in machine language
- Occupies 8K of memory starting at \$2000 Apple version with disk occupies just over 9K
- Macro and conditional assembly
- 36 error codes, 26 commands, 22 pseudo ops
- Labels up to 10 characters
- Auto line numbering and renumber command
- String search and string search and replace
- Copy, move, delete, load, save, and append commands

Cassette and Manual \$49.95 (including U. S. postage)

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