

Summer greetings, TRS-80 "Model I" owners. Yes, that's what our computers are now called, according to an article in the June 7 issue of ELECTRONICS magazine, so as not to be confused with the new TRS-80 "Model II" computer that goes on sale in July. The Model II comes with a 280A 8-bit microprocessor chip running at 4 MHz, 32K PAM and an 8-inch double-density 500K floppy disk which, from its picture, appears to be mounted in the Video Display to the right of the CRT. The article says it can talk to two other TRS-80's via phone lines but no mention of either color or higher resolution graphics. Intended as "low cost" business system competition for the IBM 5110, the Model II will be sold in 6,500 Radio Shack stores for \$3,450. For 64K RAM, two more floppies, a printer and a desk, the price goes to \$7,998.

In the same article, Radio Shack president Lewis Kornfeld is quoted as saying, "We are in the computer business. If we think there's a market for a home computer later on, we're prepared to go downstairs, too." That seems to indicate Radio Shack has just been kidding all this time about our TRS-80's having FURTHER effective small business systems OR useful accessories for the home. That may explain why they've never offered anything better than the pitiful excuses for software we've seen so far and why they've chosen not to offer us the opportunity to upgrade our units with a wider selection of products like the full size floppies they are putting into the Model II.

The announcement of the Model II was not unexpected and there are reports that two more models are in the works. There will be some serious competition, too. Texas Instruments has just introduced their 99/4 computer which contains their own 16-bit 9900 microprocessor chip, 13-inch Zenith color monitor, sound, graphics and extended Microsoft BASIC for only \$1,150 with 16K RAM. If the FCC approves their modulator for hooking up to home TV's they may drop their price to \$750 without the monitor. Hewlett-Packard has delayed their personal computer until next year so they can do some modifications but it is rumored to be in the \$500 range.

There has been some speculation that Radio Shack will now abandon the Model I computer like they did Level 1 (which is now out of production) for Level II. They say they don't intend to but their new competition may not give them any choice unless they change their ways. After all, their arrogance and almost contempt for customers after the sale (the company, not retail store employees) plus lack of support and over-priced peripherals are NOT what made the TRS-80 the world's most popular microcomputer. That was accomplished by the hundreds of companies providing reasonably priced, quality software, accessory hardware and newsletter information that Radio Shack refused to supply for the overwhelming demand. Without these companies, the TRS-80 would be nothing because few people would have a use for it.

Speaking of companies that sell TRS-80 related products, most of them are reputable... but not all. Several members have written in to warn about sending money to some of them.

One of the biggest apparent rip-off's is World Power Systems of Tucson, Arizona. We got the word within hours of the first arrest and both wrote and telephoned many of our members, especially those who indicated on their registration forms that they were considering buying from this company or disk drives which this company was advertising a special price for. The latest word is there has been several arrests and hundreds of thousands of dollars in money and hardware confiscated by authorities. According to the July issue of INTERFAC AGF, authorities are seeking Norman Hunt and his wife, also known as Jim and Lee Anderson, and information from anyone who has made prepaid orders. Write to Susan Moore, Pima County Attorney's Office, 900 County Courts Blvd., 111 West Congress, Tucson, AZ 85701

On the other end of the scale, you come across outfits like Sancer Enterprises who advertise "a permanent fix for TRS-80 keyboard bounce" for only \$2.50. We hit, expecting the use of a capacitor or something, so we could share the source of this revelation in the newsletter. What we received was a piece of Saran Wrap and a half page, double spaced note saying we should clean the key contacts and tape the Saran Wrap over the keyboard to keep out the dust.

At least we got SOMETHING for our \$2.50...

We want to say a special HELLLO to our friends north of the border in Canada. Percentage-wise, the Canadians included more contributions (most of them \$5) with their registration forms than any other group.

Many people wrote in about "Level I" and "Tapetalk" magazines on cassette tapes. Money is kept, deliveries are not made and letters are not answered. J. Wesley B. Taylor of the Wichita Valley TRS-80 Users Group has filed complaints against both of them with the Postal Service, California Attorney General, Federal Trade Commission and Internal Revenue Service. He sent us copies of two of the responses he got from these agencies and it appears that something can be done if it is not perceived to be an isolated incident. Mr. Taylor plans to pursue the matter in court and invites others who feel they have been defrauded of money and are entitled to redress and damages, to join him. His address is PO Box 4391, Wichita Falls, TX 76308. Office phone (817) 723-5523, home phone (817) 692-2687.

With so many companies (and individuals, some with company sounding names) now selling things for the TRS-80 there are bound to be a few duds. We at TCS are concerned and now have over 250 files containing ads, flyers, reports and rated feedback from members. If you have some information to pass along, please send it to us. We don't intend to recommend one company or its products over another but we are willing to pass along the number and types of complaints or compliments we have on any business name we have a file on. Just send along an SASE with the name and address of the company you are interested in. Please don't ask for a rated list of all of them. We may do that later and send it to all user groups but if so we'll do it automatically.

NEW PRODUCTS

INTRODUCTION TO TRS-80 GRAPHICS is the name of a 134-page paperback by Don Inman dealing with BASIC programs covering line drawings, geometrics, animation and more. It's \$8.95 from Oilithium Press, Box 92, Forest Grove, OR 97116 ***** Looking like a stubby briefcase, a choice of magnetically shielded data preserver designed to protect floppy disks or cassettes from erasure or physical damage is available from Magnetic Shield Div. of Perfection Mica Co., 740 North Thomas Dr., Bensenville, IL 60106. They don't give prices so they probably aren't cheap but some of you may be interested.

THE GUIDE TO TRS-80 INFORMATION is a 36-page pamphlet put out by F. E. Huebner, PO Box 37206, Oak Park, MI 48237. It's a sort of index for TRS-80 articles that have appeared in computer magazines, and of software and hardware available including names and addresses of sources. It also lists user groups and contains some tips, programming hints and general information. Printed in 1978, it's a little dated but we still find it valuable. Clubs should especially like it. It is \$2.80 + .50 postage for angles and \$1.90 each for ten or more. ***** William Barden, Jr., author of the Z-80 MICROCOMPUTER HANDBOOK, has a new book out. It's called TRS-80 ASSEMBLY LANGUAGE PROGRAMMING which is marketed by Radio Shack for \$3.95. Bill claims in his ad in the OCTUG newsletter (of which he is also editor) that his next book will be TRS-80 PROGRAMMING FOR THE MENTALLY IMPAIRED which will have 212 pages with over 3 illustrations and cover: unpacking the system, driving to the Service Center, calling Fort Worth, and contain a special appendix on raising hell. \$8.95 softcover, \$7.95 autographed.

HELP WANTED

Several members have asked if there are any TRS-80 User Groups which meet in the metropolitan New York area. If there is, please let us know so we can pass that info on. Meanwhile, contact Mike Chertok, 20 Butternut Cr., Peral River, NY 10965. He sounds like he may be ready to start one. He's also looking for a printer & interface, lowercase, no thermal paper and \$ is critical (so what's new?). ***** Are you a WAR-GAMER? If so, contact Barry Adams, 109 Valley Place, Greenville, NC 27834 and let us know, too, for the files. Barry wants to share war-gaming experience and could use some expert machine language help in solving some inherent war-gaming graphics problems. That sounds like a new challenge. How about it, experts? ***** Speaking of experts, 3-D graphics programs are sought by David Wood, 917 W. Colorado Av., Colorado Springs, CO 80905 ***** The Wichita Valley TRS-80 Users Group reports that many members lost some or all of everything they owned in the terrible tornado which struck there April 10th. While they are concentrating on rebuilding homes and businesses with their own money, the club will gratefully accept non-cash donations of software, back issues of magazines and books on computers for their club library that will be available to all their members. This is especially a good project for other user groups so send donations to J. Wealey B. Taylor, PO Box 4391, Wichita Falls, TX 76308 ***** Peter Oaly is connecting his TRS-80 to the Data 100 Model 76 Remote Job Terminal at work and needs help in this area. If anyone is familiar with this system, Peter works at Power System Engineering, 101 W. Beltline Hwy., Madison, WI 53713, work phone (608) 251-3155.

TCS FREE BULLETIN BOARD

Free ad space is donated by TCS. A small percentage of any profits that result will be appreciated to help continue this service but there is no obligation.

TBUG: Powerful M/L monitor allows you to trace, single step and use 6 breakpoints in ROM or RAM. Has all features of TBUG plus block dump to printer or screen, block write, hex math, or change a register pair value directly. Specify 16K, 32K or 48K. \$12.00..... **RELOC:** Relocates any M/L program to a new address in RAM, resolves all memory addressing and option writes the program from new location to tape. \$5.00 R.J. MCINTIRE, 1807 WOMBLE CT., HAMPTON, VA 23663

HIGH MEMORY OPERATING SYSTEM: Includes renumber, append, display BASIC variables, list BASIC 1-9 lines at a time, keyboard debounce, works with Level II or Disk Basic. Specify 16K, 32K or 48K. \$14.95 OJANE SAYLOR, 854 EADS CT., NEWPORT NEWS, VA 23663

CLEARINGHOUSE OF TRS-80 SOFTWARE in Canada. Sell your software or hardware in Canada without obstacles of mail system, currency exchange, Customs and excise. Have articles published. Also newsletter \$24/year. COTS, PO BOX 3103, STATION 'O', OTTAWA, ONTARIO, K1P 6H7, CANADA

SOFTWARE REVIEWS: If you sell software send it in for review and free (favorable or not) publicity in new publication. Read ratings and comparisons of TRS-80 software before you buy. Subscription is \$24/year (4 issues) or \$7/issue. 80 SOFTWARE CRITIQUE, PO BOX 134, WAUKEGAN, IL 60085

TRS-80 TAPE COPY PROGRAM: Copies any M/L or Level II BASIC program and then PEEK in Hex or Decimal. Programmed in BASIC. Guaranteed results. Listing \$5, Cassette \$8. SCOTT MANIS, 9310 FIVE PORKS, SAN ANTONIO, TX 78245

OISASSEMBLER: Oisassemble machine code to 2-80 mnemonics, operands shown in both Hex and Decimal, displays memory in ASCII format, searches for specified words. Level II 16K, \$2.00 to cover tape & postage. PHELPS GATES, 6 CRFSTWOOD TR. PK. - RT. 4, CHAPEL HILL, NC 27514

LOOKING FOR SOFTWARE for the yet small microcomputer market in Germany. My service includes adaptation of the software to the German market, translation of prompts and documentation, duplication, packaging and marketing. Royalties, no risk, non-competitive market. RFINHARD ENGEL, INTERSOFT, 842 N. PALM AV. #4, LOS ANGELES CA 90069

QUALITY PRINT-OUTS OF YOUR TRS-80 PROGRAMS: For documentation, debugging, publication, copyrights, etc. Level I or II up to 48K. Tractor feed, notebook size paper, \$1 per program, \$3 minimum. **MACHINE LANGUAGE PROGRAMS COPIED:** Only \$1 for 2 guaranteed readable copies, TRS-80 Level II only. Either send a cassette or add \$1.50 for brand new quality data cassette. All orders shipped same day by first class mail. RON URBASSIK, 13519 CARTER ROAD, PAINESVILLE, OH 44077

7-ISSUE SET OF CLOAO MAGAZINE: I wish to sell Sep 78 thru Apr 79 for only \$20. This is a legitimate offer not violating copyright laws, as these are my unduplicated originals. MARK JOHNSON, 735 FRSKINE, ST. LOUIS, MO 63125

FREE PROGRAMS: The oldest nationwide program exchange would like to trade programs with you. Send your list and SASE. We'll check them off and send it back with our list of programs and more info. Also, if you would like to receive **ANOTHER FREE NEWSLETTER**, we put one out every 2 months. Send SASE marked "newsletter" for current issue. THE TRS-80 FREE PROGRAM EXCHANGE, 4418 MORROW ROAD, MOESTO, CA 95350

MIND: A Teach Yourself by Computer Course that teaches you a system for memorizing unrelated information, logical material, how to remember names and faces, better listening skills. **MIND-STEP 1** is two computer cassettes, ten programs, \$24.95. **MIND-STEP 2** is one audio and two computer cassettes, nine programs, \$29.95. Both come in vinyl binder with teaching manual. Specify Level I 4K or Level II 16K. Order both, save \$5. P&H \$1.50 each. TYC SOFTWARE, 40 STUYVESANT MANOR, GENESPO, NY 14454

TRS-80 FOR SALE: Level II, Expansion Interface, 48K, Dual Disk Drives, DOS 2.1, Editor/Assembler, Line Renumber, 12 disks, over 100K in software. Original cost \$3,000, current cost \$2,700, will sell for \$2,000 or REST OFFER and I pay freight. JOSEPH BOYKIN, 1897 N. FOURTH ST., APT. A, COLUMBUS, OH 43201

WANTED - CHURCH FINANCES PROGRAM: Need Level II 16K program to handle 500 church members making weekly donations in 5 categories. Weekly data to be stored on cassette for monthly and yearly statements. Respond to: PETER DALY, SOFTWARE CASSETTES, 430 JFAN ST., MADISON, WI 53703 (Also want to make contact with other user groups.)

BLOCKADE: a game of speed, skill and strategy. Play against a friend or the computer. Great graphics, Level II specify 4K or 16K, \$3.50..... **GRAPHICS DISPLAYS** that can be used "as is" or in your own program, Level II 4K, \$2.50..... Please add \$1.00 for cassette and postage, SASE for list of others. Also interested in marketing your programs on royalty basis. Send it for evaluation or write for info. BRIAN COUCHEY, CHAMPLAIN SOFTWARE, 14 LAKE SHORE ROAD, ESSEX, NY 12936

PASCAL COMPILER FOR TRS-80 DOS 48K: Includes 16-bit integer operations, function declarations, procedures (recursion permitted), full PASCAL control structures, all supporting routines, \$35 for diskette..... **RENAME:** Utility program which will replace a variable name throughout any BASIC program with a selected new name to shorten, lengthen, change type of suffix or make more meaningful. Specify memory size. \$9.95 on tape. GENE PERKINS, 5224 WINIPRED, FT. WORTH, TX 76133

RACE: You're the driver of an Indy racer capable of unlimited speeds in elimination heats. A single mistake at 150 mph and it's all over..... **HANGMAN:** Guess the secret word before it's too late..... **LIFE:** Simulates life and death patterns of a bacteria colony on a 15 by 15 board..... **SPACE CHASE:** Rigellians have stolen secret starship plans and you must intercept before they escape. Most programs in 4K on Level I or II. SASP for complete list. HENSLEY AND RARRETT ENTERPRISES, 30 SCHOOL LANE, GRAFTON, VA 23692

LEVEL II PROGRAMMING HINTS: Graphics techniques, disable keyboard (great for demos, kids can't stop execution), test if key is being held down (great for paddle and doodle programs). 3 program listings to illustrate techniques including DOODLE and ROAD RACE, \$5.00. MIKE CHERTOK, 20 BUTTERNUT DR., PEARL RIVER, NY 10965

SATTRK: An amateur radio operator satellite tracking program for Oscar 7 and Oscar 8, Level II 16K, \$5.00..... **PRINT:** a 255 byte M/L printer driver utility for LIST/LPRINT commands that allows you to select characters per line, lines per page, line spacing, form feeds, and head delay necessary for some printers. Specify memory size. \$5.00 JOHN DLAIR, 122 DUMONT ST., NORFOLK, VA 23505

GRAPHICS SPECIAL (newsletter fund-raiser)
HONEST ABE: A recognizable image of Abe Lincoln like the one on a penny is programmed in poke graphics to show off to friends (Level II only)..... **DICE:** A graphic rolling dice subroutine for games plus Las Vegas rulea craps game with scoring for demo.... **GRAPH:** A vertical bargraph subroutine for displaying 12 months or month by month comparison of 24 months of data. Operator specifies upper/lower scale limits, increments/center scale value, or automatic scaling by computer..... **BOWLAVG:** Stores a whole season of individual bowling league game scores on a data tape that can be updated weekly and displayed graphically by games and average.... **HAPPY:** For kids 2 and up, randomly selected digits and letters are displayed one at a time in large block style. Nothing happens until the matching key is pressed (plus ENTER in Level I) then acknowledgement is graphic "happyface" that winks.... **DOODLER:** Single version of the popular original allows you to doodle on the screen with prompted input commands and stores them in memory for recall or replay..... Each program is \$5.00 or all 6 for \$20 (that's \$3.33 each, folks) on one cassette for this newsletter fund raising special. Specify Level I or II. TCS, PO BOX 10281, NORFOLK, VA 23513

John Blair has another sheet (two sides) to go with "Roaming Through the ROM's". This one has some good information on tape formats and reserved RAM locations for you M/L types. We also have some technical notes on how to hook up your own numerical keypad, switch in reverse video (black letters on white background) with an unused section of an IC in the computer, and pin designations for a proposed standard 44-pin bus for the TRS-80. Any or all of these are yours for a donation to help pay the costs of this letter. George Higson's note on some improvements to Editor/Assembler is still available for a dollar while the supply lasts. Send your request to TCS.

OTHER NEWSLETTERS

That Orange County TRS-80 Users Group (OCTUG) sure puts out a fine newsletter for a local club. It's edited by William Barden, Jr. who is a professional writer (see NEW PRODUCTS). It really has a lot of different info in it including tutorials on machine language programming. Their last issue was 23 pages (with only one page of advertising) and contained a modification for inverted video (black letters on white background) plus a short program for non-disk users to get complete error messages displayed like disk users get. You can get the monthly newsletter by joining the other 400 OCTUG members which sent \$10 to Dick White, Treasurer, OCTUG, PO Box 563, Norwalk, CA 90650.

K-BUG BYTE is the official publication of TRS-80 Kansas Business (and pleasure) User Group which formed March 15 in Wichita. Understandably, they didn't have much news for the first issue but two things caught our eye. One was a hint to control static electricity which could have disastrous effects on the computer, either temporary or permanent. Spray the rug and area around your computer with a mixture of 2/3 Downy and 1/3 water. Or attach a metal strip to the table and ground it to the plug box. The other thing we liked was the thought, "TO ERR IS HUMAN, TO REALLY FOUL UP TAKES A COMPUTER".

The newsletter of the Monterey Bay Users Group for the TRS-80 is called MBUG and we thank William Pitt for including us on his list. In their latest issue there is a warning for all of us who have a Radio Shack CTR-80 Cassette Recorder. DON'T press the STOP key while a program is loading because it can destroy that program on the tape. If you start to load a program and realise it's the wrong one, let it finish before stopping it. Thanks MBUG.

Although THE I/O PORT isn't strictly a TRS-80 newsletter, it has a lot of goodies about the TRS-80 in it. (Besides, we like the name of their club, TCS, which stands for the Tulsa Computer Society.) For those of you monkeying with IBM Selectric interfaces, their latest issue contains a schematic and article for what appeared to be general computer applications. Their address is TCS, Box 1133, Tulsa, OK 74101.

On the commercial side, INSIDERS has been highly recommended to us for those of you bent on machine language programming. The complimentary issue we got was 16 pages, only 2 of which were advertising. It is published by Computer Cablevision, Inc., 2617 42nd Street N.W. #2, Washington, D.C. 20007 and subscriptions are \$7.50 for 6 issues.

SOFTSIDE is a pamphlet sized publication that usually numbers about 60 or more pages. It has a lot of advertising but it is all for software from TSE TRS-80 Software Exchange. There must be a connection there somewhere. Anyway, it is very professionally put together and contains many BASIC listings. The April issue had one on personal finance, a couple of games including Safari, one on electronics (series circuits) and a music program that plays out on an AM radio placed next to the computer. They also have some news and programming hints, too. A unique feature is their telephone hotline (603) 673-5144 which is manned from 7 pm to 9:30 pm EST every Tuesday night to offer BASIC programming assistance for Level I or II. Subscriptions to the magazine are \$15 for 12 issues and the address is PO Box 68, Milford, NH 03055.

For people who would rather write their own software rather than punch in someone else's, SOFTSIDE has a sister publication called PROG 80 from the same address. It is published 4 times a year for \$10 bulk mail or \$14 first class mail. The May issue has an article and listing of a graphic scatter correlation program, both BASIC and machine language programs/info, a construction article and how to install a lower case modification among other things.

T-PAL, said to be the "do-it-yourself" software newsletter is a smart looking tutorial type of publication available from The Mail Mart, Box 11102, San Francisco, CA 94101. It's \$24 for 12 monthly issues. The 8-page complimentary issue we got really got into detail (literally program line by program line explanations). If they can keep up the standard they set for themselves in this issue it could be of real value for beginners and those wishing to become expert BASIC programmers. If we get any more issues or feedback from subscribers we'll make further reports.

COMPUTER MAGAZINES

KILOBAUD continues to lead. There's articles on graphing in May, Selectric word processing in June along with a telephone data coupler, and details of the HUH S-100 interface in a July review... TRS-80 STRINGS is a regular review feature in CREATIVE COMPUTING. Their June issue has an interesting article on the Voice Synthesizer complete with two of the author's programs and a phonemes dictionary... Another TRUG review article, this one in the June issue of PERSONAL COMPUTING... Little if anything in RYTE...

FEEDBACK

Mark Johnson of St. Louis, Missouri says CLOAD magazine on cassette tape is a good deal if one is interested in building up a library of games. There is some novel graphics, a little news and machine language technicalia each month, too. He also says you will probably outgrow CLOAD someday, which is why he is selling his personal set in our bulletin board section, but a lot of people he knows likes it and he would recommend it to new owners. It seems to be surviving financially.

We bought "TRcopy" from Data/Print Publishing, PO Box 903, Fargo, ND 58107 for \$39.95 and we're very pleased with what we got. This program may be used to copy any Level II BASIC or machine language program by first loading it into memory. It's distinguishing feature is that it displays each byte in hex code and ASCII equivalent as it is read from tape. This is a real time saver when you aren't sure what is on a tape because you don't have to know what kind it is or load in the whole thing to identify it. It has other nice features like allowing you to determine the exact volume level needed for certain cassettes. It comes with a professionally printed 38 page booklet with lots of information about tape formats.

Jarry Owen of Ropewell, VA reports an error in the Editor/Assembler manual, page 9, first example under "logical and": 3C00h & FFH should read 3C00 & 0FFH. Leaving that zero out won't work because the first position of an entry has to be numerical.

On page A/14 of the Level II manual under USR(n), it says "n must equal 0". Not true, says H. Phelps Gates of Chapel Hill, NC. Perhaps it meant that only one USR at a time is available in Level II? Just below that, VARPTR(n) does not return 0 if VAR has not been assigned a value. A ZPC error results as correctly stated on page 8/8.

Mr. Gates also points out a quirk in Editor/Assembler 1.1 that is explained here by John Blair of Norfolk, VA. It will occasionally accept invalid numbers as valid. The JR instruction, which is used to branch relative to the program counter a maximum of 129 cells forward or 126 cells backward, should only be used with a three digit decimal number (-126D to +129D) or the two digit hex equivalent (-79D to +82D). But if you try to assemble JR 7082, it will accept the four digit number 7082 and erroneously treat it as a forward jump. Keep in mind when using the JR instruction the displacement must be preceded by a dollar sign, the symbol for present program counter. For example, JR \$+82H is correct.

One reader wrote that he wasn't into "anonymous" relationships and wanted to correspond. So we have decided to start a new free service of maintaining a list of those of you who wish to become "pan pals" with each other. If you want to participate, send us an SASE along with your name, address and area of interest in the TRS-80. We'll compile all of you into a list and send it back.

Our "waiting list" for Level I ROM's is another free service that seems to have been a good idea. With all the interest in having switch selectable Level I and Level II in the same computer, we've matched up about a dozen of you buyers and sellers so far. At the present time we have five sellers still on the list and both single and two-chip versions are available. The going price is \$20 but don't send any money or ROM's to us, just an SASE and let us know if you want to buy or sell. Be sure to specify single or two-chip sets and we'll send your name to someone who wants to do business with you.

Speaking of free services, we have some new ones for you in the form of more "waiting lists". One is for 4K RAM's. Some peripherals and S-100 type memory boards can use the ones removed from keyboard units after upgrading to 16K. Used chips without a guarantee are worth about a third of the cost of new ones. If you would like to buy or sell a set of eight for \$15, let us know which and include an SASE. We'll put you on the list and try to match some of you up.

Another list is for 16K RAM's. For some strange reason, high speed 16K RAM's seem to work fine in TRS-80 keyboard units but not in the Expansion Unit where the slower versions are needed for proper operation. Some people are stuck with a good set that they can't use and can't return while others are hunting bargains for keyboard units or other devices. Buyers and sellers who think \$50 is a fair price are invited to send us their names and an SASE for inclusion on our waiting list. We'll try to match you up at no charge.

Here's a list that should be popular. Many of you now have disk systems and suddenly discovered you don't need all those cassettes you've been accumulating. One of the most popular is the Radio Shack C-30 3-pack that sells for \$1.99. If you got 25 cents each for 200 of them that's \$50. Set your own price but send us an SASE with the quantity, lengths and brand names of the cassettes you want to sell. We'll send you some names from the list of those who let us know they're interested in buying.

If you are hardware oriented you may have already discovered that you can extend the life of your cassette relay by letting it turn on a low current transistor to operate the high current recorder motor. That's fine until some occasion when you want to use it with a different recorder which, adhering to Murphy's Law, has a remote plug with opposite polarity voltage. If you think you will run into this situation, use two transistors such as D40N1 power darlington. Just connect them emitter to collector and collector to emitter and then in series with the remote plug. Then connect the two bases to the normally open contacts of the cassette relay. No other component is required and it works perfectly with any recorder.

If the left edge of the characters on your video display don't always line up or one line jiggles horizontally with power line interference, try moving your power supply or turn it around. The magnetic field of its transformer can have a weird effect on the deflection coils of your CRT.

If you have a vertical jiggle of just one raster line, your characters will appear blurred because of unsteady sync. We fixed a computer that caused this problem by adding a 470 pf capacitor between Z57 pin 12 and ground. Now it's a display is perfectly sharp.

If you have multipple entry problems with your keyboard, be careful when you try to cure it. Some people recommend procedure which can do more harm than good. For example, don't pry off key caps with a screwdriver. Slip a string under them and pull them off. Don't clean the contacts with a swab. The alignment of the parallel fingers is critical so they don't all bounce at the same time. Use a spray contact cleaner instead. Send an SASE for our single page KEYBOARD MAINTENANCE note ready to reproduce in your group's newsletter.

LAST MINUTE STUFF

The latest issue of 80-US has an article about lower case without hardware modification. Software is used to cause all letters to be lower case when output to a printer even though they are displayed as upper case on the CRT. A small graphic block will distinguish those that were actually made upper case with the shift key.

48K systems without external memory? That may be a possibility in another year or two now that 64K RAM chips are starting to be delivered. Motorola and TI are delivering limited quantities and Toshiba will be in full production by the fall. These chips are the same size as our 16K RAM's, pin designations are the same except for one, power requirements will be less and price will drop to the present level of 16K chips within a year or so. They only use one supply voltage (+5 volts) and if it doesn't draw much more current than the 16K chip, someone is sure to figure out a simple addressing modification for it.

We are sure to have left some stuff out for lack of room in this letter. If you sent us something we didn't use, rest assured we appreciate it and will probably use it sometime in the future.

We got lots of comments about the lack of a mailing address on our registration form for free membership. Thanks for bringing it to our attention. We have corrected that.

We haven't yet compiled all the data on users equipment, interests, applications, subscriptions, etc., but will announce it when we get it done. However, for you potential advertisers, KILOBAUD is by far the most popular magazine among our members. Also, almost everyone has Level II now and many are waiting for a disk/memory/interface combination from a single source other than Radio Shack. A lot of people are wary of the problems with the Radio Shack Expansion Box.

If you asked for something from us and didn't get it within three weeks, let us know. By trying to divide up the responsibilities around here we got in each other's way for awhile. We hope we found all of the letters that we each thought the other was taking care of.

We wish to thank many of you who volunteered assistance on your forms. If you haven't heard from us yet, please understand. We have several plans in the works which may soon include you but we want to get the bugs worked out for effortless coordination... We did not mail out any separate information to User Groups since the last letter but we hope to in the future to fill the gap between letters. On our registration forms we ask if you are a member of a User Group. "Yes" or just the name isn't what we want. We need the mailing address so we can send additional information from time to time...

We aren't getting nearly enough information on errors in manuals for Level I, Level II, Editor/Assembler, TBUG and the Technical Reference Handbook. We're sure there is much more than we have and we want to compile an index to send to user groups and requesting individuals.

TCS was established as an identity for some individuals who, as a sideline, performed some specialized computer services under contract. Follow-up information passed on to customers promoted good will and grew into a regular network of letters by the time one of them got a TRS-80 and became known to the local user group.

Local owners casually formed the TIDEWATER TRS-80 USERS GROUP to share TRS-80 experiences and discoveries. To this day there are no official by-laws, club officers or dues in this group. Meetings are held once a month although mutual assistance and fellowship occur daily. Outside communication with other groups has been accomplished courtesy of TCS.

The original TCS is dissolved and its assets, primarily consisting of letterhead and a post office box, have been turned over to TIDEWATER TRS-80 USERS GROUP who now devote the letters to the TRS-80 and continue them as a club project. The TCS name is retained because it is recognized and could just as easily represent TRS-80 COMPUTER SOCIETY, or even TRS-80 COMPUTER SERVICES, as it did TIDEWATER COMPUTER SERVICES.

It's fun to communicate with so many users of the TRS-80 around the world and be among the first to learn new information. It's rewarding to work together as a team, be able to assist others, and use our computers for something worthwhile. We publish irregularly, every two or three months if possible, and must rotate the members on the mailing list due to limited funds. But we feel there should be at least one free source of information to owners that will, if nothing else, be a source for locating other sources. Some people simply aren't aware of all the information that is available.

WHAT MAKES THE TCS LETTER FREE?

When we say this letter is free, that doesn't mean we find them under rocks. True, the collating, folding, stuffing, addressing, return address stamping and postage stamp affixing is done free by local members. But the stamps, envelope, paper and printing (which we don't get a break on) costs money.

We try to get direct mail advertisers to let us mail their flyers with our letter and when we can get three per envelope it covers the cost of the stamp. Four would give us a cushion for future letters that only have one or two. Trying to attract advertisers is the reason we use envelopes and first class mail. (If you wish to have flyers mailed, please write for details.) We never get enough advertisers this way so we rotate the names on our list except for those who sent a dollar to pay for their own stamps. Any flyers those people get are extras that the advertiser didn't pay to have mailed. (Incidentally, many people said on their form they were sending a dollar but didn't.)

We offer free services and free advertising space to encourage participation in our letter. Many appreciate this and send donations, usually a percentage of the profit on an item they advertised. This and a little income from software and miscellaneous items helps us pay printing costs.

We never seem to have enough to pay all our costs so the difference comes out of the pockets of TIDEWATER TRS-80 USERS GROUP members. You can help by always sending an SASE (self addressed stamped envelope) whenever you write us, and if you can spare it, an extra stamp or two for the cigar box so we can send out some extra letters.

If you haven't sent us a free registration form for 1979, please request one. You'll get our letter more often that way. If you are a member of a local TRS-80 user group, send us the address of the group so we can pass along more frequent information. Also, give our address to all your members so they can each get their own copies. A large list of interested owners is a selling point with our advertisers.

One last thing, feel free to copy anything you find in our letter for your own group's newsletter. That's one of the reasons we exist. And if you can spare it, put us on your mailing list. We'll assume we can draw from it unless you state otherwise.

If any of you want to start user groups in your area, we'll give you the names of TRS-80 owners for you to contact. Just supply the zip codes for us to search. Please, don't make this request for commercial purposes.