

THE S-EIGHTY™

JUNE 1980

FIFTY CENTS



NEWDOS

In the beginning DOS created the disk and the diskette....

Get your UPPER and lowercase the easy way!



THE PATCH!

Unfortunately, converting your TRS-80* requires installing the video memory chip plus wiring changes. There is only one modification on the market which eliminates most of the wiring. To get the dualcase mod installed you have three choices: 1) Send your computer to a company or individual who will do the wiring, 2) do it yourself, or 3) "THE PATCH".

To make choices 1 and 2 operate requires using software overhead in the form of a "driver". This takes 30 bytes, unless you want a "normal" shift to UPPERCASE keyboard. That takes upwards of 60 more bytes. Software oriented mods have three more disadvantages: 1) They reside in program memory, eating program space which you could be using, 2) other machine language programs are unusable if they are loaded against the top of memory, or 3) the "driver" software MUST be loaded every time you power-up, or the "MEMORY SIZE?" appears due to program bomb. Choice number three suffers from NONE of the software overhead problems. We call it "THE PATCH" and it's new for the 80's!

"THE PATCH", a small electronic module which plugs into the unused ROM socket on Level II machines, makes necessary software changes to ROM supporting lowercase, an optional block cursor, and extra keyboard debounce. Electronically means NO software overhead. Your computer displays lowercase instantly upon power-up, and the keyboard operates in "normal" typewriter fashion.

"THE PATCH" is completely compatible with your TRS-80* since it is the first, and only, TRS-80* lowercase system designed that flawlessly mates with the computer as a unit, not just a special program package.

"THE PATCH" is also the only modification of any kind which can have extra options and updates factory installed for 5 to 10 dollars per option, as they are available. Same day turnaround.

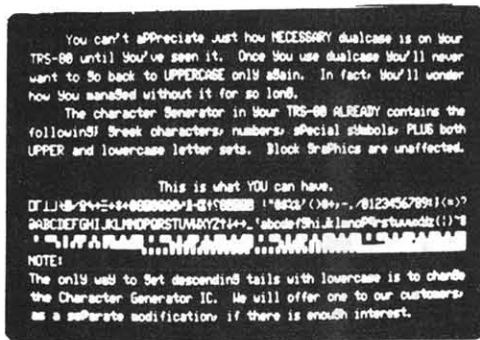
THE PATCH is a trademark of CECDAT, Inc.

*TRS-80 is a trademark of Tandy, Radio Shack Corp.

Call 208-883-0611

Order yours today to avoid extra delay. Send \$59.97 plus \$2.50 for shipping and handling to: CECDAT "THE PATCH", Box 8963, Moscow, ID 83843.

Why Lowercase?



Wouldn't you like to access YOUR entire typeset? Level II BASIC converts lowercase command words into UPPERCASE. All characters contained between quotes remain as typed, but the software in an unconverted TRS-80* allows UPPERCASE display only! This software shortcut allowed Tandy to omit one video memory chip. This chip must be added and the video software repaired before the display of dualcase is possible.

Price increase coming June 1st.

(Print or Type)

Name _____

Street _____

City _____

Zip _____

Master/Visa # _____

Expiration Date _____

Signature _____

___ ea "THE PATCH" 59.97
Ship & Handling + 2.50

___ ea Block Cursor
(Replaces Underline Cursor)

Idaho Residents add 3% Tax

___ Charge ___ Check ___ MO

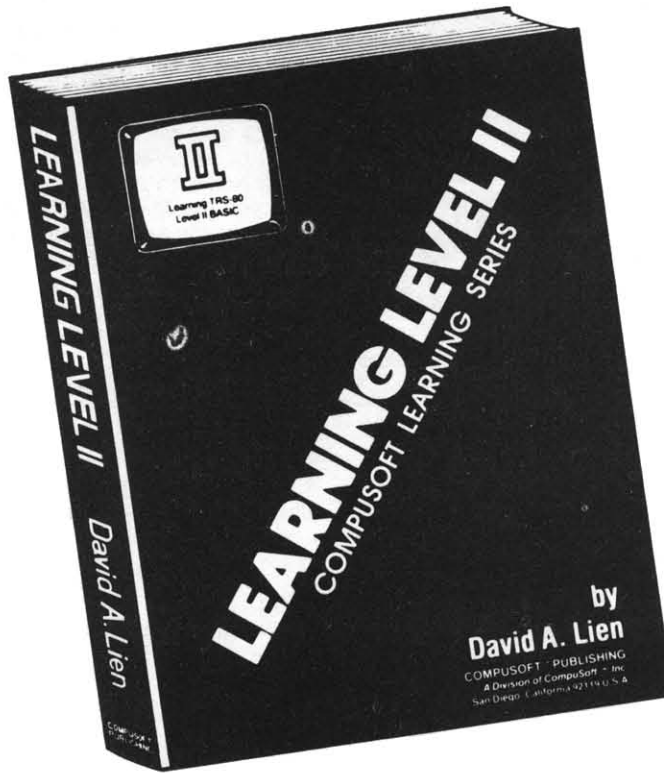
___ N/C

Total _____



READER SERVICE L

Here's The Second Half



\$15⁹⁵
(soft cover)

Written by the author of your Level II Users Manual, **LEARNING LEVEL II** picks right up where the Level I Manual leaves off. It even supplies the changes needed to make the Level I Manual compatible with your Level II TRS-80.

LEARNING LEVEL II covers all Level II BASIC beyond Level I, plus much more. It shows you how to use the Editor, explains what the many error messages are really saying, and leads you thru conversions of Level I programs to Level II.

Dual cassettes, the Expansion Interface with Real Time Clock, use of printers and other features are explained in the same easy-to-learn style that made the Level I Manual famous. **LEARNING LEVEL II** was created specifically for your Level II TRS-80!

Yes, I want to LEARN Level II!



COMPUSOFT™ PUBLISHING • 8643TE Navajo Rd. • San Diego, CA 92119

Please send _____ copies of **LEARNING LEVEL II**. My check for \$15.95 each + \$1.45 P&H is enclosed. (CA addresses add 6% sales tax).

I understand my order will be shipped promptly and there is a 30 day money-back guarantee.

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ADDRESS _____
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STATE _____
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80*

DUAL DISK-32K
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DTI
PAYROLL
 No. 410

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- Runs in all states.
- You maintain the P/R product without programing.
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- Accounts Payable
- Accounts Receivable
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*Trademark Radio Shack, Div Tandy Corp.

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Submissions

Articles, reviews and press releases are welcome and will be published as space permits. No compensation is offered for commercial submissions. Individual authors are compensated at \$20. per page.

*Note: Radio Shack and TRS-80 are registered trademarks of the Radio Shack, Division of Tandy Corporation.

RIGHT JUSTIFIED DISK FILES OR BEING LEFT TO YOUR OWN DEVICES

As a follow-up to Lance Micklus' article on DEVICES, I would like to tell you about one very nice advantage to using an operating system such as VTOS 3.0 which is "device independent". Being device independent means that the output stays the same and the user tells the operating system what to route the output to. This is a very powerful function and can be used in a variety of ways. For example, if you do not own a printer you can still run programs designed to output to one. Using the command `ROUTE *PR TO *DO` will take all LPRINT commands and route them to the video. Simple; yes? Reversing the command (`ROUTE *DO TO *PR`) does the exact opposite, thereby causing everything that is usually displayed to be printed on your printer. The command `LINK *DO TO *PR` gives you both devices at the same time. Things start to get interesting when you consider that disk drives are also devices. Any program that uses the operating system's printer driver can have the printed output written to a disk file instead.

Enter ELECTRIC PENCIL. The VTOS 3.0 version of The ELECTRIC PENCIL fits perfectly into this situation. What follows is a description of a technique I use for generating perfectly formatted files for transmission to time sharing systems. You will soon see that the technique can have myriad other uses and, besides that, it's an interesting concept to play around with.

The only necessary tools for this experiment are VTOS 3.0, ELECTRIC PENCIL and, of course, a disk drive. From DOS READY, type `ROUTE *PR TO FILENAME`. FILENAME is any name you want it to be. You have now opened a file and you have told VTOS to route all printer output to that file. Now type PENCIL (or whatever you call it on your disk) and either load in a PENCIL file or type in a new one.

Once you have a text file resident in PENCIL, type control "K" and enter your print formatting commands. For this experiment let's use J1, L60, and SX. Hit your Right Arrow and return to your text. Type Control "B" to position the cursor at the beginning of your text and then type Control "P" to print it. If you have followed the above instructions correctly your disk should now be spinning. Once the flashing cursor has returned and the disk has stopped spinning, type Control "O" to return to DOS READY. The last is very important; do not hit your RESET BUTTON! to exit PENCIL. You do not want to re-boot! You must return to DOS to close the file you have opened. This is easily accomplished by typing RESET from DOS READY. Once DOS READY reappears, type LIST FILENAME. Again, FILENAME is the name you gave when you typed `ROUTE *PR TO FILENAME`. There it is. Your text file right justified and with a 60 character line length. If your file started with a \$HEADER you will also have page numbers and if your file was longer than one page, you will see the blank lines separating each page where PENCIL put in a FORM FEED to advance to the next page. Anytime you want a copy of the document you have only to type PRINT FILENAME from DOS READY and it will be printed exactly as if you had run PENCIL and put in all the formatting commands.

Since time sharing systems have various line length limits, I use this technique to format large text files so that I am able to transmit them in the correct format without having to put carriage returns at the end of every line (a very tedious job).

Please note that whenever you use a filename that already exists on the disk, VTOS will not write over the existing file. Instead, it will APPEND the new output to the old file. This can be an advantage and also a disadvantage. If you made a mistake the first time around and are re-doing the experiment, be sure to KILL the file before trying the experiment again.

The SX command is needed to prevent a double line feed which will cause the file to be double spaced.

SCRIPSIT, the new word processor from Radio Shack, cannot be used for this experiment. SCRIPSIT uses its own printer driver and no amount of LINK or ROUTE will change the output from ultimately going to the printer.

NOTICE TO S-8IGHTY READERS

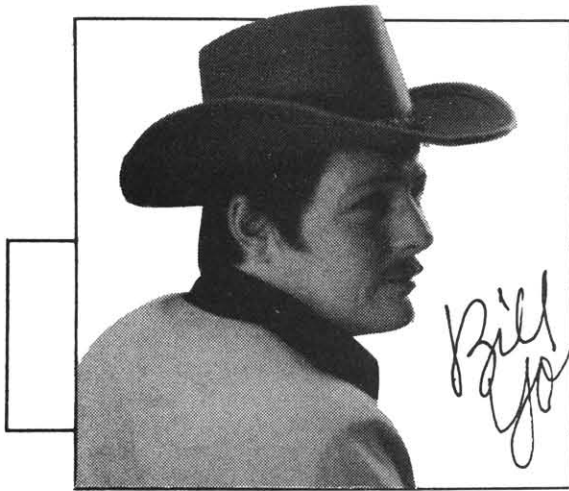
With the May issue, the S-8ighty Magazine will arrive free of charge to readers who subscribe to either SoftSide S-80 Edition, or Prog/80, and recent customers of The Software Exchange. To all others, a \$5.00 subscription fee for 12 issues will be required.

Please fill out the attached and return with your subscription fee to: **P.O. Box 68, Milford, New Hampshire 03055**

Name-----

Address-----

City-----State-----Zip-----



Bill York

PURE & SIMPLE

I come to you not as a prophet.....

Economics??

I have never even attempted to try to understand how the economic situation can be so bad that the prime lending rate soars to 20 plus percent, building starts drop by 60 percent, construction companies lay off hundreds of people at a time...and most computer companies are doing so well that they are having a hard time keeping up with orders. It just doesn't make sense...or does it? We are in a high-technology business where a machine is necessary to remain a competitive force. Without one, you fall behind your rivals and soon find yourself in dire straits. I'm not referring to all businesses, of course...but a business of any size falls easily within these boundaries.

Many companies were very surprised when at a time when tax refunds were coming in...no one was buying anything and some businesses experienced sharp declines in sales. A fast glance into one of the major financial journals provided the answer. They stated that many people had to borrow money to pay their bills as the winter progressed, and they were now paying back those loans with their tax refunds. It seems as though the only major flow of monies is in big business...and the little guy is taking it on the chin, as usual.

How do you compare ad results?

I am continuously amazed at how few companies keep accurate records of the effectiveness of their advertising. Many of the returns are never checked to see if they produced a sale. What the heck are you spending your money for??? Your primary interest should be how much money are you making versus how much you have spent..."Bang for the buck" as a wise man once said. Many people judge their campaigns by the amount of responses they receive...cow chips!...the fact that a label is only costing you \$.75 doesn't mean that you sold any of your product; you can't eat interest or curiosity. Cost per thousand is good sound economic reasoning...but, once again, it only speaks to how you invested your funds...and not what the investment produced for you.

When you receive a telephone order, ask the person how he heard about you. In your follow-up literature, provide a portion of the order sheet where the resposdee can advise where he saw your ad. Run coupon type ads, and code the address so you will have a direct measurement of how well your ad is pulling for you. Your ad doesn't have to be a full

page. If you chat with a good ad salesman he will tell you that in many cases a ¼ page ad will outpull a full page if five categories are created and satisfied:

- 1) **Establish Contact.** Get their attention
- 2) **Create customer awareness.** Solid pertinent information.
- 3) **Arouse interest.** What it can do for me
- 4) **Build customer preference.** Product loyalty based on quality
- 5) **Keep the customers sold.** Good product support and follow-up

Most Important of All!!!!

Check the information on the magazines that you intend to use as advertising vehicles. Check with some of the companies that are marketing products similar to yours and see how they did, or are doing. You'll be very surprised at how cooperative they can be. There are, unfortunately, two or three computer publications that claim circulations far in excess of what they actually are...and charge rates to support the inflated figures. When you know that you are getting X dollars in sales from an expenditure of \$X, then you have achieved the maximum in measuring and evaluating your advertising.

Now that I drive back and forth everyday to my office in Boston, I have become hooked on a morning "BS" show where the announcer is constantly asking trivia questions...after a while you get to be pretty sharp. There's hope for us all yet. Keep smilin'.

Announcing the

NAME-THE- GORILLA CONTEST WINNER

Congratulations to Mr. Alan Simons of Bergenfield, NJ for correctly naming SoftSide Editor/Programmer James Garon as the wearer of the gorilla suit on our April 1980 cover!

THE LEAST EXPENSIVE PROGRAMS YOU CAN BUY.

Up to 77 high-quality programs for
TRS-80, only \$8!

THE \$15.50 COMPILER:

TINY PASCAL FOR TRS-80

At last your TRS-80 can run Pascal too! The Chung/Yuen "tiny" Pascal is fully implemented for Level II TRS-80, 16K and up. You no longer need be left out of the growing group of Pascal users, because People's Pascal gives you everything you need to write structured Pascal programs:

- tiny Pascal compiler
- complete text editor for writing your programs
- complete tiny Pascal monitor
- sample Pascal programs
- user's manual (TRS-80 Computing issue 1:4)

People's Pascal is both a powerful, structured language and "CPU expeditor". People's Pascal programs execute at least four times faster than Basic, and often eight-times faster! Special functions open up the complete graphic capability of TRS-80. You now have the means to write those dazzling, impressive, high-speed graphics programs that are great for games, plotting, statistics, etc.

For the serious computerist, side two of People's Pascal II (tape 6) contains a larger compiler and complete source to the compiler, written in Pascal! This means you can re-compile the compiler, making changes, adding features, etc. (but this will take at least 36 K RAM and a solid knowledge of programming).

With the complete People's Pascal operating system, you can save and load both source (Pascal) programs, and compiled programs, to or from cassette tape. This means that once you have de-bugged a program, you can save the P-code (compiled program) and thereafter, to run the program, you need only load the super-fast P-code.

Here is a partial list of People's Pascal features: recursive procedure/functions • for (loop) • case if/then/else • one-dimensional arrays • write • read constant • repeat/until (loop) • "peek & poke" • plot (graphics for TRS-80)

DEALER INQUIRIES INVITED

People's Pascal 1 (tape 3) is written in Basic, implemented for TRS-80 by John Alexander of Berwick Australia. It compiles P codes more slowly and is harder to use than Pascal 2, but its P codes can be translated into Z80 native code and saved as System tapes. Pascal 2 requires that Pascal be resident at run time—Pascal 1 does not. Other People's Software tapes \$8.

—CA Residents Add 6 per cent TAX (\$8.45, \$16.40 & 24.88). Quoted Prices INCLUDE \$.50 Shipping—

TAPE 1 LEVEL 2

Mortgage calculations, Dow Jones Industrial, cash flow, inventory-change, California income tax, journal ledger (8K), loan amortization, perpetual calendar, bio rhythm, payroll, diet planning, speed reading, touch typing, sales receipt tally, decision maker, mail addressing, straight depreciation, double-declining depreciation, and revolving charge account.

Also, math problems, queen, Star Trek I, number guessing, wheel of fortune, World War II bomber, rock-scissors-paper, seek, Star Trek II, Red Baron, mini-Trek, strategy, pilot, battleship, "On A Snowy Evening", mastermind, tic-tac-toe, grand prix auto race, capitals, etch sketch, hangman. Total programs: 34; Level 1 version available: 24 programs. \$8.

TAPE 2 Some Common Basic Programs (lev. 2)

Fully documented in *Some Common Basic Programs* by Lon Poole & Mary Borchers (Osborne & Associates, 630 Bancroft way, Berkeley, CA 94710—or from CIE—\$12.50 postpaid from CIE, via UPS, CA residents add tax (to \$13.25)):

Investment, future value regular deposits; regular deposits; regular withdrawals, initial, minim (for withdrawals); nominal interest, effective & earned-interest; depreciation rate, amount depreciation; salvage value; discount com'l paper; loan principal, regular & last payment, remaining balance, term-loan; mortgage amortization; greatest common denom.- integer prime factors; polygon area; triangle parts; analysis, operations two vectors; radian-degree., degree-radian conversion; coordinate, polar equation, functions plot; linear, curvilinear interpolation; Simpson's & trapezoidal rules, Gaussian quadrature integration; derivative.

Side 2—quadratic equation, polynomial (Newton) & half-interval-search roots; trig polynomial; simultaneous equations; linear programming; matrix addition, subtraction; scalar multiplication, inversion; permutations & combinations; Mann-Whitney U test; mean, variance, standard deviation; geometric mean & deviation; binomial, Poisson, normal, Chi-square distribution; Chi-sq., student's T-distribution test; F-distribution; linear correlation coefficient; linear, multiple-linear, Nth order, geometric, exponential regression; system reliability; future projections; Federal withholding taxes; tax depreciation schedule; check writer; recipe cost; map check; day of week; days between two dates; anglo to metric; alphabetize. \$8

TAPE 3 People's Pascal Development System 1

Pascal 1 compiler-program development system. \$15.50

TAPE 4 LEVEL 1

Election returns, business percentage, ups and downs of business, index, inventory control, sales receipt tally, gas mileage, driving distance, mixed monthly sales report, payroll, annual earnings, speech recording aid, and double-declining depreciation.

Also, math problems, cash register, chase, snoopy, commander-in-chief, Christmas graphic, air raid, balance scale, stock market, tic-tac-toe and On A Snowy Evening. \$8

TAPE 5 LEVEL 2

Memory test, mortgage payments, tension breaker, lineprinter-screen & vice-versa utilities, Federal income tax, election returns, business percentage, vacation planner, car pool(disk), diet planning 2, mailing list(disk) and first aid.

Also spelling bee, Star Trek 3, mind bender, tachistoscope, chase, common factor, klingon capture, spelling practice, Hamurabi, animals, Snoopy, cryptogram, starship, ants, Yesterday, and Pilot(disk). Pilot is the language of computer-aided instruction (CAI).

TAPE 6 People's Pascal 2

Pascal 2 compiler-program development system. \$23.50

TAPE 7 LEVEL 2

Disassembler, Pilot, roster, dropout, memory loader, memory sort, inventory control, graph, land surveying, mixed monthly sales report, shopping list, diet planning 3, loan progress chart, hex-decimal conversion.

Also Star Trek 4, states and capitals, battleships 2, spelling practice 2, number guessing, hangman 2, snark, slot machine, cipher, target, surround, adder, termites, lunar lander, multiplication exercise, five-in-a-row, Bastem, and write. A number after a program indicates there are other similar People's Software programs. Pilot is the same as the disk pilot on tape 5, except runs on 16K tape systems. \$8.

COMPUTER INFORMATION EXCHANGE
Box 159, San Luis Rey CA 92068 (714) 757-4849

New Products

The S-EIGHTY is happy to publish information about new products related to the TRS-80*. We cannot be responsible for the accuracy of the information presented here, and those with questions are asked to contact the indicated companies directly.

*Trademark of Radio Shack Div. of Tandy Corp.



TRS-80 SPACE SAVER COMPUTER DESK

The Space-Saver Computer Desk from Radio Shack is designed to hold a TRS-80 Model I Microcomputer System, with cassette or up to two disk drives, and a small printer, and still leave ample room for workspace.

Especially suited for home and school use, the 37 $\frac{3}{4}$ " x 23 $\frac{3}{4}$ " desk top has a raised section for the video monitor and printer; shelf provides convenient storage for tapes, disks or manuals. Simulated walnut finish.

The TRS-80 Space-Saver Computer Desk is priced at \$49.95. Available from participating Radio Shack stores and dealers, and Radio Shack Computer Centers, nationwide.



Seventeen new programs featuring mathematics instruction, drill and games are now available from Sketete Educational Software. The programs run on TRS-80 and Apple II computers, and include graphing, algebra, and arithmetic programs and games. The programs have been used and refined in actual classroom applications, and the teachers who have used them are enthusiastic.

The programs include the "Alphabet Song" on the Apple and a sketching screen with graphics code output for the TRS-80. For computer programming classes, there is a simulated machine language computer, implemented on the screen of the TRS-80.

The 17 programs are contained on five different tapes, two for the Apple (with Applesoft in ROM) and three for the TRS-80 (Level II). They can be ordered from Sketete Educational Software, 4639 Spruce St., Philadelphia, PA 19139. Write for a free catalog.

STRUCTURED BASIC TRANSLATOR

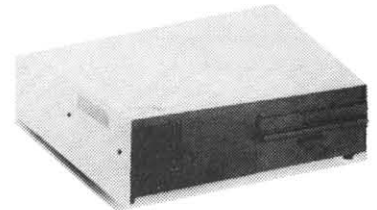
Acorn Software Products, Inc. announces the release of Structured BASIC Translator (SBT), a disk-based programming utility for the Radio Shack Model I, Level II TRS-80.

Structured BASIC Translator is not a programming language, but is simply a utility which allows programmers to write structured programs. The elements are PROCEDURE, CALL, CASE-CALL, IF-THEN-ELSE, WHILE and UNTIL. There are no line numbers and no GOTO's.

The programmer writes a structured program using either the provided editor or most any popular text editor. This text file may include structure elements, comments and BASIC statements. Then SBT converts the file into an executable BASIC program.

The translator is fast. For example, it will translate its own code in less than four minutes. This just adds to the ease and convenience of writing programs with SBT.

Structured BASIC Translator is priced at \$29.95 on disk. Dealers should direct their inquiries to: Acorn Software, Inc., 634 North Carolina Avenue, S.E., Washington, D.C. 20003 or phone (202) 544-4259.



LOBO INTRODUCES NEW FIXED/FLOPPY DISK MEMORY SYSTEM FOR TRS-80* AND APPLE USERS

Goleta, CA—LOBO DRIVES, International, one of the industry's leading manufacturers of floppy disk and fixed disk memory subsystems for the personal and small business microcomputer market, today announced the addition of the exciting new Model 1850 Dual Fixed/Floppy Disk Memory System for Apple and TRS-80 Model I computers.

LOBO DRIVES has succeeded in placing both an 8-inch floppy disk drive and an 8-inch Winchester technology fixed disk drive in one convenient, easy-to-use cabinet. The two drives also share the same highly-regulated power supply and unique disk controller. The dual arrangement makes it easy to on/off load data and also solves the need for a separate back-up for the fixed disk.

The floppy disk is the highly-reliable, field-proven Model 850 and is available in a choice of single or double density configurations. Maximum capacity is 1.6 megabytes.

The 8-inch Winchester technology fixed disk drive is a LOBO DRIVES Model 1000 and is available in a choice of 5 or 10-megabyte capacity.

*TRS-80 is a trademark of Radio Shack, a Tandy Corporation.

TRS-80 MUMATH ANNOUNCED BY MICROSOFT CONSUMER PRODUCTS

Bellevue, WA, March 14, 1980—Microsoft Consumer Products announces muMATH for the TRS-80, a symbolic math package that brings sophisticated math capability to the TRS-80 for the first time.

Developed by The Soft Warehouse of Honolulu, Hawaii, muMATH represents a major advance in the use of personal computers in educational, scientific and engineering applications. It provides the facilities to accurately and efficiently do algebra, trigonometry, calculus, integration, differentiation and other symbolic math operations.

muMATH's capabilities include exact rational arithmetic and automatic algebraic simplification. The user can control such transformations as expanding powers of polynomials and placing expressions over a common denominator. Other capabilities include trigonometric and logarithmic simplifications and symbolic differentiation and integration.

All operations in muMATH are performed with precision to 611 digits.

muSIMP, the language in which muMATH is written, is included in the muMATH package, allowing users to add their own muMATH capabilities and write other types of artificial intelligence programs. A superset of the language LISP, muSIMP is an extensible high level programming language that has the semantic power of LISP for symbolic processing but with a high-level syntax similar to such block-structured languages as PASCAL or PL/1. The system is implemented using an efficient and versatile machine-code interpreter.

muMATH requires a TRS-80 with 32K RAM and a single disk drive. To take advantage of all the capabilities of the package requires a 48K system.

The muMATH package includes the muMATH diskette, and complete

instruction manual. Suggested retail price is \$74.95.

muMATH is available from Microsoft Consumer Products retail dealers. For the name of the nearest dealer, consumers can contact Microsoft Consumer Products, 10800 Northeast Eighth, Suite 507, Bellevue, WA 98004. Telephone 206/454-1315.

BOOKKEEPING PROGRAM PRODUCTS FOR CP/M AND TRS-80 SYSTEMS

The DTI Bookkeeper I is the name of DATA TRAIN'S new family of Bookkeeping products for CP/M and TRSDOS Operating Systems. Bookkeeper I is written in Microsoft BASIC.

The products include General Ledger, Accounts Receivable (balance forward), Accounts Payable, and Payroll. All are modular (stand-alone) in design but share consistent screen formats for user prompting and ease of use. The Bookkeeper I Product Line is supported by excellent non-technical Operator's Reference Manuals for user product training and self-maintenance. Maintenance for tax tables, W-2's, quarterly tax reports, financial statement headings, etc. requires no programming and may be performed by the user.

Two versions of DTI Bookkeeper I are available. One TRSDOS for the TRS-80 Model I 32K, dual disk business system, and the other for the CP/M operating system in conjunction with Microsoft BASIC. The CP/M version will also satisfy bookkeeping needs for users of TRS-80 Model II systems utilizing CP/M. Optional DTI customer support services for Bookkeeper I include answering of operational questions by phone and bookkeeping system setup services accomplished by information supplied by the user to DTI's Data Products Services division.

Bookkeeper I is available directly to end-users for licensed use through DTI at \$95, per module or \$335, for all four products. Licensing agreements for distributors are also available. DATA TRAIN, INC.,

840 NW 6th Street, Suite 3, Grants Pass, Oregon 97526, (503) 476-1467.

INCREASED SUPPORT SERVICES FOR BUSINESS SYSTEM USERS

Addressing the individual setup needs of a bookkeeping and/or management information system for the computer user is the function of DTI's new DATA PRODUCTS SERVICE DIVISION (DPS). The DPS division will enhance DTI's successful phone training methods for customers of all DTI products. DPS will not be a phone training service but rather a service which will set-up on diskette the user's bookkeeping and/or management information system for the many DTI Bookkeeping Product Lines.

DTI products customers utilizing the service will, through DTI's questionnaire and information packet provide the DPS staff the information to setup their bookkeeping system. Setups are provided in several types from packaged setups, or a modified package setup, to custom setups. Optional setup services provide for establishment of special reports and/or the setup (input) of accounts and account informations for General Ledger (chart of accounts), Accounts Receivable (customers), Accounts Payable (vendors), Payroll (employees), etc. Setups are available for modular (stand-alone) and integrated bookkeeping systems on the appropriate products. Customers may utilize DPS not only for original bookkeeping systems setups but to modify or change an existing setup—i.e. modified or new special reports covered under the service, additional ledgers, journals, etc.

Major benefits accrued from DPS for the customer are the elimination of the inhouse setup of books for the computer which results in prompt usage of the computer system for processing chores and controlling of the setup expenses by greatly easing a substantial portion of the first time users learning curve. Coordinating

the delivery of hardware and DTI software products with DPS will allow an easy and fast startup.

DPS is available for all DTI Bookkeeping Program Products, current and soon to be released, including: DTI's NCR Bookkeeper Line marketed by NCR; the DTI Bookkeeping Products for most Wang Computers; DTI Bookkeeper Products I, II, and DTI's INFO/80 Product, for Microsoft BASIC and CP/M; DTI Bookkeeping Products for the TRS-80 Model I and II computers. The service provided is related to the capabilities of the program product with reasonable fees generally charged per module, application or data base and/or requested optional services. Packaged setups, when available, are priced on a fixed cost basis. Full information is available from DATA TRAIN, INC., 840 NW 6th Street, Suite 3, Grants Pass, Oregon 97526, (503) 576-1467.

DBMS PROVIDES CUSTOM BUSINESS APPLICATIONS

INFO/80—A responsive product created by DATA TRAIN, INC. for business bookkeeping, recordkeeping, and management information systems.

INFO/80 runs under the CP/M Operating system by Digital Research and utilizes Microsoft's Compiled (C-80) BASIC which creates a product for a wide span of the microcomputer marketplace including TRS-80 Model II with CP/M.

INFO/80 is the result of DTI's intensive R&D efforts. INFO/80 is a Data Base Management System which will bring to small business computer users, ranging from 'A'ccountants to 'Z'oo's, an effective and user-oriented method of maintaining bookkeeping and management information systems that can be totally individual for their business.

INFO/80 is operational on various disk devices ranging from 8-inch diskette to multi-megabyte hard disk with the size of the data base the con-

trolling parameter. Thus, INFO/80 can manage both a "small limited application" (data base) and a complete multiapplication (data base) for a full on-line integrated business system.

DTI will market INFO/80 and through DTI's Data Products Service (DPS) Division the user will obtain a custom or packaged bookkeeping and/or management information system setup (data base). With information provided DPS by the user an individual system setup for that business will be established.

DPS will provide to each INFO/80 user non-technical Operator's Reference Manuals for each specific business system setup. Additional support services such as user training will also be available through DTI's phone support services.

DTI projects that INFO/80 will be available for first shipment during June of 1980. INFO/80 and the data base setup will be available by license to end-users from DTI. Distributive licensing agreements for INFO/80 which feature inclusion of DTI and DPS support services will also be available to various types of distributors. INFO/80 and data base setups will be available on single density 8-inch floppy diskette. DATA TRAIN, INC., 840 NW 6th Street, Suite 3, Grants Pass, Oregon 97526, (503) 476-1467.

MATCHLESS SYSTEMS OFFERS TWO NEW PRODUCTS FOR MICRO— COMPUTER MARKET

Matchless Systems has recently developed two products for the microcomputer market. The first, the MS-204 Printer, is compatible with the TRS-80, Apple, Pet, or any other Centronics-type system. This 132-column, bi-directional, 9x7 dot matrix printer utilizes a print mechanism of extremely

simple design and high reliability, resulting in a superior performance. It has a print head life of 100 million characters.

Among the features are a print speed of 125 CPS and a throughput printer speed of 63 LPM. The adjustable sprocket feed mechanism allows use of forms from 2½" to 9½" wide, with loading from either the bottom or rear. A full 96 ASCII set permits printing upper and lower case characters which can be expanded for double-width fonts in bold face. The VFU (Vertical Format Unit) provides pre-programmed/programmable tab positions, top of form and bottom of form. The retail price is \$795.00.

Computer cables represent the second product line now being offered by Matchless, which provides off-the-shelf availability of cables for drives and printers, as well as specialty units—such as tape drive cables. The retail price for the two-drive cable is \$24.50, and the four-drive cable is \$34.50. The cable for the MS-204 Printer (and other printers such as Anadex, Microtek, Emako or any other Centronics-compatible printer) sells for \$34.50. Prices for the custom-made cables are available on request.

For OEM or dealer prices and other information, contact Mike Conner, Matchless Systems, 18444 Broadway, Gardena, CA 90248. Call (213) 327-1010.

MICROSETTE CO. GETS NEW NAME AND NEW PRODUCTS

Personal Micro Computers, Inc. is the new name for Microsette Co. It was created to reflect a broader product line than previously was encompassed under the Microsette name. Personal Micro Computers, Inc. is dedicated to offering new peripheral products to the personal computer market. Microsette blank cassettes and program duplication services will continue to be available by the new company.

Four new products from the company are currently

available. They are add-on peripherals for the TRS-80 Model I, Level II from Tandy, Radio Shack.

1. "Fastload": An interface between the Radio Shack CTR-41 recorder and the TRS-80 parallel port which permits standard cassettes in BASIC or SYSTEM formats to be loaded at 8000 baud (1 Kilobyte per second), 16 times faster than the usual baud rate.

2. "JOY-80": An Analog to Digital converter which not only has joy-sticks for games, but also may be used as an input device for up to four other real world happenings such as light level sensing, voice input, noise sensing, pressure sensing, biofeedback input, etc., etc.

3. "ROM Extender": A "black box" that plugs into the back of the TRS-80 to provide full decoding to access the unused 2K space in the TRS-80 memory map. Any ROM up to 2048 bytes may be plugged into the socket to provide up to 2014 bytes of extra memory for commonly used machine language programs.

4. "PRO-80": A prototyping printed circuit board with a 40 pin connector for conveniently assembling special peripheral circuits appearing in national magazines for the TRS-80.

Microsette Co. was started in March of 1978. In a two year time frame, Microsette Co. has established a reputation as the best cassette for the money in the micro computer market; furthermore, Microsette Co. duplication services for computer cassette programs have set the standards for comparison in quality as measured by ease of loading, material and workmanship.

Further details and pricing information on these products and services are available from Personal Micro Computers, Inc. at 475 Ellis Street, Mountain View, California 94043, telephone number (415) 968-1604.

Popular Computing, Incorporated, publishers of a monthly newsletter for the Radio Shack TRS-80 since 1978, today announced a low cost computer controlled Lighting and Appliance Control System for the TRS-80. With this the TRS-80 can control your coffee maker, outdoor lights, lamps, ceiling fixtures, electric garage door, stereo, TV, or whatever you desire (up to 500 watts or 1/3 hp).

The system is a modified version of the BSR X-10 Home Control System marketed by Radio Shack, Sears and others. It allows a TRS-80 micro-computer to remotely control lights and appliances throughout a home or office without any new wiring. Command signals are transmitted over existing house wiring. A variety of appliances and lights can be turned on and off, singularly or in groups. Lights can also be dimmed and brightened. All under program control. The system can also be controlled manually at the control unit.

A complete Model 201 Starter System sells for \$99.95. It's ready to use—just plug it in. It comes complete with simple instructions on how to install and use your system. This system consists of a Lamp Switch Module, a Master Control Unit with built-in interface, a software driver, and a demonstration program. The demonstration program, written in BASIC, provides timer driven control of up to 16 switch modules.

Additional switch modules are available. Prices are as follows:

Model 201 Starter System \$99.95

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Model 102 Lamp Switch Module \$19.95

Model 103 Appliance Switch Module \$19.95

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For additional information write to Popular Computing, Inc., PO Box 16875, Ft. Lauderdale, FL 33318.

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IN THE BEGINNING "DOS", AND OTHER NEAT STUFF

by Scott Snyder

In the beginning DOS created the diskette and the disk. And the diskette was without format and void. And darkness was upon the face of the disk. And the spirit of DOS moved upon the face of the keyboards.

And DOS said "Let there be light" and there was H.C. Pennington.

And DOS saw Pennington, that he was good. And DOS divided Pennington from the darkness.

And DOS called the light "TRS-80 Disk and Other Mysteries", and the darkness he called Tandy. And the evening and the morning were the first day.

And DOS said "Let there be a firmament in the midst of the keyboards, and let it divide the keyboards from the keyboards".

And DOS made the firmament, and divided the keyboards which were under the firmament from the keyboards which were above the firmament, and it was so.

And DOS called the firmament "NEWDOS". And the evening and the morning were the second day.

By now you may have guessed that I am a confirmed believer in the almighty DOS. By his will alone, all my free time is spent pondering over the keyboard. My bible (some refer to it as Level II Disk BASIC Reference Manual) is always there by my side. When there seems to be no way out I pick up my bible and read, chapter by chapter for inspiration and guidance.

Yea, though I walk through the valley of the shadow of disk I will fear no evil, for thou art with me, thy ROM and thy RAM, they comfort me.

Although my life with DOS may not be filled with green pastures, and some times I feel that my best friends initials are R.O.M., there is always some light peeking out of the clouds to brighten up a dark

subject. Here then, my fellow keypunchers are some observations that I have found.

These short subroutines have been extracted from my self written payroll program and are used in many of my other programs.

I have a 48K disk system with 2 RS drives, the RS lower case mod, printer and RS232 board. (Just for your information.)

The subroutine at Line 11000 is to clear the screen from any point (ZZ) to the bottom of the screen.

In all of my programs the headings are always displayed (see Line 210).

The subroutine starting at Line 12000 is my combination INKEY\$, flashing cursor, check if numeric input, error trap and see if your shoe is untied subroutine.

We must first look to Line 110 for the set up of the screen display. In Line 110 you will see the prompting message (that can be changed) followed by a STRING\$ print. CHR\$(136) is a graphics character and CHR\$(24) is a back space cursor command. So what we have done is to print our message and set up our field length in one easy step. CL\$ is "clear to the end of the line".

Now the meat!!! In Line 120 you will see three variables.

These variables are: X1, Y1, and Z1.

X1 is the length of the field to be input. NOTE: If the [ENTER] key is to terminate input then the length of X1 must be increased by 1 to provide for the extra character.

(Y1 = 1) if the last character to be input is the [ENTER] key. If input is to be terminated by the last key stroke then set (Y1 = 0)

(Z1 = 1) if the input is to be numeric only. In which case only the characters from zero [0] to nine [9] and the point [.] will be accepted by the system.

The flashing dot routine is in Lines 12030 and 12040. In this loaded routine, the keyboard scan (INKEY\$) is placed inside the "FOR NEXT" loop of the cursor on, cursor off timer. In this way while the computer is counting to 25 (or whatever) the keyboard is being scanned for an input in which case control passes to the next statement. If no input is detected, the counting continues and the cycle is again performed.

Upon return from the subroutine, if XZ = 1, then an error has occurred so go back to the line and input it over again (see Line 130) else continue.

Also upon return, the variable (B\$) contains the values just input, so reassign B\$ to a numeric value if so desired.

Everybody has their own way to approach a problem; these are some of the problems that I have had to deal with and these are my "solutions". If they can help solve some of yours, feel free to use them.

If you have some other ideas about these or any other little tips, please write them down and send them in. Let others benefit from your SN ERRORS.

By the way—if you're not a disk jockey, delete the POKEs in Line 200. They set the date in the interface clock.

So there you have it, everything I know about the TRS-80, and then some, (HA, HA)

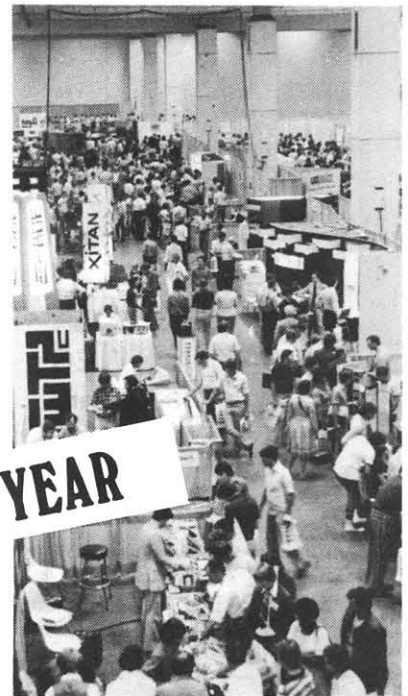
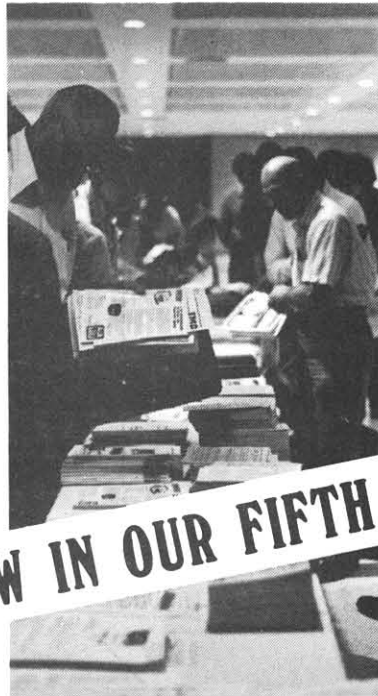
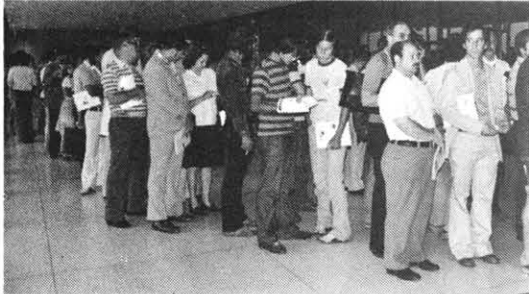
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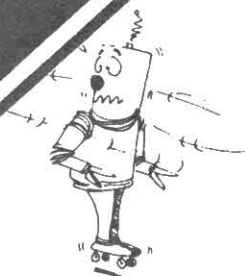
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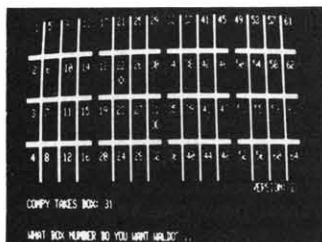
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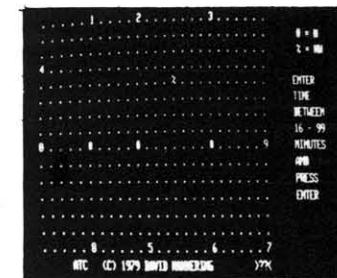
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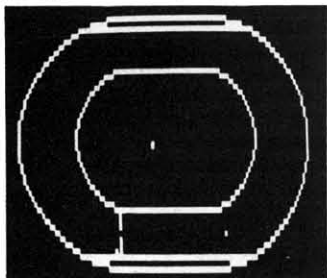
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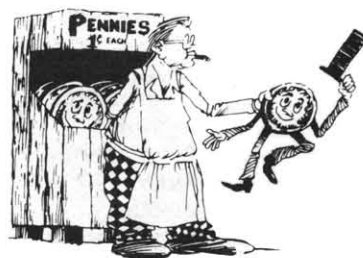
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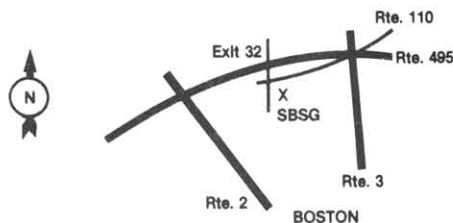
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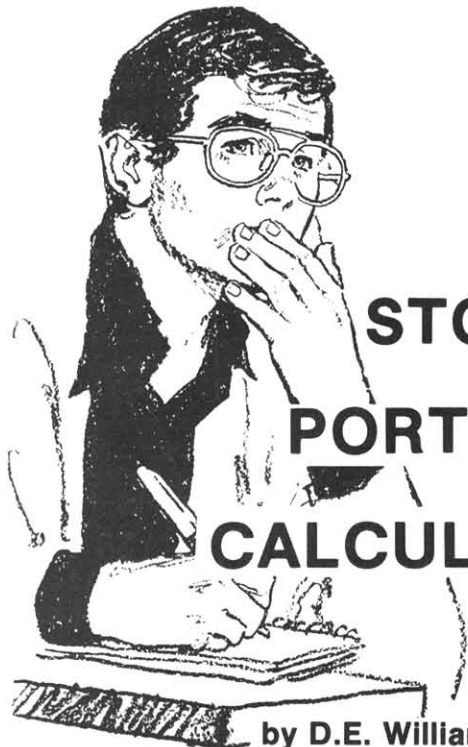
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STOCK PORTFOLIO CALCULATIONS

by D.E. Williamson

This program is designed for the TRS-80 Level II 16K with, or without, Disk Drive and Printer. To use without Disk or Printer, it should be abbreviated as will be described later. The program is not intended to show you how to make money in the stock market. Should I discover such a program, I will share it with you after I have made my first million. Instead, it is based on the philosophy that by paying attention to a subject you will see problems that might otherwise go unnoticed. The Portfolio calculations can, of course, be done with a pencil and paper given suitable time, determination, and interest.

Note that the basic (fixed) stock data is contained in subroutines. In the illustration, the first subroutine (line 1000) concerns a fictitious stock which is abbreviated "Gennut". The subroutines are intentionally arranged so that all tens digits of the line numbers are alike. This is a convenience in making stock additions, as all you have to do is copy the format of the others, with the appropriate thousands and hundreds digits. The --90 END is considered good practice to keep from accidentally running into the next subroutine.

The subroutines are called in Line 130 in any convenient order (such as the order in which they occur in the stock market reports). If a stock is added or subtracted, Line 100 will also have to be changed to correspond to the number of subroutines called in Line 130. If a stock is deleted, its subroutine need not be deleted unless you need the space.

With TOTALS (Line 570) included, there is room on the screen for only 13 stocks, including the heading and the "prompt". (Another plug for the printer.)

Since there are too many columns to get on the screen at one time, the program prints two "pages". After the first page has filled the screen, the program stops at Line 490. Pressing ENTER prints the second page. The pages can be repeated ad infinitum. With more than 14 stocks, you will have to be quick with the "shift @" to prevent scrolling

information off the top.

Now—about the use without a printer and disk drive. Without either, merely delete Lines 600 and 620 to 830 inclusive. In Line 590 delete "OR L(ENTER) TO PRINT". The parts of the program thus deleted will omit PROFIT(LOSS) since data from the previous entry must be stored on disk. If there is a disk drive but no printer, delete only Lines 710 through 800 plus 820 and 830. In Line 590, replace "PRINT" with "FINISH".

Now for the display. The first question asked will be for the date of the closing prices on the exchange. The year must be entered with all four digits. Since the number of days in the calculation is not needed to any great accuracy, it was assumed that one month contained 30.4 days (see Lines 160 and 170).

the program will then display the name of the stock and request its latest quotation, which is entered in the usual way. This will occur for all the stocks listed in the subroutines in Line 130. If you have purchased the same stock at different times and prices, merely omit the line calling for INPUT in the subsequent subroutines. The program will then use the last value of P2 that it has, until there is another input. When all data has been entered, the first page will be displayed. The START DATE in the subroutine may be any date from which you wish to start your comparison of how that stock is doing. If that stock was left to you by your aunt Emma on July 10, 1970, that may not be a good starting time to see how that stock is doing now.

YIELD is the percent yield based on current price (not the BASE price, which is, after all, past history). %GAIN/YR is probably the most controversial quantity, and is also the hardest to explain. Lines 280 and 290 show the percent appreciation of the stock price during the first whole year. After a whole year, the fractions of a year are added (as calculated in Line 220) and are included in the percent appreciation calculation. To find out if the total percent profit is doing better than the yield alone, the two are added together in Line 320. If this number is less than YIELD, that stock should be examined for possible replacement unless it has a satisfactorily high yield.

Page two is obtained by pressing ENTER. No entries need be made. The column BASE is the value of P1 in the subroutine. CURRENT is the value of P2 which was entered as the current price. VALUE is the product of the current price and number of shares (Line 230). \$/SH GAIN is self-explanatory. PROFIT is the profit on that stock to date.

TOTALS shows the value of the portfolio and how much the profit on the portfolio is worth on paper. PROFIT(LOSS) SINCE MM/DD/YYYY is only available by the use of a disk drive which will store up the previous PROFIT. This is subtracted from the current PROFIT to show if there was an increase or decrease since the last entry. Note that "profit" in the program is called PG (PORTFOLIO GAIN(LOSS)).

There is room on each page for more columns, particularly with suitable rounding or truncation. It is left to the ingenuity of the programmer to make such alterations. This author would be appreciative of suggestions.

```

10 REM      STOCK PORTFOLIO CALCULATIONS
20 REM      D. E. WILLIAMSON
30 REM      13001 OLD CUTLER ROAD
40 REM      MIAMI, FLA. 33156
50 REM      NOVEMBER 16, 1979
60 REM
70 CLS
80 REM      ** TO CHANGE PORTFOLIO CHANGE LINES 100 AND 130 **
90 INPUT "CURRENT MONTH, DAY, 4-PLACE YEAR"; M2, D2, Y2
100 N=3: REM      ** N= NUMBER OF SUBROUTINES IN 130 **
110 DIM A$(N), V(N), G(N), P(N), CAP(N), P1(N), P2(N), YD(N), M1(N),
D1(N), Y1(N), NO(N)
120 FOR I=1 TO N
130 ON I GOSUB 1100 , 1000 , 1200
140 REM      ** CALCULATE YEARS OWNED **
150 DS=0: DE=0: WY=0
160 K1=30.4*(M1-1)+D1: REM      **DAY # START**
170 K2=30.4*(M2-1)+D2: REM      **CURRENT DAY # **
180 IF(Y2-Y1)=0 THEN DS=K2-K1: REM      ** DAYS IN SAME YEAR **
190 IF(Y2-Y1)<>0 THEN DS=365-K1:/**REMAINDER OF DAYS AFTER K1**
200 IF(Y2-Y1)>0 THEN DE=K2: REM      ** DAYS IN CURRENT YEAR **
210 IF(Y2-Y1)>1 THEN WY=(Y2-Y1-1)*365: REM      ** WHOLE YEARS **
220 Y=(DS+WY+DE)/365: REM      ** FRACTIONS OF YEARS OF ANALYSIS **
230 V=SHARES*P2: REM      ** CURRENT VALUE OF STOCK **
240 PROFIT=P2-P1: REM      ** DOLLAR APPRECIATION PER SHARE **
250 CAP=PROFIT*SHARES: REM      ** PROFIT ON THAT STOCK **
260 PG=PG+CAP: REM      ** PORTFOLIO GAIN (LOSS) **
270 REM      ** % APPRECIATION PER YEAR **
280 IF Y<1 THEN Y=1: REM      ** % BASED ON ONE YEAR UNTIL Y>1 **
290 PCT=((P2-P1)/P2)*100/Y: REM % GAIN BASED ON CURRENT PRICE **
300 REM      ** % INCREASE PER YEAR + % YIELD **
310 YIELD=INT((100*DIV/P2)*100)/100:/** YIELD % CALC FROM P2 **
320 GAIN=INT((PCT+YIELD)*100)/100: REM      ** INCREASE + YIELD **
330 PRINT"CALCULATION STARTING DATE "; M1; D1; Y1
340 REM      ** CAP IS GAIN OR LOSS ON THAT STOCK **
350 A$(I)=A$: V(I)=V: G(I)=GAIN: P(I)=PROFIT: CAP(I)=CAP
360 P1(I)=P1: P2(I)=P2: YD(I)=YIELD: M1(I)=M1: D1(I)=D1: Y1(I)=Y1
370 NO(I)=SHARES
380 PRINT"STOCK", "VALUE", "%GAIN/YR", "$/SH GAIN"
390 PRINT A$, V, GAIN, PROFIT
400 PRINT
410 T=T+V
420 NEXT I
430 CLS
440 Y$="%      %      #####      ##/##/####      ###.##      ###.##
450 PRINT" STOCK      SHARES      START DATE      YIELD      %GAIN
/YR"
460 FOR I=1 TO N
470 PRINT USING Y$: A$(I), NO(I), M1(I), D1(I), Y1(I), YD(I), G(I)
480 NEXT I
490 INPUT"PRESS ENTER TO CONTINUE"; A$
500 CLS
510 Z$="%      %      ### ###      ###.###      ####.##      ####.##
#####
520 PRINT" STOCK      BASE      CURRENT      VALUE      $/SH GAIN
PROFIT"
530 FOR I=1 TO N
540 PRINT USING Z$: A$(I), P1(I), P2(I), V(I), P(I), CAP(I)
550 NEXT I
560 Q$="%      %      #####.##      #

```

```

#####
570 PV$="TOTALS"
580 PRINT USING Q$;PV$,T,PG
590 INPUT"PRESS ENTER TO REPEAT OR L(ENTER) TO PRINT";A$
600 IF A$="L" GOTO 620
610 GOTO 430
620 OPEN"R",3,"HOPE"
630 FIELD 3,4 AS P$,2 AS M2$,2 AS D2$,2 AS Y2$
640 GET 3,1
650 TP=CVS(P$):ML=CVI(M2$):DL=CVI(D2$):YL=CVI(Y2$)
660 D=PG-TP
670 RSET P$=MKS$(PG)
680 LSET M2$=MKI$(M2):LSET D2$=MKI$(D2):LSET Y2$=MKI$(Y2)
690 PUT 3,1
700 CLOSE
710 LPRINT"DATE";M2;"/";D2;"/";Y2
720 LPRINT" STOCK          SHARES      START DATE      YIELD      %GAIN
/4R"
730 FOR I=1 TO N
740 LPRINT USING Y$;A$(I),NO(I),M1(I),D1(I),Y1(I),YD(I),G(I)
750 NEXT I: LPRINT" "
760 LPRINT" STOCK          BASE      CURRENT      VALUE      $/SH GAI
N PROFIT"
770 FOR I=1 TO N
780 LPRINT USING Z$;A$(I),P1(I),P2(I),V(I),P(I),CAP(I)
790 NEXT I
800 LPRINT USING Q$;PV$,T,PG
810 PRINT"PROFIT(LOSS) SINCE";ML;"/";DL;"/";YL;"          ";D
820 LPRINT"PROFIT(LOSS) SINCE";ML;"/";DL;"/";YL;"          ";D
830 LPRINTSTRING$(15,138)
990 END
1000 A$="GENNUT--": REM          **STOCK NAME**
1010 PRINT A$;
1020 INPUT"CURRENT PRICE";P2
1030 P1=22.25: REM          ** PRICE AT "START DATE"**
1040 M1=11: D1=14: Y1=1979: REM          ** START DATE **
1050 DIV=1.2: REM          ** YEARLY DIVIDEND **
1060 SHARES=100
1070 RETURN
1080 PRINT"-----"
1090 END
1100 A$="AERO----"
1110 PRINT A$;
1120 INPUT"CURRENT PRICE";P2
1130 P1=36.375
1140 M1=1: D1=30: Y1=1979
1150 DIV=0.70
1160 SHARES=200
1170 RETURN
1180 PRINT"-----"
1190 END
1200 A$="ATL SUB-"
1210 PRINT A$;
1220 INPUT"CURRENT PRICE";P2
1230 P1=17.750
1240 M1=2: D1=15: Y1=1979
1250 DIV=0.6
1260 SHARES=300
1270 RETURN
1280 PRINT"-----"
1290 END

```



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- 4 INCREASE JOGGING TO 11 LAPS
- 5 UNCLE ED'S BIRTHDAY (20TH)
- 6 WATER THE BARREL CACTUS
- 7 CHANGE DATSUN OIL+FILTER #X-15
- 8 GRADUATION PRESENT FOR JIM
- 9 MAIL ELEC BILL WITHIN 2 DAYS
- A TIME FOR JAN'S TEETH CHECKUP
- B

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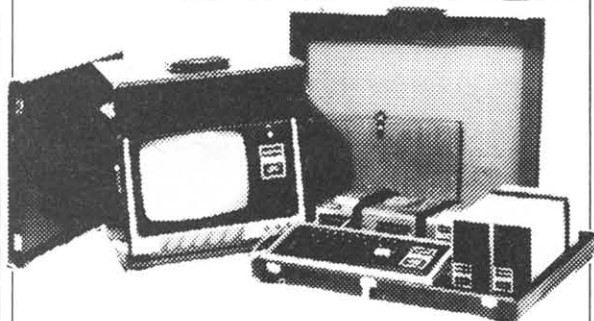
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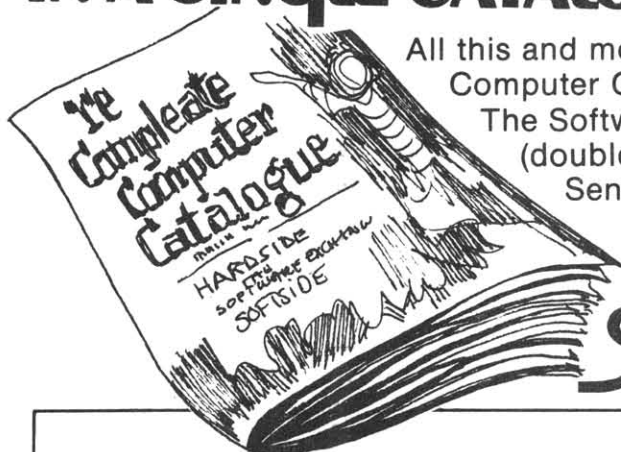


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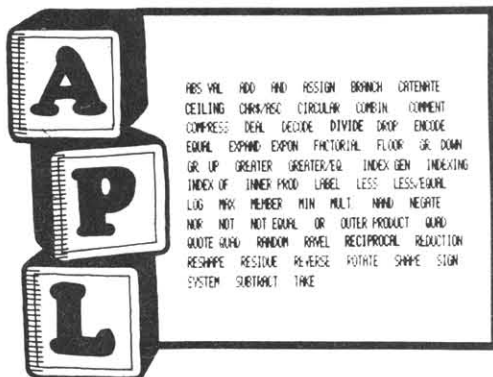
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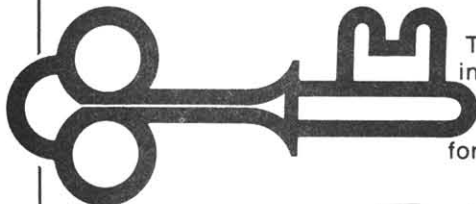
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MODEL II RELIABILITY

by Dan Keene & Dave Dischert

If you were climbing a mountain and only a thin piece of rope existed between you and the ground far below, would you put all your faith in that rope, or would you feel better if there were a backup rope too? If you owned a corporation and 100 million dollars worth of transactions were stored in a computer and there were no other records of these figures anywhere, could you sleep nights knowing that the life and death of the corporation was in the hands of a computer?

The point we're trying to make is that no computer system is perfectly reliable. Anyone who has worked with even a home computer knows that any program he values must be stored in at least two different places to insure that gremlins don't creep in.

How does the business world feel about computer reliability? Judging from the large number of systems used in every area of business, there is a lot of confidence in them. The New Jersey State Board of Pharmacy now approves of patient profile records being stored on computers (as do a few other states). Certain information on the patient is required by law to be kept, such as prescription numbers, pharmacist's initials, drug allergies of the customer and the like. The actual prescriptions written by the doctor must physically remain in files for five years. But they do allow the storage of other information on a computer medium. Many pharmacies, especially chain operations, already have systems in full swing.

TRW electronics has systems in a lot of chain stores where transactions from the floor terminals (electronic cash registers) are recorded simultaneously on both disk and tape. If the disk drive crashes (it happens!), after repairs are made, the disk file can be recreated from the tape. Also, to further insure against losing data, this computer is polled every six seconds by an IBM 370 located downtown in the main office. They trust computers enough to use them extensively but

not enough to eliminate backup systems.

How does the Model II compare? What can be done to insure that data can always be retrieved and is never lost?

The Model II is a good solid system. We have been transporting one all around the state on demonstrations with no trouble. The only hardware problem has been a loose-fitting AC cord. The plug can fall out of the back of the computer if it is bumped, but this is easily remedied by taping it to the cabinet and locating the machine in such a way as to avoid its being touched. Of course, even accidental power down would not cause any data stored on the disk to be lost.

The main unit has a built-in fan and is always cool even after 12 hours of use.

We have not experienced any of the problems that first plagued the Model I such as sporadic rebooting. The Radio Shack fixes, such as buffered cables, adding an extra line between the CPU and the interface, updating the interface printed circuit board, and improving the DOS system software solved that Model I problem.

We have had the Model II lock-up where the only button that will do anything is RESET. Typing SYSTEM"LIST" will bomb, causing an endless display of scrolling data to appear. Of course, this kind of trouble was caused by our failure to give the machine a valid command. Under a normally well-written program, the opportunity to make this kind of error would not exist. Needless to say, the first step toward creating and maintaining a data file is a thoroughly debugged program.

The safest way to store data is to put it on two separate diskettes. There are two ways to do this. Written into the program could be a routine for creating two files, on two separate disks (requiring two drives); everytime data is PUT to the one disk, it could then be PUT to the other. This keeps two data files constantly up-to-date.

Another method would be to make a copy of the data file onto another diskette at the end of the day. However, the COPY utility supplied with Model II DOS does not copy Random Access data files (called Direct Access in the Model II manual). A short program must be written to do this operation. We wrote one as an example and it is shown in Figure One. Only one drive is needed to use it. You must enter the file name and the logical record length. If you don't know the LRL, you can examine the OPEN statement in the program that created it or get a DIRectory and it will be displayed.

Nothing is 100% reliable when it comes to storage. Someone could carry a pile of magnets in his pocket and pass by your diskettes, automatically reducing your mailing list by 1000 names. Storing the diskettes in a metal file cabinet should prevent that from occurring, as will keeping unauthorized persons out of the computer room.

Even the traditionally "safe" medium of storage, paper, could be caught in a fire and destroyed.

The Model II is more than adequate for safe and reliable storage of data. But precautions need to be taken as with any type of filing system for important records.

FIGURE ONE

```
0 CLEAR0:A=MEM-6000:CLEARA:CLS:DIMDA$(1000)
10
   * COPY ROUTINE FOR DIRECT ACCESS DATA FILES /MODEL II *
20 INPUT"ENTER FILENAME":F$
30 INPUT"ENTER LOGICAL RECORD LENGTH":LR$
40 OPEN"D",1,F$,VAL(LR$)
50 FIELD1,VAL(LR$)AS R$
60 FORX=1TOLOF(1):GET1,X:DA$(X)=R$:NEXT
70 CLOSE:INPUT"INSERT DESTINATION DISKETTE ":XX$
80 SYSTEM"I":INPUT"HIT ENTER TO CONTINUE ":XX$
90 OPEN"D",1,F$,VAL(LR$)
100 FIELD1,VAL(LR$)AS R$
110 FORY=1TOX:LSETR$=DA$(Y):PUT1,Y:NEXT
120 CLOSE.PRINT"COMPLETED":END
```



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6. The winner's name will be announced in 80 Microcomputing magazine, and if the program is published, the writer will be compensated at the publisher's standard rates.

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ATARI 410 Program Recorder	89.95	65.00
ATARI 810 Disk Drive	699.95	565.00
ATARI 820 Printer	599.95	470.00
Joystick Controllers	19.95	18.95
Paddle Controllers	19.95	18.95

*TRS-80 is a trademark of Tandy Corp.

*Apple is a trademark of Apple Computer Co.

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WHAT'S NEW?

(with the "Original" TRS-80® Users Journal)

The CONNECTION, our May-Jun cover story, is a smaller-than-a-bread box device that enables even 4K Level I owners to use the RS232, serial printers, and telephone modem WITHOUT the expansion interface or acoustical coupler and to participate in the expanding area of computer-to-computer chatter via telephone. (We include a phone number listing of resources to call after you've been Connected.) An excerpt from David Lien's "Learning Level II" discusses data sorting. The creator of "ANDROID NIM" cooks up some SOUND producing BASIC routines with machine language stuffing. Our new, magical "Panacea" delves into the ways and whys of the S-80 Bus.

There is a review of Radio Shack's new text editor and a user tells how to (or how not to) handle a "RELIGIOUS ERROR"! Plus, there are the regular features: A tutorial on the Editor/Assembler for beginners; New Products; Reviews and the Business Section. It isn't called the "TRS-80 Users Journal" for nothing! It is published regularly every two months, and costs just \$16.00 per year in the U.S. Get a sample current issue (first class mail) for just \$3.00. Use your VISA or Mastercharge and call (206) 475-2219 today! Or, send check or Money Order to: 80-U.S. Journal 3838 South Warner Street Tacoma, Washington 98409

Yes! We are the people who developed "Android Nim" and other fine animated graphics programs with sound!



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