

## Ft. Worth Scene . . .

### PRICE REDUCTIONS NOW IN EFFECT

As you know, the TRS-80 has had great success since its introduction in June 1977. Sales of TRS-80 systems have now passed the 100,000 mark. We believe that the popularity and success of the TRS-80 is largely due to the fact that it has the best performance-price ratio of any micro-computer available today. Volume production has made us more efficient in our manufacturing procedures, materials purchasing and quality assurance procedures. Because of this, on July 1st we began to pass the savings on to you in the form of price reductions on certain products. These products and the new lower prices are

Level I, 4K System (26-1051)	— 499.00
Level I, 16K System (26-1053)	— 729.00
Level II, 4K System (26-1054)	— 619.00
Level II, 16K System (26-1056)	— 849.00
16K Exp. with Keypad (26-1101)	— 230.00
16K EI/RAM Kit (26-1102)	— 149.00
16K Exp. Interface (26-1141)	— 448.00
32K Exp. Interface (26-1142)	— 597.00

An exception to these reduced prices is the Level II ROM kit which has increased in price to \$120.00.

### NEWSLETTER SUPPLY EXHAUSTED

Many of you who were not on our mailing list for the Newsletter have written to us and asked for back issues. In the past we have tried to accommodate you by mailing them.

Unfortunately, our supply of back issues is now exhausted so we will not be able to continue this practice. Here are three points you should know if you want to receive this newsletter.

1. You must own a TRS-80.
2. If you are an owner and not receiving the Newsletter, send us your name, address, and the serial numbers of your equipment.
3. We are not able to mail internationally. Check at your local store or dealer concerning availability.

Turn to Scene on Back Page

## TRS-80™ LINE PRINTER II

• *Economy*

• *Power*

• *Flexibility*



### LINE PRINTER II

The ultimate low-cost, high-quality line printer! This small (15x11x5 inches), lightweight (10 lbs.) powerhouse will print 50 characters per second on 8-inch lines of 80 characters each. Line Printer II also prints expanded (wide) letters under software control.

It features upper and lower case letters in a 7x7 dot matrix format and will operate in both friction-feed and pin-feed modes.

Continuous forms 9½ inches wide (original and up to two copies) are kept in perfect alignment by non-adjustable pins built into the platen.

When used as a friction-feed unit, inexpensive roll paper fits on a detachable rear bail. And, of course, this small printer fits on your system desk with work space left over. Line Printer II may also be used with TRS-80 using the Expansion Interface.

**Line Printer II**  
Cat. No. 26-1154 ..... \$970.00

## PROTECT YOURSELF AGAINST DATA LOSS INFORMATION BACKUP RECOMMENDED

### BACKUP RECOMMENDED

We have said this before, but it bears repeating. We recommend highly that you create backup copies of your diskettes and cassettes. Backup your original copy of the TRSDOS diskette so that you will always have a "clean" copy when you need it. Also, as you add or modify information on a diskette you should backup these too.

While our disk drives and diskettes are highly reliable, they are like any other electro-mechanical device; i.e., unanticipated failures can occur.

You should ask yourself, "If my cassette(s) or diskette(s) become unreadable, how long would it take me to re-generate my program and information files?"

If the answer is, "Too long!", for your operating environment, then you should begin the practice of backing-up storage as soon as possible. Backing up cassettes is done simply by CSAVEing twice.

We have provided the BACKUP command in TRSDOS specifically for backing up diskettes. See the index in your TRSDOS manual under BACKUP.

### DISK BACKUP ON THE INVENTORY CONTROL AND GENERAL LEDGER SYSTEMS

Our recommendation concerning backing-up diskettes holds for the Inventory Control and General Ledger Systems, too. But there is one other thing you should know in the case of these systems. When you perform a backup with these systems you must backup the program diskette (on Drive 0) and all data diskettes.

While it may appear to you that, in changing inventory information, only the data diskette should have been changed, in reality there is information on the program diskette that may be modified as well.

The same is true for the General Ledger System. So, to assure that your backup copy is complete and correct, backup all diskettes.

### TRSDOS™ 2.2 NOTE

After running "TEST2/BAS," reboot your system. This test program "Pokes" the lineprinter output to the video address.

## CAUTION TO CTR-80 RECORDER USERS

We have found that under certain conditions, when the CTR-80 Recorder is stopped in the middle of the loading of a program, it can place a noise spike on the tape, thereby rendering it unusable.

There is a simple and fast modification which can be made by your Service Center which will prevent this from happening. Contact your local store to arrange for service.

## ADDENDUMS AVAILABLE FROM COMPUTER SERVICES

Remember that our Computer Services group prepares addendums for our software products. These addendums give you the latest corrections or operating instructions for the program. Outside of Texas, you can reach Computer Services by phoning on our toll free WATS line 1-800-433-1679. We'll be getting a toll free number within Texas soon, but in the meantime call 1-817-390-3583.

Below are listed some of the software for which there is a current addendum. You might call and see if you need any of them.

In-Memory Information System, Version 1  
Payroll Program — 1979 Withholding Tax Payroll Program — Level I to II Conversion  
Statistical Analysis (26-1703)  
Personal Finance — Level I to II Conversion  
Math I — Level I to II Conversion  
Algebra I — Level I to II Conversion  
Disk Mailing List

## NOTICE TO DISK PAYROLL USERS

### New Regulations from IRS

Effective July 1, 1979 — earned income credit must be paid in advance to eligible employees with every paycheck. Previously, an employee who earned less than \$10,000 per year and who had a child living with him, received a tax credit on his annual return. Check with the IRS for other eligibility requirements.

This payment can be made in one of the two ways described below. Either way, the amount must be calculated manually.

1. Set up an earnings category named ADV EIC. Be sure to make it non-taxable in all cases. Every pay period you manually calculate the advance and enter it while preparing the checks.
2. If the employee consistently works the same hours and earns the same amount each pay period, it will be more convenient to set up a deduction category ADV EIC. Add a deduction category called ADV EIC and set it up as a voluntary deduction. The next pay period, calculate the advance amount and enter it as a negative number. A minus deduction will add to net pay.

Since deductions are carried over from one pay period to the next, you should not have to recalculate it unless the earned amount changes.

## QUICK PRINT YOUR VIDEO SCREEN ON THE LINE PRINTER

Sometimes we run programs or list information on the video screen and would like to have a quick "snapshot" of the screen contents. That is, we would like line printer copy of the screen.

This operation is handy if, for example, you are instructing in the use of the TRS-80 and want to reproduce on paper, a series of interactions with the computer. The line printer image of the screen could be reproduced with a copier and handed out in class for discussion.

Here is a short program that will quickly print the contents of the screen on the line printer.

```
5 CLEAR 200
10 FOR X=15360 TO 16359 STEP 64:
   AS=""
20 FOR Y=0 TO 63:
   AS=AS+CHR$(PEEK(X+Y))
30 NEXT Y: LPRINT AS: NEXT X: END
```

Remember the line printer will not print graphics characters so don't try to print graphs, pictures, etc.

## We Goofed!

Some of our advertising on the new FLYING SAUCERS game (26-1905) showed it for 4K Level I or II. The Level I version runs in a 4K TRS-80, but if you have Level II, you'll need 16K of RAM. We apologize for the error!

## DISK OWNERS HERE'S A NOTE ON DISKETTES

It probably comes as no surprise to you that many manufacturers are jumping on the bandwagon and producing hardware for use on the TRS-80. We now have found that this is true of diskettes. We want you to know that our diskettes are carefully designed for the kind of performance required by TRS-80 and they are tested to be sure they meet our standards of quality and reliability.

Not only are the recording surfaces tested but the jacket in which the diskettes rotate is also critically important. Excess friction between the diskette and jacket can cause the magnetic surface to wear out prematurely, or cause the disk to rotate erratically.

We will not say anything specific for or against the diskettes of other manufacturers. But Radio Shack diskettes are a "known quantity" AND they can be purchased at quantity discounts. We believe you will get the performance you expect from them — we don't know about others.

## How to Merge Two Programs Using the CLOAD Command

Here is a programming tip you can use if you are operating on Level II BASIC without disk. Sometimes it is convenient to merge a program that is located on a cassette with a second program located in memory, rather than re-type it.

For example, a particularly useful input/output subroutine could be used in a number of different main programs.

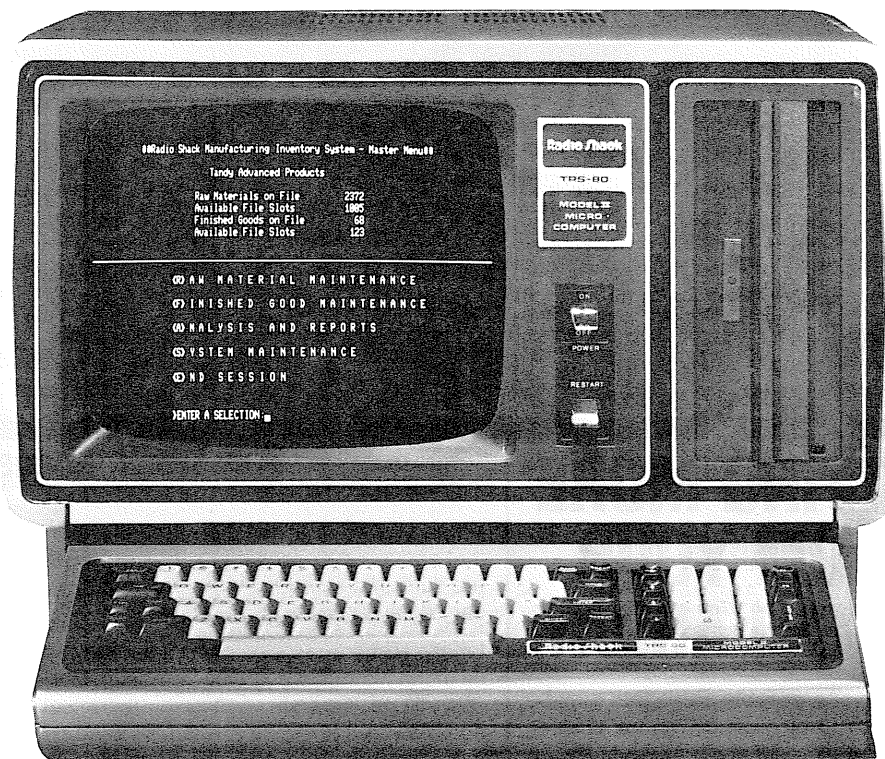
Rather than re-typing the frequently used program each time you need it, you could use the CLOAD command to merge the program with the one already in memory. It will also be necessary to do a little PEEKing and POKEing to complete the operation. Here's what to do.

1. Make sure the program to be merged (the one on cassette) has line numbers that are larger than the line numbers of the program located in memory.

2. Look at the contents of locations 16633 and 16634 using **PRINT PEEK(16633), PEEK(16634)** Write down the numbers.
3. If the contents of 16633 is 2 or greater, execute the following statements.  
**POKE 16548, PEEK(16633) - 2**  
and **POKE 16549, PEEK(16634)**  
Then go to step 5.
4. If the contents of 16633 is 0 or 1, execute the following statements.  
**POKE 16548, PEEK(16633) + 254**  
and **POKE 16549, PEEK(16634) - 1**  
Then go to step 5.
5. CLOAD the program from cassette. Then execute the statements  
**POKE 16548, 233**  
and **POKE 16549, 66**
6. LIST, RUN or CSAVE the merged program.

# THE NEW TRS-80<sup>TM</sup> MODEL II IS HERE!

- *Perfect for Small Businesses*
- *Fast and Powerful*
- *Flexible to Grow With Your Needs*
- *Easy to Operate*
- *Five-Figure Power at a Four-Figure Price!*



The TRS-80 Model II is a microcomputer system specifically designed for the small business environment. It operates at twice the speed of the TRS-80 Model I and has disk storage space expandable up to almost two million bytes. Database oriented applications such as integrated accounting systems, inventory control systems and order entry systems are ideal application areas for the Model II. Here are some of the important features and information you will want to know about the system.

## SOFTWARE

The Model II includes an all new TRSDOS Operating System and an enhanced Level III BASIC Language. Note that these are resident on disk, not in ROMs. In effect, all memory is RAM memory on the Model II. This gives the flexibility to operate other systems and languages. Memory resident DOS and BASIC requires 27K bytes.

## MEMORY

RAM memory is available in two sizes — either 32K or 64K bytes. You can start with 32K and expand to 64K when the size of your applications requires the additional memory or you can get 64K to start.

## DISK DRIVES

One 8-inch disk drive comes with the system. A separate Disk Expansion System may be purchased which permits the addition of 1, 2, or 3 additional drives.

## DISKETTES

Each Model II 8-inch diskette contains about 493K bytes. On the system disk, 77K is occupied by DOS and BASIC, leaving 416K bytes for your application files. Diskettes on additional drives have 23K bytes used by the system and 470K bytes available to you.

## CONNECTORS

Four connectors are standard on the Model II. The first is the interface connector for a printer, the second is the disk expansion connector and the last two are standard RS-232 interface connectors which may be used for serial printers, telephone modems and other applications.

## OTHER USEFUL INFORMATION

The Model II does not contain the graphics capability of the Model I but upper and lower case letters are standard. If you have RS-232 on the Model I, you can transfer data between the Model I and Model II using the communications software package, COMPAC. Some editing of programs will be required.

When the Model II is powered up, a self-test is executed to assure the integrity of the system. The keyboard contains two programmable special function keys. The video screen may contain 24 lines of either 80 characters or 40 of the expanded characters.

Delivery delays will run about 4 months. We will not be able to accept "trade-ins" of Model I's for Model II's.

<b>32K 1-Disk Model II, Cat. No. 26-4001</b>	<b>..... \$3450.00</b>
<b>64K 1-Disk Model II, Cat. No. 26-4002</b>	<b>..... \$3899.00</b>
<b>1-Drive Expansion System, Cat. No. 26-4160</b>	<b>... \$1150.00</b>
<b>2-Drive Expansion System, Cat. No. 26-4161</b>	<b>... \$1750.00</b>
<b>3-Drive Expansion System, Cat. No. 26-4162</b>	<b>... \$2350.00</b>
<b>Disk Drive Kit (Drive only) Cat. No. 26-4163</b>	<b>.... \$600.00</b>
<b>32K Add-on RAM Memory, Cat. No. 26-4102</b>	<b>.... \$449.00</b>
<b>8-Inch Diskette, Cat. No. 26-4905</b>	<b>..... \$7.50</b>
<b>8-Inch Diskettes (10-Pack), Cat. No. 26-4906</b>	<b>... \$69.95</b>

# Radio Shack®

COMPUTER MERCHANDISING  
700 ONE TANDY CENTER  
FORT WORTH, TEXAS 76102

## GETTING MORE FROM YOUR LEVEL I ARRAY

Level I has one variable name that may be used as an array — and that name is A. (See pages 123-130 in your Level I manual.) Arrays can be very useful because the subscript permits you to access different numbers computationally. For example, A(I) will access the 12th element in array A if variable I has the value 12. Similarly A(2\*J-4) and A(K\*L/6) will access the 12th element of A when J is 8, K is 2, and L is 36. This is because in each case the subscript evaluates to 12.

Now suppose you need more than one array in one of your programs. You are not stuck because of your ability to compute subscripts. What you can do is break up the array A into pieces, each of which can be treated as a separate array. Let's assume that you need three arrays of sizes 20, 110 and 50. One approach to getting 3 arrays is to use three subscripts I, J and K which range in value from 1 to 20, 21 to 130, and 131 to 180, respectively. But this can be inconvenient because, for example, the 28th element of the second array does not have the subscript 28 but rather 48 and the 11th element of the third array does not have the value 11 but 142.

A better way would be to have I vary in value from 1 to 20, J vary from 1 to 130, and K vary from 1 to 50 and to also include in the subscript a "displacement" which puts you at the desired location. For example, in the first array we would have A(I), in the second array A(J+30) and in the third A(K+130). In this way I, J and K have the value that we would "naturally" associate with the element but in the second and third arrays a displacement is added which shifts you up to the correct location.

## Fort Worth Scene Continued

### GOT A QUESTION?

When you have a question that is important enough to cause you to write to us, we are sure that you don't want any unnecessary delays in getting an answer.

Lately, some questions have been sent to us at the Newsletter and at Computer Merchandising. Specific software, technical and delivery questions are not handled by these departments and are forwarded to Computer Services for reply.

You can save yourself a few extra days by sending your questions directly to Computer Services at the following address.

**RADIO SHACK COMPUTER SERVICES**  
205 N.W. SEVENTH STREET  
FORT WORTH, TEXAS 76106

Other comments and suggestions may be sent to the Newsletter or Computer Merchandising Department. For further clarification of this policy we refer you to the "Hotline" article in the May Newsletter.

## COMPACT AND SPEED UP YOUR I/O TO CASSETTE ON LEVEL II

Here are two programs that will considerably shorten the time it takes to write and read numeric information on cassette, and the information will take up less space than when you use the standard print statement.

We think there is a better way to efficiently output to cassette, but this method has the virtue that it should be understood by most TRS-80 users.

```
10 REM ENCODE AND OUTPUT DATA
20 CLEAR 300: B$="": A$="/"
30 REM "N" IS THE NUMBER OF DATA ELEMENTS
40 PRINT# -1, N
50 FOR I=1 TO N
60 IF LEN(B$+STR$(D(I))+A$)>230
   THEN PRINT# -1, B$: B$=""
70 B$=B$+STR$(D(I))+A$
80 NEXT: PRINT# -1, B$
```

The first program is the output program shown above. First, the program writes on the cassette the number of numbers that will be output. Then the program converts the numeric data contained in array D to string form and saves the result in string variable B\$. When B\$ is about 230 characters long (or the last number has been converted), it writes the string to cassette. Notice that a "/" (slash) is placed between the numbers in B\$.

```
100 REM INPUT AND DECODE DATA
110 A$="": B$="": J=1
120 REM "NN" IS THE NUMBER OF NUMBERS TO BE INPUT
130 INPUT# -1, NN
140 INPUT# -1, B$: N=LEN(B$): LF=1
150 FOR I=1 TO N
160 IF MID$(B$, I, 1)=A$ THEN
   NC=I-LF ELSE GOTO200
170 D(J)=VAL(MID$(B$, LF, NC))
180 LF=I+1: J=J+1
190 REM CHECK FOR LAST NUMBER
200 IF J>NN THEN 220
210 NEXT I: GOTO140
220 REM YOUR NEXT STATEMENT
```

The second program is used to input data from cassette that has been encoded and output by the first program. This input program reads the number of numbers that are on the tape (line number 130) so that it will know when all the data has been read.

Variable B\$ contains the string data read from tape. Array D contains the data converted to numeric form.

Notice that line 200 branches out of the input loop when all the numbers have been converted to numeric form and stored in array D.