TANDY ELECTRONICS
MICROCOMPUTER NEWSLETTER

VOLUME I, NO. I, MAY 1978.

To all our valued TRS-80 customers,

This is the first of what we hope will become a regular newsletter. In it you will find information concerning new products, some corrections to our manuals and programming hints and ideas. Through it we will keep you posted on all that is happening in the exciting area of TRS-80!

Some of you may not as yet have taken delivery of your TRS-80 — but don't despair — we have shipments on the way, and we should start to move again shortly.

Now for the good news. I hope that in the next newslett   e can announce prices for all our   .eral equipment! Things are certainly moving fast!
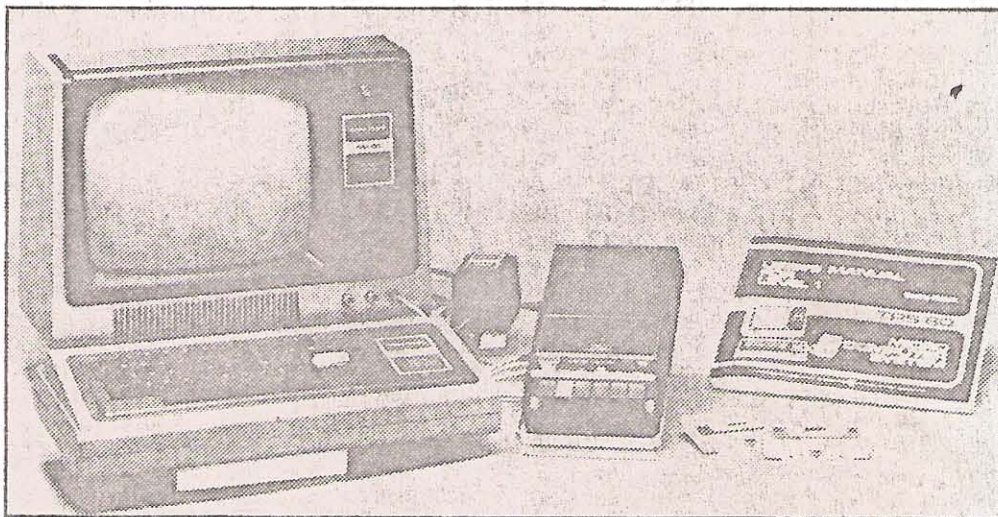
We have als   ncluded in this newsletter brie   information on the peripherals an   e that this will whet your appetit   to things that are coming.

Finally I hope you will keep in touch with us. Please mail any ideas or suggestions to me at the Tandy address and I will include them in forthcoming newsletters.

Regards,

K. S. Allen.

K. S Allen
Computer Sales Dept.

PRE-ANNOUNCEMENT NOTICE FOR TRS-80 OWNERS

Any of the following four micros (CPU only) may be ordered through your local Tandy store, and will be shipped complete from your store.

TRS-80 COMPUTER

Includes 4K RAM and LEVEL-I BASIC.
26-9001 . . . . 569.95

Includes 16K RAM and LEVEL-I BASIC.
26-9003 . . . . 980.00

Includes 4K RAM and LEVEL-II BASIC.
26-9004 . . . . 708.95

Includes 16K RAM and LEVEL-II BASIC.
26-9006 . . . . 1119.95

TRS-80 VIDEO DISPLAY
$229.95
26-9201

A 12" display designed especially for the TRS-80 system. Displays 16 lines of 64 characters, also software selectable to 32 cpl.

REALISTIC CTR-41 CASSETTE RECORDER
$59.95
14-841

FREE! The CTR-41 Cassette Recorder is included at no charge when a computer and video display are ordered together.

Your TRS-80 system can be expanded to suit your specific needs with peripherals and added software packages. Take your pick of the following "goodies"!

16K MEMORY KIT (RAM)
$409.95

With this kit you can convert your 4K TRS-80 to 16K of RAM. The EXPANSION INTERFACE (26-1140) will accommodate one or two additional 16K kits which will make possible a 32K or 48K RAM TRS-80.

LEVEL II BASIC KIT (ROM)
$139.00

If you own a LEVEL-I BASIC micro, this ROM kit will step you up to the more powerful LEVEL-II BASIC. Improved graphics, print formatting, text editing, key-board roll over (you can type as fast as you like and not lose a single letter), and faster (500 baud) cassette transfer rate with named files are some of the features. A manual is included so you can fully utilise LEVEL-II. Also included is a conversion program which will

allow you to convert your LEVEL-I programs and cassettes to LEVEL-II.

TRS-80 EXPANSION INTERFACE
26-1140

This is the key to the expandability of the TRS-80. The Expansion Interface (which usually requires LEVEL-II BASIC) enables you to add the following to the TRS-80.
1. Additional RAM (16 or 32K)
2. Dual cassettes (program selectable).
3. Mini-floppy disks. It will handle up to four minis!
4. Our new line printer (Centronics parallel port).

The EXPANSION INTERFACE includes a real time clock, a space for an additional PC board (to whatever?) and continuation of the TRS-80 bus. The EXPANSION INTERFACE will give you the capability to fully utilise your TRS-80 system.

TRS-80 LINE PRINTER
26-1150

This dot matrix, impact printer will give you true small business system capability. It will print from 60 to 110 characters per second, and 80 to 132 characters per line are available. Maximum print width is 8".

Requires:

26-1120 LEVEL-II BASIC KIT
26-1140 EXPANSION INTERFACE

TRS-80 SCREEN PRINTER
26-1151

The TRS-80 SCREEN PRINTER only requires 4 K RAM and LEVEL-I BASIC. In other words, you can run it right off the standard 4K, BASIC-I TRS-80 as is. At the touch of a button, whatever is shown on your video screen (including graphics) will be printed on electrostatic paper. And it prints 1,800 approx. characters a second!

TRS-80 MINI DISK
26-1160

Need more data storage space? The TRS-80 MINI DISK stores 86 to 96K bytes and comes with TRS-80/DOS. The MINI DISK will access any one byte of data in an average time of less than one-half second.

Requires:

16K RAM LEVEL-II BASIC
26-1140 EXPANSION INTERFACE

T-BUG
26-2001   27.95

This is a monitor program which allows

access to the Z-80 CPU. With T-BUG it is possible to program in machine language on a LEVEL-I BASIC TRS-80.

EDITOR/ASSEMBLER PROGRAM
26-2002   59.95

Although 16K of RAM is required, this package will run with LEVEL-I BASIC. It is a 2-cassette program which creates both source and object files. Microsoft, the industry leader in systems software, has developed this program...so you can expect the ultimate in editing features. Standard Zilog mnemonics are used; macros and conditional assembly are not supported.

STATISTICAL ANALYSIS PROGRAM
26-1703   59.95

A system of programs designed for the routine analysis of data in business, education, medicine, government administration, and other fields. It includes Random Sample, Descriptive Statistics, Histogram, T-Test, Simple Correlation, Linear, Regression.

HOME RECIPE PROGRAM
26-1601   9.95

Menus, directory, message centre . . . with this program, kitchen chores can be organised, simplified, and "Computerised".

MATH I PROGRAM
26-1701   36.95

A course of fundamentals for beginners. Multiplication, addition and subtraction drills. With teacher's guide. A 3-cassette portfolio.

QUICK WATSON!
26-1802   9.95

New from our games department. A fascinating game of logical deduction. Sherlock Holmes himself would have found this one challenging!

IN MEMORY INFORMATION PROGRAM
26-1502   36.95

A collection of three assembly language programs that can virtually replace any small index card system. It will file inventory, name and address lists, phone numbers, investment portfolios, etc.

PERSONAL FINANCE PROGRAM
26-1602   27.95

A 7-cassette portfolio with manual. Helps you keep track of household budgets, cheque book balances — even categories expenses for income tax records.

LEVEL-I BASIC COURSE
26-2003   24.95

Contains 8 lessons with 26 programs. Written by Dr. Ralph James and Dr. Ronald Lodewyck of U. of California at Stanislaus. Both are experienced educators and have combined their talents to produce one of the best computer-assisted instruction courses we have seen. It is a totally interactive, self-paced system designed to teach you how to use your TRS-80 to its fullest potential. If you are new to programming, this course is for you.

ALGEBRA 1 PROGRAM
26-1702   36.95

Supplemental course in elementary algebra. Includes 9 programs on 3 cassettes. Modern, interactive, computer-assisted instruction techniques.

TRS-80 PRICE LIST

Cat.No.	Description	Price
26-9201	MONITOR TRS-80	$ 229.95
26-9001	KBD/PROCESSOR (4K) LEVEL I	$ 569.95
26-9003	KBD/PROCESSOR (16K) LEVEL I	$ 980.00
14-841	CTR-41 CASSETTE RECORDER	$ 59.95
26-1101	16K UPGRADE KIT RAM	$ 409.95
26-1120	LEVEL-II BASIC KIT ROM	$ 139.00
26-1601	KITCHEN CONVERSION PROGRAM	$ 9.95
26-1602	PERSONAL FINANCE PROGRAM	$ 27.95
26-1701	MATH I	$ 36.95
26-2101	MANUAL — OWNERS	$ 14.95
TOTAL	4K SYSTEM Level I	$ 799.95
TOTAL	16K SYSTEM Level I	$1210.00

SOME BUGS THAT NEED CORRECTING

LEVEL I BASIC

The integer function (NT) should return the least integer. Some TRS-80's will return a zero for integers of values between -.5 and -.99999 instead of a -1.

Again, on some TRS-80's, if a DATA statement contains a syntax error, running the program will cause that program to completely destroy itself as soon as the DATA statement is read.

THE OWNER'S MANUAL

The combined Function and RAM test contains two errors.These lines should read: (underline indicates the change).

330 F.X = O TO A: A(X) = Q : N.X
360 P. AT 68, Q : N.Y : P. AT O,
"THE RAM TEST IS COMPLETE"

PAYROLL PROGRAM

The Update and Quarterly Summary tape requires a correction to line 2100. Rewrite line 2100 to read: A(12) = A(12) + 1. This change eliminates if "Z = 1G.2040" in statement 2100.

PERSONAL FINANCE

Some of the Personal Finance packages contain two copies of the Monthly Budget Program. One is correctly labelled, the other is labelled "BUDGET SUMMARY PROGRAM". In these cases, the Budget Summary Program is missing. If you have this problem, send your name, address, and TRS-80 serial number to:

TANDY COMPUTER SALES DEPT.,
280-316 VICTORIA ROAD,
RYDALMERE, N.S.W. 2116.

We will send you the correct tape! W. have corrected all of these bugs, but you should find others, please let us know.

PROGRAMMING TECHNIQUES — ARRAYS

Many aspiring programmers have written or called Tandy concerning the use of Arrays. TRS-80 LEVEL-1 BASIC has only one array and it is always called "A". This presents a problem when BASIC programs written for other machines are typed verbatum into the TRS-80.

For Example:

```
10 DIM Q (10,9)
20 FOR X = 1 to 10
30 FOr Y = 1 to 9
40 Q (X, Y) = O
50 NEXT Y
60 NEXT X
```

Since LEVEL-I BASIC does not recognise the DIM statement from Line 10 or the array "Q" from line 40, some modifications must be made. The simplest most efficient way to convert this program is to eliminate the DIM statement and then convert all references to that array to the A array. The subscript must also be changed. Look at the DIM statement — take the number inside the parentheses on the LEFT HAND SIDE of the comma — we'll call this our OFFSET number. Now, everywhere the array appears in the program, multiply whatever is on the left hand side of the comma by the OFFSET number and add whatever is on the right hand side of the comma to the result.

The previous example in the TRS-80 LEVEL-I BASIC:

```
20 FOR X = 1 to 10
30 FOR Y = 1 to 9
40A (X* 10 – Y) = O
50 NEXT Y
60 NEXT X
```

Line 10 is no longer needed. In line 40 — the Q was changed to an A and (X,Y) was changed to (X* 10 + Y).

That's all there is to it. Ed Meloan of North Augusta, South Carolina is a TRS-80 owner who learned this technique over the phone recently. After a few days practice he wrote to us "...The TRS-80 is great!! Now if I just had about 100K of memory". I think we all know how you feel, Ed.

With a little bit of bookkeeping, you can make your TRS-80 handle several arrays at one time. Everything is still stored in the array A, but now we need to know some additional information.

1. Where does the array or matrix start in array A, and

2. How many numbers are stored starting there. In a matrix we need to know the number of rows and columns.

Let's say we have an array of the five numbers : 5, 4, 3, 2, and 1. These numbers start at A(6).

$A(6)$	$A(7)$	$A(8)$	$A(9)$	$A(10)$
5	4	3	2	1

Let's store the starting location, 6, in the variable W(W = 6). Then, to find the value of the fourth number in our array, we set 1 to 4 (1 = 4). The formula is simple.

$$R = W + (I-1)$$

If we do this formula by hand, 6 + (4 – 1) is 9, and A(9) is our 4th value, a two. In a program we would set W and I and then calculate R as above. The value A(R) would then be the value we asked for.