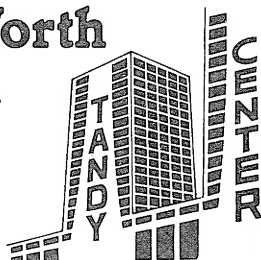


TRS-80TM Microcomputer NEWS

THE MICROCOMPUTER NEWSLETTER PUBLISHED FOR TRS-80 OWNERS

Volume 2, Issue 4

Fort Worth SCENE



The following power-up sequence has been established for the Model II computer and peripherals.

MODEL II POWER-UP SEQUENCE

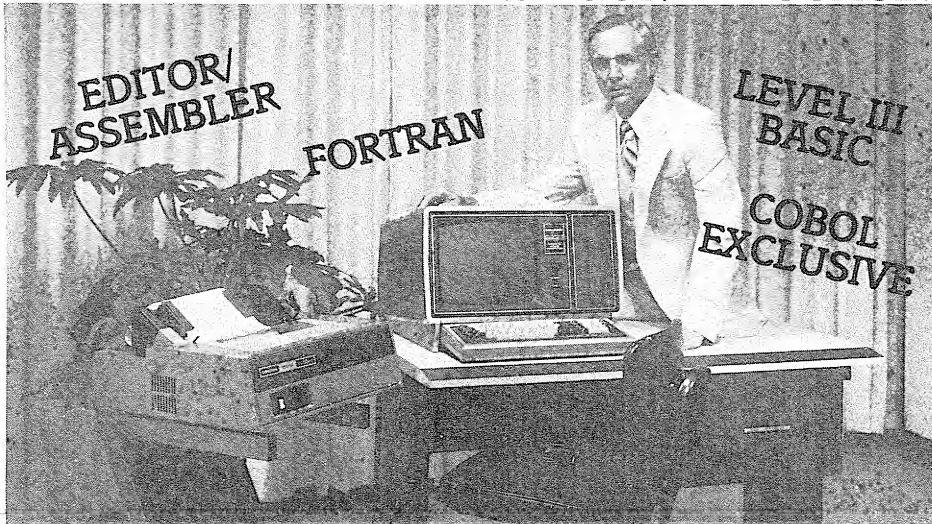
1. Be sure all system drives are empty and all components are turned OFF. If you are not using a Disk Expansion System, be sure the Disk Terminator plug is in place.
2. Turn on the COMPUTER (Display Console). Wait for the "INSERT DISKETTE" message to appear. If the message fails to appear in 10 seconds, press RESET. If it still fails to appear, turn the computer OFF, check all connections. Wait at least 15 seconds before starting over at step 1.
3. When "INSERT DISKETTE" is displayed, turn on the Disk Expansion System (if connected) and ALL other peripherals.
4. Insert the System diskette into drive 0 and close the drive door. The computer will load the operating system and prompt you to enter the date and time.
5. Before turning the Computer system off, remove all diskettes from all drives. Then turn off the entire system.
6. After ANY power-down, wait at least 15 seconds before turning the System on again. Start at step 1.

Additional Notes

- You must leave the Disk Expansion System ON at all times the Computer is in operation, even if the extra drives are not in use.
- With some printers (e.g. Line Printer III), you must use the TRSDOS FORMS command before attempting any printer output. With other printers, just have the printer on-line when you start TRSDOS.

(Continued on page 3)

TRS-80 MODEL II SPEAKS YOUR LANGUAGE!



RADIO SHACK INTRODUCES THREE NEW LANGUAGES FOR THE TRS-80 MODEL II!

FORTRAN, COBOL, and Assembly Language have been introduced for the Model II. Each of the new languages produces an object program which runs much faster than our Level III Model II BASIC. You can now pick the language which suits your needs. Interactive BASIC for easy writing and fast debugging. FORTRAN for scientific and formula oriented programs. COBOL for business applications. Assembly Language if you want maximum execution speed and minimum code.

Radio Shack's exclusive COBOL is the only microcomputer COBOL we know of which offers multi-key ISAM (Index Sequential Access Method) files. You now have access to a full-featured COBOL, which in turn gives you keys to the vast library of COBOL programs which have been written and proven over the years. Our COBOL is compatible with many COBOL programs which were written for the big mainframes! The primary restriction is that the program fit (with overlays) into our 64K Model II.

(Continued on page 2)

Radio Shack Computer Service Contracts Available NOW!

Radio Shack has made it possible for you to purchase a service contract for your Model I or Model II TRS-80 directly from your local store! Service contracts are written for one-year periods, and generally begin on the last day of your computer's limited warranty period.

Radio Shack is now offering three separate service contracts:

- Carry-In
- Limited On-Site
- Full On-Site

(Continued on page 3)

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RADIO SHACK EXCLUSIVE COBOL

Radio Shack's exclusive COBOL is a very powerful program development system. The system includes:

TRSDOS
TEXT EDITOR
COBOL COMPILER
RUN-TIME PACKAGE
PRINT PACKAGE
SAMPLE PROGRAMS

Radio Shack COBOL features a one-pass compiler which generates object code which can then be executed directly by the run-time package. COBOL features include full screen formatting, Multi-keyed index sequential files, full ANSI Level 2 I/O, program linkage and segmentation.

Additional features include:

- High-level COBOL based on American National Standard (ANSI) X3.23-1974
 - ANSI Level 2 sequential, relative and indexed file access methods including ALTERNATE KEYS with DUPLICATES.
 - Standard DISPLAY and COMPUTATIONAL data types, extended to include binary (COMPUTATIONAL-1) and packed decimal (COMPUTATIONAL-3).
 - Full arithmetic capability, including CORRESPONDING and COMPUTE.
 - Extended ACCEPT/DISPLAY for CRT control, including cursor positioning, prompt, screen erase, input editing and special feature control.
 - Interactive debug at the COBOL source statement level with address stop, single step, and variable display.
 - Undermarked errors appearing with self-explanatory messages.
 - Single-pass compiler generating ready-to-execute object programs for fast, efficient program generation, loading and execution.
 - Cross reference showing all references to each name, designating defining, source and destination line.
 - Efficient segmentation at the source language level.
 - Compiled object programs and the supporting runtime modules may be distributed while associated source modules are retained. This protects the source programs from unauthorized use.
- COBOL (26-4703 \$299.00)

New Languages Introduced

(from page 1)

Radio Shack's FORTRAN opens up the vast library of scientific programs to the Model II, as well as giving you a language which many people are already familiar with. FORTRAN's ability to access machine language routines means you can write each portion of a program in the language best suited to it, then link them together in the structure of a FORTRAN program.

Assembly Language for the TRS-80 Model II includes full Macro capabilities. Now you have a full featured Text Editor and Assembler for Model II.

Individual articles in this Newsletter describe the features of these new languages.

RADIO SHACK FORTRAN

The FORTRAN package includes four modules:

- The Editor for writing and editing FORTRAN source programs
- The Compiler, which reads your source program and translates it into relocatable object code.
- The Linking Loader, which lets you load the compiled program(s), execute them, and save them as TRSDOS executable files.
- The FORTRAN subroutine library, for use by the Linking Loader in conjunction with your relocatable FORTRAN object files.

FORTRAN is a universal, problem oriented language designed to simplify the preparation and check-out of programs. Radio Shack's FORTRAN includes the ANSI FORTRAN language as described in document X3.9-1966 with a number of extensions and a few restrictions. The most notable of the restrictions is the absence of the COMPLEX data type.

The following data types and formats are available in Radio Shack FORTRAN:

Logical — "True" or "False"

Integer — -32768 to +32767

Real — $10^{**}-38$ to $10^{**}+38$

Double Precision — $10^{**}-38$ to $10^{**}+38$

Hollerith — Literals

Arrays may contain up to three dimensions.

The FORTRAN Compiler creates the Object file and the Listing file. Its optional switches allow you to specify Octal or Hexadecimal listing addresses, and to generate object files which are structured for loading into ROMs.

The compiler will document 36 different types of fatal errors and 34 warning conditions. In addition to these errors during compilation, there are 14 runtime warnings and 11 fatal runtime errors.

The FORTRAN subroutine library includes arithmetic functions for operations between data types and for data conversions, as well as 45 single and double precision mathematical functions.

Model II FORTRAN (26-4701 \$299.00)

REVISED MANUAL AVAILABLE

A newly revised manual is now available for owners of the VOICE SYNTHESIZER (26-1180). The new manual has an expanded section on programming hints as well as a one-thousand word dictionary. Order from your local Radio Shack store or dealer (\$1.50). See page 4 for details on enhanced manuals.

RADIO SHACK EDITOR ASSEMBLER

The Editor Assembler package includes five modules:

- The Editor for writing and editing Assembly Language source programs
- The Assembler, which reads your source program and translates it into relocatable object code.
- The Linking Loader, which lets you load the assembled program(s), execute them, and save them as TRSDOS executable files.
- The Cross Reference Facility, which generates a cross reference listing for your Assembly Language program.
- The FORTRAN subroutine library, for use by the Linking Loader in conjunction with your relocatable Assembly Language object files.

The Macro assembler allows numeric constants to be specified in Binary, Decimal, Octal and Hexadecimal. Four operand modes are supported:

Absolute
Data Relative
Program (code) Relative
COMMON

The MACRO assembler generates 12 error codes and 4 error messages.

(Continued on page 3)

Preferred Customer Sale For Newsletter Readers only!

Your TRS-80 can be "trained" to respond to as many as 32 different words or phrases using Radio Shack's TRS-80 VOXBOX™.

Only
\$119
Save
\$50

was 169.95
in RSC-3



Connects directly to 16K Level II keyboard

Now that your TRS-80 can recognize you, it will be eager to respond to your every wish and whim. Your experiments with "voice recognition" programming may lead you to new heights in creativity. The TRS-80 VOXBOX comes with a complete manual, demonstration tapes and programming hints.
VOXBOX, Cat. No. 26-1181 Sale \$119.95

VOICE SYNTHESIZER

Tired of being chained to a printer or video display to get the results of your latest programming effort?

Let your TRS-80
"speak its mind."

Only **\$299**

was 399.00 in RSC-3



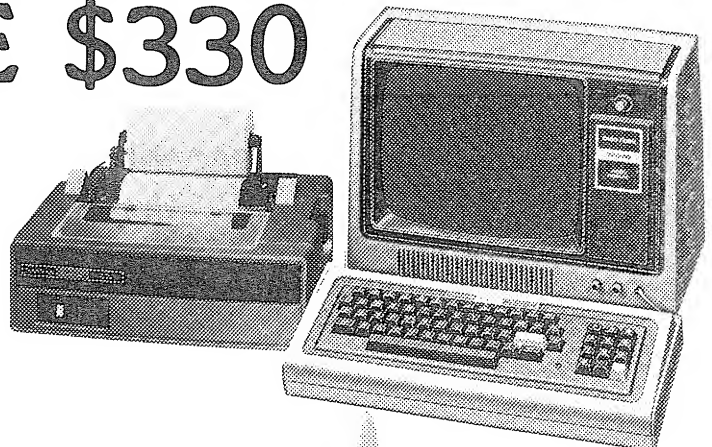
Connects directly
to TRS-80 Level I
or Level II keyboards
16K preferred

Program your TRS-80 to speak using electronically "synthesized" speech projected through a built-in speaker. Your TRS-80 will be capable of producing 60 different phonemes, more than enough for English and some foreign languages! Comes complete with an expanded manual which includes extensive programming tips, as well as our new thousand word vocabulary.
Voice Synthesizer, Cat. No. 26-1180 Sale \$299.00

NOW SAVE \$330

on a TRS-80

**Friction Feed
Printer**



**Was
\$1299**

in Catalog RSC-2

**Limited
Quantities**



**Only
\$960**

Connects directly to
TRS-80 Level II keyboard
with special cable
(not included)

Fast Delivery

Perfect for education or home use! It's a medium-speed 5x7 dot matrix impact line printer that uses roll or fanfold paper, producing one or two carbon copies. Print density is hardware variable from 10 to 16.5 characters per inch. Prints 132 characters per line maximum at 21 lines per minute. Long-lasting continuous-loop cloth ribbon. A roll-paper holder is included. Requires Level II and Printer Interface Cable or Expansion Interface and Printer Cable. U.L. Listed.

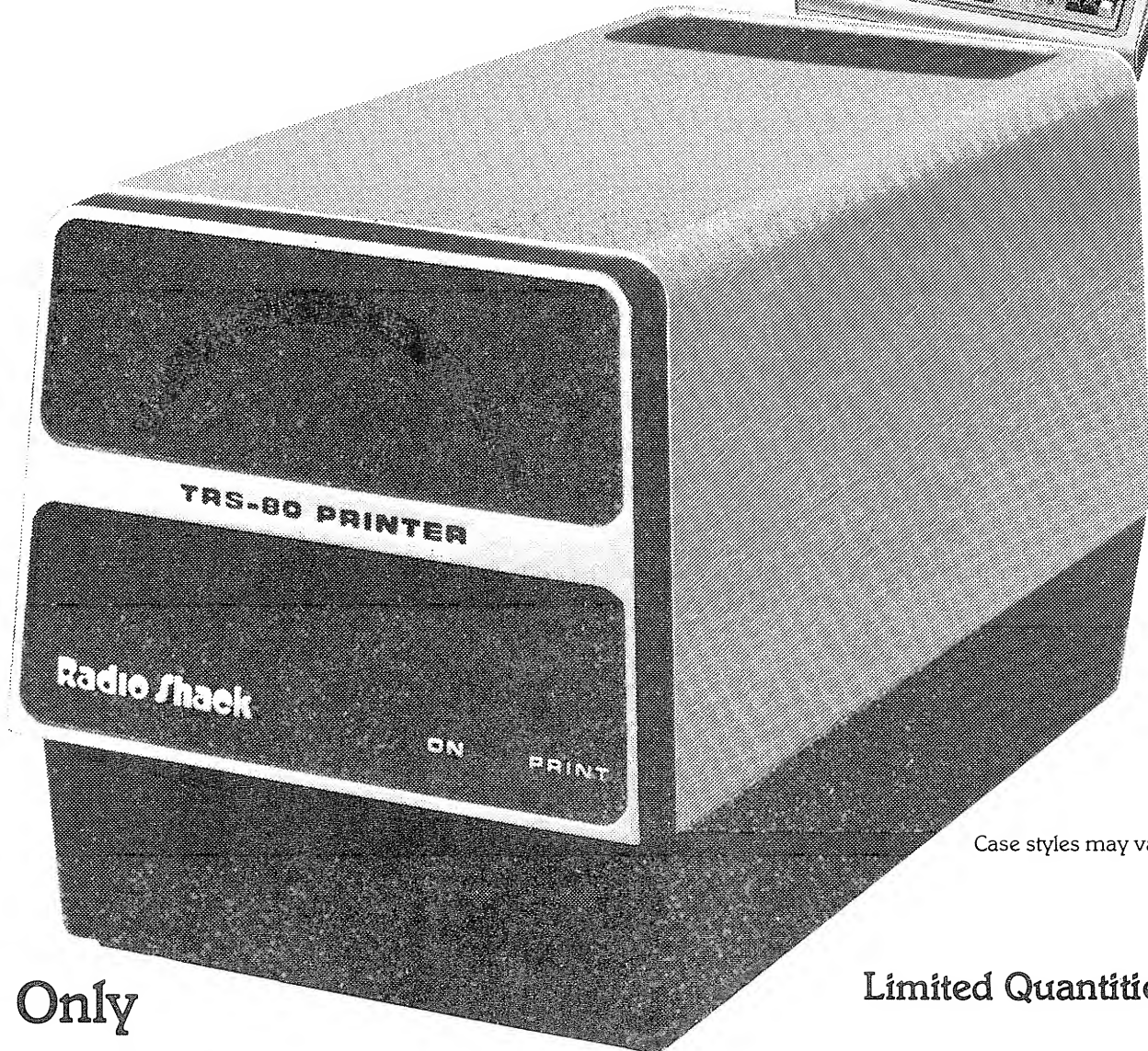
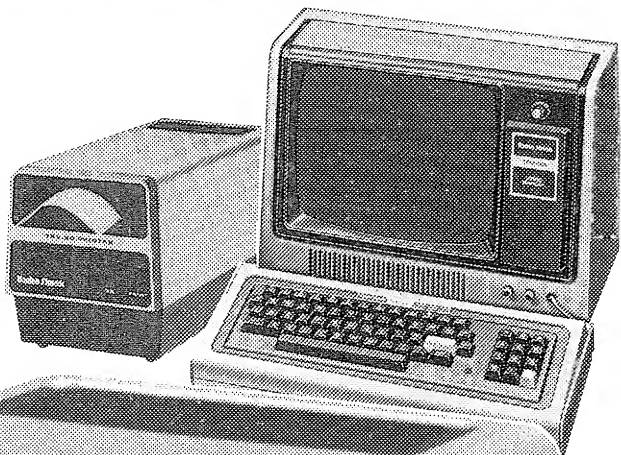
Friction-Feed Line Printer, Cat. No. 26-1150 Sale 960.00
Printer Cable for E.I., Cat. No. 26-1401 39.00
Printer Interface Cable, Cat. No. 26-1411 59.00

ORDER ONE TODAY!

SAVE \$400

This is a Once in a Lifetime Chance!

TRS-80 Screen Printer



Case styles may vary

Only
\$199

Including keyboard cable

Was \$599 in
Jan. 1978 Newsletter.

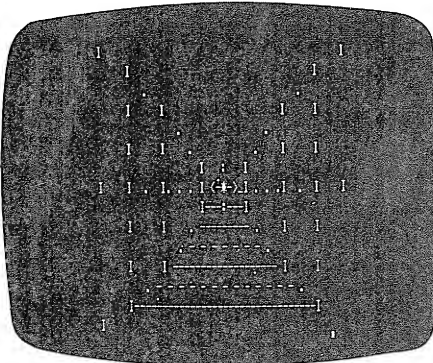
Limited Quantities

This printer will produce a copy of whatever is on your video screen—including graphics—in only two seconds! It will operate on a Level I or Level II system, with or without Expansion Interface. (See your salesperson for special Expansion Interface cable.) Aluminized paper will not fade and is not affected by heat or light.

Screen Printer, Cat. No. 26-1151 Sale \$199.00
Aluminized Paper, Item No. ACP-0001 Pkg. of 3 rolls/\$14.95

ORDER NOW! Fast Delivery

Model I Software Spotlight

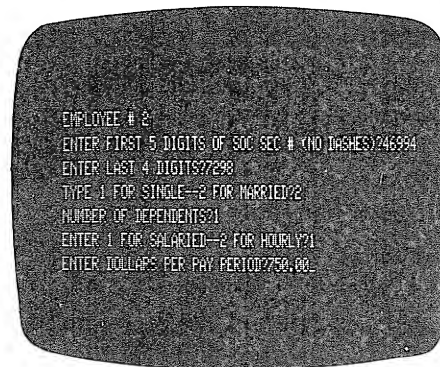


GAME PACK I

for 4K Level I includes:

- Checkers
- Hammurabi
- Draw
- Star Pilot
- Space Taxi
- Random Tic-Tac-Toe

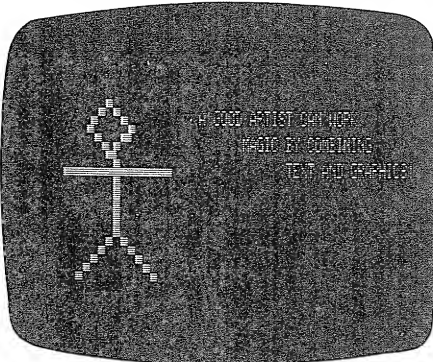
26-1805 \$19.95



PAYROLL for 4K Level I

- Quarterly Update
- Payroll Update
- Video display of amounts
- 11 employees in 4K!

26-1501 \$19.95



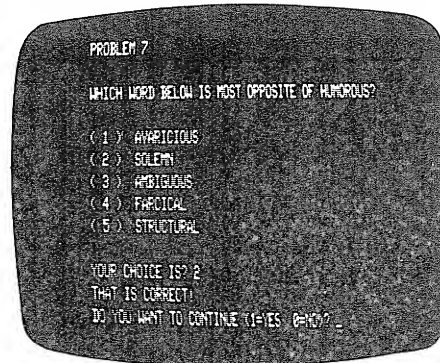
MICROMOVIE

for 4K Level I and Level II

Features:

- Full screen editing
- Pictures saved on tape
- Combine Pictures to make Movies
- Speed Control
- Much more

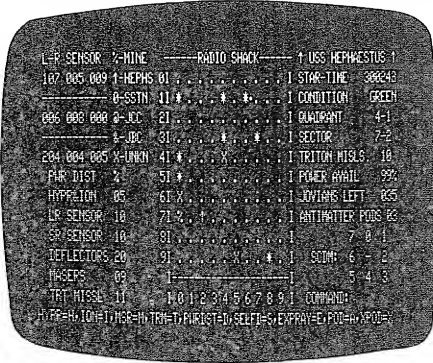
26-1903 \$9.95



I.Q. BUILDER for 4K Level I or Level II

Build your problem solving abilities and test taking skills! Ideal for students! Covers Analogies, Number Series, Synonyms, and Antonyms.

26-1706 \$29.95

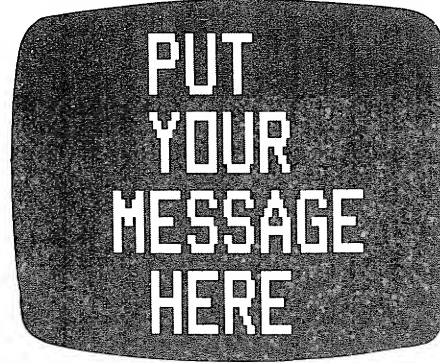


INVASION FORCE

for 16K Level I or Level II

- Hyper Drives
- Ion Drives
- Short and Long range scanners
- Deflectors
- Triton Missiles
- Antimatter Pods
- Experimental Ray

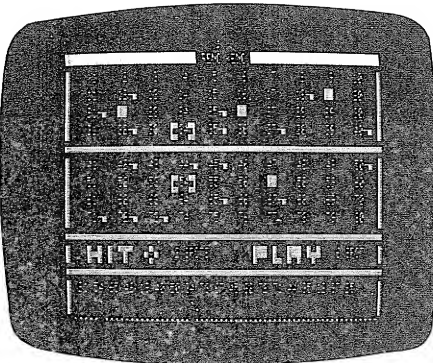
26-1906 \$14.95



MICROMARQUEE for 4K Level I or Level II

Use your MARQUEE to get your message across! Features easy editing, up to 254 characters in a constantly moving display that always attracts attention.

26-1904 \$4.95



CASINO GAMES PACK

for 16K Level II

- includes:
- Craps
 - Keno
 - Slot Machine
 - Roulette
 - Wheel of Fortune
 - Baccarat
- Full of graphics and excitement!

26-1806 \$19.95

Service Contracts (from page 1)

The carry-in contract provides you with one year's service, parts and labor. Simply bring your computer to your local Radio Shack store and the store will ship it (no charge to you) to the service center. When the computer has been repaired, it will be returned (no charge) and you pick it up at the store where you left it. Part of the service provided by the contract is priority handling at the service centers.

The limited on-site service contract, good for one year, provides you with the following:

- Installation
- One preventive maintenance call
- Two remedial service calls including mileage, parts, labor and expenses.

In addition to the above, the contract also provides an UNCONDITIONAL guarantee on the following components (calls on these items will not count as one of the contracted service calls):

- Video display tube (CRT)
- All interconnecting cables
- Internal power supplies (CPU & Disks)

The full on-site service contract provides you with:

- Installation
- Two preventative maintenance calls
- Unlimited remedial service calls including mileage, parts and labor performed during normal business hours, excluding weekends and holidays.

Note: If your computer has already been installed we will come to your location, inspect the equipment, and make sure that your equipment is operating properly. If your equipment happens to be out of warranty there may be some additional charges to put it in like-new condition.

Model I equipment can be covered under a full on-site contract provided there is over \$3000 (retail value) in computer equipment at the one location or address for which on-site service is desired, and the equipment does not contain non-Radio Shack modifications.

Contact your local Radio Shack store for full service prices.

The basic Limited on-site service contract is \$500. This covers either the 26-4001 (32K Model II) or 26-4002 (64K Model II) and one of the following printers:

- 26-1150 Line Printer I (Friction)
- 26-1152 Line Printer I (Tractor)
- 26-1154 Line Printer II
- 26-1156 Line Printer III

If your system contains other Model II equipment, or if you have a different printer, check with your local Radio Shack for additional information.

On-site rates assume that the equipment is located within 50 miles of the center of the metropolitan area where on-site service is offered, and that the equipment is easily accessible. Check with your local Radio Shack (or call J.P. Morgan at 1-800-433-5502 outside Texas or 1-817-390-3801 inside Texas) for a quotation on contracts which do not meet these requirements, or for information on service contracts for schools.



Model II Edit/Assm (from page 2)

Optional switches allow you to specify Octal or Hexadecimal listing addresses, force generation of a cross reference, and assemble either 8080 or Z80 mnemonics.

Further, the Assembler has full Macro capabilities, including conditional assembly.

The FORTRAN subroutine library includes arithmetic functions for operations between data types and for data conversions.

For addition and subtraction the arithmetic routines permit operations between the following data types:

| ARGUMENT 1 TYPE | ARGUMENT 2 TYPE |
|--------------------|--------------------|
| REAL | INTEGER |
| REAL | REAL |
| DOUBLE | INTEGER |
| DOUBLE | REAL |
| DOUBLE | DOUBLE |

For multiplication, division and exponentiation routines are included which permit operations between two INTEGER arguments.

Model II Editor/Assembler
(26-4702 \$199.00)

LEVEL I CHECK DATA FILE

```

1 REM * CHECK FILE KEN MELSHA
10 Y=1: N=0: CLS
30 P."IS THIS THE FIRST CHECK OF ";
40 IN."THE PERIOD";B
50 IF B=0 T.130
60 CLS:IN."DATE OF CHECK";B$
80 IN."CHECK NUMBER";A
90 IN."AMOUNT OF CHECK";X
100 P."WHAT WAS THE CHECK";
110 IN."WRITTEN FOR";A$
120 G.340
130 P."HOW MANY CHECKS ARE ";
140 IN."NOW ON FILE";R
150 P."PRESS THE RECORDER'S ";
160 IN."PLAY' KEY THEN ENTER 1";E
170 CLS: P. AT 64."DATE"."CHECK NO.".
190 P."AMOUNT"."REASON"
200 T=0
210 F.C=1 TO R
220 IN.# B$,A,X,A$
230 P. B$,A,X,A$
240 T=T+X
250 N.C
260P."NUMBER OF CHECKS ON
FILE=";C-1
280 P."TOTAL AMOUNT OF
CHECKS=";T
300 IN."ENTER 1 FOR NEW CHECK
DATA";E
310 CLS: IF E=1 T.60
330 G.410
340 P."PRESS 'RECORD' and 'PLAY'";
350 IN." KEYS, THEN ENTER 1";E
360 P.# B$;","A;","X;","A$
370 P."DATA RECORDING COMPLETE"
380 P."FOR MORE DATA ENTER 1, ";
390 IN."0 TO STOP";E
400 IF E=1 T.60
410 END
    
```

Fort Worth Scene (from page 1)

* Just BEFORE you change any diskette in any drive, you MUST execute the "I" command. (Under TRSDOS, type "I" and ENTER. Under BASIC, type 'SYSTEM" and ENTER.)

Please note that this last item is a departure from previously published methods (TRSDOS manual 2/46). It is especially important in BASIC that the SYSTEM"I" command be used BEFORE you change diskettes and not after.

Mail to: Radio Shack, Dept. MNA-002
1300 One Tandy Center
Fort Worth, Texas 76102

Send me information on:

Model II COBOL

Model II FORTRAN

Model II Editor/Assembler

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

IF UNDELIVERABLE DO NOT RETURN

**POLICY STATEMENT
ON ERRORS IN TRS-80
PROGRAMS AND MANUALS**

We publish corrections to software packages in the newsletter in order to get information to you as quickly as possible. You can make the correction yourself, or you may choose to visit your local Radio Shack store, verify that you are the owner of the program (some type of proof will be required), and have them order a corrected copy for you. In some cases, there may be a nominal charge. If we enhance a program or manual there will be a charge for the enhanced version. If you need a corrected copy of a program or manual, contact your local Radio Shack store or dealer.

**Model I Accounts Payable
(26-1554)**

We Goofed! Somewhere between our programmer and the printer we left out the fact that while 26-1554 will run in 32K in either of the TWO disk configurations, it requires 48K of memory for the THREE disk set-up

**Rounding problem in Model I
Accounts Payable (26-1554)**

Version 1.2 is correct. Earlier versions have an intermittent rounding problem.

**COMPUTER SERVICES ADDRESS
AND PHONE NUMBERS**

New phone hours!
8AM to 7PM Central time

Computer Services
900 Two Tandy Center
Ft. Worth, Texas 76102

1-800-433-1679 (WATS Except Texas)
1-800-772-5914 (WATS Inside Texas)
1-817-390-3583 (Switchboard)

The error can be eliminated by making the change indicated.

In the program INVOICE, change line 350 from:

```
350 N# = VAL(IN$):
      W# = ABS(N#)*100:V$ = "":
      X = W#/D1#:W# = W# - X*D1#:
      V$ = V$ + CHR$(X - (N# < 0)*128):
      X = W#/D2#:W# = W# - X*D2#:
      V$ = V$ + CHR$(X):X = W#/D3#:
      W# = W# - X*D3#:
      V$ = V$ + CHR$(X) + CHR$(W#):
      RETURN
```

TO:

```
350 N# = VAL(IN$):
      W# = ABS(N#)*100:V$ = "":
      X = W#/D1#:W# = W# - X*D1#:
      V$ = V$ + CHR$(X - (N# < 0)*128):
      X = W#/D2#:W# = W# - X*D2#:
      V$ = V$ + CHR$(X):X = W#/D3#:
      W# = FIX(W# - X*D3#):
      V$ = V$ + CHR$(X) + CHR$(W#):
      RETURN
```

Be certain that you SAVE a copy of the corrected program.

**Model I Accounts Receivable
(26-1555)**

The Accounts Receivable program has the same problem just described for Accounts Payable. Version 1.4 is current and correct. To correct the problem in earlier versions, ADD the following line to the program "ENTRANS":

```
1365 W# = FIX(W#)
```

Be certain that you SAVE a copy of the corrected program.

A further minor problem exists in Accounts Receivable versions 1.0 to 1.2. This effects the way multi-page statements are printed.

The subtotal from the previous page prints one line too far up on the page. However, the top of the following page is begun correctly.

This problem is corrected by changing line 2820 in the "PROCESS" program from:

```
2820 LPRINTL$:POKE16425,1:
      LF = 7 - PEEK(16425):
      GOSUB1590
```

TO:

```
2820 LPRINTL$:POKE16425,0:
      LF = 7 - PEEK(16425):
      GOSUB1590
```

This modification has been fully tested on line printers I and III. It does not affect other functions of the system. Be certain to SAVE a copy of the corrected program.

Misprint in the Model II manual

In the Model II Owner's Manual, page 0/2 of the TRSDOS section, the instructions for multi-disk FORMAting of diskettes are incorrect. If you are using Model II with multi-disk, follow the instructions given in the TRSDOS manual on pages 3/6 and 3/7.

Page 0/2 reads:

```
FORMAT :1 ID = {TRSDOS,
      PW = PASSWORD, FULL}
```

It should read:

```
FORMAT :1 {ID = TRSDOS,
      PW = PASSWORD, FULL}
```

