MODEL 4
HARD DISK
INSTRUCTIONS

Radio Shack®

Model 4
HARD DISK
INSTRUCTIONS

Radio Shack®
A DIVISION OF TANDY CORPORATION
FORT WORTH, TEXAS 76102

TRSDOS® Version 6 Operating System:
© 1983 Logical Systems.
All Rights Reserved.
Licensed to Tandy Corporation.

Model 4 Hard Disk Start-Up Manual:
© 1983 Tandy Corporation.
All Rights Reserved.

Reproduction or use without express written permission from Logical Systems, Inc. or Tandy Corporation, of any portion of this manual is prohibited. While reasonable efforts have been taken in preparation of this manual to assure its accuracy, Logical Systems, Inc. or Tandy Corporation assumes no liability resulting from any errors or omissions in this manual, or from the use of the information obtained herein.

TRSDOS is a registered trademark of Tandy Corporation.

10 9 8 7 6 5 4 3 2 1

Introduction

This document is for hard disk owners only. Part I explains how to move Radio Shack® applications to your hard disk. Part II explains the backup procedures you should use to preserve the data on your hard disk.

Before continuing, do the following:

1. Read your *Hard Disk System Start-up Manual.*

2. Initialize your hard disk system.

3. Make backups of your application diskettes. (Follow the instructions in your application manual.)

Now you are ready to continue.

Table of Contents

Part I:
Moving Radio Shack Application Programs
to Hard Disk 1

Part II:
Hard Disk Backup Procedures 3
Using BACKUP 4
Using HARDCOPY 7
Copying a Large Hard Disk File 7
Restoring a HARDCOPY File 9
HARDCOPY Errors 11

PART I: MOVING RADIO SHACK APPLICATION PROGRAMS TO HARD DISK

1. Start-up or reset the Hard Disk System (with the START-UP diskette in floppy Drive Ø). The computer then assigns your drives logical numbers.

   When the TRSDOS Ready prompt appears, remove the START-UP diskette.

2. Place the application diskette in what is now logical Drive 4 (floppy Drive Ø).

3. Type the BACKUP command:

   BACKUP :4 :*d* (Q=N) ENTER

   where ***d*** is the number of the drive the diskette is normally in when using a floppy disk system. (**Q=N** tells TRSDOS to move all files without prompting.)

   Examples:

   If the diskette is labeled PROGRAM or DRIVE Ø, type **BACKUP :4 :Ø (Q=N)** ENTER.

   If the diskette is labeled DATA or DRIVE 1, type **BACKUP :4 :1 (Q=N)** ENTER.

   If the diskette is labeled DRIVE 2, type **BACKUP :4 :2 (Q=N)** ENTER.

   The BACKUP utility moves the disk files from logical Drive 4 to the hard drive you specified, showing each file name.

4. When the files have been moved, TRSDOS Ready reappears. Remove the application diskette and store it in a safe place.

5. Repeat Steps 1-4 for all your application diskettes.

6. Your hard disk drive now contains the application program(s). Next, install the forms filter. First make a backup of your

START-UP diskette. Place the backup in Drive Ø, and press the reset button. At TRSDOS Ready, type:

SET *FF TO FORMS/FLT (ENTER)
FILTER *PR *FF (ENTER)
SYSGEN (DRIVE =4) (ENTER)

When TRSDOS Ready reappears, remove the diskette from Drive Ø and label it as your COBOL START-UP diskette.

Note: Whenever running any COBOL application, use the COBOL START-UP diskette.

PART II: HARD DISK BACKUP PROCEDURES

You can protect the data and programs stored on your hard disk by creating and maintaining a "backup library." A backup library is a group of diskettes that contain all the data you have entered.

Your application program manual suggests backup library requirements tailored to your application program. You might find another method more suited to your needs, but it is essential that you have some kind of backup library. Be sure to back up your hard disk at least every other day, more often if your application program or heavy usage requires it. An up-to-date backup library ensures that you'll be able to retrieve most of your data if an accident (such as a misplaced report, equipment malfunction, or power failure) should happen.

You can make copies of the programs and data on your hard disk in two ways:

- BACKUP — copies all or some of the files on your hard disk onto TRSDOS-formatted floppy diskettes. BACKUP cannot copy files that are larger than 174K bytes.

- HARDCOPY — copies individual files of any size onto TRSDOS-formatted floppy diskettes. The files cannot be used while on floppy diskettes. To use them, restore them to their original form on hard disk with the HARDCOPY read option.

Using Backup

To safeguard the information you have stored on hard disk, periodically make a backup copy on floppy diskettes:

1. Start-up or reset the computer with the START-UP diskette.

2. Determine how many TRSDOS-formatted floppy diskettes you need. (You may need up to 28 diskettes.) To do this, display the directory for the hard disk by typing the DIR command with the allocation (A) parameter.

   Examples:

   To show the total space consumed by the files on hard Drive 1, type **DIR :1 (A,I,S)** (ENTER).

   To show the total space consumed by data files on hard Drive 1, type **DIR $/DTA:1 (A)** (ENTER).

   To show the total space consumed by the COBOL program files on hard Drive Ø, type **DIR $/COB:Ø (A)** (ENTER).

   The column labeled File Size indicates the amount of space that the files on that disk use. Add the space requirements of all the files listed. (If the directory shows that an individual file exceeds 174K bytes, do not include the space used by that file in the total. You need to use HARDCOPY to copy that file. See "Using HARDCOPY.") There is no limit to the total amount of space.

   Divide the total by 174. (A newly formatted floppy diskette can hold approximately 174K or 178,176 bytes.) Round up the result to the next whole number. For example, if the directory allocation table shows the total space to be 435K, you need three floppy diskettes:

   435 / 174 = 2.5 (rounded up = 3)

3. Format the number of floppy diskettes you need. (It is a good idea to format one extra in case of a problem.) To format a diskette, place a blank or old diskette in what is now Drive 4 (floppy Drive Ø). Be sure the write-protect notch is not covered. Type **FORMAT :4 (Q=N)** (ENTER).

When finished formatting the diskette in Drive 4, TRSDOS displays:

```
Formatting Complete

TRSDOS Ready
```

4. With one of the formatted diskettes in Drive 4, type the BACKUP command.

   Examples:

   To copy each file on hard Drive 1 to the floppy diskette in Drive 4, type **BACKUP :1 :4** (ENTER).

   If you have the COBOL Accounts Receivable program on hard disk and you wish to copy your Accounts Receivable data from Drive 1 to a floppy diskette in Drive 4, type **BACKUP AR$/DTA:1 :4** (ENTER). "AR$" tells TRSDOS to copy files that start with the letters "AR." "DTA" tells TRSDOS to copy data files only. (If you want to use this method to copy the data files of a different program, find out what letters the files of the program start with by entering the DIR command as instructed in Step 2.)

   If you have the COBOL General Ledger program on hard disk and you wish to copy the program from Drive 0 to a floppy diskette in Drive 4, type **BACKUP GL$/COB:0 :4** (ENTER). "GL$" tells TRSDOS to copy files that start with the letters "GL." "COB" tells TRSDOS to copy files written in COBOL.

   After you enter the BACKUP command, the message, `Backup reconstruct invoked` appears on the screen. Then, the screen shows the name of each file as it is being copied.

5. When the floppy diskette becomes full, TRSDOS prompts you to insert a newly formatted diskette. Remove the diskette currently in Drive 4, insert a newly formatted diskette, and press (ENTER). (It is not unusual for a file to take up less space on a floppy disk than on a hard disk.)

   When `TRSDOS Ready` appears, the backup is complete.

You can also use the BACKUP command to copy programs and/or data from a TRSDOS-formatted floppy diskette to hard disk. For example, to copy the programs and data from a floppy diskette in Drive 4 to Hard Drive 0, type **BACKUP :4 :0 (Q=N)** (ENTER).

Using HARDCOPY

HARDCOPY/BAS is a TRSDOS utility that copies individual files from hard disk to floppy diskettes. HARDCOPY can copy files that are too large for BACKUP to copy. The files that HARDCOPY copies onto floppy diskettes are for backup purposes only — before trying to use these files, restore them to their original form on hard disk with the HARDCOPY read option.

Copying a Large Hard Disk File

1. Start-up or reset the computer with the START-UP diskette.

2. Determine how many TRSDOS-formatted floppy diskettes you need. To do this, display the directory "allocation table" by typing the DIR command followed by the hard drive number and (A). For example, to show the total space consumed by the files on hard Drive 1, type **DIR :1 (A)** (ENTER).

   The column labeled File Size indicates the amount of space that the given file uses on that disk. Divide this number by 174. (A newly formatted floppy diskette can hold approximately 174K or 178,176 bytes.) Round up the result to the next whole number. For example, if the directory allocation table shows the total space to be 435K, you need three floppy diskettes:

   435 / 174 = 2.5 (rounded up = 3)

3. Format the number of floppy diskettes you need. (It is a good idea to format one extra in case of a problem.) To format a diskette, place a blank or old diskette in logical Drive 4 (floppy Drive Ø). Be sure the write-protect notch is not covered. Type **FORMAT :4 (Q=N)** (ENTER).

   When finished formatting the diskette in Drive 4, TRSDOS displays:

   ```
   Formatting Complete

   TRSDOS Ready
   ```

4. Run the HARCOPY utility (actually a BASIC program) by typing **BASIC HDCOPY4/BAS** (ENTER).

5. HARDCOPY displays the following main menu:

```
HARDCOPY — Disk file Backup Utility — Ver. X
Copyright (C) 1983 by Logical Systems, Inc.

        <C>     Create Backup copy
        <R>     Read in Backup copy
        <@>     to Exit

        Your Selection ?
```

   Type **C** (ENTER).

6. The screen shows:

```
HARDCOPY — Disk file Backup Utility — Ver. X
Copyright (C) 1983 by Logical Systems, Inc.

            CREATING Backup files

            Enter SOURCE drive ?
```

   Enter the source drive. For example, if the disk file you want to copy is on hard Drive 1, type **1** (ENTER).

7. TRSDOS asks:

```
Enter DESTINATION drive ?
```

   Place a TRSDOS-formatted diskette in Drive 4 and type **4** (ENTER).

8. TRSDOS asks:

```
Enter filespec ?
```

   Enter the file name, including any extension or password of the file to be copied. Do not enter the drive number. For example, type **EXAMPLE/BAS** (ENTER).

9. TRSDOS then copies the file, showing the number of records it is copying. When the floppy diskette is full, TRSDOS shows:

```
DESTINATION disk is FULL — insert new disk and hit <ENTER>
```

If a SOURCE disk I/O error (explained in "HARDCOPY Errors") has occurred, TRSDOS also shows:

```
### SOURCE errors detected and marked
```

Remove the floppy diskette and insert a new one. Press (ENTER) and TRSDOS continues until all the records are copied.

10. Each time you insert a floppy diskette, HARDCOPY checks it for any problems. If it finds one, it shows an error.

    When finished, TRSDOS lets you know if it found any defective records. It then returns you to the main menu. Press (@) to return to TRSDOS Ready.

You now have a backup of your hard disk file. Number and label each floppy diskette with the date and the name of the file.

The file cannot be used while it is on floppy diskette. To use the file, restore it to the hard disk, using the HARDCOPY read option.

Restoring a HARDCOPY File

To restore a "hardcopy" file backup to its original state on a hard disk, follow these steps:

1. Start-up or reset the computer with the START-UP diskette.

2. Run the HARDCOPY utility (actually a BASIC program) by typing **BASIC HDCOPY4/BAS** (ENTER).

3. HARDCOPY displays the following main menu:

```
HARDCOPY — Disk file Backup Utility — Ver. X
Copyright (C) 1983 by Logical Systems, Inc.

        <C>  Create Backup copy
        <R>  Read in Backup copy
        <@>  to Exit

        Your Selection ?
```

Type **R** (ENTER).

4. The screen shows:

   ```
   READING in Backed up files

   Enter SOURCE drive ?
   ```

   Insert the first diskette of the backup file into a drive and enter the drive number.

5. HARDCOPY asks:

   ```
   Enter DESTINATION drive ?
   ```

   Enter the hard disk drive number where you want to store the file.

6. HARDCOPY asks:

   ```
   Enter filespec ?
   ```

   Enter the backup file's name. This must be the same name you used to create it.

7. HARDCOPY then begins moving each record in the file, checking each record as it moves it. After copying the first diskette, HARDCOPY prompts you to insert the second diskette.

   Insert another diskette containing part of the file. (You can copy the diskettes in any order — HARDCOPY places all the records in their proper locations.)

8. When finished restoring the file, HARDCOPY displays:

   ```
   READ completed. Press <ENTER> to continue ?
   ```

   Press **ENTER**, and HARDCOPY returns to the main menu. Press @ to return to TRSDOS Ready.

HARDCOPY
Errors

These are error messages you might get while using HARDCOPY:

DESTINATION disk I/O error — the record number shown on the screen contains an error. You can continue the copy by pressing (ENTER). However, TRSDOS will not copy the record with the error. To cancel the copy, press (@).

DESTINATION disk is flawed – Copy suspended — HARDCOPY cannot use the destination diskette. Remove it and insert a new one. Press (ENTER) and the copy restarts at the current block of records. To cancel the copy, press (@).

File not on SOURCE drive – <ENTER> to continue — the source drive does not have the file you specified. Perhaps it has a password or extension that you didn't enter. To return to the main menu, press (ENTER).

SOURCE disk I/O error — the record number shown on the screen contains an error. You can continue the copy by pressing (ENTER). However, TRSDOS will not copy the record with the error and will mark it as not copied in the destination file. To cancel the copy, press (@).

SOURCE file is empty – <ENTER> to continue — the file exists but contains no records. Press (ENTER) to return to the main menu.

Unacceptable file name — you entered a file name which included a drive number. HARDCOPY prompts you to enter the filespec again, without the drive number.

RADIO SHACK, A DIVISION OF TANDY CORPORATION

U.S.A.: FORT WORTH, TEXAS 76102
CANADA: BARRIE, ONTARIO L4M 4W5

TANDY CORPORATION

AUSTRALIA	BELGIUM	U. K.
91 KURRAJONG ROAD MOUNT DRUITT, N.S.W. 2770	PARC INDUSTRIEL DE NANINNE 5140 NANINNE	BILSTON ROAD WEDNESBURY WEST MIDLANDS WS10 7JN

10/83-TM

Printed in U.S.A.