

S-227



North Star Computers, Inc.

14440 Catalina St., San Leandro, CA 94577 USA
(415) 357-8500 TWX/Telex (910) 366-7001

**North Star ADVANTAGE
Hard Disk
Supplement Guide**

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This guide explains the start-up and general operating procedures for the hard disk North Star ADVANTAGE.

Before using this guide, read the North Star ADVANTAGE User Manual to familiarize yourself with the computer. Further information on the hard disk is contained in the North Star ADVANTAGE Technical Manual, which is available from your authorized North Star dealer.

Two floppy disks are supplied with your North Star hard disk ADVANTAGE. The Demonstration/Diagnostic disk includes a short introduction to the computer, the BUSIGRAPH program for creating business graphic displays, and diagnostic tests for the various components of the computer.

North Star ADVANTAGE Hard Disk Supplement disk contains six programs that enable you to utilize the hard disk. You will use these programs throughout the life of the computer. They perform the following functions:

- o initialization
- o daily testing
- o diagnostic testing
- o backup
- o recovery

This Guide explains how to use each of the programs on the Hard Disk Supplement disk. When you finish reading it, you will have a good understanding of the care and operation of this powerful hard disk computer.

Definition The hard disk information sticker is located on the back of the hard disk North Star ADVANTAGE. It contains important information about the hard disk to which you refer when you first load the Hard Disk Supplement disk.

Diagram This is the hard disk information sticker, with labelled parts. These are explained below.

The diagram shows a rectangular sticker with the title "HARD DISK INFORMATION" at the top. Below the title are two fields: "Drive Type" followed by a circle containing the letter "A", and "Code" followed by a circle containing the letter "B". Below these is a section titled "SKIP TABLE" which contains a table with three columns labeled "CYLINDER" and "HEAD". The first column has a circle containing the letter "C" in its first row. The table has 7 rows and 6 columns in total. At the bottom right of the table is the number "23024C".

CYLINDER		HEAD		CYLINDER		HEAD	
(C)							

23024C

LABEL	PART	DESCRIPTION
A	Drive Type	This contains "HD-xx", where "xx" is the the capacity of the hard disk in megabytes.
B	Code	This contains a short code which identifies the type of hard disk.
C	SKIP TABLE	This shows the locations of "skips" on the hard disk. See section 4.3 for an explanation of this.

Introduction This procedure explains how to load the Hard Disk Supplement disk in the computer and display the main menu. The main menu contains the list of programs on the disk.

Verification of Hard Disk Type Each time you load the Hard Disk Supplement disk, the question "Is this a code ----- hard disk?" appears on the screen. The computer stores information about the type of hard disk drive it contains. It requests you to verify this information.

The first time you load the Hard Disk Supplement disk, check the "Code" line on the hard disk information sticker. It should match the screen prompt. If the screen prompt and the sticker do not match, call your North Star dealer.

If you do not receive the prompt at all, you must tell the computer what type of drive it contains, and run the Extended Total Disk Check and Reformat test. This is explained in Chapter 4.

Note Always leave the white or silver write-protect tab on your Hard Disk Supplement disk. This protects it from changes.

Procedure

STEP	ACTION	DISPLAY
1	Turn the computer on.	LOAD SYSTEM
2	Insert the Hard Disk Supplement disk in the floppy drive.	
3	[RETURN]	

LOADING THE HARD DISK SUPPLEMENT DISK (continued)

Procedure

STEP	ACTION	DISPLAY
4	IF...	
	o you see this message, then go to step #6.	Is this a code ----- hard disk?
	o you see this message, then go to the next step.	INVALID DISK LABEL Please enter the hard disk code exactly as shown on the hard disk info sticker:
5	Read the hard disk information sticker and enter the code as shown. [RETURN] after entering. The computer begins the Extended Total Disk Check and Reformat test. Go to section 4.5 to complete the procedure.	
6	IF...	
	o the screen prompt matches the code as shown on the hard disk information sticker, then Y [RETURN] to indicate "yes." Use upper case.	
	o the screen prompt does not match the code, then remove the Hard Disk Supplement disk and reset the computer. Call your North Star dealer to determine which is correct.	

LOADING THE HARD DISK SUPPLEMENT DISK (continued)

Procedure

STEP ACTION

-
- 7 The main menu appears on the screen. Subsequent procedures start from this point.

NORTH STAR ADVANTAGE HARD DISK SUPPLEMENT

- 1 NON-DESTRUCTIVE DAILY RUN
- 2 SIMPLIFIED TOTAL DISK CHECK AND REFORMAT
(DESTRUCTIVE TO ALL DATA!)
- 3 EXTENDED TOTAL DISK CHECK AND REFORMAT
(DESTRUCTIVE TO ALL DATA!)
- 4 BACKUP
- 5 TOTAL RECOVER
(DESTRUCTIVE TO ALL DATA!)
- 6 SELECTIVE RECOVER
- 7 RESET SYSTEM

SELECT ACTIVITY>

- 8 You are ready to initialize the hard disk, as explained in the next section.

Definition of Initialization Initialization is the process that prepares the hard disk to store applications and data. The Simplified Total Disk Check and Reformat program initializes the disk.

When to Use Initialize the hard disk to set it up for the first time, or after it has been repaired.

Description The initialization process is a series of operations which are described here:

STAGE	OPERATION	DESCRIPTION
1	Formats the disk.	Puts information on each track of the hard disk so that data can be read and written on that track.
2	Tests the disk and writes the skip table. See section 4.3 for an explanation of this.	Checks that data can be reliably written to and read from the hard disk. It records those spots which cannot be read. It also tests the motor on the hard disk drive.
3	Creates a directory with a system account.	Provides the data structure for the hard disk. See your operating system manual for further explanation.

Caution During the formatting portion of the test, important system information on the hard disk is temporarily relocated. If you interrupt the program during formatting, you must run the Extended Total Disk Check and Reformat to restore this information. See section 4.5.

Stopping the Test You may stop the test after the disk has been formatted by typing the [CONTROL] and C keys simultaneously. This is not destructive to the hard disk. You then have the option to pause or end the test. If you end the test, run it over before you place data on the hard disk.

Procedure

STEP ACTION

- 1 2
 Select 2 from the main menu.

 **** WARNING **** Level 2 test...

 PROCEEDING WITH THIS TEST WILL DESTROY ALL EXISTING DATA ON
 THE DISK

 Press RETURN to proceed or ESC to abort
- 2 **[RETURN]**
 The test begins after the formatting is completed. This is
 a long test. You may want to do other work while it is
 running.

 CONTROL-C CAN BE USED TO INTERRUPT TEST (EXCEPT WHILE
 FORMATTING)
 DISK NOW BEING FORMATTED
 .
 .

HOW TO INITIALIZE THE HARD DISK (continued)

Procedure

STEP ACTION

- 3 Any errors detected are shown at the end of the test. These errors are rare. If your disk has any, call your North Star dealer or service representative.

SEEK ERRORS 0

HDCOM ERRORS 0

.

- 4 The directory and SYSTEM account are created last.

TEST COMPLETE

Creating directory at sector 128

.....

Creating SYSTEM account

Initialization complete

Press RETURN

- 5 **[RETURN]**
This returns you to the main menu.

- Introduction** After you initialize the hard disk, you are ready to load the applications you want to use on the hard disk.
- Definition of Operating System** The operating system provides the interface between the computer and the application(s). The operating system instructs the computer on how to execute the commands from the application.
- Choices of Operating Systems** North Star provides four operating systems for use on the hard disk North Star ADVANTAGE.
- o Graphics CP/M
 - o HDSO-ADV
 - o Graphics DOS
 - o Graphics MS-DOS for the North Star ADVANTAGE 8/16
- Loading the Operating System** Operating systems are not stored on the hard disk; they are loaded into memory from a floppy disk. Whenever you turn the power on, you must load the desired operating system into memory. To do so, insert the the disk that contains the operating system in the floppy disk drive and press [RETURN]. To switch operating systems, reset the computer, then insert the disk and press [RETURN].
- Programs** Language processors like BASIC and applications like WordStar or Accounts Receivable can be stored on the hard disk. Once you load the appropriate operating system, you can place these applications on the hard disk.
- Working Copy of the Disk** Each operating system has a program to copy floppy disks. Use this program to make a copy of the Hard Disk Supplement disk. Read your operating system manual for instructions on how to do this. Using a working copy protects your factory master Hard Disk Supplement disk. After making the working copy, put the factory master in a safe place.

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Backing up is the process of copying information from the hard disk onto another storage medium. It protects you from loss of data due to operator error or computer failure. This chapter explains how to backup the hard disk using one or more floppy disks.

The backup system provides a number of options. There are three types of backup procedures, which can be used separately or in different combinations. This flexibility allows you to create a system tailored to your needs.

This chapter contains explanations and procedures for each type of backup. Read through it and the following chapter on hard disk recovery to understand how the entire system works. The guidelines for each procedure explains when it is appropriate to do it.

**Protecting
Your Data**

Backing up is an essential operation. If your data is somehow lost, your backup disks prevent you from having to redo your work.

**Types of
Backup
Procedures**

There are three types of backup procedures:

- o Complete backup copies all the data and system information on the hard disk.
- o Incremental backup copies those portions of the data which have changed since you did the last backup.
- o Selective backup copies specific accounts or files.

**Divisions of
the Hard Disk**

Both the backup and recovery programs work with special divisions of the hard disk which are from the North Star HDOS operating system. These divisions are called accounts and files.

Each North Star hard disk operating system utilizes this structure in some form. Refer to your operating system manual for further explanation.

Types of Backup Disks

Backing up a hard disk usually requires more than one floppy disk. There are two types of backup disks:

- o The master disk is the first disk used in a backup procedure. It contains the hard disk system directory.
- o The continuation disks follow the master in any order.

Definition of Backup Session

A backup session consists of a master disk and any continuation disks, which are copied using a single backup procedure, in a single sitting. A backup session can be complete, incremental or selective.

Definition of Backup Series

A backup series consists of two or more backup sessions, which are linked together. A backup series starts with a complete backup session, and contains one or more incremental backup sessions. A series can continue over a period of days or weeks. It ends when the next complete backup session is done.

Selective backup sessions cannot be part of a series. They have a special function which is explained in section 2.9.

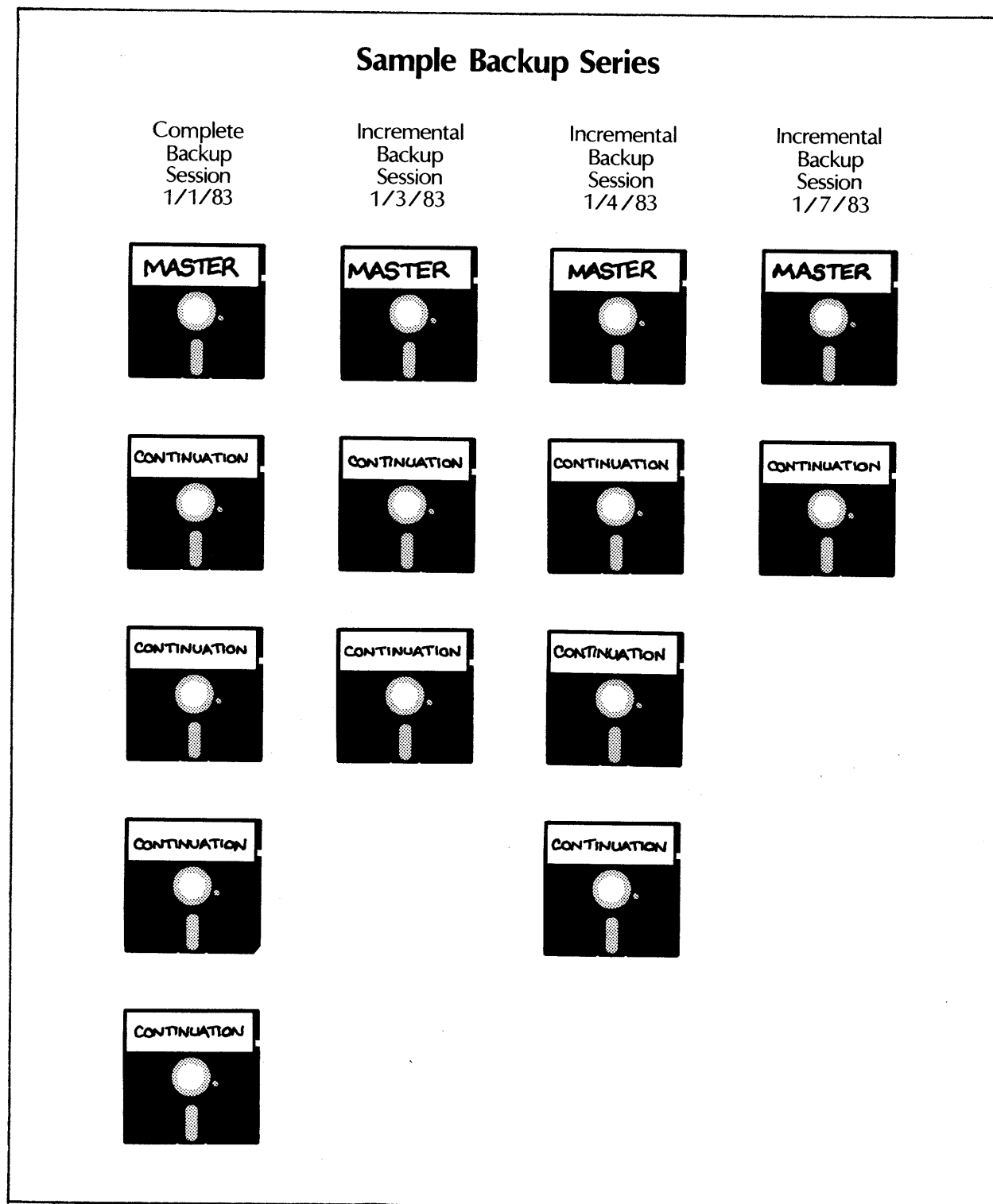
Number of Backup Disks

The number of floppy disks a backup session requires varies according to the size of your hard disk and the amount of data it contains. A quad-capacity (double-sided, double-density) floppy disk can backup approximately one-third of a megabyte of data.

BACKUP DISKS (continued)

Diagram

This diagram illustrates the relationship between backup sessions and series.



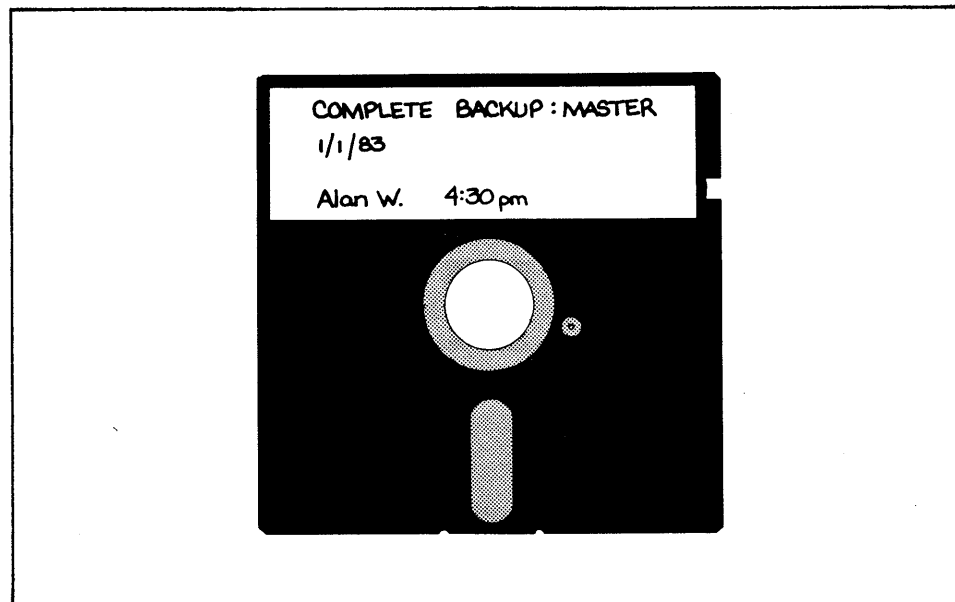
**Labelling
Backup Disks**

A good backup system requires that disks are labelled, dated and stored in sequence. Label backup disks with:

- o the type of backup session: complete, incremental or selective
- o the type of disk: "M" for master or "C" for continuation
- o the date, and the time if more than one backup session is done in a day

Diagram

This diagram suggests a correctly labelled disk:



Definition of Initializing Initializing a floppy disk is preparing it to store data. All floppy disks used for backup must be initialized once before data can be placed on them. This procedure explains how to initialize them.

When to Initialize Disks Initialize floppy disks before the first time you use them. You can re-use them after this time without re-initializing them. If they contain any old data, it is written over.

Keep a Supply Initialize several floppy disks before beginning a backup. You cannot stop in the middle of a backup session to initialize more disks, so keep an ample supply on hand.

Procedure

STEP ACTION

1 4
Select 4 from the main menu.

HARD DISK BACKUP ON FLOPPY DISKS
FOR NORTH STAR ADVANTAGE

NORTH STAR COMPUTERS, INC.

1. Complete backup (on previously initialized disks)
2. Incremental backup
3. Selected files or accounts backup
4. Initialize disk(s) for backup
5. Explanation

SELECT ACTIVITY (or ESC to exit)>

HOW TO INITIALIZE FLOPPY DISKS FOR BACKUP (continued)

Procedure

STEP ACTION

2 4

Insert floppy disk to be initialized in drive 1

**** WARNING - ALL DATA ON THIS DISK WILL BE DESTROYED ****

Press RETURN to proceed or ESC to exit

3 Remove the Hard Disk Supplement disk and insert a floppy disk.

4 **[RETURN]**
Initialization takes about 1 minute.

Disk has been initialized -- press RETURN

5 **[RETURN]**

Insert floppy disk to be initialized in drive 1.

****WARNING - ALL DATA ON THIS DISK WILL BE DESTROYED ****

Press RETURN to proceed or ESC to exit

6 IF....

o you want to exit, then go to the next step.

o you want to initialize another disk, insert another floppy disk, and repeat this procedure from step #4.

7 **[ESC]**

Insert the HARD DISK SUPPLEMENT disk in drive 1 and press RETURN

8 Remove the initialized disk and insert the Hard Disk Supplement disk.

HOW TO INITIALIZE FLOPPY DISKS FOR BACKUP (continued)

Procedure

STEP ACTION

- 9 **[RETURN]**
 This returns you to the backup menu.
- 10 **[ESC]**
 This returns you to the main menu.

**Definition
of Complete
Backup**

A complete backup copies the entire contents of the hard disk onto one or more floppy disks. These disks constitute an exact image of the applications and data on the hard disk at the time you made them.

**When to Do
a Complete
Backup**

Do a complete backup once every two weeks if you change or add to your data frequently.

If you change or add to your data only occasionally, do a complete backup once a month.

**Printing
the Session**

Each backup procedure gives you the option to print a record of the session. This sends the screen prompts and your responses to a printer. The printer rate must be set at 9600 baud.

**Note on the
Procedure**

The account names, file names and file lengths shown are examples.

Procedure**STEP ACTION**

- 1 **4**
 Select 4 from the main menu.

HARD DISK BACKUP ON FLOPPY DISKS
FOR NORTH STAR ADVANTAGE

NORTH STAR COMPUTERS, INC.

1. Complete backup (on previously initialized disks)
2. Incremental backup
3. Selected files or accounts backup
4. Initialize floppy disk(s) for backup
5. Explanation

SELECT ACTIVITY (or ESC to exit)>

- 2 **1**
 Today's date (8 characters, any style without blanks):

- 3 Enter the date in numeric form and **[RETURN]**

Listing to:

1. Screen
2. Printer (Device #1)
3. Other Printer

Selection:

HOW TO DO A COMPLETE BACKUP (continued)

Procedure

STEP ACTION

4 IF...

o you want a printed record of the procedure, then go to the next step.

o you do not want a printed record, then select 1 and go to next step.

5 IF...

o your printer is in IO slot 1, then select 2.

o your printer is in another IO slot, then select 3 and type the number of the slot in response to this prompt:

Device number:

6 You are ready to begin the backup.

Please insert the first blank initialized disk into drive 1

Press RETURN to continue

7 Remove the Hard Disk Supplement disk and insert a floppy disk.

HOW TO DO A COMPLETE BACKUP (continued)

Procedure

STEP ACTION

- 8 **[RETURN]**
A display like this appears with your account names, file names, and file lengths.
- Backup started
.....
- | ACCOUNT
----- | NAME
----- | SIZE
----- | BACKED UP
----- |
|------------------|---------------|---------------|--------------------|
| ***** | | | |
| SYSTEM | CPMWORK | 94 | 94 |
| . | | | |
| . | | | |
- Please remove BACKUP:M from drive 1 and label it
- Please insert the next blank initialized disk into drive 1
Press RETURN to continue
- 9 Remove the disk and label it with COMPLETE BACKUP:M (for "master") and the date. Insert another floppy disk.
- 10 **[RETURN]**
- | | | | |
|--------|----------|------|-----|
| ***** | | | |
| SYSTEM | CPMUNITA | 2056 | 444 |
- Please remove BACKUP:C from drive 1 and label it
- Please insert the next blank initialized disk into drive 1
Press RETURN to continue
- 11 Remove the disk and label it with COMPLETE BACKUP:C (for "continuation") and the date. Insert another floppy disk.

HOW TO DO A COMPLETE BACKUP (continued)

Procedure

STEP ACTION

12 **[RETURN]**

The computer prompts for continuation disks until the backup is completed.

```
*****  
SYSTEM          CPMUNITA          2036          326
```

Please remove BACKUP:C from drive 1 and label it

File data backup complete
Please insert the HARD DISK SUPPLEMENT disk in drive 1.
Press RETURN to continue

13 Remove the last floppy disk and label it with COMPLETE BACKUP:C and the date. Insert the Hard Disk Supplement disk.

14 **[RETURN]**

File cleanup started

.
Backup of hard disk drive #101 now complete
Press RETURN to continue

15 **[RETURN]**

This returns you to the main menu.

Definition of Incremental Backup An incremental backup copies only the data that changed since you did the last complete or incremental backup.

How it Works When you create or add data to files, the computer marks portions of them. As you do an incremental backup, the computer finds the markers and backs up only these portions. The markers are then erased.

When to Do an Incremental Backup Do an incremental backup each day you change data on the hard disk. An incremental backup must be part of a series that began with a complete backup.

Note on the Procedure The account names, file names and file lengths shown are examples.

Procedure

STEP ACTION

- 1 4
 Select 4 from the main menu.

HARD DISK BACKUP ON FLOPPY DISKS
FOR NORTH STAR ADVANTAGE

NORTH STAR COMPUTERS, INC.

1. Complete backup (on previously initialized disks)
2. Incremental backup
3. Selected files or accounts backup
4. Initialize floppy disk(s) for backup
5. Explanation

SELECT ACTIVITY (or ESC to exit)>

2 2

Today's date (8 characters, any style without blanks):

3 Enter the date in numeric form and **[RETURN]**

Listing to:

1. Screen
2. Printer (Device #1)
3. Other Printer

Selection:

HOW TO DO AN INCREMENTAL BACKUP (continued)

STEP ACTION

4 IF...

- o you want a printed record of the procedure, then go to the next step.
- o you do not want a printed record, then select 1 and go to step 6.

5 IF...

- o your printer is in IO slot 1, then select 2
- o your printer is in another IO slot, then select 3 and type the number of the slot in response to this prompt:

Device number:

6 You are ready to begin the backup.

Please insert the first blank initialized disk into drive 1
Press RETURN to continue

7 Remove the Hard Disk Supplement disk and insert a floppy disk.

8 **[RETURN]**

A display like this appears with your account names, file names, and file lengths.

Backup started

.....

ACCOUNT	NAME	SIZE	BACKED UP
-----	----	----	-----

SYSTEM	CPMUNITA	2056	444

.

Please remove BACKUP:M from drive 1 and label it

Please insert the next blank initialized disk into drive 1
Press RETURN to continue

HOW TO DO AN INCREMENTAL BACKUP (continued)

STEP ACTION

9 Remove the disk and label it with INCREMENTAL BACKUP:M (for "master") and the date. Insert another floppy disk.

10 **[RETURN]**

```
*****  
SYSTEM          CPMUNITA          2056      444
```

Please remove BACKUP:C from drive 1 and label it

Please insert the next blank initialized disk into drive 1
Press RETURN to continue

11 Remove the disk and label it with INCREMENTAL BACKUP:C (for "continuation") and the date. Insert another floppy disk.

12 **[RETURN]**

The computer prompts for continuation disks until the backup is complete.

```
*****  
SYSTEM          CPMUNITA          2056      48
```

Please remove BACKUP:C from drive 1 and label it
backup is complete.

File data backup complete
Please insert the HARD DISK SUPPLEMENT disk in drive 1.
Press RETURN to continue

13 Remove the last floppy disk and label it with INCREMENTAL BACKUP:C and the date. Insert the Hard Disk Supplement disk.

14 **[RETURN]**

File cleanup started

.
.
Backup of hard disk drive #101 now complete
Press RETURN to continue

15 **[RETURN]**

This returns you to the main menu.

**Definition
of Selective
Backup**

A selective backup copies specified accounts or files from the hard disk onto one or more floppy disks.

**When to Do
a Selective
Backup**

Here are two uses for selective backup:

- o to transfer a file or account to another hard disk
- o to preserve a file or account before removing it from the hard disk

Use selective backup for a file or account which is larger than the capacity of a floppy disk. Each operating system provides a way to copy files smaller than that size onto floppy disks. These programs generally take less time to use than selective backup.

**Using in
Recovery**

You cannot use a selective backup session in the total recovery procedure. You can use it for a selective recovery.

Note on the Procedure

This procedure shows you how to backup a file, called CPMUNITA, within a particular account, called SYSTEM. If you wish to backup an entire account, you would give a different response at step #10. The rest of the procedure is the same.

The account names, file names and file length shown are examples.

Procedure**STEP ACTION**

- 1 4
 Select 4 from the main menu.

HARD DISK BACKUP ON FLOPPY DISKS
FOR NORTH STAR ADVANTAGE

NORTH STAR COMPUTERS, INC.

1. Complete backup (on previously initialized disks)
2. Incremental backup
3. Selected files or accounts backup
4. Initialize floppy disk(s) for backup
5. Explanation

SELECT ACTIVITY (or ESC to exit)>

- 2 3
 Today's date (8 characters, any style without blanks):

- 3 Enter the date in numeric form and **[RETURN]**

Listing to:

1. Screen
2. Printer (Device #1)
3. Other Printer

Selection:

HOW TO DO A SELECTIVE BACKUP (continued)

Procedure

STEP ACTION

4 IF...

-
- o you want a printed record of the procedure, then go to the next step.
 - o you do not want a printed record, then select 1 and go to step 6.

5 IF...

-
- o your printer is in IO slot 1, then select 2
 - o your printer is in another IO slot, then select 3 and type the number of the slot in response to this prompt:

Device number:

6 You are ready to begin the backup.

Please insert the first blank initialized disk into drive 1
Press RETURN to continue

7 Remove the Hard Disk Supplement disk and insert a floppy disk.

8 [RETURN]

Backup started
.....

Account Name:

9 SYSTEM [RETURN]

1. The entire account
2. List the files
3. List the name and ask for confirmation
4. Name a specific file

Selection:

HOW TO DO A SELECTIVE BACKUP (continued)

Procedure

STEP ACTION

10 4

Filename:

11 CPMUNITA [RETURN]

A display like this appears with your account name, file name and file length.

```
*****  
SYSTEM          CPMUNITA          2056          444  
.  
.
```

Please remove BACKUP:M from drive 1 and label it

Please insert the next blank initialized disk into drive 1
Press RETURN to continue

12 Remove the disk and label it with SELECTIVE BACKUP:M, the date, the file name and the account name. Insert another floppy disk.

13 [RETURN]

```
*****  
SYSTEM          CPMUNITA          2056          444
```

Please remove BACKUP:C from drive 1 and label it

Please insert the next blank initialized disk into drive 1
Press RETURN to continue

HOW TO DO A SELECTIVE BACKUP (continued)

Procedure

STEP ACTION

- 14 Remove the disk and label it with SELECTIVE BACKUP:C, the date, the file name and the account name. Insert another floppy disk. Repeat the process as often as instructed.

```
*****  
SYSTEM          CPMUNITA          2056          48
```

NOTE: If no more files, then just press RETURN
Filename:

- 15 [RETURN]

NOTE: If no more accounts, just press RETURN
Account name:

- 16 [RETURN]

Please remove BACKUP:C from drive 1 and label it

Please insert the HARD DISK SUPPLEMENT disk in drive 1.
Press RETURN to continue

- 17 Remove the floppy disk and label it with SELECTIVE BACKUP:C, the date, the file name and the account name. Insert the Hard Disk Supplement disk.

- 18 [RETURN]

This returns you to the main menu.

Recovery is the process of copying data from the backup disks onto the hard disk. If you lose data on the hard disk for any reason, the recovery system saves you the time and effort required to redo your work.

There are two types of recovery procedures: total recovery and selective recovery. Each has a special use, which is explained in this chapter. Read through the explanations and procedures to familiarize yourself with the system. Do the procedures when appropriate.

**Definition
of Total
Recovery**

A total recovery is the process of placing the data from a backup series onto the hard disk. It recreates the data on the hard disk exactly as it was on the date of your backup session.

Description

The total recovery process essentially reverses the process of a backup series. A backup series begins with a complete backup session and goes through one or more incremental backup sessions. A total recovery begins with the most recent incremental backup session and works back through the complete backup session in that series. If there are no incremental backup sessions in that series, the recovery begins with the complete backup session.

**When to Do
a Total
Recovery**

Use total recovery if the contents of the hard disk have been lost.

Requirements

A total recovery can be done with:

- o a complete backup session, or
- o a backup series (which consists of a complete backup session and one or more incremental backup sessions)

**Sequence
of Disks**

These are guidelines for determining the sequence of backup disks used in a standard total recovery.

1. Start with the master disk from the most recent incremental backup session.
2. Then, insert the continuation disks of that incremental backup session. Insert them in any order within that session.
3. Then, insert the master of the next most recent backup session. Depending on your series, this may be another incremental backup session, or it may be the complete backup session for the series.
4. Then, insert the continuation disks of that backup session. Insert them in any order within that session.
5. The recovery ends with the last continuation disk of the complete backup session.

If your series contains only a complete backup session, begin with the master disk and work through each of the continuation disks.

**Note on
Options**

The sequence of disks described above is for a standard total recovery. You do have other options:

- o You do not have to begin with your most recent incremental session. You may begin with an earlier incremental session, or the complete session.
- o You may use an earlier backup series if you have saved one.

SEQUENCE OF DISKS IN A TOTAL RECOVERY (continued)

General Rules

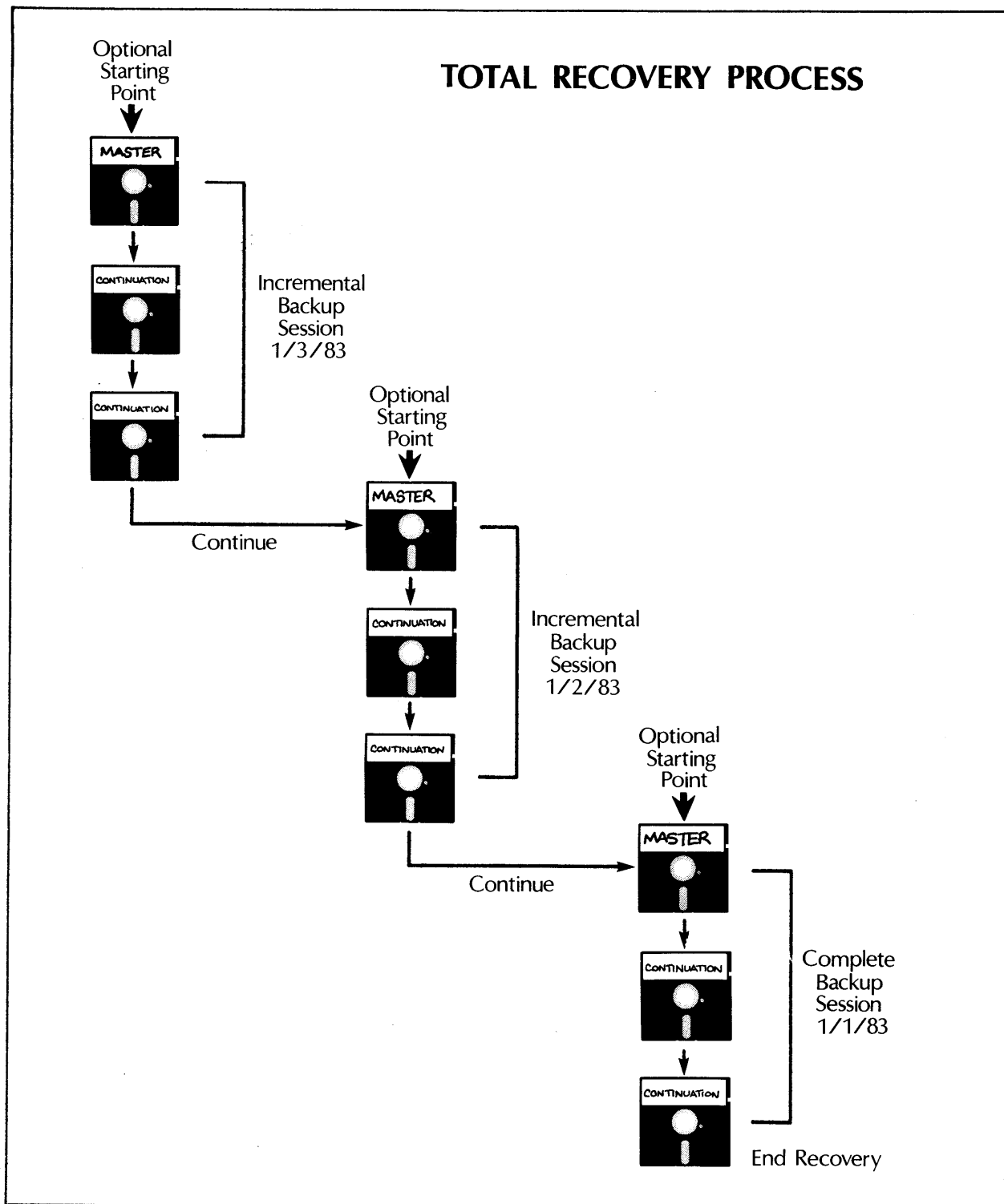
Whether you do a standard total recovery, or try one of the options described above, you must follow these general rules:

1. Always recover the entire backup session - begin with the master disk, and use all the continuation disks.
2. Do not "skip around" within a backup series. Once you start with a session, you must use all previous sessions in the correct sequence, until you finish the series.
3. You must always use the complete backup session in the series, and use it last.

SEQUENCE OF DISKS IN A TOTAL RECOVERY (continued)

Diagram

This diagram illustrates the sequence of disks described:



Important If your data was lost because of a problem with the hard disk or the computer, do not recover until the problem has been completely fixed.

Caution Total recovery destroys any data still stored on the hard disk. Backup any remaining valuable data first.

Note on the Procedure This procedure shows a total recovery which recovers all the accounts that were on the hard disk. Total recovery gives you the option to omit certain accounts. If you wish to do so, make a different selection for step #8. The basic procedure from step #9 is the same.

The account names, files names and file lengths on shown are examples.

Procedure

STEP ACTION

1 5
Select 5 from the main menu.

**** WARNING ****

TOTAL RECOVERY BEGINS BY DESTROYING ALL DATA ON THE DISK

Press RETURN to proceed or ESC to abort

HOW TO DO A TOTAL RECOVERY (continued)

Procedure

STEP ACTION

2 [RETURN]

Creating directory at sector 128

.....

Creating SYSTEM account

Initialization complete

TOTAL RECOVERY FROM FLOPPY DISKS FOR NORTH STAR ADVANTAGE

Listing to:

1. Screen
2. Printer (Device #1)
3. Other Printer

Selection:

3 IF...

-
- o you want a printed record of the procedure, then go to the next step.
 - o you do not want a printed record, then select 1 and go to step 6.

4 IF...

-
- o your printer is in IO slot 1, then select 2.
 - o your printer is in another IO slot, then select 3 and type the number of the slot in response to this prompt:

Device number:

5 You are ready to begin the recovery.

Please insert BACKUP:M into drive 1
Press RETURN to continue

HOW TO DO A TOTAL RECOVERY (continued)

Procedure

STEP ACTION

- 6 Remove the Hard Disk Supplement disk and insert the master disk from your most recent backup session.
- 7 **[RETURN]**
1. Recover all accounts
 2. Specify accounts
 3. Specify exceptions
- Selection:
- 8 1
- Assuming SYSTEM account already there
Allocated space for file CPMWORK,SYSTEM: 94 blocks
Allocated space for file CPMUNITA,SYSTEM: 2056 blocks
- Please put the HARD DISK SUPPLEMENT disk into drive 1.
Press RETURN to continue
- 9 Remove the master backup disk and insert the Hard Disk Supplement disk.
- 10 **[RETURN]**
- Please wait ...
2 files found on the recover list
- Please insert the master backup disk into drive 1
Press RETURN to continue
- 11 Remove the Hard Disk Supplement disk and insert the master backup disk again.

HOW TO DO A TOTAL RECOVERY (continued)

Procedure

STEP ACTION

12 [RETURN]

Recovered 94 blocks to file CPMWORK,SYSTEM *COMPLETED*
Recovered 444 blocks to file CPMUNITA,SYSTEM
You may remove the disk from drive 1
Please insert the next backup disk into drive 1
Press RETURN to continue

13 Remove the master backup disk.

IF....

-
- o there are more continuation disks from that session, then insert one of them and [RETURN]
 - o there are no continuation disks from that session, and there is a prior incremental session, then insert the master of the prior incremental session and [RETURN]
 - o there are no more continuation disks from that session, and the next most recent session is a complete backup, then insert the master of the complete backup session and [RETURN]
 - o if this is a complete backup session, and there are no continuation disks, then the computer indicates that the recovery is finished. Go to step #13.

14 The computer prompts for disks until the recovery is complete. Follow the process from the previous step to decide which disks to insert.

Recovered 50 blocks to file CPMUNITA,SYSTEM *COMPLETED*
You may remove the disk from drive 1
File recovery completed. Thank you for waiting.

Please insert the HARD DISK SUPPLEMENT disk into drive 1
Press RETURN to continue

HOW TO DO A TOTAL RECOVERY (continued)

Procedure

STEP	ACTION
15	Remove the last backup disk and insert the Hard Disk Supplement disk.
16	[RETURN] This returns you to the main menu.

**Definition
of Selective
Recovery**

A selective recovery is the process that recovers specific files or accounts onto the hard disk.

Description

You can do a selective recovery with either a selective backup or a backup series session. With a backup series, the computer prompts you for disks until it has found the entire file or account. The program may read from all or only some of the disks in the series.

**Uses of
Selective
Recovery**

Selective recovery replaces a file or account which has been lost from the hard disk.

It is also used to transfer a file or account from one hard disk to another.

You can recover an older version of a file or account and designate a new name for it as you recover it. The current and prior versions would then exist side by side for comparison. If you do this, be sure there is enough room on the hard disk for both versions of the file.

**Note on
Options**

If you do a selective recovery with a backup series, you have the option to use any series you have. To get the most current data, use your most recent backup series.

You also have the option to begin with an earlier backup session within a backup series, if you do not want the most current data in that series.

Note on the Procedure

This procedure shows how to recover a file, called CPMUNITA, using a backup series. Selective recovery also recovers an entire account. The basic procedure is the same. The account name, file name and file length shown are examples.

Procedure**STEP ACTION**

-
- 1 **6**
Select 6 from the main menu.

RECOVERY PROGRAM FOR FLOPPY DISKS
NORTH STAR COMPUTERS, INC.

1. Accounts Listing
2. Recover files or accounts
3. Explanation

Selection (or ESC to exit)>

- 2 **2**
Listing to:

1. Screen
2. Printer (Device #1)
3. Other Printer

Selection:

- 3 **IF...**

-
- o you want a printed record of the procedure, then go to the next step.
 - o you do not want a printed record, then select 1 and go to the next step.

HOW TO DO A SELECTIVE RECOVERY (continued)

4 IF...

o your printer is in IO slot 1, then select 2.

o your printer is in another IO slot, then select 3 and type the number of the slot in response to this prompt:

Device number:

5 You are ready to begin the recovery.

Please insert the backup disk into drive 1.
Press RETURN to continue

6 Remove the Hard Disk Supplement disk and insert the master disk from your backup session.

7 **[RETURN]**

Master disk of (date)

Old account name:

8 **SYSTEM [RETURN]**

1. The entire account
2. List the files
3. List the name and ask for confirmation
4. Name a specific file

Selection:

9 4

Old Filename:

10 **CPMUNITA [RETURN]**

New Filename for CPMUNITA:

HOW TO DO A SELECTIVE RECOVERY (continued)

Procedure

STEP ACTION

11 CPMUNITA [RETURN]

Account name for CPMUNITA (must already exist):

12 SYSTEM [RETURN]

CPMUNITA,SYSTEM will recover to a new file CPMUNITA,SYSTEM

1. Next file or account
2. Recover files
3. Top level menu

Selection:

13 2

Insert the HARD DISK SUPPLEMENT disk into drive 1.
Press RETURN to continue

14 Remove the master backup disk and insert the Hard Disk
Supplement disk.

15 [RETURN]

Please wait.
1 file found on the recover list

Please insert the master backup disk into drive 1.
Press RETURN to continue

16 Remove the Hard Disk Supplement disk and insert the master
backup disk again.

17 [RETURN]

Recovered 444 blocks to file CPMUNITA,SYSTEM
You may remove the disk from drive 1
Please insert the next backup disk into drive 1
Press RETURN to continue

HOW TO DO A SELECTIVE RECOVERY (continued)

Procedure

STEP ACTION

18 Remove the master backup disk.

IF....

- o there are more continuation disks from that session, then insert one of them and **[RETURN]**
- o there are no continuation disks from that session, and there is a prior incremental session, then insert the master of the prior incremental session and **[RETURN]**
- o there are no more continuation disks from that session, the next most recent session is a complete backup, then insert the master of the and complete backup session and **[RETURN]**
- o if this is a complete backup session, and there are no continuation disks, then the computer indicates that the recovery is finished. Go to step #19.

19 The computer prompts for disks until the file is recovered. Follow the process in the previous step to decide which disks to insert.

Recovered 20 blocks to file CPMUNITA,SYSTEM *COMPLETED*
You may remove the disk from drive 1
File recovery complete. Thank you for waiting.

Please insert the HARD DISK SUPPLEMENT disk into drive 1
Press RETURN to continue

20 Remove the last backup disk and insert the Hard Disk Supplement disk.

21 **[RETURN]**
This returns you to the main menu.

(

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(

The Hard Disk Supplement disk contains three test programs. They help you diagnose situations in which the hard disk is not operating properly. This chapter explains the uses of these tests.

If a problem arises with your hard disk due to computer failure, such as that caused by physical shock from being dropped or jolted, or power failures, call on trained service people to correct it.

The hard disk may not operate properly due to causes other than damage or failure. The hard disk has important information about itself stored internally. This information can be lost in certain situations. This chapter explains the limited situations in which you may rectify such problems yourself.

- Three Tests** The Hard Disk Supplement disk contains three tests:
- o the Non-Destructive Daily Run
 - o the Simplified Total Disk Check and Reformat
 - o the Extended Total Disk Check and Reformat
- Daily Run** The Non-Destructive Daily Run is a short diagnostic test which checks the hard disk for errors. It does not affect the programs or data on the hard disk. It is explained in section 4.2.
- Simplified Check** The Simplified Total Disk Check and Reformat initializes and tests the hard disk. It is not used as a diagnostic test. It erases any data or programs on the hard disk. It is explained in section 1.2.
- Extended Check** The Extended Total Disk Check and Reformat contains the same test as the Simplified Total Disk Check and Reformat, but requires the user to answer a series of questions regarding the hard disk before it begins. It erases any data or programs on the hard disk. It is explained in section 4.5.

Regular Testing One of your important responsibilities is to test the hard disk regularly. The Non-destructive Daily Run performs this function. This test does not affect the data on the disk.

Description The Non-Destructive Daily Run verifies the performance of the hard disk. It tests for "read errors." Read errors are indications that data is not being correctly read from the hard disk.

Monitoring Read Errors A small number of read errors can be considered normal. You should pay attention to the trend in the occurrence of read errors. Once read errors appear, keep a log of them. If the number appears to increase steadily, or if it changes dramatically from one test to the next, there may be a problem with the hard disk. If this occurs, call your North Star dealer or service representative.

When to Use Run this test at the start of every day.

THE NON-DESTRUCTIVE DAILY RUN (continued)

Procedure

STEP ACTION

-
- 1 1
Select 1 from the main menu. The test begins automatically.
It takes a few minutes.
- Level 1 test...
- Sector pulse count correct
Sector pulse timing range correct
- Testing usable tracks for read errors
-
- ·
Number of read errors: 0
- Testing reserved track
.....
Reserved track test passed
- TEST COMPLETE
- Press RETURN
- 2 IF....
-
- o the number of read errors is 0, then [RETURN] to exit the
program and return it to the main menu.
- o the number of read errors is greater than 0, then record
the number and [RETURN] to exit the program.

Definition of Skip A skip is a portion of the hard disk that is not reliable. Normally, a hard disk has a few skips. They do not mean that the disk itself is defective, nor do they measurably reduce the capacity of the disk.

Definition of Skip Table The skip table contains information about the locations of the skips. Certain divisions of the hard disk are called cylinders and heads. Skips are identified according to the cylinder and head on which they are located.

The skip table is located internally on the hard disk. The hard disk must have this information to operate properly.

Identifying skips Before shipping, the hard disk is carefully checked and any skips are identified. The locations of the skips are recorded on the hard disk information sticker. A diagram and explanation of the sticker appear in section 1.1.

Problems with the Table The hard disk will not function if the skip table is lost. Here are two situations in which this occurs:

- o If the Simplified Total Disk Check and Reformat is interrupted by a power failure or a system reset while formatting the hard disk. When you reload the Hard Disk Supplement disk, the message INVALID DISK LABEL appears.
- o If the hard disk is dropped or jolted during shipping. The message INVALID DISK LABEL appears on the screen when you first load the Hard Disk Supplement disk. This situation was mentioned in section 1.1.

Replacing the Skip Table If the INVALID DISK LABEL message appears, you must replace the skip table on the disk. The Extended Total Disk Check and Reformat does this.

Restrictions The Extended Total Disk Check and Reformat destroys data. Both of the situations mentioned above are those in which you have not yet placed applications on the hard disk.

If the skip table is lost after you have placed data on the hard disk, run this test only on the advice of your North Star dealer or service representative and only after you have fully backed up any data still accessible on the disk. In this case, certain screen prompts for the test differ from those shown in the following procedure. Your dealer or service representative can assist you with them.

- Preparation** The Extended Total Disk Check and Reformat replaces the skip table on the hard disk. Before the test begins, read the hard disk information sticker for the location of each skip. The test requests this information.
- Notes on the the Procedure** This test presents a series of options. Most of those are useful only for service representatives. This procedure shows the simplest method of running the test.
- You may stop the test (except during formatting) by typing the [CONTROL] and C keys simultaneously. This is not destructive to the hard disk. You then have the option to pause or end the test. If you end the test, run it over before you place data on the hard disk.

Procedure**STEP ACTION**

-
- 1 In some cases, this test begins automatically. However, if you are initiating the test, select 3 from the main menu.
- 2 When the test begins, this message appears.
- **** WARNING **** Level 3 test...
- PROCEEDING WITH THIS TEST WILL DESTROY ALL EXISTING DATA ON THE DISK
- Press RETURN to proceed or ESC to abort
- 3 **[RETURN]**
- DISK NEED TO BE FORMATTED (Y/N)?

HOW TO RUN THE EXTENDED TOTAL DISK CHECK AND REFORMAT(continued)

Procedure

STEP ACTION

4 IF....

- o you initialized the hard disk earlier, but a problem occurred and you received the prompt "INVALID DISK LABEL" when you loaded the Hard Disk Supplement disk, then **Y** to format the disk again.
- o you selected this test from the main menu, then the hard disk does not need to be formatted. Type **N**

5 IF...

- o you see this message, then check the hard disk information sticker and go to the next step.

CURRENT SKIP TABLE

CYLINDER xxx, HEAD xx

CYLINDER xxx, HEAD xx

ENTER ADDITIONAL SKIPS (Y/N)?

- o you see this message, then check the hard disk information sticker and go to the next step.

CURRENT SKIP TABLE INVALID-

NO SKIPS

ENTER ADDITIONAL SKIPS (Y/N)?

6 IF...

- o the screen shows skips and they match the skips shown on the hard disk information sticker, then **N** and go to step #11.
- o both the screen and the sticker show no skips, then **N** and go to step #11.
- o the screen shows no skips but the sticker shows skips, then **Y** and go to the next step.
- o the screen and the sticker both show skips, but their locations do not match, then remove the Hard Disk Supplement disk, reset the computer and call your North Star dealer.

HOW TO RUN THE EXTENDED TOTAL DISK CHECK AND REFORMAT (continued)

Procedure

STEP ACTION

- 7 Y
- CYLINDER:
- 8 Enter the cylinder number of the first skip recorded on the sticker.
- HEAD:
- 9 Enter the head number of the skip. Enter the same information for each skip.
- CYLINDER:
- 10 [RETURN] after the CYLINDER prompt when you finish entering the skips.
- 11 The skip table is complete.
- Press RETURN to accept or ESC to reject SKIP TABLE?
- 12 [RETURN]
- HALT IF ERROR DETECTED (Y/N)?
- 13 N
- REPEAT TEST CONTINUOUSLY (Y/N)?
- 14 N
- RUN TEST ON SKIPS (Y/N)?

HOW TO RUN THE EXTENDED TOTAL DISK CHECK AND REFORMAT (continued)

Procedure

STEP ACTION

15 N

TYPE THE NUMBER OF ITERATIONS FOR EACH TEST SECTION

PATTERN READ/WRITE:

16 1 [RETURN]

SERVO HARMONIC TEST:

17 1 [RETURN]

SERVO RANDOM TEST:

18 1 [RETURN]

OUTPUT TO SCREEN (0) OR PRINTER (1)?

19 IF...

o you do not want a printed record of the test session, then
select 0

o you want a printed record, then your printer must be in
IO slot 1. Select 1 to print.

20 You are ready to begin the test.

Press RETURN to start test

HOW TO RUN THE EXTENDED TOTAL DISK CHECK AND REFORMAT (continued)

Procedure

STEP ACTION

21 IF...

o you indicated that the hard disk is to be formatted,
then you see this display first:

CONTROL-C CAN BE USED TO INTERRUPT TEST (EXCEPT WHILE
FORMATTING)

DISK NOW BEING FORMATTED

.
.

o the hard disk is not to be formatted, then you see this
display first:

Testing reserved track

.....

22 This is a long test. You may want to do other work while it
is running.

23 The test records any errors at the end. These errors are
rare. If your disk has any, call your North Star dealer or
service representative.

SEEK ERRORS 0
HDCOM ERRORS 0

.
.

24 Any skips are also recorded.

CYLINDER xxx, HEAD x
CYLINDER xxx, HEAD x

TEST COMPLETE

Creating directory at sector 128

.....

Creating SYSTEM account

Initialization complete

Press RETURN

HOW TO RUN THE EXTENDED TOTAL DISK CHECK AND REFORMAT (continued)

Procedure

STEP	ACTION
------	--------

25	[RETURN]
----	----------

26	This normally returns you to the main menu. In some cases, it may return you to the hard disk code prompt. Make sure the prompt displays the correct code. Then, if you want to get to the main menu, type Y [RETURN]
----	---

READER COMMENTS



Please use this mailer to send your comments on this manual and the program it describes. We will carefully consider your suggestions for incorporation in future versions. If you require more space for your comments, please attach a separate sheet.

NAME OF PROGRAM _____ VERSION NO. _____

MANUAL PART NO. _____ MANUAL SERIAL NO. _____

What features of the program do you like?

What features of the program don't you like or what features do you feel are missing?

Are there specific points in the manual that need clarification or correction? Give details with page and paragraph references.

Did you find the manual easy to use and understand? Do you think certain aspects should be organized differently? Was any necessary material omitted or was any material unnecessary?

Did you find sufficient information provided in the manual for proper system set up and installation?

Additional comments: _____

NAME _____ DATE _____

COMPANY OR ORGANIZATION _____

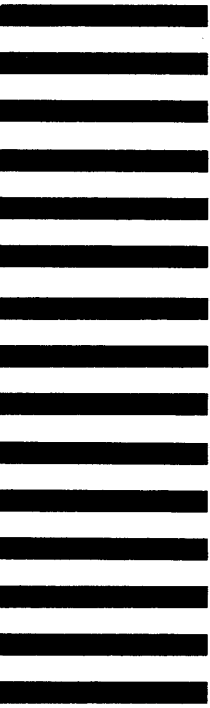
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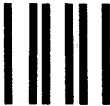
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