

Corvus Systems

The Bank™ Diagnostic Guide

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GETTING STARTED

The system manager can fix some Bank problems himself. This guide will help to diagnose and correct those problems.

Bank problems are caused by mechanical failure or faulty hardware or firmware. Firmware is the factory-supplied software that controls The Bank and enables the computer to communicate with The Bank. This guide addresses Bank problems caused by faulty firmware or hardware.

Bank problems may appear if The Bank firmware is outdated or damaged. There may also be problems if the tape cartridge, the medium which stores information, has too many bad tracks.

The tools to diagnose and correct such problems are The Bank indicator lights and The Bank diagnostic program.

Begin by using The Bank indicator lights and Chapter 1 of *The Bank Guide*. Make sure The Bank is set up correctly. If the problem still persists, turn to The Bank diagnostic program.

USAGE

Throughout this guide **type** means to enter two or more characters or keyboard symbols on the computer keyboard. Type all words, symbols, spaces and punctuation to the right of the word **type** exactly as shown. Do not add or leave out punctuation marks at the end of the statement.

Examples:

Type A:PIP C:=B:*.DOC

Type RUN BSYSGEN

Do not type the spaces between **type** and the first character to its right.

Throughout this guide the word **press** means to enter a single character or symbol on the computer keyboard. When a keytop symbol is used, press the key to which it refers. Do not type out each letter of the word in the keytop symbol.

Examples:

Press Y

Press RETURN

When the command **press** or **type** appears in a sentence or paragraph, type in the information indicated.

Example:

Type your user name and **press** RETURN .

The variables **x.xx** on the screen display stand for software version numbers.

Software Required

To correct problems on The Bank, use the Corvus diskette labelled "Bank Diagnostic Utilities."

BANK INDICATOR LIGHTS

The three lights on The Bank show its status. When only the ready light is on, The Bank can work and communicate with computers. The ready light goes off when The Bank is actually in use. When The Bank begins to run most diagnostic programs, both the fault and ready lights will be on. When The Bank's busy light is on, The Bank will not accept commands. It either is busy working on a command or has suspended activity to prepare for shutdown. While The Bank is in use, all lights will often flicker.

If The Bank's busy light is always on, The Bank's controller card may not be able to communicate with its read-write card. Press the reset button. After about 1½ minutes The Bank's ready light should be the only light on. If it isn't, turn off The Bank; then turn it on again. The ready light should come on after about 1½ minutes.

The table below shows common problems and their solutions. More details on how to remedy problems follow the table.

Symptom	Possible Problem	Remedy
No indicator lights on Bank	Power cord not properly connected	Properly connect power cord
	Power not on	Turn power switch to ON
	Cartridge unit door	Close cartridge unit door
	Fuse blown	Replace fuse (see "Changing Fuses" below)

Symptom	Possible Problem	Remedy
Indicator lights function yet ready light does not stay on	Improper hardware setup	Check hardware setup, especially cable attachments
	Improper firmware (on formatted tape)	Replace firmware (See "Updating Firmware" below)
Ready light on but computer cannot communicate with Bank	Improper hardware setup	Check hardware setup
	Incorrect OMNINET address setting	Check OMNINET address switch
	Improper firmware (on formatted tape)	Replace firmware (See "Updating Firmware" below)
	Improper power-up sequence	Turn off all equipment; then follow correct power-up sequence
Ready light on and computer can communicate with Bank but intermittent problems	Media defects	Check for media defects. See "Correcting Media Defects" below)
	Improper power-up procedure	Turn off all equipment; then follow correct power-up sequence
Busy light always on	Bank controller card can't communicate with read-write card	Press reset button
Bank runs too slowly	Incorrect interleave factor	Reset interleave factor (See "Resetting the Interleave Factor" below)
	Improper power-up sequence	Turn off all equipment; then follow correct power-up sequence

BANK DIAGNOSTIC TOOLS

The Bank diagnostic program helps repair Bank problems. The tools to use are updating the firmware, resetting the interleave factor, certifying and inactivating tracks, and reformatting tapes and tracks.

Before resetting the interleave factor and certifying, reformatting or inactivating tracks, first back up all pertinent data. Either an entire tape or specific tracks can be backed up.

To back up an entire Bank Tape, use one of two methods. First, using two Banks, copy one Bank Tape to another Bank Tape. Or, with only one Bank, copy the information from the tape to a disk system and then to another Bank Tape. For both methods, follow the steps for copying in the *Transfer Utility Manager's Guide*.

To back up the data on specific tracks, first determine which volumes are on those tracks. Use three program options: range, list images and list volumes.

First use the range option in the spare table option of The Bank diagnostic main menu. This option shows the range of sectors a specific track contains. To learn how to use the range option, go to this guide's section "Using the Spare Table Option."

Then use the list images and list volumes options to determine what volumes have starting addresses in that range. The list images option is found in the transfer manager option of the Corvus management utility. To see how to use this option, refer to the *Transfer Utility Manager's Guide*. Enter the list volumes option from the volume manager on the drive management main menu.

Back up the volumes with starting addresses in the sector range of the bad track. Also back up the last volume of the preceding track.

To avoid the problem of backing up data before certifying, reformatting, inactivating or resetting the interleave factor, try to keep an extra copy of all information stored on The Bank Tape.

The Corvus service department also may recommend using a different data file for The Bank diagnostic program. Before changing the name of the data file, use the version level option to determine the version number of the data. To change the data file, use the option "set diag data block file name."

ENTERING THE DIAGNOSTIC PROGRAM

The Bank diagnostic program can be entered through the disk system or a floppy disk drive.

The Bank came with The Bank Diagnostic Utilities diskette. Chapter 2 of *The Bank Guide* shows how to use this diskette to update the Constellation II utility programs on a Corvus disk system. If the utility programs are already on the disk system, use the diagnostic program from the disk system. From the management utility main menu, select the maintenance option. From the maintenance utilities menu, select The Bank diagnostic.

Use the diagnostic program from the floppy disk drive if the utility programs have not been updated or the Corvus disk system does not work.

To exit The Bank diagnostic program during a procedure, press **[ESC]** .

Follow these steps to use The Bank diagnostic program from a floppy disk drive.

- 1.** Turn on all Corvus systems.

Remember that The Bank is the last server device to be turned on.

- 2.** Put the diskette into the floppy drive.

If the computer has two floppy disk drives, put The Bank Diagnostic Utilities diskette into drive A.

3. Turn on the computer.

The screen is similar to:

```
BDIAG [x.xx] Bank Diagnostic
(c) Copyright 1983 Corvus Systems, Inc.
-----
Please enter-

Bank OMNINET station address: nn
```

where **nn** is the numeric OMNINET station address of The Bank.

4. Enter The Bank's address.

Type in The Bank OMNINET address, and press **[RETURN]** .

The screen displays The Bank diagnostic menu. The screen is similar to:

```
BDIAG [x.xx] Bank Diagnostic
(c) Copyright 1983 Corvus Systems, Inc.
-----
V — VERSION Check
P — Display BANK PARAMETERS
C — Perform Verify-Scan for bad tracks
D — DISPLAY or alter spare block tables
R — RECOVER format results

F — Perform tape FORMAT
S — SET diag data block file name
L — Read version LEVEL of Diag Data Block

I — Modify INTERLEAVE
U — UPDATE firmware on Bank
N — Write tape NAME
W — WRITE Corvus volume

E — Exit
-----
Current station address is nn

Please select an option: ___
```

UPDATING THE FIRMWARE

Update the firmware if The Bank ready light is on, but The Bank cannot communicate with the computer. Also update the firmware after reformatting a Bank Tape.

Firmware may have to be replaced if Corvus devices, Corvus utility programs or new versions of the computer's operating system are added to the system. The guides that come with new hardware or software will include update instructions and diskettes if it's necessary to update the firmware.

The steps below show how to check The Bank's firmware version and update or replace the Corvus firmware.

1. Check the firmware version number.

From The Bank diagnostic menu,

Press V

The screen display for a 200-MB tape is similar to:

Bnk	P/V	Capacity	SPT	TPB
1	P	404,712	2044	100
ROM	Firmware			
y	FBNKx.x	-- CONST II - 11/83		
Tape Time:		2 hrs, 40 min	Start/Stop Count: 1	

The firmware version is a number, here FBNKx.x, and a short message. This firmware is The Bank operating system software that is replaced when firmware is updated.

Another firmware version number is listed under ROM. This firmware is permanently wired into the hardware, here the read-only memory, and cannot be changed.

The drive number is listed under Bnk. The Bank is always considered drive 1. Type of drive—physical or virtual—is listed under P/V; The Bank is a physical drive. Capacity is measured in 512-byte blocks. Also displayed are number of sectors per track (SPT) and tracks per Bank (TPB). The SPT depends on the tape size. The 100-MB Bank Tape has about 1020 sectors per track, and the 200-MB, about 2044. All Bank Tapes have 100 tracks.

Tape time indicates the hours and minutes the tape has spun. Corvus engineers recommend a maximum tape life of 500 hours. After that, The Bank Tape may experience intermittent problems due to media defects.

The start/stop count shows how many times the tape has stopped and restarted. Each time The Bank is turned on, the count increases by one. If The Bank is running all day, the tape should stop and restart perhaps four or five times. The start/stop count on a reliable tape should be no more than 500.

To return to The Bank diagnostic main menu,

Press SPACE

2. Select the update option.

Press U

The screen displays:

```
The option you have selected may
destroy data on the Bank. Please
make sure that you are talking to
the proper address.

Target station # is:nn
Continue? [Y/N]
```

Press Y

3. Enter the firmware file name.

The screen displays:

```
Enter firmware file name: FBNKx.x
```

where x.x is the version number of The Bank firmware.

To update or replace the firmware with the displayed version number,

Press

The screen displays:

```
Going to Prep Mode
Reading firmware from FBNKx.x.DATA
.....
Firmware written.
```

After the firmware is written, the screen displays The Bank diagnostic main menu.

- 4.** Confirm the new firmware is on The Bank.

Press V

- 5.** Exit the diagnostic program.

Press E

RESETTING THE INTERLEAVE FACTOR

Reset the interleave factor if The Bank is running too slowly. The interleave factor causes the tape head to skip a prescribed number of sectors on the tape's track when reading or writing data. Too low an interleave factor will cause The Bank to run programs more slowly than a floppy disk drive.

To reset the interleave factor, follow these steps.

1. Check the interleave factor.

Press P

The screen displays the tape parameters. The display is similar to:

```
Going to Prep Mode
                                PARAMETERS
-----
Cartridge map for tapename.
Length of cartridge is: xx meters.
Interleave spec: y
-----
```

where **tapename** is the name of the cartridge, **xx** is the cartridge length in meters and **y** is the interleave factor set during the format procedure.

The variable **xx** depends on the size of The Bank Tape. It is 50 for a 100-MB tape and 100 for a 200-MB tape.

To return to The Bank diagnostic main menu,

Press SPACE

2. Back up the tape.

Before changing the factor, back up the entire Bank Tape. Follow the instructions in this guide's section "Bank Diagnostic Tools."

3. Select the modify interleave option.

After backing up the information on The Bank Tape, change the interleave factor. Select the modify interleave option on The Bank diagnostic main menu.

Press I

The screen displays:

```
Going to Prep Mode
                MODIFY INTERLEAVE
-----
CURRENT interleave =  x
Please enter NEW interleave [1-31 odd only] 9
```

where **x** is the interleave factor set during formatting.

4. Enter the new
interleave factor.

Enter an odd number between 1 and 31.

Press

To return to The Bank diagnostic main menu,

Press

5. Transfer the data
back to The Bank.

After changing the interleave factor, return the
backed up data to The Bank.

CORRECTING MEDIA DEFECTS

Media defects can cause The Bank to experience intermittent problems.

Media defects result from accidental damage to the tape. A power surge can stretch the tape. Dirt and liquids can blemish it. Exposure to high temperatures or magnetic fields will damage the tape.

If media defects are suspected, first perform a cyclical redundancy check. The CRC looks for bad sectors that cannot store information. It checks each track sector by sector.

The Bank Tape has 100 tracks. On a 200-MB tape each track is divided into eight sections, each similar to a track on the disk system. A 100-MB tape has four sections. Each section contains 256 sectors. Each sector contains two blocks of 512 bytes.

To run the CRC, use the verify-scan option on The Bank diagnostic main menu. Within this option, choose between a verify or certify procedure. The procedure chosen determines the number of media checks the program runs and how defects are corrected.

The verify procedure checks the media only once. If it finds media defects, it lists the numbers of the tracks with bad sectors. It does not spare the bad sectors on the track. To spare the bad sectors, certify, reformat or inactivate the bad tracks.

Verifying does not destroy data on The Bank Tape, so there is no need to back up data before verifying; this saves time. Also, it takes less time to verify than to certify or reformat. To save time, verify, but remember to correct the media defects later.

The certify procedure checks the media four times. If it finds media defects, it automatically spares the bad sectors. Because of the extra media checks the certify program runs, choose to certify whenever possible. Certifying ensures a more reliable tape.

The reformat procedure checks the media only once and corrects the defects. Because it runs only one media check, it takes less time to reformat than to certify. If it is essential to save time, choose to reformat.

Inactivating prevents a track from being used. Use this tool only when the verify or certify procedure lists a track with more than four bad sectors.

The verify, certify and reformat procedures work on either entire tapes or specific tracks. Use them on specific tracks only if the exact location of the problem is known.

If defective data is found in only one volume, only one track may need checking and repairing. To determine which track to verify, certify or reformat, use three program options.

First use the list images option to find the starting address of the volume. The list images option is in the transfer manager option of the Corvus management utility. To see how to use this option, go to the *Transfer Utility Manager's Guide*.

If the volume is not contained within an image, use the list volumes option to find its starting address. Enter the list volumes option from the volume manager main menu. The volume manager option is on the drive management main menu.

After finding the address, use the convert option on the spare table menu to convert the starting address number to a track, head and sector location. Enter the convert option from the option "display or alter spare block tables" on The Bank diagnostic main menu. To learn how to use this option, see this guide's section "Using the Spare Table Option."

Verify, certify or reformat the track that the convert option lists. If the volume extends into the next track, correct that track too.

VERIFYING TRACKS AND TAPES

The Bank automatically ran a cyclical redundancy check on The Bank Tape during formatting. If The Bank found bad sectors on the tape, it spared them by skipping over them. The Bank noted the location of the spared sectors in the spare table. These bad sectors then were not used to store information.

Since The Bank Tape was first formatted, the tape may have been damaged. It now may have new bad sectors. The verify option lists a track if it has bad sectors that the check did not find during tape formatting. Spare these bad sectors by certifying, reformatting or inactivating.

The verify option works on an entire tape or specific tracks. To verify an entire 100-MB tape takes 35 minutes and a 200-MB tape, 70 minutes. To verify a single track on a 100-MB tape takes about one minute and on a 200-MB tape, about two minutes.

After verifying, spare the bad sectors the program listed by certifying, reformatting or inactivating tracks.

Follow these steps to verify The Bank Tape.

1. Enter The Bank diagnostic program.
2. Select the option to perform verify-scan for bad tracks.

Press C

The screen displays:

```
Going to Prep Mode
                Locate Media Defects  x.xx
-----
CERTIFY or VERIFY? C/V C
-----
Press <ESCAPE> to EXIT
```

3. Begin the verify procedure.

Press V

The screen displays:

```
Do all tracks? Y/N Y
```

To verify the entire tape, press Y and go to step 5.

To verify specific tracks, press N.

The screen displays:

```
Please enter-  
First track #: x  
Last track #: y
```

where x is the number of the first track to verify and y is the number of the last track to verify.

4. Choose the tracks to verify.

Type in the number of the first track to verify and press **RETURN** . Type in the number of the last track to verify and press **RETURN** .

To verify a single track, enter its number for both first and last tracks.

5. Continue the program.

The screen is displaying:

```
VERIFY of tracks x - y in progress
```

where x is 1 and y is 100 if the entire tape is being verified.

When verification is complete, the screen displays the results. If no new bad sectors were found, the screen displays:

```
Verify completed.  
No tracks with errors found.
```

If no bad sectors were found at all, the screen displays:

```
Verify passed.
```

The Bank cannot spare more than four sectors per track. If the check finds a track with more than four bad sectors, the screen displays:

```
Track n failed.  
Bad sector count exceeds limit.
```

where n is the track number.

If this happens, this track cannot store data. To prevent use of this track, see this guide's section "Inactivating Tracks."

If track 1 failed, the tape is too damaged to use. Track 1 contains The Bank firmware and spare sector information. Inactivation of this track destroys valuable Bank Tape information.

If the check found errors, the screen displays:

```
Verify complete.  
Track n w x y z  
Tracks with defective sectors may contain  
bad data. See the Bank User Guide.
```

where n is the track number and w, x, y and z are bad sector numbers. The screen will list the track and bad sector numbers until all bad tracks have been listed.

If the program finds defective sectors in track 1, reformat the entire tape.

After the screen lists all the bad tracks,

the screen displays:

```
Press L to list to a print file  
Press <space> to continue
```

6. Copy the error information.

If the check found media defects, note the number of any track with errors. To print a list of the media defects, press L.

The screen displays:

```
Media Defects Listing  
Please enter  
destination file name:
```

Type in a file name and press **RETURN** . Always use this file name when specifying a file to store the verify results. Write it down on a piece of paper to refer to later.

Once the program creates the file, the screen displays:

File creation complete.

To return to The Bank diagnostic main menu,

Press `[SPACE]`

Press E twice to return to the Corvus management utility main menu.

To list this file to a local printer or computer console, use the show results option on the transfer manager main menu.

7. Spare the bad sectors.

Certify, reformat or inactivate any track with bad sectors.

CERTIFYING TRACKS

The certify procedure works on specific tracks or an entire Bank Tape. However, certify the entire tape only during initial tape preparation. Once the tape is formatted and information is stored on it, certify only specific tracks on the tape. If the entire tape is certified, valuable information on track 1 is destroyed. Never certify track 1.

To certify a single track on a 100-MB tape takes about 3½ minutes and on a 200-MB tape, 6½ minutes. To certify an entire 100-MB tape takes about five hours and a 200-MB tape, about 10 hours.

Follow the steps below to certify tape tracks.

1. Back up the data.

Before certifying the bad tracks, back up the data. Back up only the volumes located on the bad tracks.

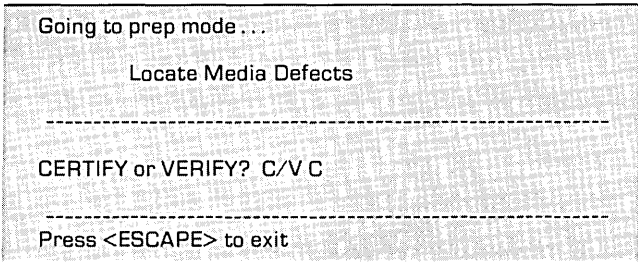
To back up, follow the instructions in this guide's section "Bank Diagnostic Tools."

2. Enter The Bank diagnostic program.

3. Select the option to perform verify-scan for bad tracks.

Press C

The screen displays:



4. Begin the certify procedure.

Press C

The screen displays:

```
Do all tracks? Y/N Y
```

To certify specific tracks, press N.

The screen displays:

```
Please enter-  
First track #: x  
Last track #: y
```

where x is the number of the first track to certify and y is the number of the last track to certify.

5. Choose the tracks to certify.

Type in the number of the first track to certify and press **[RETURN]**. Type in the number of the last track to certify and press **[RETURN]**.

To certify a single track, enter its number for both first and last tracks.

6.

The screen displays:

```
CERTIFY of tracks x - y in progress  
Please enter Result File Name: BNKRSLT.TEXT
```

Press **[RETURN]**

The screen displays:

```
Result File Name is now filename.  
-----  
TAPE CERTIFY 1.05
```

where `filename` is the name of the results file.

The program now checks the media four times. After checking the media, it spares up to four bad sectors per track. When certifying is complete, the screen lists the numbers and locations of the spared bad sectors. The screen is similar to:

```
SPARED x: y: z:
Track x, 1 eligible and 1 spared
CERTIFY COMPLETE
```

where `x` is the track number, `y` is the head number and `z` is the sector number.

It also lists the tracks that had more than four bad sectors. Inactivate any track with more than four bad sectors. Follow the instructions in this guide's section "Inactivating Tracks."

This completes the certify procedure. If problems reading or accessing data persist, some sector addresses may be defective. Certifying does not write new sector addresses to the track, but reformatting does. Reformat if a sector address appears to be defective.

REFORMATTING TRACKS AND TAPES

The reformat procedure works on specific tracks or the entire tape. To reformat a single track on a 100-MB tape takes about two minutes and on a 200-MB tape, about 3½ minutes. To reformat an entire 100-MB tape takes about 100 minutes and an entire 200-MB tape, about 200 minutes.

Follow the steps below to reformat The Bank Tape or tape tracks.

1. Back up the data.

Before reformatting the bad tracks or tape, back up your data. To reformat specific tracks, back up only the volumes located on the bad tracks. To reformat the entire tape, back up the entire tape onto disk systems or another Bank.

To back up, follow the directions in this guide's section "Bank Diagnostic Tools."

2. Enter The Bank diagnostic program.

3. Begin the reformat procedure.

To reformat the entire tape, follow the tape preparation procedure in Chapter 3 of *The Bank Guide*.

To reformat specific tracks, press F. The screen displays:

```
The option you have selected may
destroy data on the Bank. Please
make sure that you are talking to
the proper address.

Target station # is:nn
Continue? [Y/N]
```

where nn should be The Bank OMNINET address.

4. Continue the format procedure.

If nn is The Bank OMNINET address,

Press Y

Otherwise, exit The Bank diagnostic program. Repeat step 2. Be sure to enter the correct Bank station address.

The screen displays:

```
----- Perform Tape Format -----
Formatting a cartridge destroys all data
on the cartridge. Continue? Y/N N
```

Press Y

The screen displays:

```
Format an entire cartridge? Y/N Y
```

Press N

The screen is similar to:

```
Format Selected Tracks
```

```
-----  
Please enter-
```

```
Track Number to format: [ ]
```

Enter the number of the first track to reformat and press **RETURN** . The screen displays:

```
Going to Prep Mode
```

```
Formatting ...
```

Once The Bank has reformatted the track, the screen displays:

```
Press <space> to continue
```

To reformat other tracks, press **SPACE** and repeat steps 3 and 4 of this section. Follow this procedure until all the bad tracks are reformatted.

INACTIVATING TRACKS

If the verify or certify procedure finds a track with more than four bad sectors, the track must be inactivated. Inactivating a track creates a new, empty volume to place over the bad track. The volume prevents the track from being used to store data.

Creating the volume is a three-part process. First back up the information on the track. Next determine the size and location of the track. Then enter the drive management utility program to create the volume.

First, back up all volumes with information on that track. To determine which volumes to back up, use three program options: range, list images and list volumes. To back up the volumes on a specific track, follow the directions in this guide's section "Bank Diagnostic Tools."

Second, determine the starting and ending addresses of the track. To determine these addresses, use the range option again. It shows starting and ending addresses of the track.

Third, enter the drive management program from the management utility main menu. Choose the select drive option. Enter The Bank Tape server and drive names and passwords created during tape preparation.

Next select the volume manager option. From the volume manager main menu, select the add volume option. The program first asks for the name of the volume. Choose a volume name that implies that this volume should not be used to store information. For example, use the name Badtrck1.

The program now asks for the size and location of the volume to add. To determine the volume size, subtract the track starting address from its ending address and add one. Enter this number for the size of the volume to add. Enter the track starting address for the location of the volume to add.

For volume type, enter UCSD. Do not grant write access to this volume.

After inactivating the track, transfer the backed up information to another location on The Bank. Use the transfer manager option from the management utility main menu.

USING THE SPARE TABLE OPTION

Use this option to display the spare sector table, determine the range of sectors contained in a specific track or convert a sector number into a track location.

This option can also be used to add or delete sectors to or from the spare sector table. However, be careful using the add and delete options. Adding or deleting sectors can destroy data on The Bank Tape.

Follow these steps to enter and use the spare table option.

1. Enter The Bank diagnostic program.
2. Select the spare table option.

Press D

The screen displays information about the spared sectors. For each spared sector, it lists track and head information. After listing all the bad sectors on every track, the screen displays the total numbers of spared sectors and tracks containing bad sectors. The screen is similar to:

```
Going to Prep Mode
BANK spares procedure x.xx
Sectors spared:
-----
TRACK   6  HD: 0 SCT: 134
1 track with sectors spared for
1 sector spared total.
Press <SPACE> to continue.
```

where HD is head and SCT is sector.

To go to the spare table menu,

Press

The screen displays:

```
SPARE TABLE x.xx
-----
D  — DISPLAY contents of the spare sector table
C  — CONVERT a logical sector number to a physical one.
R  — Show the RANGE of sectors a track contains.

A  — ADD a sector to the spare sector table
X  — DELETE an entry from spare sector table

E  — Exit and save data if changed
ESC— Abort without saving the changes
-----
Please select an option:
```

3. Select the convert option.

To convert a sector number into a track location,

Press C

The screen displays:

```
BANK Logical to Physical Conversion x.x
Press <ESC> to EXIT...
INTLV = y,      UB/T = z
Logical sector number to convert...
```

where x.x is the version number of the program option, y is the interleave factor and z is the number of user blocks per track.

Enter the number of the sector to convert and press RETURN .

The screen is similar to:

```
TRACK = 2, HEAD = 2, SECTOR = 248
```

To return to the spare table main menu,

Press

4. Select the range option.

To determine the range of sectors contained in a specific track,

Press R

The screen displays:

```
TRACK# TO RANGE OF LOGICAL
-----
PRESS <ESC> TO EXIT ...
Enter the Track number ... 0
```

Enter the number of the track and press .

The screen is similar to:

```
TRACK x=sectors      y TO z
```

where x is the number of the track, y is the track's starting address and z is its ending address.

To return to the spare table main menu,

Press

5. Select the add option.

To add a sector to the spare sector table,

Press A

The screen displays:

Enter TRACK number for sector to be added:

Enter the track number of the sector to add and press .

The screen displays:

Enter HEAD:

Enter the number of the head and press .

The screen displays:

Enter SECTOR:

Enter the number of the sector and press .

The screen displays:

Sector added.

The screen also may display a warning that the track already has the maximum number of spared sectors, four.

To return to the spare table main menu,

Press

6. Select the delete option.

To delete a sector from the spare sector table,

Press X

The screen displays:

```
Enter TRACK number for sector to delete:
```

Enter the track number of the sector to delete and press .

The screen displays:

```
Enter HEAD:
```

Enter the number of the head and press .

The screen displays:

```
Enter SECTOR:
```

Enter the number of the sector and press .

The screen displays:

```
Sector deleted
```

To return to the spare table main menu,

Press

7. Exit the spare table option.

To add or delete the sectors just entered, exit the program by pressing E.

To avoid adding or deleting those sectors, exit the program by pressing ESC .

The screen now displays The Bank diagnostic main menu.

DETERMINING THE VERSION LEVEL OF THE DATA FILE

The Corvus service department may recommend using another data file for The Bank diagnostic program. This may be necessary to correct problems with the system hardware or software.


Before Corvus can recommend the correct data file, it must know the version number of the data file the diagnostic program uses to perform its options.

To determine the version number, follow the steps below.

1. Enter The Bank diagnostic menu.
2. Select the version level option.

Press L

The screen display is similar to:



Diag Data Block revision byte is x

where x is the version number of the data.

To return to The Bank diagnostic main menu,

Press

3. Record the version number in *The Bank Guide*.

Write this version number in Appendix B of *The Bank Guide* for later reference.

SETTING THE DIAG DATA BLOCK FILE NAME

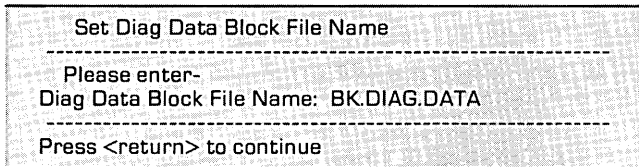
Once the Corvus service representative knows the version number, he can recommend another data file for The Bank diagnostic program.

Follow these steps to change the name of the data file. Use the name the service representative designates.

1. Enter The Bank diagnostic program.
2. Select the set file name option.

Press S

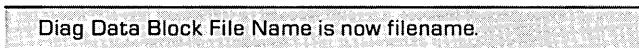
The screen displays:



```
Set Diag Data Block File Name
-----
Please enter-
Diag Data Block File Name: BK.DIAG.DATA
-----
Press <return> to continue
```

Type in the new file name and press **RETURN** .

The screen displays:



```
Diag Data Block File Name is now filename.
```

where filename is the name of the file just entered.

3. Return to The Bank
diagnostic main menu.

Press

CHANGING FUSES

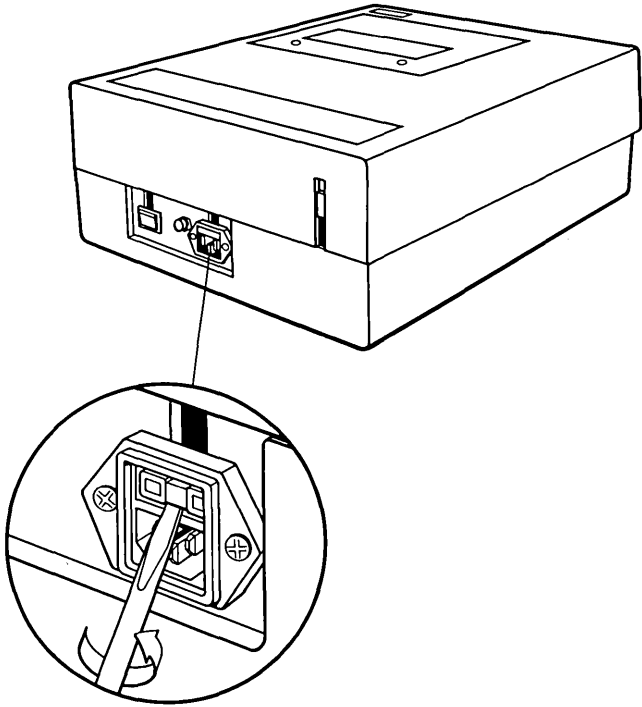
If The Bank indicator lights are not working, the fuse may need to be changed. Check the fuse and replace it if it burned out.

To change the fuse, follow the steps below.

1. Turn off
all equipment.
2. Unplug
The Bank.

3. Remove the fuse holder from The Bank.

Just above the power socket on the back of The Bank is the fuse holder. Slide a small screw driver under the holder's bottom lip. Twist the screw driver to the right or left. The holder should easily pop out.



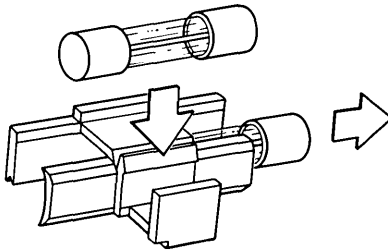
Location of Fuse Holder

4. Check the fuses.

Turn the fuse holder so that the bottom lip is pointed up.

The holder has two slots for fuses. One slot has three sides, and the other has four. The defective fuse would be in the three-sided slot. The four-sided slot is reserved for the spare fuse.

For The Bank to work, the three-sided slot must always contain a good fuse. Check to see if the three-sided slot contains a defective fuse. The fuse is defective if its internal wire is broken or its casing is clouded.



Fuse Holder

5. Remove the defective fuse.

If the three-sided slot contains a defective fuse, remove the fuse. Press up on one end of the fuse. The fuse easily pops out the slot's top.

6. Insert a good fuse
in the three-sided slot.

The fuse box incorrectly says to use only 250V fuses. The Bank uses 125V1.5A fuses. They are available from computer dealers or electronics stores.

Press a good fuse into the top of the three-sided slot. The fuse clicks as it locks into the slot.

7. Place a spare fuse
in the holder.

Insert a spare fuse in the holder by sliding it into one end of the four-sided slot.

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