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AppleCD 300 Plus CD-ROM Drive: Cannot Read CD-R Discs (8/96)

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TOPIC -----

When I insert a Recordable CD (CD-R) in my AppleCD 300 Plus CD-ROM drive I hear a loud grinding noise from the drive approximately once every two seconds. The disc never appears on the desktop. The only way I can make is stop the grinding noise is to push the open/close button and to remove the disc. What's wrong?

DISCUSSION -----

History

The Recordable Compact Disc Systems standard (called "Orange Book") was not completed when the production of the AppleCD 300 Plus drive began in November 1993. At that time, the method used to indicate the last session on a disc was to omit the B0 entry in the last session's Table of Contents (TOC).

In January 1994, a new version of the "Orange Book" specification was released that employed a second method to indicate the last session on the disc: set the B0 entry in the last session to FF FF FF.

Discs that are written using this second "Orange Book" technique do not mount on early AppleCD 300 Plus drives.

The problem is only seen under the following conditions:

- The disc is a CD-R disc. *Regular CD-ROM discs do not have a problem.*
- The disc is a large capacity disc (74-minutes). This is approximately a 618MB Macintosh volume. *Regular capacity (63-minutes) discs work correctly.*
- The Table of Contents (TOC) on the disc contains a B0 entry set to FF FF FF. Currently, newer versions of the CD-R writer made by JVC are the only known CD-R drives that consistently create this entry in the TOC. The JVC CD-R writer is marketed by JVC and Pinnacle.

This problem will be seen when using an AppleCD 300 Plus drive on a Macintosh or on a PC. An interesting note is that all Panasonic CD-ROM drives produced early this year for PCs also have the same incompatibility as the AppleCD 300 Plus

drive. This means that IBM and Compaq have the same issue with CD-R discs. Changes have been made to the AppleCD 300 Plus firmware (firmware version 1.1f) to correct the situation. The new version of firmware is available in revision 'B' of the AppleCD 300 Plus drive which is now in production. A firmware update of a revision 'A' drive is NOT possible because the new firmware is also tied to a hardware change.

Solution

Possible ways to avoid the problem:

- Don't use the JVC CD-R writer for creating discs.
- Don't put more than 610 Megabytes on a disc when using the JVC CD-R system.
- Update the AppleCD software to the latest version, 5.1.1. Version 5.1.1 of CD-ROM Setup adds support for multisession CDs, CD Plus, and Enhanced CDs. It requires System 7.1 or later.
- Use one of several third-party solutions available for the AppleCD 300. Companies such as FWB, MacPeak, Optical Media International, and ASTARTE GmbH offer software to mount multisession data CD-R media.
- Have the AppleCD 300 Plus drive replaced with a Rev B version and use Apple CD-ROM driver software v5.1.1 or a third-party CD-ROM driver software with the Rev B drive. Using Apple CD-ROM driver software v5.0 or earlier with the Rev B drive will not allow you to read the multisession discs.

It should be noted that CD-R discs that exhibit this problem can still be used for mastering CD-ROM discs. Most (if not all) mastering facilities create a new TOC when creating the glass master, removing the B0 entry which causes the problem. If a multisession disc is mastered, the mastering facility should be instructed to omit the B0 entry in the last session's TOC. This instruction may not be necessary because the B0 entry is normally omitted by the reformatting software.

Determining Rev A and Rev B CD-ROM Drives

To determine if you have a Rev A or Rev B CD-ROM drive, check the serial number bar code. On all Rev B CD-ROM drives the last digit on the serial number bar is the letter B.

Article Change History:

- 19 Aug 1996 - Corrected misspelling.
- 11 Jul 1995 - Added information about Apple CD-ROM driver v. 5.1.1
- 19 Jan 1995 - Added information on using third-party drivers.

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