The Avery Fisher Center (AFC) comprises the audiovisual media collection for the Bobst Library at NYU. The center contains thousands of audiovisual items, including video, laserdiscs, CDs, DVDs, CD-ROMs and other media. In this paper I examine a particular item from the CDROM collection and assess its archival and preservation needs. I chose to examine *Ballet CD-ROM* by Victoria Morgan (CD-ROM BAFC XMM 76), produced by Ted Helminski and Performing Arts Video (PAV). The copyright date is 1996 and the accompanying documentation gives specifications for use with both Mac and PC. By doing a Google search, I was able to find a support website at http://www.pav.org/Ballet.htm, which gave information on the CD-ROM and included links to buy a copy. I was also able to purchase a copy on Ebay. A Worldcat.org search produced twenty-six libraries containing copies of the CD-ROM. The CD-ROM does not appear to be in distribution, but clearly it is still relatively easy to find copies in libraries as well as the occasional copy available on ebay.

Acquisition history

The Avery Fisher Collection at Bobst Library has been collecting CD-ROMs since 1993, according to Librarian Gloria Rohmann. Most of the CD-ROMS were purchased directly from the producer / distributor. The main subject areas in the collection include science, nursing, medical, and music. The precise acquisition data was not available; my best guess would be that (AFC) acquired this particular *Ballet CD-ROM* between 1996 and 2002, probably either when it was released in 1996 or shortly thereafter.

General description of optical media

Ballet CD-ROM is a single CD-ROM. It takes up 638MB on the CD-ROM. According to Kees Immink, one of the engineers in charge of its design, the CD as a storage medium was introduced around 1982 through a joint effort between engineers at Sony and Philips. The CD consists of very pure polycarbonate plastic with a thin layer of aluminum (or in rare cases, gold) and a top layer of lacquer. It has a standard diameter of 120 mm, thickness of 1.2mm and variants of 74 minute audio / 650MB data or 80 minutes audio / 700 MB data. Information is stored and

read by lasers – one type of laser is used to create the CD and another to read it and / or write non-commercial CDs in personal computers. CD players can be stand alone for music, or can be internally or externally connected to a computer through cable formats and interfaces such as IDE (ATA), SCSI, S-ATA, Firewire or USB.

Storage

The CD-ROMs in the Avery Fisher Collection were initially stored in their original packaging, mostly clamshell cases, but due to space problems, most of the packaging was discarded. Some of the more elaborate packaging containing useful information, drawings or images has been retained. The CD-ROM collection is now housed in jewel cases in compact shelving accessible to staff only. Print materials are housed separately. *Ballet CD-ROM* appears to be in fairly good condition. I don't see anything in looking at the physical item that causes me concern. Neither side appears scratched, warped or otherwise damaged. There don't appear to be any smudges or dirt on it either. (Because CD-ROMs are relatively thin, and information is encoded on them fairly close to the printed surface, a scratch might indicate damage to the information.) It is stored in a plastic jewel case, which prevents it from directly touching the case on either side. The case also contains front and back printed material.

There is no climate control for the Avery Fisher Collection. According to Kate Contakos, Preservation Librarian at Bobst Library, the Preservation Department does not keep track of the temperature and humidity in the area of the library where the CD-ROMs are stored for lack of a secure area to keep the data loggers. On November 17, 2006, MIAP student Miwa Yokoyama logged the temperature at 73 degrees and humidity at 48% in the CD-ROM area.

Content

The *Ballet CD-ROM* is designed to serve as an interactive encyclopedia of Ballet. Through a central navigational area, it provides access to lists of terms and linked moving image demonstrations, as well as audio recordings of interviews with well-known and respected dancers and choreographers on a variety of topics. The Bobst Library catalog entry for Description (slightly more detailed than the CD ROM back cover, follows: "Interactive history of ballet,

including: demonstrations of over 700 terms; video performances by Evelyn Cisneros, Katita Waldo, and Christopher Stowell; audio pronunciation of terms by Pascale Leroy; and interviews with professional dancers from around the world."

The program consists of a main menu, with selections including: "History," "Introduction," "Interviews," "Barre," "Center," "Instructions," and "Credits." "History" provides an interactive overview of the history of Ballet, with an alphabetic index and links to terms and audiovisual demonstrations in the "Center" and "Barre" sections. The introduction is a short video montage of dancers and a brief interview with Victoria Morgan. The "Interviews" section consists of audio file interview on one to four topics with twenty-two individuals. Instructions consist of three pages demonstrating how to click on links, navigate the program windows, and increase memory on a Mac if needed. Credits consist of three pages listing *CD-ROM* participants and their tasks, Special Thanks, and a short list of references.

The "Center" and "Barre" sections form an index of terms, all linked to written explanations and audiovisual demonstrations. The "Barre" section describes itself as: "CLASSICAL BALLET CONCEPTS / These are ideas about the form, execution, and performance of classical dance, some of which date back to Renaissance times." The "Center" section defines itself as follows: "Categories of Center Floor Work / Center floor work is practiced after the body and legs have been well prepared and warmed up during the barre work. In the center of the studio the dancer must rely upon the skills built at the barre and work to execute the movements, steps and positions accurately with stability and composure. It is here that the dancer really learns to dance and coordinate the movements into a seamless whole. There are several categories of center work which include all the movements and positions taught in classical ballet.

The sections can be accessed separately or in conjunction with one another through the use of linked terms and indexes. The main menu is fairly easy to return to if one gets lost. The CD-ROM really seems to be intended as an encyclopedia of Ballet, so experiencing or accessing

the "whole work" becomes an odd concept – the user is not really expected to use the entire contents at any one time, but to have a thorough resource for any term that might come up in practice or theory. The interviews are not really organized by subject matter, although it is possible to scroll through a topic list arranged by interviewee. The "History" section is organized in a linear fashion, although terms are hyperlinked to the indices and demonstrations.

Technical Specifications

Ballet CD-ROM was produced in 1996. It uses file formats that still exist and have fairly good backward compatibility: primarily Adobe Acrobat and QuickTime. Files have extensions and appropriate metadata [where?]. The program was probably designed to run on a Mac Performa or a 500 series IBM ThinkPad and its contemporaries. [let us know how you know this?] I haven't seen any major differences or problems with running it on any of the more recent systems. The CD-ROM case printed material states: "System requirements (Macintosh): Macintosh 68020-68040 with 2MB of application RAM (4MB recommended) or Power Macintosh with 4MB (8MB recommended); CD-ROM drive." "System requirements (Windows): IBM PC 486 or higher; Microsoft Windows 3.1, Windows 95 or Windows NT; 4MB RAM (8MB recommended); CD-ROM drive."

I tested *Ballet CD-ROM* in several Macs, running system 8, 9 and X operating systems and in two PCs. The PC at Bobst running Windows 95 would not let me access the files (I think there may have been something wrong with that particular PC), while my IBM laptop running Windows XP ran it perfectly well. Otherwise I had no trouble using the CD-ROM on any of the computers I tried. I did not notice any major issues with running the program on newer computers or with newer operating systems, except that I had to put it in full screen mode on those systems, while full screen was the default on the earlier systems. It seemed to work in the same way on all the computers – inserting the CD-ROM, opening the program, opening files and clicking on links all produced uniform results in all the computer environments I tested. I did not notice any files not opening or playing too fast or too slow or any major color or tone differences among the computers and systems I used.

I also experimented with changing factors such as memory and monitor specs. I looked at the program under several conditions: hundreds of colors, thousands of colors, millions of colors, low, medium and high resolution, and memory allotments which were equal to, much less, and much more than the program specifications recommended. It seemed that some of the more complicated monitor options were not ideal for the media involved. For the most part, the media appeared relatively similar and viewable with standard monitor and color options on a variety of systems.

Types of Media & File Formats

The *Ballet* program is housed on a single, one-sided CD-ROM, playable in a variety of standard CD drives. It exists on the CD-ROM as a series of files and folders. The files consist primarily of QuickTime (.mov) audio and moving image files with Adobe PDF files for the menus and interface pages. From metadata associated with the files, it appears that the PDFs for the main menu, center, barre and other sections were created in April 1996 by the application "Adobe PageMaker 6.0," their "PDF producer" was "Acrobat Distiller 2.1 for Macintosh," and their PDF Version is "1.1."

The top level of the CD-ROM contains folders marked "Contents," "Index," and "Install" an Acrobat file marked "Aballet," an Adobe Catalog Index file marked "Index," and a text file marked "ReadMe." The primary program files are located in the "Contents" folder, arranged in folders titled "AudioA" through "AudioE," a file of Audio Interviews titled "AudioI," a file of PDFs titled "PDFs" and video files in folders "VideoA" through "VideoE." The PDFs range in size from 57kb for the credits to 20MB for the "Center" section. Separate PDF files exist for each section listed in the main menu. Audio files for pronunciation of terms range in size from 22kb to 250kb. Audio Interviews range from 370kb to around 5MB. Video files range from 600kb for a short demonstration to 10MB for the Intro video. Each of the Audio and Video folders contains approximately 150 files. These files can be accessed through the program or played individually.

The CD-ROM also contains folders of "Acrocat" and other inoperable files in the

"Index" folder and various installation files in the "Install" folder. The program can be installed on a Mac or PC using the software in this folder, although it can also be run directly from the CD-ROM. The Install files include installation files for Acrobat (Reader 2.1 and Reader with search) and QuickTime. As the CD-ROM contains the image and sound files, and is necessary to run the program even after installation, it is unclear why installation would be particularly useful.

Rights Issues

The library's rights to reproduce CD-ROMs fall into two categories – the right to make copies of a work which has been lost, stolen or damaged, and the right to reproduce digital works through migration, refreshing or emulation. While the library has a legal right to make up to three copies of a published work under certain conditions, it may not circumvent technology or rewrite computer code on a CD-ROM program in order to do so. If copying a CD-ROM does not involve re-coding or interfering with protection technology, the library may make up to three copies of the work providing that: 1. copies are not made for commercial advantage, 2. the library is open to the public and researchers, 3. the copies include a notice of copyright, 4. the library has made a reasonable effort to locate an unused replacement copy at a fair price, and 5. digital copies are not distributed or made available outside the library premises.

In the case of this particular CD-ROM, the Avery Fisher Collection could probably find a reasonably priced copy. I suspect that the CD-ROM does not contain anti-circumvention technology. The programs used in creating and running the CD-ROM seem to be fairly well supported currently, as well as being backwardly compatible, so I don't foresee any major re–coding or reprogramming work that would need to be done.

Cataloging and Organization

The Avery Fisher Collection is cataloged in MARC format and accessible to users in a more human friendly format in the NYU Library catalog, BobCat. The CD-ROMs are arranged

under call numbers beginning with "XMM." This call number arrangement does not seem to be standard among libraries I found on OCLC WorldCat with CD-ROM collections. Its OCLC id number seems to be 35302878. Other collections label it "Computer GV 1787 M67 1996," "GV1787 .M63 1996," "Multimedia CD 110," or "GV1787 .M580 1996 c.1." To the best of my knowledge, the CD-ROM collection at AFC is cataloged and housed according to acquisition date, with earlier acquisitions having lower numbers. CD-ROMs are housed in compact shelving, accessible to staff, with CD-ROM related book material stored separately. The items listed in BobCat under the XMM call number include items housed at affiliated libraries such as the New School for Social Research Library and the Parsons School of Design Library. Items at these locations tend to be focused on topics of interest to these institutions – for example, design and architecture at the design school library.

Access

According to Gloria Rohrmann, the library decided to circulate CD-ROMs because of the difficulties of keeping up all the equipment necessary to run the component parts of the CD-ROMs in the library. The collection is rarely used, and it seems that some AFC student workers as well as student library users do not realize that the CD-ROMs can be checked out for a period of one week and renewed. The collection is searchable through the library catalogs of NYU and the affiliated schools that share cataloging resources (NSSR, Parsons, etc). Any student or researcher with access to Bobst Library and the Avery Fisher Collection can use the CD-ROM on site. I did not find NYU listed among the libraries on OCLC holding my particular CD-ROM, which is slightly odd.

Selection

This CD-ROM is not particularly unique – copies can be found on ebay and a number of other libraries have copies. The material contained on the CD-ROM seems to have been produced specifically for the purpose of creating the CD-ROM. Therefore, the original material, if it still exists, probably is unique. For example, some of the interviews, in their original format, may

actually be unique material. It is possible that originals exist, perhaps at the SF Performing Arts Library and Museum, or in Victoria Morgan's personal collection.

Because of the relative ease of finding other copies of the CD-ROM, and because of the nature of the file formats used in creating and operating the program, I believe that this CD-ROM should not be a high preservation priority for Avery Fisher. The files seem to work well and in very close to their original capacity on a variety of computer systems, both Mac and PC. I really did not see a lot of difference in how the CD-ROM looked or performed on the range of computers I used to run it. Adobe Acrobat and QuickTime continue to be fairly standard and widely used file formats, and both are clearly able to read files created in their earlier incarnations.

Because they may be useful in operating many of the older CD-ROMs in the AFC, I would recommend that the AFC make sure to maintain the functionality of the older Macs and PCs offered for use with the collection. I believe there may be something wrong with the older PC, which is running Windows 95. The programs native to these computers, including their contemporaneous versions of Acrobat and Quicktime, should also be maintained. Should Avery Fisher feel a need to make copies of this CD-ROM, I doubt there would be any problems with simply burning another copy of it – I found no anti-circumvention software. If the AFC copy of the CD-ROM became damaged or went missing, any one of the 26 other libraries listed in OCLC could probably burn a copy to replace it as well. In terms of housing, I would recommend testing the acidity / inertness of the plastic case and the print material, and possibly storing the print material in another, archival, location, both in keeping with standard archival practice and to avoid potential issues with acidity or decay of the paper. I would recommend that AFC be more careful about storage (temperature/humidity), publish the fact that CD-ROMs circulate and get the item on OCLC.