Cataloging in today’s world is focusing more often on access and organization of electronic resources. Among these electronic resources is the electronic book (e-book), a media form that first appeared on the market in the fall of 1998. Marketing to libraries began in 1999, most notably with the appearance of netLibrary as a vendor. As libraries began purchasing e-books, a whole new set of issues arose for libraries such as licensing, purchasing and ownership, and, of course, cataloging. E-books have received a lot of attention in the last few years with regard to the publishing industry, niche markets, and viability as a product. Many papers address cataloging bibliographic resources in electronic format for serials, Web sites, and other Internet resources. A review of the literature has not revealed anything that focuses on the cataloging of electronic books. This paper will examine functional aspects of cataloging an electronic book.

What Is an Electronic Book?

The first task is deciding if the resource to be cataloged is electronic. Generally, electronic is thought of as something stored on magnetic or optical media, such as a floppy diskette, a hard drive, or a CD-ROM, or remote access media stored on a distant server. The Merriam Webster online dictionary defines electronic as “implemented on or by means of a computer.” This definition works well for electronic books that are accessed either remotely or on a personal PC or pocket computer and also for those e-books that require an e-book reader device, which in and of itself is a type of computer. The challenge is deciding if the resource is a book. If it acts like a book, reads like a book, and generally “feels” like a book, except that it is electronic, then it probably is a book. In other words, if it fits the definition of a monograph as defined in the Anglo-American Cataloguing Rules, 2d ed., 2002 rev. glossary as a nonserial bibliographic resource that is complete or intended to be complete in a finite number of parts, it is a book.

Defining mode of access required for reading the book is also important. There are two modes of access: direct and remote. Direct access may be an elec-
tronic file that is saved and stored on a hard drive, a CD-ROM, a floppy diskette, a personal digital assistant (PDA) (e.g., PalmPilot), a pocket computer, or an e-book reader device. Examples of direct access books are CD-ROMs, which may accompany a print book as an electronic version, and e-books available for purchase from various vendors such as Palm Digital Media (formerly Peanut Press), Barnes and Noble, or amazon.com. These e-books are generally downloaded and saved to a disk drive. The other type of access, which may be more common for many libraries, is remote access. Remote access involves a connection to the Internet and an Internet browser to access the content of an e-book from a local area network (LAN) or a remote server. These types of e-books are offered by netLibrary, National Academy Press, and Project Gutenberg, among others.

**E-Books as Manifestations**

AACR2 (1978) was written from a carrier-biased perspective, which worked well before the days of electronic media.7 Books in print form follow the rules from chapter 2, serials follow chapter 12, cartographic resources follow chapter 3, and so on. The only type of reproduction catalogers had to deal with was the microform and the facsimile. Microform resources have their own set of rules in chapter 11, and the facsimile is handled with a specific note according to the AACR2 (2002) rule 1.11A, in conjunction with the corresponding Library of Congress Rule Interpretations (LCRI).8 Chapter 9 of AACR2 (1998), formerly titled “Computer Files,” was devised to catalog electronic resources that are predominantly databases, software, or some other type of computer program or computer data.9 While the concept of books, serials, cartographic resources, moving images, and the like in electronic form may have been considered, they did not exist in any significant number by which to construct rules that would accommodate the types of bibliographic resources catalogers now encounter. Times have changed, however, and the rules and standards by which electronic resources are cataloged will be changed, revised, discussed, and changed again over the next several years, as evidenced by the change of the AACR2 (2001) chapter 9 title to “Electronic Resources” and the continuing rule revisions beginning with the 2001 amendments.10

As defined by the Functional Requirements for Bibliographic Records: Final Report issued by the International Federation of Library Associations and Institutions (IFLA), e-books are manifestations of a work—that is, “the physical embodiment of an expression of a work.”11 These manifestations may take the form of an electronic facsimile, such as the e-books distributed by netLibrary or many of the books distributed as portable document format (PDF) files, where facsimile means an exact image or copy with the intent to “preserve the look and feel of the earlier manifestation.”12 Manifestations also may be reproductions or close imitations that do not seek to preserve the look and feel of earlier manifestations, rather simply to reproduce the content. The Library of Congress defines reproduction as a “manifestation that replicates an item (or a group of items) or another manifestation (e.g., a reprint with no changes) that is intended to function as a substitute,” further noting that the physical characteristics may differ from the original.13 An excellent example of a reproduction is the HTML versions of print books distributed by the National Academy Press. Each chapter is one HTML document and lacks pagination. Many of these National Academy Press HTML e-books also exist as electronic facsimiles in netLibrary, where the pagination and layout of the original print is preserved.

It is possible to describe an e-book in a catalog record in a variety of ways. One method, which follows the CONSER guidelines in Module 31, is called the multiple version record (also known as the single record approach), in which the electronic form is described on the same record as the print form (but only when the owning institution already holds the print manifestation).14 A cataloger also may treat the e-book as a facsimile and catalog it as one would a microform following the LCRI 1.11A. Each method provides for different possibilities in management and presentation of e-book resources. However, these methods cannot be used exclusively. Only the treatment of an e-book as a unique manifestation may be employed at any time. In other words, any resource may be described uniquely and independently of its other manifestations. For the purposes of this paper, therefore, e-books and their cataloging guidelines are treated as a unique manifestation. What follows will describe the creation of a unique surrogate record for the resource. Facsimile cataloging and the multiple-version single record approach to cataloging e-books are not treated here.

**Cataloging the E-Book**

The cataloging elements described hereafter are presented in the OCLC work form for books for display of MARC21 metadata using the MARC21 conventions for the delimiter ($) and blank (#) indicators.15 Description follows the rules in the 2002 revision of AACR2, chapter 9, “Electronic Resources,” and LCRI's for chapter 9. Figures 1–3 give full MARC21 examples for direct access e-books stored on a fixed disk, remote access e-books accessed via the Web, and direct access e-books accessed via a CD-ROM. Each of the twelve elements is described below and followed, when appropriate, by an example.
Control Fields

The e-book should be cataloged using the work form for books. That is to say, the record type in the leader is coded “a” for language material. The only other significant field in the 008 control field for books is the “Form of item” character in position 23. This field is coded “s” for electronic. Additionally, catalogers of e-books will need to add the 006 field for computer files/electronic resources. In the 006 control field, the record type is coded “m” to designate the resource as a computer file. The “type of computer file” for e-books will normally be “d,” meaning “document.” This can be thought of as the equivalent of the language material code “a” from the record type in the leader. The type of description code used may be described in textual form later in the 516 field.

006 [m d ]

Additionally, the 007 electronic resource control field should be added to describe the general material designation (GMD). The category of material code ($a$) for this field is “c.” Code the 007 field as defined in the MARC 21 Concise Format for Bibliographic Data, filling in for the specific material designation ($b$), color ($d$), dimension ($e$), and sound ($f$). The remaining codes of the 007 field are specifically for digital images and archival purposes and are not necessary for the e-book.

007 c $b z $d b $e n (007 field coded for an e-book used on a computer or hand-held device.)

Variable Data Fields: LCCN, ISBN, Classification

Variable fields containing the Library of Congress control number (LCCN), the ISBN, or perhaps a publisher number are familiar, standard data common in monographic catalog records. Often e-books will contain the LCCN and the ISBN assigned to the print version of a resource. This information can be found most often in Cataloging in Publication (CIP) data on the screens following the title page screen. These screens may be considered the electronic version of the title page verso. Additionally, the ISBN for the e-book version of the resource, if one exists, may commonly be found either before the title page screen or after the CIP information. All of this information is valid on a record for an e-book as well, with a minor adjustment. In the 010 field for the LCCN, the cataloger should input the number, but code it with a subfield $z$ to indicate that the number is invalid for the form of the item. Catalogers also should code the ISBN for the print resource with a subfield $s$, but code the e-book ISBN using the subfield $s$.

Figure 1. Example of direct access e-book stored on a fixed disk
Classification may be handled in different ways and should be based upon the subject analysis of the resource as it would be for any other kind of bibliographic resource. If the library has direct access materials that will be shelved using Dewey or LC classification, then catalogers may assign a call number. If the resource is remote, a call number is not necessary for location because this function is achieved with the uniform resource identifier (URI). However, a class number may be desired for other purposes, such as virtual browsing or collection development and management. Some institutions are organizing electronic resources on Web sites by various classification schemes. Examples of such sites are listed on the Web site Beyond Bookmarks: Schemes for Organizing the Web, maintained by Gerry McKiernan, Science and Technology Librarian at Iowa State University.17

The variable data fields used for cataloging print bibliographic resources are also used for the description of electronic bibliographic resources, following the rules for description prescribed in chapters 1 and 2 of AACR2 (2002). This paper assumes basic familiarity with these rules and a basic knowledge of monographic cataloging. The discussion hereafter focuses on the application of the specific rules defined in chapter 9 for the description of electronic resources as they apply to e-books.

**Uniform Titles**

Electronic books are not electronic serials. Catalogers should not create a uniform title merely because the electronic book has a print counterpart. This is done in serials cataloging to differentiate various editions, manifestations, and publications when a title conflict occurs. This is not the case for monographic cataloging. Catalogers should refer to AACR2 (2002), chapter 25, “Uniform Titles,” for more explanation on the use of uniform titles. For monographic cataloging, uniform titles for paperback editions, updated or numbered editions, or any other kind of difference are not created when the monograph in hand has the same title as another monograph, since these differences are reflected in other areas such as edition statements and publication dates. Catalogers should follow the rules in AACR2 (2002) chapter 23 for creating uniform titles when they are needed, as when a monograph is a translation or is better known by a different name, for instance, a book published under one title and republished under a different title. The National Authority File should be used to determine if a uniform title heading already exists. Catalogers should not create a uniform title for an electronic book by qualifying it with (Online) or similar terms.

**Variable Data Fields of Note for Description of E-books**

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Title Information

As with any other bibliographic resource, the title must be transcribed from the chief source of information or appropriate surrogate when the chief source is lacking. For electronic resources of any kind, the chief source of information as defined in AACR2 (2002) rule 9.0B1 is the resource itself, meaning any information presented formally from a variety of different sources, such as the title screen, the "about" or "readme" file, menu screens, and metadata tags. Additionally, information provided by the publisher, creator, or distributor may be used when the information is not available from the chief source. This may include descriptive information, which is specific to the electronic resource, from the publisher’s or distributor’s Web site. Catalogers should supply the GMD in square brackets directly following the title proper. The approved GMD for e-books under AACR2 (2002) rule 1.1C1 list 2 is: [electronic resource]. Citing the specific source of information used for the title of the electronic resource in a note field is mandatory. The OnLine Audiovisual Catalogers, Inc. Cataloging Policy Committee's Source of Title Note for Internet Resources provides useful examples when the source term to cite is in doubt.¹⁵

245 14 $a The skies of Pern $h [electronic resource] / $c Anne McCaffrey.

500 ## $a Title from title page screen.

Edition Information

Information about available edition statements should be stated in the 250 field as would be done for any other bibliographic resource. If the edition statement is taken from a source other than that of the title information, it is mandatory to cite the source of the edition statement in a note field.
Type and Extent of Resource

Information about the type and extent of the electronic resource is given in the 256 field. The LCRI for rule 9.3B1 instructs catalogers performing original cataloging of an electronic resource to omit the type and extent of the resource altogether. However, institutions choosing to use this description area in the 256 field should use the term “electronic data” and provide any file characteristics that are readily available. Alternatively, one may record the information in a note following rule 9.7B8. In such a case, catalogers may use the 516 field. For e-books that may be downloaded, especially onto a pocket computer or PDA device for which file space may be limited, file size is especially useful information and should be recorded, if available. File characteristic information in the 256 field must be given in parentheses, separating records and bytes or file size by a colon. The 516 field does not have a prescribed format, so catalogers may use a free text note.

256 ## $a Electronic data (1 file : 498 kilobytes)

516 ## $a Electronic text; file size: 498 kilobytes.

Publication, Distribution, Etc.

One explicit change to the revised chapter 9 rules is to consider all remote electronic resources as published. This is not important for commercially available e-books, but is very important for e-books produced by individuals and freely distributed over the Internet, such as HTML documents that could be considered e-books. The cataloger should be aware of rule 9.4F4, which instructs one to use the latest available copyright date when multiple copyright dates are presented on the resource. Furthermore, LCRI 9.4D1 instructs the cataloger to apply the optional provision of AACR2 (2002) rule 9.4D1, which is to give the name of the distributor. Qualify the distributor name using square brackets with either “[distributed by]” preceding the name or “[distributor]” following the name.


260 ## $a Philadelphia : $b Lippincott Williams & Wilkins ; $a New York : $b Ovid Technologies [distributor], $c 2003.

Physical Description

The physical description of an electronic resource will vary depending upon the type of resource at hand. For all electronic resources accessible remotely, omit a physical description. For electronic resources available on direct access media, give the number of physical units and the specific material designation (SMD). A new option for the physical description is the use of conventional terminology for the SMD. Catalogers may now use terms such as CD-ROM, Photo CD, or DVD. The revised LCRI for this rule, 9.5B1, instructs that the optional provision be applied to original cataloging. The cataloger also should give information about color or sound, if present. Finally, the amended rule for dimensions allows for the option of recording dimensions of media using metric units, which brings the physical description more in line with almost every other type of format description. However, LCRI 9.5D1 states that this option should not be applied, so the cataloger should continue to use imperial units for dimensions of direct access media.

300 ## $a 1 CD-ROM : $b sd., col. ; $c 4 ¾ in.

Series Statements

The rules for the transcription of series statements are not different for electronic resources. However, publisher information is allowed as a prescribed source of information for series statement information. This means that a series statement found on a publisher’s or distributor’s Web site, which does not appear in the resource itself or its container or other accompanying information, is valid for use in the record. Instances of this type of occurrence should be rare, and use should be judicious, especially if a Web site is used as the source of information. If the cataloger feels that recording the series information will be necessary or helpful in the description of the resource, he or she should record the series information along with its source and the date viewed in a note field just to be circumspect.

490 1# $a The dragonriders of Pern ; $v v. 13

500 ## $a Series statement from distributor’s Web site (viewed April 27, 2001).

800 1# $a McCaffrey, Anne. $t Dragonriders of Pern ; $v v. 13.

Notes for E-Books

Several notes are necessary for a full description of the e-book. These notes are presented in the order prescribed
in AACR2 (2002). The nature and scope note is given in a 516 field as the first note on the record. This note is not mandatory and may be repetitive of other information already given in the record. However, if viewed as necessary, the note may be presented in a straightforward manner. The text used for a nature and scope note is not prescribed, but it may be formed according to the same prescription given in the Type and Extent of Resource section earlier in this paper.

516 ## $a Electronic text; file size: 498 kilobytes.

Notes about system requirements are, however, mandatory and must be included in the description of every full-level electronic resource record. For remote access resources, the mode of access must be described. For direct access resources, catalogers should give any specific hardware or software requirements that are readily available and identifiable.

538 ## $a Mode of access: World Wide Web.

538 ## $a System requirements: Palm ebook reader for Windows CE or Palm OS.

538 ## $a System requirements: Internet browser.

Again, the source of the title proper and the edition statement, if it differs from the source of title information, always must be recorded and given as separate notes. If title or edition statement information is taken from a source (generally a Web site) that may change in the future, catalogers should provide the date on which the information was viewed.

500 ## $a Title from HTML header on publisher’s Web site (viewed July 16, 2000).

500 ## $a Title from title page screen.

500 ## $a Ed. statement from container.

500 ## $a Ed. statement from publisher’s Web site.

If the resource is available in another format, catalogers may state the format type in which the resource is available in a 530 field. For records submitted to national utilities, this note is particularly useful, but it is not necessary for local catalogs. An appropriate local practice also helpful to the patron is to use this note only when differing formats of the resource are owned.

530 ## $a Also available in print.

Subject Analysis

For all e-books, catalogers should assign subject headings based on the content of the resource. Catalogers should not use the free-floating form subdivisions Databases or Software. These terms are very specific and should only be used for true databases or software applications. Examples where these subdivisions are appropriate are the Bibliography of the History of Art, which is a database, or Microsoft Office 2000, which is software.

In addition to subject analysis, institutions may wish to bring out the form of the item by applying a form/genre term. These terms may be useful for post-coordinate searches or as hooks for types of electronic resources. The most common form/genre term in use for e-books is “Electronic books,” which is borrowed from the Library of Congress Subject Headings (LCSH). The MARC21 2002 Concise Edition now requires that the 655 field second indicators parallel those of the other subject tags.19 That is, if an LCSH term is used, code the second indicator as 0 (zero). When an appropriate form/genre term is not available in various thesauri, it is acceptable to create locally defined terms. In these cases, term sources must be cited in subfield $2, and locally defined terms are cited as “$2 local.” Catalogers should take care to manage locally defined terms with an authority control system, and terms should not be created unnecessarily.

655 #0 $a Electronic books.

655 #7 $a Interactive textbooks. $2 local

Conclusion

Cataloging an e-book requires few extra steps beyond those required for a print book. Catalogers should remember to make good use of the tools at their disposal, specifically chapters 1, 2, and 9 of AACR2 (2002), the appropriate Library of Congress Rule Interpretations, the MARC21 Format for Bibliographic Data, and, of course, other catalogers. The key points to remember when cataloging an e-book are:

- Cite the source of title and source of the edition statement if it differs from the source of title.
- State the mode of access or system requirements necessary for operation.
- Add the extra codes required for the electronic nature of the e-book.

Catalogers should also remember to make every effort to keep up-to-date with the current revisions of the various rules.
and standards. Consistent adherence to current rules and standards to ensure uniform description of resources is very important. Following these steps provides a clearer description of the resource being cataloged, aids other catalogers in identifying the same resource, and provides the necessary information required for patrons to locate and use e-books.

References

2. Eek! It's E-Books, videorecording, 116 min. (Minneapolis, Minn.: MINITEX, 2002).
12. Ibid., 76.