2005

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Abstract
Purpose – To review the history behind and steps taken to inventory and build search/edit modules for a database containing the Iowa State University Library’s extensive collection of American National Standards Institute (ANSI) standards.

Design/methodology/approach – Iowa State University built a database inventory of the ANSI collection of standards through the use of Microsoft Excel and Oracle production software. The collection was inventoried and input into an Excel database, then converted into a web-based search engine using Oracle software. Edit modules were developed to allow for adding to the database, and updating and correcting existing records.

Findings – With the addition of this search engine and edit module, the task of keeping records up to date and keeping patrons informed as to the availability of standards within the ISU collection has been greatly improved.

Practical implications – The implications for this form of database suggest it could be introduced into other major research libraries with large collections of uncatalogued literature utilizing similar software and expertise. This was a local concern that could have a broad impact on the way ANSI standards are inventoried and searched in libraries.

Originality/value – The library that possesses a large collection of work under a single call number that is not inventoried and is looking for solutions for improved patron access will find this information valuable.

Keywords
Databases, Search engines, Academic libraries, Computer software

Disciplines
Library and Information Science

Comments
This is the accepted manuscript of an article published in Collection Building 24 (2005): 29–34, doi:10.1108/01604950510576100.

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ANSI Standards: Creating a local, searchable database

By Norma J. Dowell

Introduction

Iowa State University Library, as a large technical university, has an extensive paper collection of American National Standards Institute (ANSI) standards going back to the early nineteen hundreds. This collection has been catalogued under one call number. Prior to 1996, it had not been completely inventoried and library staff members were required to search the standards collection to find standards for patrons. This proved to be frustrating with the variety of standard designations from different developers, and the lack of a way to know for certain that a standard was truly in the collection and more certainly an ANSI designated standard. The purpose of this article is to share the steps taken at ISU to resolve the issue of accessibility to the ANSI collection of standards to all patrons of our Library, both walk-in and online. It is recognized this was a local issue, however the author feels these steps could be duplicated by other libraries with similar software and expertise.

History

In an effort to serve Library patrons who wish to research standards from an historical standpoint, Iowa State University has been documenting the acquisition of ANSI Standards since 1950, although the earliest standard discovered is “Forms for Concrete Joist Construction Floors,” written in 1932. Records indicate the Library received ANSI standards as gifts from various sources, eventually subscribing directly from ANSI in
1982. The standards were originally housed in the engineering reading room in the Engineering Education Building, as well as at the reference collection in our main library. When the engineering reading room closed, the full weight of maintaining the collection of standards fell on the Reference Collection Maintenance section of the main library. The standards were separated from the rest of the reference collection because of their unique call number and the sheer volume of documents. They were placed in filing cabinets and shelves within the reference collection.

The standards were shelved by ANSI designation, then by size. Larger standards were placed on shelving in the collection, and smaller or single sheets were placed in filing cabinets. This proved to be challenging for patrons if they were not sure of the size of a standard. One could search for a period of time and have great difficulty finding a standard because of unfamiliarity with the collection, unmarked standards, or items simply being misshelved. There were also gaps in the holdings for standards because they were not a part of our original collection. Our current subscription is with IHS Global Engineering Documents (Global Engineering). The subscription allows the Library to receive updates for existing documents, including changes in ANSI standard designation and publisher. However, this does not necessarily guarantee the acquisition of new standards. In addition the collection is alphabetized by ANSI standard designation, which made the search process more tedious by having it split by size. Because of the complexity of the arrangement one or two people would be trained to search the standards for patrons; not ideal if one of those trained was not available. A complete inventory and documentation of the standards collection was desperately
needed so that anyone fielding a question about them could have the information at their fingertips.

In the summer of 2000, we used the most current edition at the time of the Catalog of American National Standards (1997) and determined which standards in our collection were the most current. Those standards were then arranged, regardless of size, on the shelves that previously housed the large-sized standards; each standard had the designation clearly marked on its spine. Pamphlet boxes and file covers were used for filing smaller standards when necessary. Non-current standards were then marked, arranged and placed in the adjacent filing cabinets where small standards were previously housed.

After the rearrangement was completed, it was determined that each standard of the ANSI collection should be documented in some way. Thus, library staff first began work documenting all ANSI standards held by the ISU library. Because of the number of standards, the decision was made to build a database rather than to attempt to catalogue each and every standard with separate call numbers. To begin, Library staff contacted Global Engineering for a current listing of ANSI standards with title, designation and abstracts. In 1997, ANSI ceased publication of a print catalog and made an electronically generated catalog available through Global Engineering. This catalog had over 20,000 records of standards, which ANSI had designated as official national standards. We purchased a copy of the electronic catalog from IHS Global and work began on the massive inventory.
The Process

The electronic catalog was converted from .pdf format into an Excel spreadsheet so that the list would be more easily editable, and could be converted to Oracle in the future. Staff created columns for sorting the list, identifying what was actually in the ISU ANSI Standard collection, and determining whether it was a current or an older standard. The resulting spreadsheet comprised eight columns of information. This included the developer, ANSI designation, title, abstract (all supplied by the electronic catalog), staff added numerical sorting, alphabetic sorting, version status, and Library holdings columns (Fig. 1).

![Microsoft Excel - ANSisamin.xls](image)

Fig. 1--Example of ISU’s ANSI Database built from Microsoft Excel

Staff then searched the ISU collection and indicated on the new spreadsheet what was owned, adding older standards to the list and updating abstracts. This process took about a year beginning Fall 2000. With the conversion of 24,877 records, the spreadsheet was ready for the next step.

A list of developers was built by matching acronyms to a list sent to the Library from Global Engineering. Developers for older standards were added to the list as they were discovered. Standards not owned by the library were removed from the list and
approximately 18,500 records remained. When the Library received new revisions or affirmations of standards from Global, they were added to this list. Two issues now had to be resolved: making this list easier to edit or add to, and making it accessible to patrons.

**Building the web-based search engine**

ISU Library had recently acquired Oracle database software. The Information Technology staff was approached about the situation with standards. The webmaster suggested using Oracle to build and maintain the large database. She built a prototype search engine, converting the Excel records into an Oracle built web-based database search engine. Staff members were invited to test and comment on features of this prototype. The initial search engine allowed exact string searches only, consisting of keyword, title, designation or developer. Issues arose if exact titles or developers were not known. Subsequent updates included pull-down menus with Boolean operators and developer’s names. This current search engine is available to any person using the ISU Library from the Library website (Fig. 2). The URL is http://db.lib.iastate.edu/elib_pac/ansi_search.jsp.
Results from a search using this engine will include the designation, developer, title, a field showing whether or not the Library owns a more complete record of the standard with notes, and whether or not it is the latest known standard in the Library collection (Fig. 3).
Clicking on the Full Record link will show the full title and abstract if available. If there is no abstract but there are other notes about the standard, they are placed in this field (Fig. 4).
Once the Oracle database was completed, it was necessary to develop an edit module so that new records or changes in current records could be maintained. ANSI issues a weekly document, the *ANSI Standards Action*, which reports changes and updates to existing standards. Since those are added notes to the Library’s existing records, an easy way to find individual records was mandatory. A searchable edit module was the result.

**The Edit Module**

The edit module solves several essential issues, most importantly, finding records easily, adding new records as necessary, and making changes immediately available to our patrons. The edit module includes a search engine that makes the task of sifting through thousands of records quick. It can be searched by keyword, title, designation or developer, much like the public search module. Staff can also add new records or developers from this menu (Fig. 5).
The resulting list includes records that match the search parameters with a linked record number. Staff can select and edit a record by clicking that link (Fig. 6).
An edit module will open with a combination of free-text and pull-down menus. From this module, staff can edit existing records, add new records (‘Blank Workform’ button), delete old records, edit developers and perform new searches, submitting changes directly into the active database that users will search. (Fig. 7).

(Fig. 7—ANSI Standards staff edit module)

Conclusion
With the addition of this search engine and edit module, the task of keeping records up to date and keeping patrons informed as to the availability of standards within the ISU collection has been greatly improved. Patrons from within the university or outside of the ISU community have been able to search and use standards in a much more organized and focused manner. Librarians and patrons can now be confident that particular standards are (or are not) part of the ISU Library ANSI Standard collection.
Further Reading, Web Links and Notes


_The Iowa State University Library's collection of American National Standards Institute (ANSI) standards is freely available for use by walk-in patrons of the library. The ANSI Standards Search – ISU Holdings search engine is available to allow patrons from within or outside of the ISU community to research what is available in the library collection. Individuals wishing to use the ANSI collection must come to the library to use them._