

How the Agility of Librarians Led to the Development of TRAIL

Daureen Neddill, M.S., M.L.I.S.
Data Curation Librarian
University of Utah
Salt Lake City, Utah

What is TRAIL?

TRAIL stands for the Technical Report Archive & Image Library. TRAIL is an initiative to identify, digitize, archive, and provide access to federal technical reports issued by the United States prior to 1976. The [TRAIL](#)

[website](#) provides information about the project. The [TRAIL interface](#) provides access to the federal technical report series that have been digitized thus far.



What are Federal Technical Reports?

Federal technical reports are a major source of scientific and technical information. They are highly detailed and contain valuable information serving specialized audiences of researchers. For example, the Atomic Energy Commission, Health and Safety Laboratory (AEC HASL) includes quarterly reports on the Fallout Program. This is data about the levels of nuclear fallout occurring in various substances, such as milk, water, bread, etc. The research, conducted in the late 1950s through the 1960s, was in response to the concern about nuclear fallout. Federal researchers measured Strontium 90 at various locations (Figure 1). This AEC HASL series, like many of the other technical report series, contains pages of the research data from the project and anyone can reuse and repurpose the data. Today, researchers receiving federal grants are being asked to make their data available for others to reuse and repurpose.



Figure 1. Map of the locations of survey points for Strontium 90. From Hardy, Edward P., Jr. *Fallout Program Quarterly Summary Report (September 1, 1961 through December 1, 1961)*. AEC-HASL 117. Washington DC 260 pp.

Federal agencies publish technical reports as part of the record of their work. They are the internal reporting of internal and outsourced research results. These final reports can be incorporated into a series already published by the agency or they can be published as an independent series of that agency. Each government agency has developed its own classification system to organize its publications. During the early part of the 20th century a government-wide classification system was established, which we now refer to as SuDocs. In spite of the implementation of SuDocs, technical reports are usually referenced by their agency classifications. Over the years agencies have come and gone, merged and split, thereby changing their classification, and making the technical reports difficult to find.

The format used to distribute technical reports has also been problematic. To reduce the amount of paper being used to print reports and the space used for storing reports federal agencies have used microcards, microfiche and microfilms as a distribution method. These formats require the use of bulky, old-fashioned and expensive equipment, which impedes access.

Why Librarians Became Involved

TRAIL initially developed out of the frustration of engineering librarians and researchers who were unable to access legacy technical reports. The availability and access to more recent (1994-current) technical report literature has been greatly improved with delivery via the Internet. Legacy materials have been less available due to shortfalls in funding and staffing at government agencies. The shift to the use of electronic resources is rendering these legacy reports invisible.

Most large research libraries across the country have sizeable collections of federally funded technical reports. It is estimated that there are a million or more reports ranging from several pages to several hundred pages. The collections of legacy reports are often difficult to identify and locate because:

- in many of the libraries a large proportion of federal technical reports are not catalogued at an individual title and/or report-number level, and

- some technical report series require the use of additional print indexes to convert numbering schemas.

To assist researchers, government document librarians publish Library Guides describing the complexity of the organization of the reports (Figure 2) and provide detailed instructions for accessing legacy technical reports.



Figure 2. A page from the government document library guide on technical reports at the J. Willard Marriott Library, University of Utah http://campusguides.lib.utah.edu/Technical_Reports

Meanwhile, engineering librarians realized that creating a digital library for federal technical reports would encourage their use by making them easier to discover. Creation of a digital library would provide a mechanism for archiving and delivering persistent and unrestricted access to legacy technical reports. Direct benefits resulting from the endeavor include:

- Researchers, nationally and internationally, will have open-access to important information resources previously available only through mediated assistance in localized collections throughout the United States.
- It will maximize investment returns from federally funded research efforts.
- TRAIL ensures that an archival collection of technical reports documenting research results from multiple disciplines achieved over the past 100+ years is maintained.
- University libraries can remove incomplete sets and difficult to use collections of legacy reports from their collections, freeing up valuable space for collection growth and the development of learning environments.

Initiation of the Project

The initial discussions took place in mid-2003 at the University of Arizona, (UA) and at conferences held by the [Engineering Library Division of the American Society for Engineering Education](#) (ASEE-ELD) and [American Library Association](#) (ALA). Maliaca Oxnam, then an engineering librarian at UA led the discussions and also initiated an online discussion list for addressing problems. At the same time the [Greater Western Library Alliance](#), (GWLA) announced it was seeking proposals for new strategic initiatives. Oxnam, recognizing the opportunity, wrote a proposal for UA to submit to GWLA for the development of a collaborative project with the [Center for Research Libraries](#) (CRL) as a partner. The UA proposal was accepted by GWLA in March 2006. The project was designed to be just large enough to explore the various problems and successes that might occur with a national, collaborative digitization project. Soon after the announcement a second



fortuitous opportunity surfaced. [Linda Hall Library](#) was interested in digitization and agreed to work with the group to conduct a cost analysis by digitizing 200-500 reports.

At this time there was one government document librarian and seven engineering librarians from eight institutions involved in the project along with the personnel from Linda Hall Library. The eight institutions involved spanned five time zones. To accomplish the work the geographical distribution of members was addressed by implementing:

- [Basecamp](#), an online collaborative tool for project management, provided by GWLA to facilitate the work. Documents, reports and a record of emails were all stored in Basecamp to track activities and progress.
- An official timekeeper. All meeting times were based on the Central Time Zone. Task Force members met weekly via telephone and in person as needed, usually once or twice a year.

At the first meeting of the initial group of librarians, in August 2006, a Gantt chart was developed to lay out the work for the first year. With personnel at Linda Hall Library and a few vendors digitizing documents, a workflow, standards, and quality control procedures were developed by TRAIL.. The documents to be digitized initially were influenced by the results of a survey TRAIL conducted asking academic libraries to identify the most important federal agencies and/or series to be digitized.

What TRAIL Has Been Doing

The initial pilot website (Figure 3) was launched in January 2007. Robert Schwarzwald, then at the University of Hawaii, Manoa had agreed to develop a pilot website for the growing digital collection using [Streetprint](#), software he and his staff were already familiar with. Streetprint is open source and, therefore, is flexible and easy to modify. The pilot website included a search engine for the digitized reports and information about the project. Documents posted to this pilot site were well received with worldwide usage and special requests coming from researchers across the U.S., and as far away as Chile and Greece.



Figure 3. Screenshot of the original pilot website for the TRAIL collection.

About the middle of 2007 the [University of Michigan Digitization Project](#) (UM Digitization Project) offered to contribute free digitization through its Google Books Program. TRAIL recognized the opportunity this would provide and agreed.

The basic workflow designed at this point continues today. TRAIL participants collect and catalog documents, which are then sent to the UM Digitization Project for digitization. The UM Digitization Project receives a copy of all scanned documents it sends to Google. In 2008

the UM Digitization Project began depositing its digitized collection in the [HathiTrust](#), including the TRAIL scanned documents.



Not all technical reports were shipped to the UM Digitization Project for scanning. Publications with maps or foldouts, or anything warranting nondestructive scanning were digitized by vendors and stored on servers at the University of Hawaii, Manoa. By 2009 the project outgrew the capacity of the pilot website. Mel DeSart, an engineering librarian at the University of Washington (UW) offered to have his library's IT department develop a search engine and interface. At the same time the University of North Texas (UNT) agreed to provide servers for the non-Google scans. The new interface being developed by UW would therefore have a search engine able to search both the HathiTrust and UNT servers for TRAIL federal technical reports.

The makeup of TRAIL changed in 2008. It was recognized that additional expertise in government documents was needed. Five additional government document librarians were recruited resulting in an even split between engineering and government document librarians working on the project. The project's visibility among government documents increased further when it was announced that TRAIL won the LexisNexis/GODORT/ALA "Documents to the People" award in 2010. Also in 2008, working groups were formed to address the various tasks, collecting reports for processing, processing the documents to be digitized, developing and maintaining a website about the project, and technology.

An important aspect of the project, initiated in 2008, involves working with OCLC. Each individual report processed is cataloged, therefore making catalog records for each of these items available. OCLC agreed to assist by converting existing print records to digital records as items are digitized and made available to users. Records are then assembled into collection sets, which can be purchased by libraries for inclusion in library OPACs. This further increases the number of access points for users to legacy technical reports.

In 2010 TRAIL moved its administrative home from GWLA to the Center for Research Libraries Global Resources Network. CRL provides a broader membership base and administrative expertise. As a result of the move new Bylaws were adopted and TRAIL reorganized. The elected positions of chair, chair-elect and secretary were established along with a steering committee as the governing body. The four working groups, Collections, Processing, Technology and Communications were formalized.



Moving away from GWLA resulted in TRAIL having to actively recruit member organizations. In addition to demonstrating support for the project, membership is important because it provides the project with annual dues, content and volunteers. In 2011 a new member recruitment task force was established and as of May 2012 there were 34 member institutions. In 2011 TRAIL also initiated a project addressing the federal technical reports on microform in response to requests by many libraries. Currently a workflow, standards, etc. are being developed. TRAIL is also interested in developing partnerships with federal agencies. One

member, the University of California at San Diego worked with NASA to fill in the documents missing from the NACA (National Advisory Committee for Aeronautics) series.

How TRAIL Accomplishes its Work



Figure 4. A schematic representation of TRAIL's nationally distributed workflow for the digitization of federal technical reports. The purple dotted lines represent series being sent from nodes to processing at UA. The blue lines represent series being sent from UA to either UM Digitization Project or UNT for digitization.

TRAIL's nationally distributed workflow (Figure 4) involves institutions assembling technical report series identified as being important for the collection. These institutions are referred to as nodes. The first node was established when Patricia Kirkwood, an engineering librarian at the University of Arkansas stepped up and accepted a collection being discarded by a library in Alaska. TRAIL has had over 20 institutions donate technical reports to the project. The node coordinates the acquisition of content for UA to process, apply metadata, etc. The documents are then sent for digitization to either UM Digitization Project or to UNT when special scanning is required.

Because TRAIL membership is throughout North America, it was imperative to implement virtual tools. An online Collection Processing Database (Figure 5) was developed to maintain a record of:

- institutions and their involvement with the project
- all the collections being considered and/or worked with along with pertinent information about each collection

- the shipping of collections
- the contacts for each institution



Figure 5. The TRAIL Collection Processing Database, an online workspace developed for the project.

The Processing Working Group also developed a wiki for more detailed communication about their work. These virtual tools allow members to record and update records as needed and keep up with what other members are doing.

While working with GWLA, the project management software Basecamp was used. When the project moved to CRL, the documents were transferred to CRL’s collaboration workspace, [Confluence](#). The Steering Committee and the working groups use this virtual space for their work and for communicating with member institutions. The list of needed publications is maintained in this space. New members to TRAIL require orientation and training. The Communications Working Group accomplishes this by using [Wimba](#), a virtual classroom with audio, video, and application sharing features (Figure 6).



Figure 6. A view of the Wimba site from the perspective of the organizer during a virtual orientation session for new members to TRAIL. The slides for the presentation are listed on the right. Tools for enhancing the slide during the talk are on the left.

Not all work is accomplished virtually. Conference calls occur regularly and a face-to-face meeting is held once a year in the spring. At the annual meeting the past year's successes and issues are reviewed and plans for the work of the next year are laid out. Initially, Gantt charts were used to facilitate planning. Now goals and work are determined using a visual team-planning map.

Marketing of the TRAIL project and website has been through presentations at conferences, publications and the [TRAIL website](#) under the CRL banner. Information about TRAIL, membership, activities, contact information, and working group descriptions are made available to the public. There is also a link to the [TRAIL search interface](#) (Figure 7), which provides links to information on the TRAIL website. The TRAIL collection includes over 40,000 documents from the Bureau of Mines, National Bureau of Standards, Atomic Energy Commission, Saline Waters, and NACA. Series currently being considered are from the Fish and Wildlife Service and Sandia National Labs.

The agility to recognize and act when an opportunity presents itself has played a significant role in the success of the TRAIL project. TRAIL has accomplished a lot since Maliaca Oxnam recognized the GWLA call for proposals as an opportunity to digitize federal technical reports. Accepting Linda Hall Library's offer to assist during the early stages and UM Digitization Project's offer to perform the bulk of the digitization pushed the project forward. TRAIL recognized the greater opportunities available by being a part of CRL would allow the project to grow. Being willing and agile enough to work virtually ensured that librarians located at institutions nationwide could accomplish common objectives and goals.



Figure 7. The TRAIL search interface at www.technicalreports.org.