

## **AC 2008-15: FINDING ASME TECHNICAL PAPERS**

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# Finding ASME Technical Papers

## Abstract

A wealth of information relevant to current engineering research exists in the American Society for Mechanical Engineers (ASME) papers. Librarians can encounter frustration in finding ASME papers due to poor quality citation information from the patrons, incomplete indexing by bibliographic database vendors, and the many journals, transactions, conference books and individual papers where these papers were published. In addition, ASME utilized an inconsistent and confusing numbering system that changed over time. Libraries and librarians developed finding aids to assist in tracking down this material within their collections. This presentation, intended for the Engineering Libraries Division's Basics Boot Camp session, will review how to address patron requests for ASME information in a systematic way, using both computer-based indexes and print resources.

## Historical Background

From its founding in New York City in the year 1880, the American Society of Mechanical Engineering (ASME) has sought to inform and broaden understanding within the profession by presenting papers at its meetings. Primarily due to the initiative of Frederick Hutton, second secretary of the ASME, the society began publishing these papers and issuing them to the membership. Prior to 1883, either the author or the Secretary of the Society would first read the paper in front of the assembly, then perhaps a few copies would be distributed for re-publishing by journals. According to Hutton, also an early historian of the organization, "Little argument is required to present the disadvantages of this system. The tedium of prosy reading is hard to bear. Many engineers are not trained to read pleasantly or to fill large halls with the voice. Mathematical papers cannot be followed even by experts..."<sup>1</sup> Hutton quickly determined a format of annual volumes for publishing papers through the *ASME Transactions*.

ASME has grown from a relatively small group of founders, "...depicted as solid and skillful men, who recognized the need for a better system of exchanging technical information..." and become a large, multinational organization of professional engineers, men and women dedicated to advancing the state of the art in mechanical engineering.<sup>2</sup> Throughout their history, this society has sought to transfer technical developments and practices to its membership through papers, standards, and books. As engineering librarians confronting this bounty of intellectual production, across an increasingly complex array of subfield literature from the society, we often find it difficult to find a specific technical paper requested by a patron.

Mechanical engineering is a rich field, and older papers have more relevance to practicing engineers and researchers working here than in some other fields, electrical engineering for example. These papers also represent an important resource for historians of technology, forensic engineers, and others interested in the built and manufactured world.

As the society gained membership and the numbers of papers increased, some of the papers presented found no publication outlet, but were published individually by the society as "Miscellaneous Technical Papers". This practice began in 1928. At first, these technical papers

included no paper number nomenclature similar to the three-letter acronyms associated with papers published in the *ASME Transactions*. After a period when they were available to members, ASME would no longer inventory the individual copies, and they would refer interested parties to the Engineering Societies Library (ESL), where the individual copies for a given year were maintained in a bound collection. From 1928-1932, the papers were collected and bound without identifying metadata such as a paper number, plus the physical papers had no paper number system. Beginning in 1933, ESL librarians assigned numbers to the miscellaneous papers by meeting. For example, the designation “60h” would apply to a meeting arbitrarily assigned the number “60,” with “h” indicating the 8th presented paper at the meeting, “h” being the 8<sup>th</sup> letter of the alphabet. The ESL librarians wrote this number on the first page of the paper. In collecting the papers into bound volumes, however, the librarians did not order the papers by these numbers. With some notable exceptions of frequently-used individual papers, the papers from 1933-1973 were assigned paper numbers and bound in alphabetical order by the last name of the principal author.

What engineering librarians will recognize as ASME paper numbering, in the format of “two-digit year – dash – meeting or division code – dash – paper number” began to appear for some (but not all!) miscellaneous papers in 1944. An example of a typical post-1944 ASME paper numbering would be 76-GT-105, the paper number for “Problems of the Heat Exchanger for Vehicular Gas Turbines” by E. Tiefenbacher, published by ASME in 1976.<sup>3</sup> These ASME paper numbers provide a key identifier to verify more complete bibliographic information on a given paper; unfortunately, the paper number does not provide a reliable guide for location and retrieval of a paper within a given library’s collection. Will the librarian find the paper in the miscellaneous technical papers, in an ASME journal or the *Transactions*, or in a conference proceedings? Beginning in 1974, the ESL librarians ordered the miscellaneous technical papers in bound volumes alphabetically by the ASME paper number, as all papers were being assigned these numbers by ASME at that point.

The *ASME Transactions* contain an annual index, and there are several ASME-published print compendium indexes that have proven valuable to librarians seeking to verify paper locations by author or subject.<sup>4-6</sup> Also, librarians have developed wonderful cross-reference lists mapping ASME paper number to the ASME journal of publication.<sup>7-9</sup> However, the papers collected as miscellaneous technical papers, the ASME papers unpublished in either the *Transactions*, the various ASME journals, or in conference proceedings, have less accurate and often misleading or incomplete bibliographic references. At the present time, there are no comprehensive electronic indexes of ASME technical papers.

### **A Sample Demonstrates the Problem**

To illustrate the problem with the miscellaneous technical papers, ten papers were selected from the miscellaneous papers collection of the Linda Hall Library. The papers were selected over a span of years, one paper selected at random from each of the following years: 1928, 1932, 1938, 1942, 1948, 1953, 1957, 1964, 1972, and 1980. Bibliographic records were then sought using an electronic database known to index ASME papers (Compendex through EiVillage). No effort will be made to defend this as a representative sample; rather, the point of the exercise is to give some indication of the types of problems that crop up in looking for these

papers in a database. Any general conclusions drawn to assess quantitatively the completeness or accuracy of the database would therefore be specious. Of the ten papers selected, seven returned bibliographic records corresponding to the paper in Compendex. Those records located were found under serial titles like “American Society of Mechanical Engineers – Advance paper,” “ASME – Paper,” or “American Society of Mechanical Engineers – Papers.” While these titles are suggestive, and fairly consistent, they do not lead unambiguously to the determination that the record is a miscellaneous technical paper publication. Of the three papers that Compendex failed to return a correct bibliographic match for, one returned a later *Transactions* article with the same title and author (the miscellaneous paper appears to be an earlier manuscript for the *Transactions* article)<sup>10</sup>, and two returned no matching results whatsoever.<sup>11-12</sup> The miscellaneous papers without bibliographic records in Compendex came from the 1930’s, 1950’s and 1970’s, suggesting that the problem of incompleteness in ASME paper indexing is not limited to a particular time period.

The most important conclusion from this exercise is that not all ASME miscellaneous technical papers are indexed within Compendex. In fact, no current electronic database can claim complete coverage of these papers. The sampled miscellaneous papers that could not be identified in Compendex did not appear in the print *Engineering Index*, so this important print resource cannot claim complete coverage for these papers either. In addition, the whole collection of miscellaneous papers are not covered within the major multi-year index compilations for papers published in ASME *Transactions* or the various ASME journals.

Best Practices for Finding ASME Technical Papers

Where should the engineering librarian turn to find reliable indexing to verify an ASME miscellaneous paper?

A sufficiently motivated librarian can compile a reasonable and complete index for certain years from ASME print journal resources. For the years 1932-1939 and 1952-1956, indexes for the miscellaneous technical papers can be found in the ASME *Transactions*.<sup>13</sup> For the years 1961-1980, Linda Hall Library staff use ASME Annual Publication AM-5, “Transactions of the ASME, Society Records,” which explicitly contains an index for miscellaneous technical papers. Oddly, Annual Publication AM-5 contains the indexing to the *Transactions* and *Mechanical Engineering* for the previous year, but the miscellaneous papers from two years prior to publication. For example, the 1982 publication of AM-5 contains the 1981 index for *Transactions* and *Mechanical Engineering*, but the 1980 index of miscellaneous papers. Sometime between 1957 and 1960, ASME began publishing Annual Publication AM-5. In the period 1952-1956, this “Society Records” section was published as Section Two of the January issue of the ASME *Transactions*. The OCLC record for AM-5 is inaccurate but acknowledges its confusion, stating that the publication “Began with the 1965 issue?”<sup>14</sup> At this point in time, I have not located a copy of AM-5 older than January, 1963, although I have found a reference in the journal *Mechanical Engineering* to the availability of AM-5 in April, 1960.<sup>15</sup>

What about ASME print indexes for miscellaneous technical papers in the period 1940-1951? In their official records, the society neglected them. The indexes used language similar to this gloss, taken from the 1943 “Indexes to A.S.M.E. Papers and Publications”:

“...Several additional papers and reports included in these 1943 programs were not published during the year in Transactions or Mechanical Engineering but were issued in mimeographed or photo-offset form.

Complete sets of these are on file for reference purposes at the office of the Society and the Engineering Societies Library, under the title of “Miscellaneous Papers Presented at A.S.M.E. Meetings, 1943.” Photostat copies of any of these papers may be secured from the Library...”<sup>16</sup>

The collections of the Engineering Societies Library were obtained (with a few notable exceptions) by the Linda Hall Library in 1995. The library has a complete set of ASME miscellaneous technical papers from 1928-2001. In addition, several finding aids for these papers moved with the ESL collection to the Linda Hall Library. These finding aids include a collection of meeting programs up through 1995, annotated by ESL librarians, a compilation of author indexes for miscellaneous papers 1960-1982, and the venerable ESL card catalog, containing a check-in file by paper number from 1950-1982, and card files by author and paper number from 1946-1990. Unfortunately, these finding aids cannot be readily accessed electronically, and an effort has begun to make some finding aids for ASME miscellaneous technical papers available through the Linda Hall Library website. The reference staff of Linda Hall Library are able to assist with questions about ASME technical papers, and can be reached by phone (800-662-1545) or e-mail ([reference@lindahall.org](mailto:reference@lindahall.org)).

When requesting assistance with an ASME miscellaneous paper from Linda Hall Library, the most useful information for bibliographic identification will be the author and year of publication, followed by the paper title and ASME paper number if available.

## Conclusion

American Society of Mechanical Engineers technical papers represent a special challenge to the engineering librarian, and identifying and locating the individually-published miscellaneous papers can prove difficult, even for experienced subject specialists. This paper discusses the historical background of the publication of these papers by ASME, demonstrates by example that these papers are incompletely documented in both print index and electronic databases, and describes how librarians can assemble a useful print index from existing ASME publications. Finally, because of its unique collection of Engineering Societies Library materials, the reference staff of Linda Hall Library are prepared to assist you with finding those stubborn citations that refuse to yield to the access strategy discussed in this paper.

## Bibliography

<sup>1</sup>Hutton, Frederick Remsen. (1915) *A History of the American Society of Mechanical Engineers From 1880 to 1915*. New York: American Society of Mechanical Engineers. Page 31.

<sup>2</sup>Sinclair, Bruce, with assistance of James P. Hull. (1980) *A Centennial History of the American Society of Mechanical Engineers 1880-1980*. Buffalo, NY: University of Toronto Press. Page 24.

<sup>3</sup>(1976). Tiefenbacher, E. "Problems of the Heat Exchanger for Vehicular Gas Turbines." ASME Paper Number 76-GT-105. New York: American Society of Mechanical Engineers.

<sup>4</sup>*Transactions*. American Society of Mechanical Engineers. New York: 1880-Present.

<sup>5</sup>(1957). *Seventy-Seven Year Index (1880-1956)*. New York: American Society of Mechanical Engineers.

<sup>6</sup>(1971). *Subject & Author Cumulative Index to Transactions of the ASME 1957/1970*. Tokyo, Japan: Nichigai Associates, on behalf of The American Society of Mechanical Engineers.

<sup>7</sup>(? - 1978?) *Index to Place of Publication of ASME Papers 1950-1959; 1960-1977*. Gardena, California: Specialized Information Services.

<sup>8</sup>(1981) *Index to Place of Publication of ASME Papers 1950-1977*. Schenectady, New York: General Electric Company Technology Marketing Operation.

<sup>9</sup>(1989?) Saul, J. Muriel. *ASME Technical Paper List*. Madison, Wisconsin: Kurt F. Wendt Library, College of Engineering, University of Wisconsin-Madison. [coverage is 1963-1988]

<sup>10</sup>(1937). Bristol, E.S., and J.C. Peters. "Some fundamental considerations in application of automatic control to continuous processes." ASME Miscellaneous Paper.

<sup>11</sup>(1953). Sweeney, R.J.. "Super-refrigeration." ASME Miscellaneous Paper.

<sup>12</sup>(1972). Gay, H.P. and E.M. Wineholt. "Analog Simulation of an Automatic Gun." ASME Miscellaneous Paper, 72-Mech-2.

<sup>13</sup>The specific volume, issue and page numbers for these print indexes are being developed into a web-accessible finding aid through the Linda Hall Library website, <http://www.lindahall.org>.

<sup>14</sup>OCLC accession number 29655441.

<sup>15</sup>(1960). "How Well Do You Know Your Society?" (announcement box) *Mechanical Engineering*, 82 (4), April 1960. Page 147.

<sup>16</sup>(1943). *Transactions*, Society Records, page RI-79.

For those interested in the history of the Engineering Societies Library, consult

Mount, Ellis. (1982). *Ahead of its time: the Engineering Societies Library, 1913-1980*. Hamden, Conn.: Linnet Books.