ASME MANAGEMENT DIVISION HISTORY

1886–1980

Editor
Charles M. Merrick

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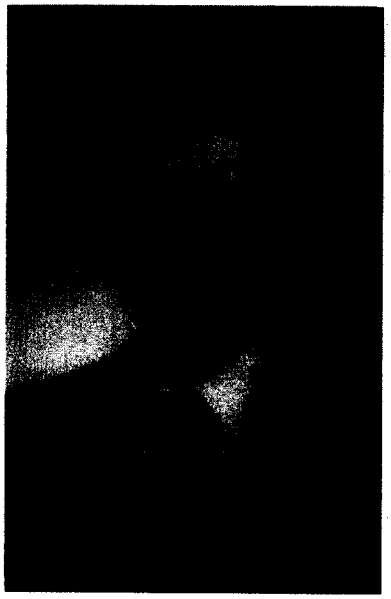

Charles M. Merrick

The Management Division would like to express its appreciation to Professor Merrick, Historian Emeritus, for the many hours he spent coordinating and editing this ASME Management Division History. His efforts, as well as those of the Contributing Editors, have resulted in a comprehensive presentation of the events, awards, and especially the people that have made the Management Division a successful part of ASME.

ASME MANAGEMENT DIVISION HISTORY

1886–1980

Editor
CHARLES M. MERRICK

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Sponsored By
The Management Division, ASME

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
United Engineering Center 345 East 47th Street New York, N.Y. 10017

FOREWORD

Here under one cover is a thorough record of the valuable contributions to management thought and practice during the first century of the Society and for the three decades of the formally structured Management Division. Individuals of stature have added to the prestige of The American Society of Mechanical Engineers on both the national and the international scene. The ideas and the principles and practical applications of management techniques have enhanced the living standard and eased the burden of society. Recorded in one place are pioneering papers which stimulated interest in management practices as well as the names of many individuals who devoted time and energy to the operation of management activities in the Society for the benefit of mankind.

Many of the basic principles first presented at ASME meetings have stood the test of time and with refinements are still current practice. Restudy of some of these papers could be useful.

The Management Division is the one that captures the attention of more members of ASME than any other of the more than thirty professional divisions. This interest is a natural progression as a member's experience and development in his engineering specialty leads to a move into executive management.

Those who founded the Management Division of ASME in 1920 anticipated an important finding of the profound ten year study of engineering education in the nineteen-twenties undertaken by the Society for the Promotion of Engineering Education (SPEE), now the American Society for Engineering Education (ASEE), and the active participation of all the professional engineering societies. The study revealed that more than fifty percent of graduates in engineering who were out five years or more were in management careers rather than practicing the pure engineering design specialty of their undergraduate curricula.

It became clear during the preparation of the material for the division history that the Management Division was established as the outgrowth of the management movement which received special impetus in the early part of this century. The story of the Management Division is really the lives of its leaders. Initially Henry R. Towne, Frederick W. Taylor, Henry L. Gantt, and Frank B. Gilbreth were the pioneers. Then came Leon P. Alford, Ralph E. Flanders, Lillian M. Gilbreth, Ralph M. Barnes, J. Keith Louden, and Harold B. Maynard, among others. An insight into the changes in management philosophy and methodology over the years since the formation of the Management Division can be gained by reviewing the paper titles and conference themes presented in the Authors and Publications and the Conferences sections. Those who were honored for special accomplishments are next identified in Lectures/Medalists. The prognosis of the future provides the closure.

I am most appreciative of the support of the Editorial Board members, each of whom has contributed to items in the preparation of this history. The business and academic affiliations of the members attest to the high level of the support that I have received.

Mr. Robert G. Butler, Corporate Vice President and Secretary of the American Management Association (AMA), and Patricia Conway, Assistant Corporate Secretary, were most helpful in compiling the complete data about the Gantt Medal Board operations and the Gantt Medal Awards.

Mr. Frank R. Dunaway, Jr., was the emissary for the 1975-1976 Committee who persuaded me to undertake the project. Professor George L. Thuering, Jr., Chairman the next year, was most encouraging. Members of subsequent Management Division Executive Committees labored to find ways and means to publish the manuscript economically.

Dr. William G. McLean, Professor Emeritus of Engineering Science at Lafayette College, has been most helpful through his wise counsel and his intimate knowledge of Society affairs. Although I was retired from Lafayette College, Dr. Leon J. McGeady, Director of Engineering, arranged office space and secretarial services and supplies for preparation of the manuscript. His secretary, Mrs. Elizabeth Bullock, was most cooperative and effective as the draft of each part of the manuscript was circulated for review. Her ideas and good taste made easier the subsequent refinements.

Annual changes in the organization of the Executive Committee of the Management Division and changes and reorganization of the Society headquarters staff delayed clearance for publication of the Management

History beyond the peak of the celebration of the Centennial. In the fall of 1983, Dr. George Thuering revived interest in the History and approval for its publication quickly followed. Special gratitude is owed to Mr. Steve Cowdery for his work in preparing the book for publication and following the project through to its completion.

From the beginning, the objective has been to provide a permanent record under one cover of the major documents and activities which members of the Society contributed to the development of management principles and practices during the one hundred years of the Society and the sixty years of the formal Management Division.

Charles M. Merrick

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Chapter 5 — Lecturers/Medalists

Chapter 6 — The Future

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CHAPTER 1

INTRODUCTION

THE MANAGEMENT MOVEMENT

David D. Acker
and
William J. Jaffe

MANAGEMENT'S BEGINNINGS

Any historical summary--no matter how brief--rightfully should start at the beginning, but it is difficult, if not impossible, to pinpoint exact dates as far as management is concerned. Some aspects are recorded in the BIBLE (e.g. Principle of Exceptions in Jethro's admonition to MOSES in EXODUS 18:12-26 and examples of planning and forecasting by Joseph in GENESIS 46:15-43) as well as in Aristotle's writings (Principle of Transfer of Skill). With the beginning of the Renaissance, there was double-entry bookkeeping by Paciolo in Genoa. In France, there was Saint Simon, for whom the nation was to be a vast workshop. Certainly many procedures were identified with the Industrial Revolution in England: market research, planned site location and machine layout, were all utilized in the Soho Foundry of Boulton, Watt & Co., and Robert Owen's Lanark was the scene of systematic personnel practices. In the USA, Eli Whitney used interchangeable parts in the manufacture of clocks as well as guns. Perhaps, the best analysis was made by Oliver Sheldon, in his article on THE DEVELOPMENT OF SCIENTIFIC MANAGEMENT IN ENGLAND, when he ascribed to:

> Each generation...its scribe who thought scientifically about the ploughing of the soil, the throwing of the shuttle...Then came the day when the ploughman, the weaver...discarded the old tools of their crafts and strode amazedly into the towns where the new factories reared their ugly forms...So finally the torch was passed from one generation to another, till, amid the immense structure of American industry it passed to the hand of Frederick Taylor.

TAYLOR, MANAGEMENT, AND THE ASME

Yet, this man, whose credits range from the presidency of ASME to the well deserved appelation of "The Father of Scientific Management," openly disclaimed any monopolistic right to or authorship of any system of management, "scientific" or otherwise, and, before the Special Committee of the House of Representatives to Investigate the Taylor or Other Systems of Shop Management (January 25, 1912), he asserted emphatically that "...this has been the work of 100 men or more, and that the work which any of us may have

done is a small fraction of the whole...It is a matter of evolution, of many men, each doing his proper share." On this basis, then, credit for the foundation of "scientific management" must go, not only to Taylor and his associates, but to the many contemporaries who worked independently and forthrightly here in the USA. Both groups, however, found the ASME not only a convenient--but for many years, the sole--rostrum for papers on management. ASME's role was defined early--in fact by the Presidential Address of its first president, Thurston (1880). More specifically it was the landmark paper of Towne (THE ENGINEER AS ECONOMIST) in 1886 that cast the die and, consequently, the major part of scientific management thought came from ASME platforms and in Society Journals. This tradition was continued by the Divisions when they were established. In fact, during the first year (1920) of its existence, the Management Division defined the subject matter of its own field:

> Management is the art and science of preparing, organizing, and directing human effort to control the forces and to utilize the materials of nature for the benefit of man.

THE FATHER OF SCIENTIFIC MANAGEMENT

For a score of years after Towne's paper, ASME was the scene of discussions on wage payment plans, mnemonic systems, toolroom organization, inventory procedures, etc., but these were treated, for the most part, as independent instead of integrated problems. Taylor was aware of this, and he attempted, time and time again, to reinforce his fundamental notion that the central problem was: WHAT IS A FAIR DAY'S WORK? In 1985, he had tackled the problem under the guise of treating a "piece-rate system," and, in 1903, under "shop management." Yet, despite the universal acclaim for his ASME Presidential Address (ON THE ART OF CUTTING METALS) in 1906, and the resulting enhancement of his reputation, he found that his integrated treatment (THE PRINCIPLES OF SCIENTIFIC MANAGEMENT) was still buried in a papers committee. Hence, in 1911, he withdrew it, published it privately, and distributed a copy to every member of the Society. As he told a congressional committee (1912):

> Scientific Management is not an efficiency device...not a new system of figuring costs...not holding a stop-watch to a man...not time study...not motion study...not functional foremanship...not any of the devices the average man calls to mind when Scientific Management is spoken of. Now, in its essence, Scientific Management involves a complete revolution on the part of the working man engaged in any industry and it involves an equally complete revolution on the part of those on management's side--the foreman, the superintendent, the owner, the board of directors...I have never said that Scientific Management cannot be used for bad (ends). It is possible to use the mechanism of Scientific Management for bad (ends) but not Scientific Management. It ceases to be Scientific Management the moment it is used for bad (ends).

More specifically, he maintained that:

> Scientific Management consists of a philosophy which results...in a combination of the four great underlying principles of management.

First. The development of a true science for each element of a man's work...

Second. The scientific selection, training, teaching, and direction of workmen...

Third. The hearty cooperation with the men...

Fourth. An almost equal division of the work and responsibility between the management and the workmen...

Too many people assume, incorrectly, that all the American pioneers in the field worked directly with and under Taylor. Many did, but others were completely independent and outside that circle. Among Taylor's disciples were: Barth (Taylor's mathematician and "systems man"), Diemer (Taylor's choice to head, at Pennsylvania State College, the first Industrial Engineering Department, to teach "mechanical engineering from the standpoint of production rather than machinery performance"), Babcock (who introduced the Taylor System to the automotive industry), Metcalfe (whom Taylor praised for the "card system of shop returns" at the Frankford Arsenal), S. Thompson (timestudy developer and designer of the "watch book"), Hathaway (Taylor's best all-around man"), Cooke (Taylor's staunch advocate who applied scientific management to municipal government and university administration), et alia. Gantt, on the other hand, did work with Taylor at Bethlehem, but he expanded his interests, and, although best known to most for his Chart, became the Great Humanitarian of the Movement. Again, J. M. Dodge, ASME President, is best known for his having been President and Chairman at Link-Belt, but his connection with Taylor came when, influenced by SHOP MANAGEMENT, he introduced the Taylor System in his company. On the other hand, many other leaders operated completely outside the direct Taylor Group. These included giants, such as: the Gilbreths (whose motion study and whose concern for the psychology of the worker form the basis of contemporary studies such as human factors and ergonomics), Emerson (the great popularizer of the Movement), Halsey (who originated, in American industry, the first successful wage incentive plan as an improvement over ordinary piece rates), Kimball (who was among the first to offer elective courses in public administration to engineering students), Hoxie (who tried to reconcile the differences between labor and some scientific management advocates), Church (whose many contributions include the variable budget), Dennison (the industrialist who stressed business' obligations to the workers and to the community as well as to the stockholders), Alford (ASME's historian and the profession's leading editor and publisher) et alia.

GANTT, THE GILBRETHS, AND ALFORD

As in the case of Taylor, special attention should be directed to those who worked outside that circle. Gantt, the Gilbreths, and Alford are good examples. Gantt's great contribution, as far as the Chart was concerned, was in his use of <u>time</u> instead of <u>quantity</u> as its variable. In this connection, it is proper to mention at least three of those who worked under him: Clark (who universalized the Chart), Porter (who drew the earliest Chart, but whose main reputation comes from his establishment of the first motion study laboratory in the colleges), and Davies (who for half a century guided the destinies of ASME). However, the key word for Gantt was SERVICE, and his fundamental concept that, as far as business was concerned, it "has no reason for its existence except for the service it can render." The Gilbreths--and,

according to their plan, their contributions were never to be individualized--expressed their philosophy, their researches, their work, their very lives in the poignant SEARCH FOR THE ONE BEST WAY. This pervades their great attempt to remove all wasteful and unproductive motions, and their serious concern for the well being of the worker. In more recent years many of their intuitive results in the field of physiology have been quantitatively verified as more sophisticated measuring devices were developed. In fact, the sciences of Human Factors and Ergonomics have been built on their pioneering.

As for Alford, from 1912 to his death in 1942, he singly prepared all of the famous TEN YEAR MANAGEMENT REPORTS. Moreover, his editorship of the many engineering and management magazines, periodicals, books (especially the HANDBOOKS) made him a mainstay in the disseminating of engineering and management concepts. Moreover, his eventual tabulation of the Laws and Principles of Management remains a classic.

THE PERIOD BEGINNING WITH THE 1920'S

Among the leading contributions, during the Prosperity of the Twenties, the Depression of the Thirties, and the War of the Forties, was the American Engineering Council. Its work may be summarized best by the four great studies it made: WASTE IN INDUSTRY, THE TWELVE HOUR SHIFT, SAFETY AND PRODUCTION, and THE BALANCING OF ECONOMIC FORCES. ASME's role in these and other endeavors was crucial. An equally important aspect of ASME's interest was the role in establishing the American Engineering Standards Committee--from which evolved the American Standards Association (ASA), the United States of America Standards Institute (USASI) and, as it is now known, the American National Standards Institute (ANSI). Finally, the talents of the members of ASME, in general, and the Management Division, in particular, were enlisted in the Depression and the War Years.

It is difficult to name all the developments during the years following the 1920's but some notice must be taken of the following, at least: in management philosophy, applications, and control, there were Hopf, Follett, Urwick, and, of course, Mayo and his Hawthorne Experiment associates. On the other hand, the period also showed a great growth in the more quantitative aspects: Economic lot sized (Raymond and Lehoczky), break even (Rautenstrauch and Knoeppel), statistical quality control (Shewhart), cybernetics (Wiener), and one of the greatest of the "secret" weapons of World War II (operations research). Perhaps the following categorizations will be helpful in this brief survey:

INDUSTRIAL ENGINEERING: Barnes, Maynard, Mogensen.
ORGANIZATION--THEORY AND PRACTICE: Argyris, Barnard, Diebold, Dodd, Drucker, Gulick, Juran, Lewis, McCormick, Simon, Sloan, Tead, Urwick.
HUMAN RELATIONS/BEHAVIORAL SCIENCES: Dickinson, Lincoln, Roethlisberger, Rowntree, Scanlon.
MANAGERIAL ACCOUNTING/ECONOMICS: Dean, Grant, McKinsey, Terborg, Williams, Bullinger, Bangs and Hanselman.
QUANTITATIVE MEASURES: Churchman, Deming, Fisher, Forrester, Morgenstern, Pearson, Shannon, Shewhart, Von Neumann, Weiner.

MANAGEMENT EDUCATION: Bullinger, Grant, Holden, Lytle, Person, Roe, Schell, C. B. Thompson.

MANAGEMENT ASSOCIATIONS

Finally this chapter would not be complete without a listing of some of the many management oriented societies currently active, and these are many. Thus, there are management sections which are part of the recognized engineering societies: e.g., in addition to ASME, there are those of the American Institute of Industrial Engineers, the Institute of Electrical and Electronic Engineers et al. Again, when ASME and AIIE took on the task to act as a secretariat, on behalf of American National Standards Institute, for the ASME Publication of INDUSTRIAL ENGINEERING TERMINOLOGY (ANSI Z94), this publication included a section on Organization Planning and Theory, in addition to many other aspects of interest to the management field. The following provided representatives: American Arbitration Association, American Association of Cost Engineers, American Institute of Chemical Engineers, American Insurance Association, American Production and Inventory Control Society, American Society for Engineering Education, American Society of Quality Control, American Society of Manufacturing Engineers, Association of Consulting Management Engineers, Human Factors Society of America, Industrial Management Society, Industrial Relations Research Association, American Truck Association, The Institute of Management Science, International Material Management Society, and the Society for Advancement of Management.

In addition, there are many others, among which are: American Institute of Management, American Management Associations (including Society for Advancement of Management), Academy of Management, Association for systems Management, CIOS, the World Council of Management, formerly Comite International de L'Organisation scientifique and its national members (AMA and IMDI) the International Management and Development Institute, the Conference Board, International Executives Association, and the Project Management Institute.

MANAGEMENT IN ASME'S SECOND CENTURY

Clearly the progress of management has been great, and ASME, in general, and the Management Division, in particular, have played a major role in the past and will continue to be in the forefront during ASME's second century. The path management must continue to take was defined by Brandeis--whose devotion to public service spanned half a century from his first important struggle over the traction system of Boston through his presence as an active force during the early days of the scientific management movement to his decisions on the U.S. Supreme Court bench--in his discussion of a "profession." He believed that a "profession" is an occupation where the necessary preliminary training is "intellectual in character, involving knowledge and to some extent learning as distinguished from mere skill...which is pursued largely for others and not for one's self...in which the amount of financial return is not the accepted measure of success..." More specifically, the requirements of a "recognized profession" were stated by Juran:

1. Meets an indispensable need.
2. Is based on a body of systematic and specialized knowledge.
3. Imposes, on the candidates for admission, minimum standards of--
   a) Professional training,
   b) Cultural training,
   c) Length of professional study, in approved institutions,
   d) Scholarly attainment.
4. Provides for state supervision of admission to the profession through--
   a) Minimum standards of training for candidacy,
   b) Examination for technical competency,
   c) Examination for character and fitness,
   d) License granted only to successful candidates.
5. Requires compliance to a standard code of ethics transcending personal considerations.
6. Provides for the economic self-sufficiency of its members.

Certainly, these are characteristics which are easily associated with management leaders. However, these are requirements that must be espoused by all practitioners, and, unfortunately, too many persons indiscriminantly have assumed--or, in many cases, have been given--imposing management titles. The task, then, is quite clear, and responsible management leaders, societies, and institutions, cannot escape their obligations.

As indicated, in even this brief resume of management history, the need for professionalism is basic. When Taylor expanded mechanical engineering beyond the basic design concept, when the Gilbreths insisted that attention be paid to the human element, when Towne emphasized the "engineer as economist," and when Gantt emphasized the service aspect, the fundamentals of a professional manager became clear. Management became the unifying factor associated with the "Four M's"--Materials, Money, Men ("persons," sic) and Management. If these are not enough to demand the "professional manager," the demands of the future are even more stringent. If anyone, it was Wiener who heralded this development--from an industrial civilization to a communication/information one, and only a professional manager can answer that demand.

CHAPTER 2

MANAGEMENT DIVISION STRUCTURE

Organization Chart - 1979-80 (July 1979)

By-Laws of the Management Division - March 1974

The Management Division Executive Committee

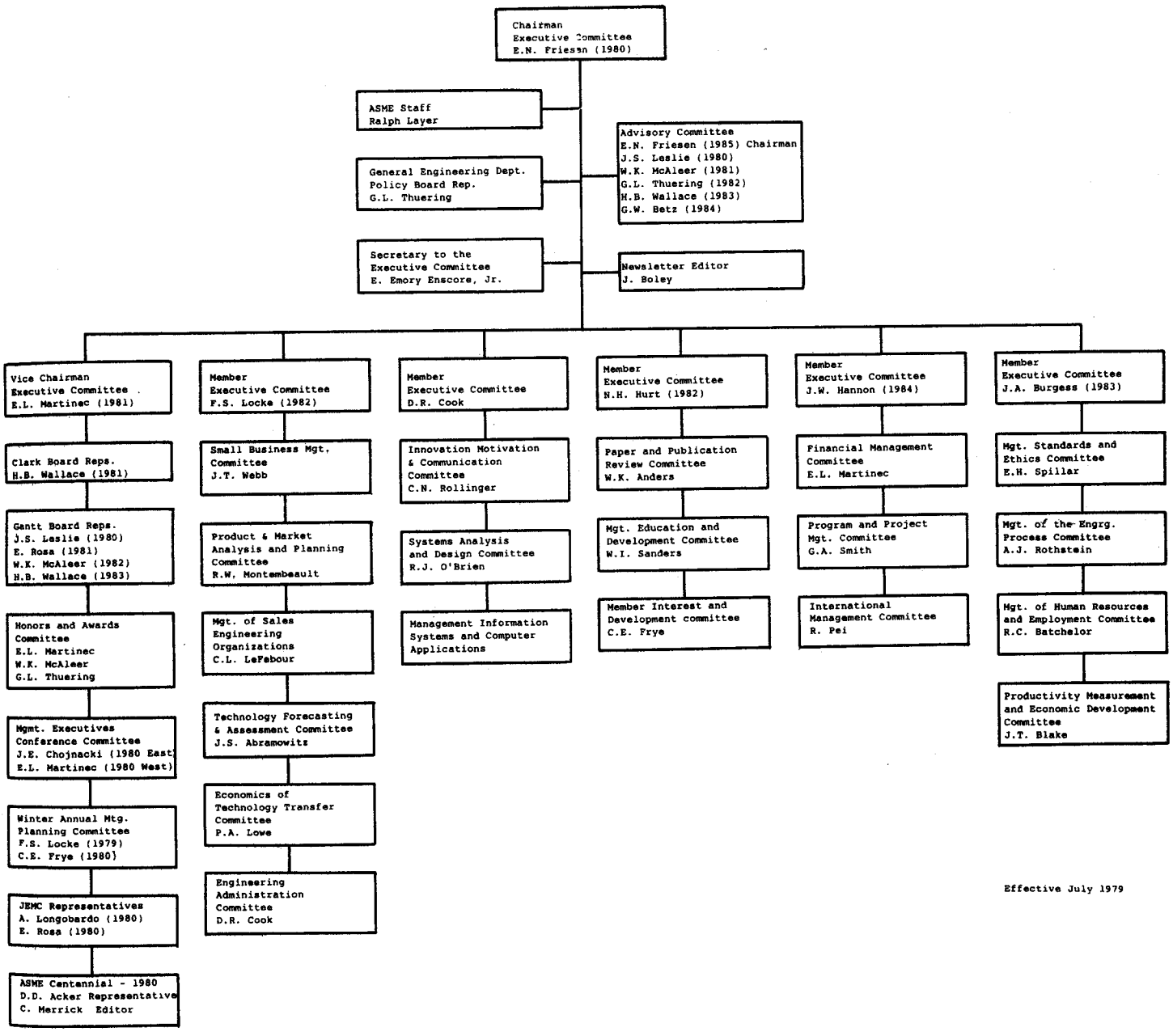
- History
- Executive Committees 1920 to Year 1979-80

ASME Society Presidents and Management Contributors

- History
- Chronological List of Contributors

Formation of the Management Section - September 1920

ASME MANAGEMENT DIVISION
ORGANIZATION STRUCTURE



Effective July 1979

BY-LAWS
of the
MANAGEMENT DIVISION
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
MARCH 1974

The Management Division shall constitute a Professional Division of the American Society of Mechanical Engineers organized in accordance with the Society's Constitution, By-Laws and Rules.

A. OBJECTIVES

1. To promote the art and science of management among members of the Society in the fields of planning, organizing, measuring, and directing human effort applied to control and to utilize the forces and materials of nature to achieve objectives in the most effective and efficient manner.

2. To encourage and foster research, development and the publication of significant information in the field of management within the scope of the Division's objectives.

3. To foster the interchange of ideas among engineers by:

   a. Encouraging the preparation, presentation and/or publication of papers, reports, manuals and texts on management subjects.

   b. Organizing programs for presentation and discussion of management papers and reports and in which all members of the Society and invited participants may meet on an equal basis to exchange experiences and ideas.

   c. Cooperating with other Professional divisions, committees, and groups within the Society and with other engineering societies or management organizations with respect to preparation and presentation of papers and reports, management standards and ethics, management education and development, and special services in order to avoid duplication of effort and/or possible conflicts.

4. To cooperate with and provide encouragement to colleges and universities, as well as other societies, which are offering courses, seminars, workshops, conferences and symposia relating to the field of management.

5. To stimulate interest in international management activities by developing an exchange of management methods and procedures, skills, and important literature with engineering management groups abroad through the Society's international contacts, groups, and committees.

6. To encourage the development of the affiliated committees for the advancement of specialized functions within the general framework of the Management Division.

7. To direct attention to outstanding achievement and general contributions in the field of management to all members of the Society and to recommend and/or provide suitable recognition for such achievement.

8. To provide advice and counsel to the Executive Director and Secretary of the Society, when requested, on matters relating to management of the Society.

9. To provide that the activities of the Division shall be directed by members of the Society who have attained some prominence and prestige in the field and have shown, by activity within the Division, the necessary ability and willingness to discharge such responsibilities.

B. SCOPE OF ACTIVITIES

1. The Division shall, when desirable, organize and conduct and/or sponsor one or more sessions at meetings, conferences, seminars, symposia and workshops of the Society.

2. The Division shall, when desirable, organize a Division Conference upon obtaining an invitation from a section, subject to the approval of the General Engineering Department Policy Board.

3. The Division, shall, at its discretion, conduct special interest meetings, conferences, seminars, symposia and workshops for the purpose of serving members in specific management fields.

4. Subject to the approval of the Meetings Coordinating Committee, the Division shall participate in joint sessions with other engineering societies or management organizations when such is of benefit to the Division, to the Society and to the engineering profession.

5. Committees of the Division shall be appointed and maintained for the purpose (a) providing continuing support to Division members, (b) planning and implementing Division functions, (c) providing special advice and counsel to the Executive Director and Secretary of the Society, and (d) providing support to the Executive Committee on an as-needed basis.

6. The Division shall recommend and submit suitable papers and reports, as well as manuscripts of manuals and texts, of current or permanent value or exceptional quality and interest, for publication by the Society or other suitable organizations.

C. ORGANIZATION

1. The management Division shall be organized under the Coonstitution, By-Laws and Rules of the Society. In case of conflict between the Division and Society By-Laws and Rules, those of the Society shall govern.

2. The Executive Committee shall be responsible for ensuring achievement of the objectives of the Division.

3. The Executive Committee shall be assisted in carrying out the affairs and activities of the Division by an Advisory Committee and such other committees as it may organize. Each committee organized by the Executive Committee shall have a charter setting forth the manner in which it will conduct its affairs. Each charter shall be made a part of the minutes of the Executive Committee meeting upon its acceptance by the Executive Committee at one of its duly constituted meetings.

4. Each committee, through its chairman, shall report to and receive guidance from a designated Executive Committee member.

5. An Advisory Committee shall be formed to provide advice and counsel to the Chairman of the Executive Committee. This Committee shall normally consist of the current and past five chairmen of the Executive Committee, and others, on occasion, who have made outstanding contributions in the field of management. The members of this committee:

   a. Shall be appointed annually by the Chairman of the Executive Committee.

   b. May be called upon for specific assignment by the Chairman of the Executive Committee.

   c. Shall be invited to attend meetings of the Executive Committee.

D. THE EXECUTIVE COMMITTEE

1. The Executive Committee shall consist of seven members selected from the membership of the Society as follows:

   a. Prior to February fifteenth of each year, the Executive Committee of the Division shall nominate to Council any individuals whom it desires to have the Council appoint as the new members of the Executive Committee. The method of selecting the individuals shall be the option of the Executive Committee.

   b. In making the selection, the Executive Committee shall ensure that each nominee:

      (1) Meets the requirements stated in Paragraph A.9 above.

      (2) Is willing to serve for five years, during which time he/she

may serve as vice-chairman and/or chairman of the Executive Committee.

(3) Has the necessary time and financial resources or backing so that he/she can attend all meetings of the Executive Committee and such other functions and sessions demanding his/her attention.

(4) Has such secretarial assistance as may be required, without charging the Society for services rendered.

2. The terms of the members shall begin/end at the close of the Summer Annual Meeting.

3. The Executive Committee shall elect its own chairman and vice-chairman. No one shall be eligible for election as chairman until he/she has been a member of the committee for at least two years or for the vice-chairman until he/she has been a member of the committee for at least one year. Normally, a fourth-year member shall be elected vice chairman and a fifth-year member shall be elected chairman.

4. Vacancies on the Executive Committee shall be filled by appointment of the Executive Committee, subject to approval by the President of the Society.

5. The Executive Committee shall appoint or elect a secretary of the Division who shall record and report the proceedings of the Division to the Executive Director and Secretary of the Society. The Division Secretary shall perform his/her duties under the direction of the Executive Committee.

6. There shall be at least two meetings, and preferably four meetings, of the Executive Committee in each year. Meetings of the Executive Committee may be called by the chairman at such places and times as he may deem advisable. Other meetings may be called if requested by at least three members of the Executive Committee.

7. Four members of the Executive Committee shall constitute a quorum, but three of these members shall actually be present and not represented by proxy.

8. Except where specifically stated otherwise, all actions of the Executive Committee shall be determined by a majority vote of those voting.

9. It shall be the responsibility of the Executive Committee to carry out the objectives of the Division; establish committee; appoint representatives; supervise and direct Management Division actions; and perform such other functions as necessary for maximum effectiveness of the Division in the field of management.

10. Responsibility for the Advisory Committee shall rest with the Chairman of the Executive Committee (see para C.5); responsibility for society

affairs and liaison activities shall rest with the Vice-Chairman of the Executive Committee (see para F); responsibility for all other committees shall rest with designated members of the Executive Committee (see para E).

11. Although the committees report to the Executive Committee through the committee chairmen, it is recognized that this relationship can be most effective provided the designated Executive Committee members interpret the objectives of the Division and assist committee chairmen with their activities. It shall be the responsibility of the Chairman of the Executive Committee at the start of each new Society year to designate the members of the Executive Committee to whom the committees report.

12. The duties of officers and committee chairmen shall be as specified in Professional Divisions Manual, MS-11.

E. THE COMMITTEES

1. Any committee, except the Advisory Committee, may be established or disestablished upon the considered judgment of the Executive Committee.

2. Each committee, consisting of as many members as needed to perform its responsibilities, shall receive its overall direction from the designated member of the Executive Committee.

3. Each committee shall have the authority and responsibility to perform its assignment providing such activities are not inconsistent with the By-Laws of the Division, the scope of the Division's activities, and more specifically, the scope of the committee.

4. The size of each committee shall be mutually agreed upon by the chairman of the committee and by the designated Executive Committee member.

5. In accordance with rule 2, Article R-10, of the Society's rules, appointments to committees shall be made annually. However, in order to provide continuity of experience for more effective operation of committees, members may be reappointed for a second or third year by the chairmen of the committees.

F. SOCIETY AFFAIRS AND LIAISON ACTIVITIES

1. The activities set forth in this paragraph shall be separate from the activities of the committees of the Division. The activities described here shall be the responsibility of the Vice-Chairman of the Executive Committee, unless otherwise noted or an exception is made during a specific year by the Executive Committee.

2. Honors and Awards

a. Recipients of honors and awards shall be determined by an Honors and Awards Committee.

b. The Honors and Awards Committee shall consist of a chairman and a minimum of two other members. Members will generally be appointed for a three-year term, with the senior member retiring each year. Appointees shall be eligible for reappointment.

c. Recommendations for honors and awards shall be prepared in accordance with ASME Manual, MS-71.

3. Liaison Activities

a. The Management Division shall cooperate in intra-and inter-Society functions, boards and councils by appointing representatives to the following:

(1) General Engineering Department Policy Board
Beginning with the Summer Annual Meeting in June of each year, one representative from the Management Division shall be appointed to this Board. The representative so appointed shall be eligible for reappointment not more than twice. (This representative shall normally report directly to the chairman, but shall report to the vice-chairman in any year when the Executive Committee so decides.)

(2) Wallace Clark International Award Board
Beginning on January 1 in even numbered years, one representative from the Management Division shall be appointed to this Board for a four-year term; thus, there will be a total of two Management Division representatives on this Board at all times. The representatives so appointed shall normally be eligible for reappointment to a second term.

(3) Gantt Medal Board of Award
Beginning on January 1 each year, one representative from the Management Division shall be appointed to this Board for a four-year term; thus, there will be a total of four Management Division representatives on this Board at all times. The representatives shall normally be eligible for reappointment to a second term.

(4) Council for International Progress in Management USA, Inc.
Beginning on January 1, 1974 and every fourth year thereafter, one representative from the Management Division shall be appointed to this Council for a four-year term. The representative so appointed shall normally be eligible for reappointment to a second term.

b. Other appointments shall be made from time to time as requested by the President of the Society or the Executive Director and Secretary of the Society, for representation at specific functions.

4. Management Executives Conference

a. The Management Division shall be responsible for planning and holding this conference annually to provide executive management with an opportunity to discuss informally subjects and policies of current concern. The conference shall be entirely self-supporting.

b. Attendance shall be restricted to executive management, by invitation. Invitations shall be extended to chairmen of the board, presidents, vice-presidents, members and former members of the Executive Committee of the Management Division, and others at the policy-making level.

c. The Conference Committee shall consist of no less than five members. Members shall be appointed for three-year terms, with senior members retiring at the conclusion of each conference. Appointees shall be eligible for reappointment.

5. ASME Winter Annual Meeting (WAM)

a. The Management Division shall be responsible for planning and organizing the management-oriented sessions and the Towne Lecture at the WAM. Whenever possible and wherever appropriate grouping can be arranged, approved papers that have been voluntarily submitted shall be used.

b. The Towne Lecturer shall be selected by the Executive Committee no later than nine months prior to the WAM.

c. The Planning Committee shall consist of no less than three members. Members shall be appointed for three-year terms with the senior member retiring each year at the conclusion of the WAM. Appointees shall be eligible for reappointment.

6. Joint Engineering Management Conference

a. The Society, working through the Management Division, shall sponsor and/or cooperate with other professional societies in the development of a Joint Engineering Management Conference (JEMC) to be held annually for the presentation of papers of general engineering management interest.

b. The chairmanship of these conferences shall rotate among sponsoring societies. Selection of officers and the organization of the committee shall be a function of the committee. Participating societies shall be urged to serve as "sponsors", but those not desiring to do so may participate on a "cooperating" basis.

c. Each society participating shall be representated by three members. Members shall generally be appointed for a three-year term, with the senior member retiring each year at the conclusion

of the conference. Appointees shall be eligible for reappointment.

d. The planning for each conference shall follow the procedure for planning a divisional conference except that each sponsoring/cooperating society will seek the invitation and cooperation of its respective host section.

e. A special manual for planning and conducting the JEMC shall describe more specifically the organization and operation of the conference.

G. SPECIAL CONSIDERATIONS

1. Division Associates

With the approval of the Executive Committee, the chairman may appoint Division associates, who are not members of the Society, to cooperate in the work of the Division and to attend committee meetings, without the right to vote. Such appointment shall be for one year.

2. Custodian Fund

a. The Division shall maintain, under the general rules of the Society, a Custodian fund in accordance with the policy of the Society. The fund may be supplemented by proceeds from divisional conferences, special meetings, sale of publications, and other activities of the Division.

b. The fund shall be maintained by the Society. Withdrawals may be made with approval by the Executive Committee for purposes of the Division. The signature of the Chairman and the Secretary of the Executive Committee shall be required on all written requests for such withdrawals.

3. Amendments

a. These By-Laws may be amended by approval of five members of the Executive Committee of the Division. Such amendments shall be subject to final approval by the General Engineering Department Policy Board prior to implementation.

b. Amendments requested by a petition of ten members of the Society shall receive consideration of the Executive Committee of the Division.

c. A special By-Laws Committee may be appointed by the Executive Committee to consider any revisions that may be presented for consideration.

4. Membership

a. The Division shall conduct its affairs in such a manner as to attract qualified engineers to become members of the Society and to participate in its varied fields of activity.

b. With the cooperation of local sections, the Division shall also encourage upgrading of members as they qualify.

Compiled and Submitted by,

EXECUTIVE COMMITTEE
OF THE
MANAGEMENT DIVISION

MARCH 1974

THE MANAGEMENT DIVISION EXECUTIVE COMMITTEE

David D. Acker

The Executive Committee is responsible for managing the affairs of the Management Division. Over the years it has provided direction and guidance for those chairing the technical committees formed to carry out the activities in the areas of interest to members of the Division. The technical committees serve to advance management science in specific areas. This has normally been accomplished by gathering, analyzing, evaluating and disseminating information in the form of technical papers, or through panel discussions, workshops, symposia and annual conferences.

New committees have been formed from time to time and old committees deactivated as the interests of the members changed. The Executive Committee has always recognized the significance of the fluid condition in maintaining the vitality of the Division. Accordingly, it has dealt with it headon. Furthermore, whenever members of the Division have expressed a need to deal effectively with a new management discipline, the Executive Committee has always responded to the need in an appropriate way.

Current technical committees of the Management Division are shown in the organization chart. These committees account for a wide variety of activities and services to members of ASME, regardless of their basic technical specialty. The dynamic organization of the Management Division, fostered by the leadership of its Executive Committee, has accounted--in no small way--for the continued growth of its membership and services over the past 60 years. Its importance to the Society since 1920 has never waned, and today it is the largest technical division in the Society.

MANAGEMENT DIVISION EXECUTIVE COMMITTEES

ORGANIZED JULY 1920

OFFICERS	MEMBERS
1920-21	
Leon P. Alford, Chairman Editor - "Industrial Management" Lawrence W. Wallace, Vice-Chairman W. Herman Greul, Secretary Fred J. Miller, President of the Society	Frank B. Gilbreth Charles E. Knoeppel Sanford E. Thompson
1921-22	
Reginald A. Wentworth, Chairman Manufacturing Manager Barrett Company, N.Y. Alonzo Flack, Secretary Edwin S. Carman, President of the Society	Leon P. Alford W. Herman Greul Frank B. Gilbreth Lawrence W. Wallace
1922-23	
Reginald A. Wentworth, Chairman Manufacturing Manager Barrett Company, N.Y. Alonzo Flack, Secretary Dexter S. Kimball, President of the Society	W. Herman Greul Leon P. Alford Lawrence W. Wallace Frank B. Gilbreth
1923-24	
Reginald A. Wentworth, Chairman Manufacturing Manager Barrett Company, N.Y. Alonzo Flack, Vice-Chairman Charles W. Lytle, Secretary John L. Harrington, President of the Society	W. Herman Greul Irvin A. Berndt Leon P. Alford Robert T. Kent
1924-25	
Robert T. Kent, Chairman Superintendent, Prison Industries State of New York, Ossining, N.Y. Irving A. Berndt, Vice-Chairman Charles W. Lytle, Secretary Frederick R. Low, President of the Society	Leon P. Alford Sanford E. Thompson Asa B. Segur

OFFICERS	MEMBERS
1925-26	
Robert T. Kent, Chairman Superintendent, Prison Industries State of New York, Ossining, N.Y. Charles W. Lytle, Vice-Chairman George E. Hagemann, Secretary William F. Durand, President of the Society	Sanford E. Thompson Asa B. Segur Park T. Sowden
1926-27	
Charles W. Lytle, Chairman Professor - Industrial Engineering New York University, N.Y. Robert T. Kent, Vice-Chairman George E. Hagemann, Secretary William L. Abbott, President of the Society	Park T. Sowden William L. Conrad Robert E. Newcomb
1927-28	
Charles W. Lytle, Chairman Professor - Industrial Engineering New York University, N.Y. Park T. Sowden, Vice-Chairman George E. Hagemann, Secretary Charles M. Schwab, President of the Society	William Conrad Robert E. Newcomb Walter R. Clark
1928-29	
William L. Conrad, Chairman Consulting Engineer, N.Y. Park T. Sowden, Vice-Chairman George E. Hagemann, Secretary Alex Dow, President of the Society	Robert E. Newcomb Walter R. Clark William B. Ferguson
1929-30	
William L. Conrad, Chairman Consulting Engineer, N.Y. Robert E. Newcomb, Vice-Chairman George W. Kelsey, Secretary Elmer Ambrose Sperry, President of the Society	William B. Ferguson Charles W. Lytle George E. Hagemann
1930-31	
Charles W. Lytle, Chairman Proesssor - Industrial Engineering New York University, N.Y. William B. Ferguson, Vice-Chairman George W. Kelsey, Secretary Charles Piez, President of the Society	Howard M. Hubbard George E. Hagemann Fairfield E. Raymond

OFFICERS	MEMBERS
1931-32	
William B. Ferguson, Chairman Production Manager, Newport News Shipbuilding & Drydock Company Fairfield E. Raymond, Vice-Chairman George W. Kelsy, Secretary Roy V. Wright, President of the Society	George E. Hagemann Charles W. Lytle John W. Nickerson
1932-33	
Fairfield E. Raymond, Chairman Associate Professor - Industrial Research M.I.T., Boston, Mass. William B. Ferguson, Vice-Chairman George W. Kelsey, Secretary Conrad N. Lauer, President of the Society	Charles W. Lytle John R. Shea Joseph A. Piacitelli
1933-34	
Fairfield E. Raymond, Chairman Associate Professor - Industrial Research M.I.T., Boston, Mass. John R. Shea, Vice-Chairman William H. Kushnick, Secretary Andrey A. Potter, President of the Society	Charles W. Lytle Joseph A. Piacitelli John P. Carmody
1934-35	
John R. Shea, Chairman Assistant Engineer of Manufacturing Western Electric, Incorporated Kearney, N.J. Joseph A. Piacitelli, Vice-Chairman William H. Kushnick, Secretary Paul Doty, President of the Society	Fairfield E. Raymond George W. Kelsey Walter Rautenstrauch
1935-36	
Joseph A. Piacitelli, Chairman Consulting Industrial Engineer New York, N.Y. George W. Kelsey, Vice-Chairman William H. Kushnick, Secretary Ralph E. Flanders, President of the Society	Charles I. Day Walter Rautenstrauch John R. Shea

OFFICERS	MEMBERS
1936-37	
George W. Kelsey, Chairman President, G. W. Kelsey & Company New York, N.Y. Walter Rautenstrauch, Vice-Chairman William H. Kushnick, Secretary William L. Batt, President of the Society	Joseph A. Piacitelli Charles I. Day Lester C. Morrow
1937-38	
Lester C. Morrow, Chairman Consulting Editor, Factory Management & Maintenance McGraw-Hill Publishing Company, N.Y. William H. Kushnick, Vice-Chairman Louis N. Rowley, Jr., Secretary James H. Herron, President of the Society	Jay A. Jacobs George W. Kelsey
1938-39	
Lester C. Morrow, Chairman Consulting Editor, Factory Management & Maintenance McGraw-Hill Publishing Company, N.Y. William H. Kushnick, Vice-Chairman Louis Rowley, Jr., Secretary Harvey N. Davis, President of the Society	Jay A. Jacobs Harold B. Bergen Walter Rautenstrauch
1939-40	
William H. Kushnick, Chairman Plant Manager, Anchor Hocking Glass Corporation Long Island City, N.Y. Harold B. Bergen, Vice-Chairman Louis N. Rowley, Jr., Secretary Alexander G. Christie, President of the Society	Jay A. Jacobs Lester C. Morrow
1940-41	
William H. Kushnick, Chairman Director - Civilian Personnel Office of Secretary of Defense Washington, D.C. Harold B. Bergen, Vice-Chairman Gideon M. Varga, Secretary Warren H. McBryde, President of the Society	Lester C. Morrow John R. Bangs, Jr.

OFFICERS	MEMBERS
1941-42	
Harold B. Bergen, Chairman Partner, McKinsey & Company New York, N.Y. John R. Bangs, Vice-Chairman Gideon M. Varga, Secretary William A. Hanley, President of the Society	James M. Talbot Lawrence A. Appley Archie Williams
1942-43	
John R. Bangs, Chairman Professor & Head, Department of Administrative Engineering Cornell University, Ithaca, N.Y. James M. Talbot, Vice-President Gideon M. Varga, Secretary James W. Parker, President of the Society	Lawrence A. Appley Joseph M. Juran Andrew I. Peterson
1943-44	
James M. Talbot, Chairman Vice President, SS White Dental Manufacturing Company Staten Island, N.Y. Joseph M. Juran, Vice-Chairman Carlos de Zafra, Secretary (Assistant) Gideon M. Varga, Secretary Harold V. Coes, President of the Society	Lawrence A. Appley
1944-45	
Joseph M. Juran, Chairman Professor and Chairman, Department of Administrative Engineering New York University, N.Y. Lawrence A. Appley, Vice-Chairman Gideon M. Varga, Secretary Robert M. Gates, President of the Society	Andrew I. Peterson John A. Willard Asa S. Knowles William R. Mullee
1945-46	
Lawrence A. Appley, Chairman President, American Management Association Andrew I. Peterson, Vice-Chairman Carlos de Zafra, Secretary (Assistant) Gideon M. Varga, Secretary Alex D. Bailey, President of the Society	Asa S. Knowles William R. Mullee John A. Willard

OFFICERS	MEMBERS
1946-47	
Andrew I. Peterson, Chairman Manager, Quality Control, R.C.A. Harrison, N.J. John A. Willard, Vice-Chairman Carlos de Zafra, Secretary (Assistant) Gideon M. Varga, Secretary D. Robert Yarnell, President of the Society	Asa S. Knowles William R. Mullee J. Keith Louden
1947-48	
John A. Willard, Chairman Partner, Biglow, Kent & Willard Consultants, N.Y. William R. Mullee, Vice-Chairman Carlos de Zafra, Secretary Eugene W. O'Brien, President of the Society	J. Keith Louden Gideon M. Varga Harold B. Maynard
1948-49	
Willaim R. Mullee, Chairman Professor, Administrative Engineering, New York University, New York, N.Y. J. Keith Louden, Vice-Chairman Thomas A. Marshall, Jr., Secretary Ervin G. Bailey, President of the Society	Gideon M. Varga Harold B. Maynard Eugene H. MacNiece
1949-50	
J. Keith Louden, Chairman Vice President & Assistant to President York Corporation, York, Pa. Harold B. Maynard, Vice-Chairman Thomas A. Marshall, Jr., Secretary James M. Todd, President of the Society	Gideon M. Varga
1950-51	
Harold B. Maynard, Chairman President - Methods Engineering Council Pittsburgh, Pa. Gideon M. Varga, Vice-Chairman Lloyd W. Stearns, Secretary James D. Cunningham, President of the Society	Eugene H. MacNiece Arthur M. Perrin Thomas A. Marshall, Jr.

OFFICERS	MEMBERS
1951-52	
Gideon M. Varga, Chairman Industrial Engineer & Assistant to President, Mercer-Robinson Company, Incorporated New York, N.Y. Eugene H. MacNiece, Vice-Chairman William A. MacCrehan, Secretary J. Calvin Brown, President of the Society	Arthur M. Perrin Phil Carroll, Jr.
1952-53	
Eugene H. MacNiece, Chairman Director of Quality Control Johnson & Johnson, New Brunswick, N.J. Arthur M. Perrin, Vice-Chairman William A. MacCrehan, Jr., Secretary R. J. S. Pigott, President of the Society	Ercole Rosa, Jr. Thomas A. Marshall, Jr. Phil Carroll
1953-54	
Arthur M. Perrin, Chairman President, National Conveyors Company, Incorporated New York, N.Y. Thomas A. Marshall, Jr., Vice-Chairman Ercole Rosa, Jr., Secretary Frederick S. Blackall, Jr., President of the Society	Phil Carroll Louis E. Newman
1954-55	
Phil Carroll, Chairman Consulting Industrial Engineer Maplewood, N.J. Louis E. Newman, Vice-Chairman Edward R. Murphy, Secretary Lewis K. Sillcox, President of the Society	Henry N. Muller, Jr. Raymond F. Dauer Frederick W. Hornbruck, Jr.
1955-56	
Louis E. Newman, Chairman Manager - Propulsion Study - Atomic Power, Equipment Department, General Electric Company Schenectady, N.Y. Henry N. Muller, Jr., Vice-Chairman Edward R. Murphy, Secretary David W. R. Morgan, President of the Society	Frederick W. Hornbruck, Jr. Robert G. Hess Charles A. Jurgensen

OFFICERS	MEMBERS
1956-57	
Henry N. Muller, Jr., Chairman Director of Engineering, Canadian Westinghouse, Ltd., Hamilton, Ontario, Canada Frederick W. Hornbruck, Jr., Vice-Chairman Hugh A. Bogle, Secretary Joseph W. Barker, President of the Society	Robert G. Hess Charles A. Jurgensen Raymond A. Dauer
1957-58	
Frederick W. Hornbruch, Jr., Chairman Chief Engineer, Rath & Strong, Incorporated Boston, Mass. Robert G. Hess, Vice-Chairman Elles M. Derby, Secretary William F. Ryan, President of the Society	Charles A. Jurgensen Raymond F. Dauer
1958-59	
Robert G. Hess, Chairman Executive Vice President, Walworth Company, New York, N.Y. Charles A. Jurgensen, Vice-Chairman Elles M. Derby, Secretary James N. Landis, President of the Society	Raymond F. Dauer Hugh A. Bogle Robert I. Miller
1959-60	
Charles A. Jurgensen, Chairman Vice-President, Manufacturing DeLaval Steam Turbine Company Hugh A. Bogle, Vice-Chairman Douglas G. Knight, Secretary Glenn B. Warren, President of the Society	Robert I. Miller Marshall Anderson Oliver J. Sizelove
1960-61	
Hugh A. Bogle, Chairman Manager, Industrial Engineering E. I. DuPont & Company Wilmington, Del. Marshall Anderson, Vice-Chairman Douglas G. Knight, Secretary Walker L. Cisler, President of the Society	Robert I. Miller Oliver J. Sizelove Alexander M. Smith

OFFICERS	MEMBERS
1961-62	
Marshall Anderson, Chairman Manager, Manufacturing General Purpose Controls General Electric Co., Bloomington, Ill. Oliver J. Sizelove, Vice-Chairman Douglas G. Knight, Secretary William H. Byrne, President of the Society	Alexander M. Smith Matthew J. Murphy Philip R. Fortune
1962-63	
Oliver J. Sizelove, Chairman Professor & Chairman, Department of Industrial & Management Engineering, Newark College of Engineering, Newark, N.J. Alexander M. Smith, Vice-Chairman Eugene T. Tierney, Secretary Clifford H. Shumaker, President of the Society	Philip R. Fortune Donald E. Farr James C. Skinner
1963-64	
Alexander M. Smith, Chairman Vice-President, Lamson & Sessions, Cleveland, Oh. Donald E. Farr, Vice-Chairman Eugene T. Tierney, Secretary Ronald B. Smith, President of the Society	James C. Skinner Lester R. Bittel Wallace J. Richardson
1964-65	
Donald E. Farr, Chairman President, H. B. Maynard & Company, Incorporated Pittsburg, Pa. James C. Skinner, Vice-Chairman Ralph C. Parsons, Secretary Elmer O. Bergman, President of the Society	Lester R. Bittel Wallace J. Richardson Hugh Estes
1965-66	
James C. Skinner, Chairman President, Thomas & Skinner, Incorporated Indianapolis, Ind. Lester R. Bittel, Vice-Chairman Ellis J. Sharkey, Secretary Henry N. Muller, President of the Society	Wallace J. Richardson Hugh Estes Charles M. Merrick

OFFICERS	MEMBERS
1966-67	
Lester R. Bittel, Chairman Editor-in-Chief - "Factory Magazine" McGraw-Hill Publishing Company, N.Y. Wallace J. Richardson, Vice-Chairman John B. Dempsey, Secretary James H. Harlow, President of the Society	Hugh Estes Charles M. Merrick V. Donald Schoeller
1967-68	
Wallace J. Richardson, Chairman Professor, Industrial Engineering Lehigh University, Bethlehem, Pa. Hugh Estes, Vice-Chairman Frank A. Blackwood, Secretary Louis N. Rowley, Jr., President of the Society	V. Donald Schoeller Bernard B. Winer Robert A. Brauburger
1968-69	
Hugh Estes, Chairman Consultant - Organization Planning General Electric Company, New York, N.Y. V. Donald Schoeller, Vice-Chairman Frank A. Blackwood, Secretary George F. Habach, President of the Society	Bernard B. Winer Robert A. Brauburger Herbert F. Lund
1969-70	
Bernard B. Winer, Chairman Manager, AC Motors & Generators Engineering, Westinghouse Electric Corporation, Pittsburg, Pa. Robert A. Brauburger, Vice-Chairman Frank A. Blackwood, Secretary Donald E. Marlowe, President of the Society	Herbert F. Lund Ercole Rosa George T. Lewis
1970-71	
Robert A. Brauburger, Chairman Technical Computer Center Chrysler Corporation, Detroit, Mich. Herbert F. Lund, Vice-Chairman Frank R. Dunaway, Jr., Secretary Allen F. Rhodes, President of the Society	Ercole Rosa George T. Lewis David D. Acker

OFFICERS	MEMBERS

1971-72

Herbert F. Lund, Chairman President - Leadership Plus, Incorporated Stamford, Conn. Ercole Rosa, Vice-Chairman Frank R. Dunaway, Jr., Secretary Kenneth A. Roe, President of the Society	George T. Lewis David D. Acker John S. Leslie

1972-73

Ercole Rosa, Chairman Manager, Corporate & Information Systems IBM Corporation, New York, N.Y. David D. Acker, Vice-Chairman Ricardo Hartswell, Secretary Richard G. Folsom, President of the Society	John S. Leslie William K. McAleer Frank R. Dunaway, Jr.

1973-74

David D. Acker, Chairman Professor of Management, Defense Systems Management College, Fort Belvoir, Va. John S. Leslie, Vice-Chairman Ricardo Hartswell, Secretary Daniel C. Drucker, President of the Society	William K. McAleer Frank R. Dunaway, Jr. George L. Thuering

1974-75

John S. Leslie, Chairman Chairman - Leslie Company Parsippany, N.J. William K. McAleer, Vice-Chairman Ronald G. Kogan, Secretary Richard B. Robertson, President of the Society	Frank R. Dunaway, Jr. George L. Thuering Henry B. Wallace, Jr.

(Executive Committee increased in size from five to seven members.)

1975-76

William K. McAleer, Chairman President, Peter F. Loftus Co. Pittsburgh, Pa. George L. Thuering, Vice-Chairman Ronald G. Kogan, Secretary Charles Tutt, Jr., President of the Society	Frank R. Dunaway, Jr. Henry B. Wallace, Jr. Louis Kuh E. Nick Friesen Gregor W. Betz

OFFICERS

MEMBERS

1976-77

George L. Thuering, Chairman
Director,
Management Engineering Department
The Penn State University
University Park, Pa.
Henry B. Wallace, Jr., Vice-Chairman
Ronald G. Kogan, Secretary
Earle C. Miller, President of the Society

Frank R. Dunaway, Jr.
Louis Kuh
E. Nick Friesen
Gregor W. Betz
Emil L. Martinec

1977-78

Henry B. Wallace, Jr., Chairman
Management Consultant, Tenafly, N.J.
Gregor W. Betz, Vice-Chairman
E. Emory Enscore, Jr., Secretary
S. Peter Kezios, President of the Society

E. Nick Freisen
Emil L. Martinec
Ronald G. Kogan
Nathan H. Hurt
Frank S. Locke

1978-79

Gregor W. Betz, Chairman
President, Betz Associates
Williamsville, N.Y.
E. Nick Freisen, Vice-Chairman & Historian
E. Emory Enscore, Jr., Secretary
Orval L. Lewis, President of the Society

Emil L. Martinec
Nathan H. Hurt
Frank S. Locke
Ronald G. Kogan
John A. Burgess

1979-80

E. N. Friesen, Chairman
Executive Engineer,
Department of Water and Power
City of Los Angeles, Cal.
Emil L. Martinec, Vice-Chairman
E. Emory Enscore, Jr., Secretary
Donald N. Zwiep, President of the Society

Nathan H. Hurt
Frank S. Locke
John A. Burgess
John W. Hannon
David R. Cook

1980-81

E. L. Martinec, Chairman
Argonne National Laboratory
Argonne, Ill.
N. H. Hurt, 1st Vice-Chairman
F. S. Locke, 2nd Vice-Chairman
Stephen Cowdery, Secretary
Charles Jones, President of the Society

John W. Hannon
J. Abramowitz
Richard Donnelly
David R. Cook

SOCIETY PRESIDENTS AND MANAGEMENT CONTRIBUTORS

Louis N. Rowley

The history of ASME written in 1915 by Frederick R. Hutton cites the earlier founding of ASCE and AIME and then goes on to say "The transactions of both these societies were broad in their scope, but there were many who felt that in neither organization did the engineers of production and of the factory and power plant, and the designers and managers of producing machine shops gather in sufficient numbers to induce the preparation of papers and the presentation of discussion in these particular fields."

When the Society was founded in 1880, a high percentage of the original members came from these particular areas of engineering. Many of them had entrepreneurial backgrounds - they owned or headed shops producing machine tools, engines, or other industrial machinery. This was particularly true of the leadership - 16 of the first 25 presidents fitted into this general description and three more were distinguished machinery designers and thus had closely related backgrounds. Although there was not yet a designated "science of management," the art of directing technical enterprises was of prime interest to these engineers. The society they began to build was to prove fertile soil for growth of a management science.

The inaugural address of ASME's first president, Robert Henry Thurston, defined a role in this area for the newly formed society. But the landmark 1886 paper of Henry R. Towne, eighth president, titled "The Engineer as Economist," staked out the claim beyond question and with such authority as to make ASME a primary forum for the presentation and discussion of management thought.

Frederick Winslow Taylor, often called "the father of scientific management," became the Society's 25th president in 1906. His presidential address, launching ASME's second quarter-century, was the classic "On the Art of Cutting Metals." With Taylor's pioneering papers and books, and the work of a growing number of followers, the art of scientific management was well and truly founded. Its influences were manifested in many ways throughout industry and ASME. For example, James Mapes Dodge, who was the Society's 22nd president, introduced Taylor methods at the Link Belt Company which he headed.

During this second quarter-century of ASME history, the nature of its leadership shifted somewhat, reflecting the changes that were taking place in the engineering world from which its leaders came. There were fewer presidents who could be described as entrepreneurs, two notable exceptions being George Westinghouse, 29th president, and Charles M. Schwab, 46th

president. Most of some ten presidents who came from industry might be described more accurately as engineer-executives. The industries represented also showed some changes: there were fewer machinery manufacturers and the relatively new electrical field had representation from both its equipment manufacturing branch and from the electric utility companies. For the first time, the publishing field was represented, by two engineering editors. One of them, Fred J. Miller, 39th president, had a background in management and industrial engineering and wrote extensively about them. It was during his term that the Management Division was founded.

But the group that showed the largest increase was that of educators: no less than eight men from that field held the presidency during the Society's second quarter-century, reflecting the expansion of technical education and a growing professionalism. One of these educators, Dexter S. Kimball, 41st president, was a prolific contributor to the literature of industrial engineering and pioneered in introducing courses in management to the engineering cirriculum.

The third quarter-century of ASME's history saw the pendulum swing back to the presidency being filled from industry - 14 of the presidents in this period were industrial executives and more than half of this number were chief executives. It may be assumed that this background created a climate favorable to the growth of the young Management Division. More specifically, a number of these presidents were closely connected with the management field and were contributors to its literature. Ralph Flanders, 54th president, as head of a major machine-tool company, authored a number of significant papers on management in the 20's and early 30's. He later became U.S. Senator from Vermont. Flanders' successor as president of ASME, William L. Batt, was also known as a spokesman for the management field. And one president of this era, Harold Vinton Coes, made management consulting a focus of his mature career and contributed to its literature.

The current quarter-century of ASME history, not yet quite complete, is the first in which more presidents have come from the field of education and research than from any other. Nine presidents out of the 24 elected up to the time this history is written can be so classified. The next largest category is engineering executives, followed closely by an unusually large group of men whose careers were mainly in consulting and design engineering.

Among the group of presidents who came from the education field, was Clifford H. Shumaker who, while chairman of Industrial Engineering at Southern Methodist University, founded and directed the Institute of Management there. Henry N. Muller, 84th president, at one period of his career had the distinction of heading a large program for hiring and training professional personnel in a major corporation.

Looking back over this brief review of ASME presidents and their relation to the field of management, it can be seen that the number of presidents specifically involved with scientific management was relatively small (about 10%). But the large portion of the leadership that came from industry (owners, chief and engineering executives, etc.), and the fact that many of the educators and consultants had executive responsibilities assured a climate in which ASME activity in the field of management would operate in a sympathetic atmosphere. Nor was this limited to the presidents: for many of

the members, interest in the art of management came second only to their primary technical specialty.

It is in this encouraging atmosphere that the Management Division has flourished and ASME has become a major focus for the discussion of the principles and practice of scientific management.

SOCIETY PRESIDENTS AND MANAGEMENT CONTRIBUTORS

Chronological list of some of the Presidents
closely identified with Management

NO.	YEAR	PRESIDENT
5	1886	SELLERS, Coleman Engineer - William Sellers & Company Philadelphia, Pa.
6	1887	BABCOCK, George H. President - Babcock & Wilcox Company New York, N.Y.
8	1889	TOWNE, Henry Robinson President - Yale & Towne Manufacturing Company Stamford, Conn.
9	1890	SMITH, Oberlin President - Ferracute Machine Company Bridgeton, N.J.
16	1897	WARNER, Worcester Reed Partner - Warner & Swasey Company Cleveland, Oh.
22	1903	DODGE, James Mapes President - Link-Belt Company Philadelphia, Pa.
23	1904	SWASEY, Ambrose Partner - Warner & Swasey Company Cleveland, Oh.
25	1906	TAYLOR, Fredrick Winslow Consulting Engineer in Management Philadelphia, Pa.
29	1910	WESTINGHOUSE, George President - Westinghouse Electric Company Pittsburgh, Pa.
33	1914	HARTNESS, James President - Jones & Lamson Machine Company Springfield, Vt.
37	1918	MAIN, Charles Thomas President - Charles T. Main, Incorporated Consulting Engineers Boston, Mass.

NO.	YEAR	PRESIDENT
39	1920	MILLER, Fred J. General Factory Manager - Remington Typewriter Company New York
41	1922	KIMBALL, Dexter S. Dean - College of Engineering, Cornell University Ithaca, N.Y.
44	1925	DURAND, William F. Professor Emeritus - Mechanical Engineering, Sanford University Palo Alto, Cal.
46	1927	SCHWAB, Charles M. Chairman of Board - Bethlehem Steel Corporation Bethlehem, Pa.
47	1928	DOW, Alex President - Detroit Edison Company Detroit, Mich.
48	1929	SPERRY, Elmer Ambrose President - Sperry Gyroscope Company New York, N.Y.
50	1931	WRIGHT, Roy V. Editor - R. R. Mechanical Engineer Simmons-Boardman Publishing New York, N.Y.
52	1933	POTTER, Andrey A. Dean of Engineering - Purdue University Lafayette, Ind.
54	1935	FLANDERS, Ralph E. President - Jones & Lamson Machine Company Springfield, Vt.
55	1936	BATT, William L. President - SKF Industries Philadelphia, Pa.
62	1943	COES, Harold V. Vice-President - Ford, Bacon & Davis, Incorporated New York, N.Y.
65	1946	YARNALL, D. Robert President - Yarnall-Warning Company Philadelphia, Pa.

NO.	YEAR	PRESIDENT
66	1947	O'BRIEN, Eugene W. Vice-President - W. R. Smith Publishing Company Atlanta, Ga.
75	1956	BARKER, Joseph W. President & Chairman of Board - Research Corporation New York, N.Y.
76	1957	RYAN, William F. Vice-President & Senior Consulting Engineer - Stone & Webster Engineering Corporation Boston, Mass.
77	1958	LANDIS, James N. Vice-President - Bechtel Corporation San Francisco, Cal.
78	1959	WARREN, Glenn B. Vice-President & Consultant - Turbine Division, General Electric Company Schenectady, N.Y.
79	1960	CISLER, Walker L. President - The Detroit Edison Company Detroit, Mich.
80	1961	BYRNE, William H. President - Byrne Associates, Incorporated New York, N.Y.
81	1962	SCHUMAKER, Clifford H. Chairman - Department of Industrial Engineering, Southern Methodist University Dallas, Tex.
82	1963	SMITH, Ronald B. Vice-President - M. W. Kellogg Company New York, N.Y.
83	1964	BERGMAN, Elmer O. Senior Staff Engineer - National Engineering Science Company Pasadena, Cal.
84	1965	MULLER, Henry N. Vice-President - Canadian Westinghouse, Ltd. Hamilton, Ontario
85	1966	HARLOW, James H. Vice-President & Executive Engineer - Philadelphia Electric Company Philadelphia, Pa.

NO.	YEAR	PRESIDENT
86	1967	ROWLEY, Louis N. Publisher - Power, McGraw Hill Company New York, N.Y.
87	1968	HABACH, George F. Vice-President, Administration - Studebaker-Worthington Incorporated New York, N.Y.
90	1971	ROE, Kenneth A. President - Burns & Roe, Incorporated Oradell, N.J.

FORMATION OF THE MANAGEMENT SECTION*

On July 23, 1920 an organizing conference was called together to take steps to form a Professional Section on Industrial Engineering. A total of nine hundred and thirty-seven members had signified their desire to join by registering at the Society's headquarters. The conference was called together by L. P. Alford, member of the special committee on Professional Sections. The members attending voted unanimously to present a petition to the Council for the formation of such a section, but changed the name used in the call to the Management Section. It was believed that the expression "Industrial Engineering" was too narrow to adequately indicate the scope of the work that such a section might and should do.

Under authority of the Council this petition was referred to the Executive Committee and has been voted upon favorably. Its text is as follows:

TO THE PRESIDENT AND COUNCIL:

Gentlemen:

Your approval is requested for the formation of a Professional Section to be known as the Management Section, to be inaugurated under the provisions of By-Law B-47.

We recommend that this Section be established to organize the members of the Society and others who may wish to affiliate with them, who are interested in the art and science of management.

We recommend further that this Section be authorized to coordinate the activities of those members of the Society who are interested in the development of productive industry.

We recommend still further that this Section be authorized to cooperate with other societies and organizations having similar aims and objects.

We hope also that the Section may be appointed by the Council to be the angency for carrying out the recommendations of the Special Committee on Industrial Engineering as embodied in the report of this Committee now before the Council.

*Excerpts from Mechanical Engineering, Vol. 42, No. 9, Sept. 1920, pp. 122-123.

This petition is presented in accordance with the action of the Special Committee on Professional Sections taken at a meeting held on March 11, 1920, and a copy hereof has been sent to that Committee.

This petition is signed by 43 members of the Society, whose names are also on the list of the 937 members who have signified their intention of joining the Management Section when authorized.

Respectfully,

L. P. Alford
Member, Special Committee on Professional Sections
representing Management Section

* * * * * * * * * * * * *

Mr. Alford said that the purpose of the proposed section was to provide definitive organization in this field within the Society, and where possible to cooperate with other agencies having similar aims and objects, such as the Society of Industrial Engineers, The Taylor Society, the Industiral Relations Association of America, and the American Society of Safety Engineers.

* * * * * * * * * * * * *

With a knowledge of the fundamentals and practice of management that has been accumulating during the past thirty years, and with the background of the influence that the A.S.M.E. has had through the papers and reports on these matters, there is every reason to believe that the Management Section will be able to undertake the work of major importance. Once a beginning is made to set up standards that will be generally adopted, the foundation will have been laid for a great professional superstructure. It is only when knowledge becomes organized and accepted as true, that it is in a position to be utilized to the best advantage in engineering and industry, so broadly speaking, the immediate task before this Section is to so develop its outline of activity and its committee work, that it will begin to organize the knowledge of management that we already possess for the benefit of the members of A.S.M.E., as well as for the assistance of those who may be affiliated with the Section, or may be members of organizations that participate in the work. From this viewpoint, it is a program of service for the engineering profession.

To start the work of the Section in motion as rapidly as possible, an Organizing Committee was appointed, consisting of Wallace Clark, Chairman; I. A. Berndt, Carle M. Bigelow, Hugo Diemer and Sanford E. Thompson.

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CHAPTER 3

AUTHORS AND PUBLICATIONS

Landmark Authors and Publications

Observations

Chronological List of Twenty-Five Authors

Authors and Lists of Publications

"The Engineer as an Economist"

Henry R. Towne 1886

"Management's Past - A Guide to Its Future"

L. M. Gilbreth and W. J. Jaffe 1960

Ten Years' Progress in Management

Lists of Papers

1912-1919-1922-1932-1942-1952-1960-1970

LANDMARK AUTHORS AND PUBLICATIONS

Charles M. Merrick

Members of the Society with an interest in management have made notable contributions to management literature since the founding of ASME in 1880. Many of the publications have been milestones in management progress and have added to management principles and to management thought and practices during the first one hundred years of the society. Some treatises have been widely quoted, have been reprinted, and have served as textbooks in colleges and as references in management training and development programs.

It seems logical to develop the list of author-members of the society in chronological order. The list of landmark publications will not be confined to papers that have appeared in the Journal or the Transactions of ASME, since some of the literature by member-authors was published elsewhere, or as books that became permanent additions to management thought and have received widespread recognition.

Members of the society made important contributions to management literature before establishment of the Management Section in 1920 and many have added to the printed thoughts and practices in the 60 years since then. Discussion of the landmark papers and authors is built around three periods. The Initial Period 1886-1920 is prior to formation of the Management Section. A subsequent grouping conveniently falls into the twenty year period 1920-1940 as the Management Division developed and matured. Wartime activities served as a convenient period break because of the widespread demand for management knowledge to apply to the huge wartime production leading the the Current Period 1940-1980.

Initial Period
1886-1920

It has been acknowledged that the impetus for thought and contributions on management by the Society and its members was initiated by the publication in the ASME Transactions of 1886 of

TOWNE

the famous paper by Henry R. Towne, "The Engineer as an Economist" which is reproduced in this chapter. His paper "Gain-Sharing" in the Transactions 1888 was among other

GANTT

contributions. Henry L. Gantt's "Bonus System of Awarding Labor," Transactions 1901 was the first of a number of his

contributions including the books "Work, Wages and Profits," 1910 and "Organizing for Work," 1919.

TAYLOR "Shop Management" by Frederick W. Taylor which appeared in the ASME Transactions 1903 created a lot of discussion and was reprinted. Most widely known and many times reprinted was his book in 1911 "Principles of Scientific Management." Discussion of "Taylor's Principles" caused many to lose sight of F. W. Taylor's remarkable treatise "On the Art of Cutting Metals" published by ASME as his presidential address 1906.

EMERSON Less known but important was Harrington Emerson's "A Rational Basis for Wages," Transactions 1904 and his well-known book "Twelve Principles of Efficiency."

GILBRETH Prominent and widely acclaimed are the writings of the Gilbreths. Frank B. Gilbreth's books "Bricklaying System" - 1909 and "Motion Study" - 1911 were extensively read and discussed. In 1915 "Motion Study for the Crippled Soldier" was published in the Mechanical Engineering Journal and "Process Charts" appeared in the Transactions in 1921. "Fatigue Study" appeared as a book in 1919 and all of these writings stimulated interest in work study, work simplification, and the psychology

GILBRETH of human endeavor. Lillian M. Gilbreth's aid to Frank was of inestimable value. Among other publications of Dr. Lillian were "The Present State of the Art of Industrial Psychology" in the Mechanical Engineering Journal 1925 and "Women in Engineering," 1942. Some members of the society and others have been fortunate to receive an autographed copy "The Quest of the One Best Way," Dr. Lillian M. Gilbreth's sketch of the life of her husband, Frank B. Gilbreth. An important paper in the 1912 Transactions was "Present State of the Art of Industrial

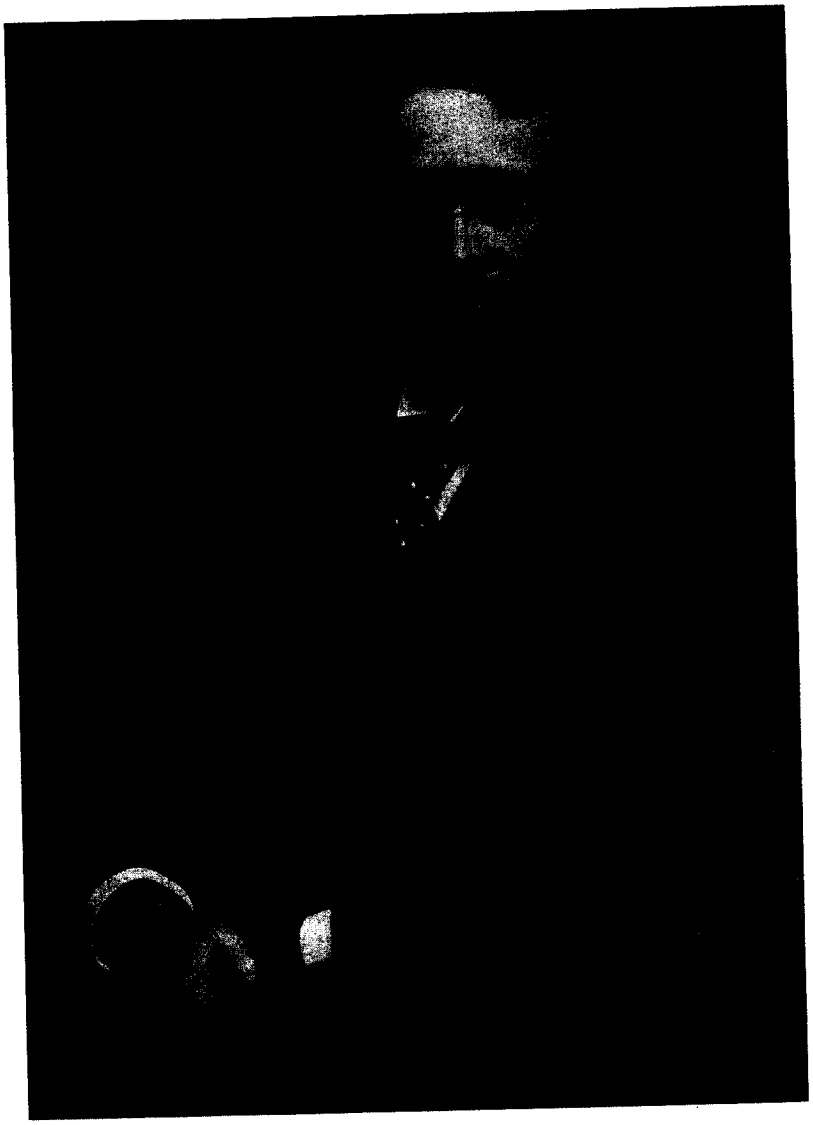
ALFORD Management" by Leon P. Alford and Henry L. Gantt. The 1926 Journal and Transactions contained "Laws of Manufacturing Management" and in 1929 "A Basis for Evaluation Manufacturing Operations" with J. E. Hannum. Widely used were L. P. Alford's handbooks. The first, 1924, was "Management Handbook," followed by a revision 1934 titled "Cost and Production Handbook," and

KIMBALL finally 1944 "Production Handbook" with J. R. Bangs. Dexter S . Kimball provided a widespread study of the broad implications of management with publication in 1913 of his book "Principles of Industrial Organization." It was used extensively in colleges and universities, and served as a reference book in management training programs in both World Wars. The remarkable revision record was 1st - 1913, 2nd - 1919, 3rd - 1925, 4th - 1933, 5th - 1939 and 6th - 1947, the last two with his son, Dexter S. Kimball, Jr. as co-author. Kimball had many other publications and served in several offices in the Society including

ROE President. "Measurement of Management" by Joseph W. Roe appeared in the Transactions 1923. Not specifically management but important contributions by Joseph W. Roe were "English and American Tool Builders" 1916, "Principles of Jig and Fixture Practice," 1928, and "Factory Equipment," 1935 jointly with

THOMPSON Charles W. Lytle. Before 1920 was Sanford E. Thompson's paper "Development of Scientific Methods of Management in a Manufacturing Plant," ASME TRANS. 1917.

KNOEPPEL The 1918 Transactions contained Charles Knoeppel's "Industrial Organization as It Affects Executives and Workers." His book "Managing for



FREDERICK WINSLOW TAYLOR

1856-1915

"The Father of Scientific Management"

Profits" with E. G. Seybold emphasized the use of the "profitgraph" and "break-even charts."

Development of the Management Section
1920-1940

Landmark publications and authors on management after the organization of the Management Division included "Design, Manufacture and Production Control of a Standard Machine" 1924

FLANDERS Transactions & Journal by Ralph E. Flanders. Other papers he published in the Mechanical Engineering Journal were 1925 "Simplified Control of Methods in Manufacturing," 1931 "Engineering Economics and Problems of Social Wellbeing" and 1932 "The Economics of Machine Production." Specific papers on management became less frequent, especially after he became the Honorable Ralph E. Flanders, Senator from Vermont. "Economic

RAYMOND Production Quantities" by Fairfield E. Raymond published in the 1927-28 Transactions created widespread interest. "Advantages Derived from Simplification of Fundamental Formulas for Economic Production Quantities" appeared in the Transactions in 1930 and the Transactions of 1932 contained "Economic Life of Equipment" by F. E. Raymond and H. O. Vorlander. "Quantities and Economy in Manufacture" became a book by F. E. Raymond in 1931 because

MAYNARD of the interest shown in the earlier papers. Harold B. Maynard was very active in the Management Division of ASME. "Time Study and Formulas for Wage Incentives" the book by S. M. Lowry, H. B. Maynard and S. J. Stegemerten was a pioneering book on the subject that was used widely in industry and in colleges and universities beginning in 1927. The book "Operation Analysis," 1939 by H. B. Maynard and J. Stegemerten had extensive use in war training programs. "Methods Time Measurement" by H. B. Maynard, G. J. Stegemerten, and J. L. Schwab in 1948 established a revised technique that has been widely and variously used. Maynard has also been Editor of well accepted handbooks; 1956 "Industrial Engineering Handbook," 1960 "Top Management Handbook," and 1967 "Handbook of Business Administration."

COES Harold V. Coes published "Some Essential Principles for Budgetary Control" in the Transactions 1927-28 and in the

LYTLE Journal in 1944 "Wartime Research and Development." Charles W. Lytle, active in the Management Division, published a book "Wage Incentive Methods" in 1929 and in 1946 published "Job Evaluation

RAUTENSTRAUCH Methods" with the 2nd edition in 1954. Walter V. Rautenstrauch contributed to the management field with his paper in the Mechanical Engineering Journal in 1932 "The Economic Characteristics of the Manufacturing Industries." His book "The Economics of Business Enterprise" provided a very extensive

MOGENSEN treatment of break-even charts. Well known was Allan Mogensen's book "Common Sense Applied to Motion and Time Study" - 1932. The Mechanical Engineering Journal of 1933 contained "Motion Study - Why has the Machine Designer Ignored It?" A book that had extensive use in colleges and universities and in training programs for industry in World War II was "Motion & Time Study,"

BARNES 1937 by Ralph M. Barnes. Second Edition 1940, Third Edition

1949, Fourth Edition 1958 and Fifth Edition 1963. In 1941 "Study of Development of Skill During Performance of Manufacturing Operations" appeared in the Transactions. This was an example of the refined study of work motions that R. M. Barnes pioneered. "Motion and Time Study Applications" in 1942 and "Work Methods Manual" in 1944 were helpful in job study and job standardization. Although he published little in the society publications, Phil Carroll was very active in the meetings and conferences of the Management Division and he was well known in the field of time standards and stopwatch time study. One important book in 1938 was "Time Study for Cost Control," Second Edition in 1943 and Third Edition in 1954. Another widely used book in 1950 was "How to Chart Time Study Data."

CARROLL

Current Period
1940-1980

LOUDEN

The major contributions of J. Keith Louden were the book in 1944 "Wage Incentives;" and in the Journal of Mechanical Engineering, "Methods Improvement from Viewpoint of Management" 1944; and in 1946, "Wage Incentives - Their Application in a Peacetime Economy." More recent books of top management interest have been published through American Management Association.

LINCOLN

"Lincoln's Incentive System," the book by James F. Lincoln in 1946 was much in demand explaining the remarkable and unique incentive system of the Lincoln Electric Company. Joseph M.

JURAN

Juran is well known especially in the field of Quality Control. The book "Management of Inspection and Quality" was published in 1945. In the Journal of Mechanical Engineering in 1949 appeared "Application of Statistics to the Science of Management" and in the 1950 Journal "The Engineer as a Manager." Most important was "Quality Control Handbook" published in 1951. The Second Edition was issued in 1962 and the Third Edition in 1974, which included F. M. Gryna and R. S. Bingham in the editorial group.

JAFFE

William J. Jaffe's book in 1957 "L. P. Alford and the Evolution of Modern Industrial Management" recognized the valuable contriubtions of Mr. Alford to management thought and to the Society. The 1961 paper jointly authored by Dr. Gilbreth and Dr. Jaffe is reprinted in this chapter. W. J. Jaffe was editor for ASME and AIIE of "Industrial Engineering Terminology" in 1972, twelve volumes of the American National Standard Z-94. As

BITTEL

an Editor in the field of management for McGraw-Hill, Lester R. Bittel has published some important books. In 1959 was "What Every Supervisor Should Know" and in 1964 "Management by Exception." Published in the Journal of Mechanical Engineering in 1974 was "From Work Measurement to Work Management - From Wage Incentives to Work Itself."

Mr. Bittel is Editor-in-Chief of "Encyclopedia of Professional Management", published in 1979.

Space limitations preclude a listing of all the writings on management contributed by mechanical engineering members of ASME. Therefore this list conforms to the suggestion to include a notable twenty-five authors with publication of landmark papers. Not all the publications of each author are included but rather those for which each is best known.

The twenty-five authors presented here is a matter of judgment but with an attempt to be objective. There are many other members of the society who made important contributions in the management field who should be included. It is hoped that those who are particularly distrubed by specific omissions will be charitable in their opinions.

The list emphasizes earlier authors and publications for which there has been more time for people to respond and to demonstrate the lasting value of the contribution. More recent publications need the test of time.

If the list were expanded other authors with important publications would be included. Chronologically the list would include William Kent, Fred Halsey, Carl Barth, Hugo Diemer, James M. Dodge and Harry Hopp. Also there would be Wallace Clark, Robert Thurston Kent, Paul E. Holden, William L. Batt, J. E. Hannum and David B. Porter. And also Edward H. Hempel, Joseph A. Piacitelli, Lyndall F. Urwick, Herbert F. Lund, Harold F. Smiddy, Alex W. Rathe, and David D. Acker.

Included here is reprint of "Management's Past - A Guide to Its Future" by Dr. Lillian M. Gilbreth and Dr. William J. Jaffe since it is an excellent treatise on the history and development of the Management Division and contains a fine bibliography. It was part of the 1960 Ten Year Progress in Management Report.

"Management Wrinkles" is a monthly column which appears in the Journal of Mechanical Engineering. Sponsored by the Management Division it began in July 1975. These short monthly articles suggest ways to make engineers more efficient managers by stimulating thought on how to manage and how to be a manager. They deal with practical applications of basic management principles and emphasize human relations. Some columns are adaptations of paper and talks by members on timely management subjects. The program is under the direction of Robert A. Vitolo who serves as editor.

This chapter closes with a list of the titles of papers and the authors of the Management Progress Reports which have become Ten Year Progress Reports. The early reports edited by Leon P. Alford were dated 1912- 1919 - 1922 and 1932. Subsequent Progress in Management Reports were dated 1942, 1952, 1960 and 1970.

The prestige of ASME has certainly been increased through the efforts of the leaders of the Management Division and by the writings of the members who have contributed so much to the advancement of management thought and practice.

LANDMARK AUTHORS AND PUBLICATIONS

Chronological List

1886	HENRY R. TOWNE
1902	HENRY L. GANTT
1903	FREDERICK W. TAYLOR
1904	HARRINGTON EMERSON
1909	FRANK B. GILBRETH
	LILLIAN M. GILBRETH
1912	LEON P. ALFORD
1913	DEXTER S. KIMBALL
1916	JOSEPH W. ROE
1917	SANFORD E. THOMPSON
1918	CHARLES E. KNOEPPEL
1924	RALPH E. FLANDERS
1927	FAIRFIELD E. RAYMOND
1927	HAROLD B. MAYNARD
1927	HAROLD V. COES
1929	CHARLES W. LYTLE
1932	WALTER RAUTENSTRAUCH
1932	ALLAN H. MOGENSEN
1937	RALPH M. BARNES
1938	PHIL CARROLL
1944	J. KEITH LOUDEN
1944	JAMES F. LINCOLN
1945	JOSEPH M. JURAN
1957	WILLIAM J. JAFFE
1959	LESTER R. BITTEL

ASME LANDMARK AUTHORS AND PUBLICATIONS

HENRY R. TOWNE

The Engineer as an Economist
by Henry R. Towne, President, Yale & Towne Mfg. Co.
Stamford, Conn.
1886 ASME TRANS., Vol. 7, pp.428-432

Gain-Sharing
by Henry R. Towne, President of the Society 1888-1889
1888-1889 ASME TRANS., Vol. 10, pp. 600-626

HENRY L. GANTT

A Bonus System of Rewarding Labor
by Henry L. Gantt, South Bethlemen, Pa. Member of the Society
Presented at the ASME New York meeting, Dec. 1901
1902 ASME TRAMS., Vol. 23, pp. 341-372

Training Workers in Habits of Industry and Cooperation
by Henry L. Gantt, Pawtaucket, R. I. Member of the Society
Presented at the New York meeting of the Society, Dec. 1908
1908 ASME TRANS., Vol. 30, pp. 1037-1063

WORK, WAGES AND PROFITS
1910 Engineering Magazine Co., 312 pages

ORGANIZING FOR WORK
1919 Harcourt, Brace & Howe, N.Y., 113 pages

FREDERICK W. TAYLOR

Shop Management
by Frederick W. Taylor, Philadelphia, Pa. Member of the Society
Presented at the Saratoga meeting, June 1903
1903 ASME TRANS., Vol. 24, pp. 1337-1450

SHOP MANAGEMENT
1911 Harper & Brothers, N.Y., 207 pages
1919 Harper & Brothers, N.Y., 207 pages

A Summary of This Notable Paper Through the Quotation of Many of Its Outstanding Statements
For representation at the Annual Meeting of ASME, Dec. 1-4, 1924
1924 Mechanical Engineering, Vol. 46, pp. 806-807
1947 Reprinted in Scientific American

THE PRINCIPLES OF SCIENTIFIC MANAGEMENT
by Frederick W. Taylor, Philadelphia, Pa.
1911 Harper & Brothers, N.Y., 144 pages
Special Edition printed February 1911 for confidential distribution among members of ASME with the compliments of the author
The 1911 Edition was rebound; Reprints occurred in 1913, 1914, 1915, 1916, 1917, 1919, 1923, 1934 and 1942

HARRINGTON EMERSON

A Rational Basis for Wages
by Harrington Emerson, New York - Member of the Society
1904 ASME TRANS., Vol. 25, pp. 868-883

THE TWELVE PRINCIPLES OF EFFICIENCY
by Harrington Emerson, New York
1912 Engineering Magazine Co., N.Y., 423 pages
1916 Fourth Edition
1917 Fifth Edition
1924 Sixth Edition

FRANK B. GILBRETH
LILLIAN M. GILBRETH

BRICKLAYING SYSTEM
by Frank B. Gilbreth
M. C. Clark Publishing Co., Chicago, 1909, 321 pages

MOTION STUDY
by Frank B. Gilbreth
D. VanNostrand Co., New York, 1911, 116 pages

Motion Study for the Crippled Soldier
by Frank B. Gilbreth, Providence, R.I., Member of the Society
Presented at New York Local Section, Oct. 12, 1915
1915 Mechanical Engineering, Vol. 37, pp. 669-675

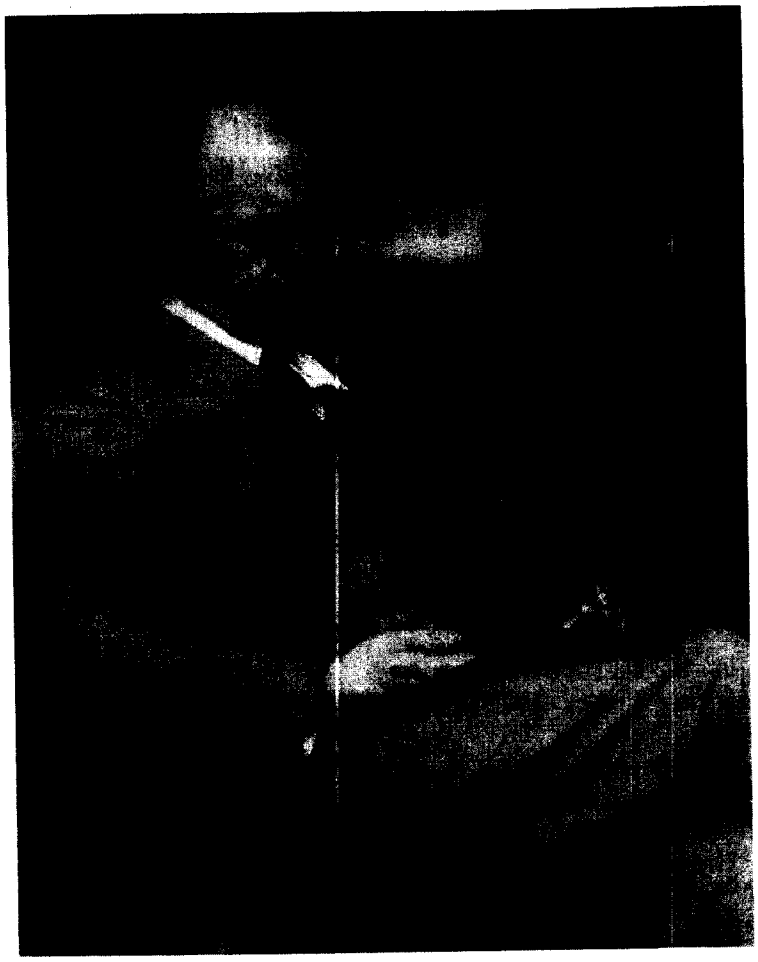
FATIGUE STUDY
by F. B. and L. M. Gilbreth
Macmillan Co., New York, 1919, 175 pages

Process Charts
by Frank B. Gilbreth, Montclair, N.J., Member of the Society,
- and Lillian M. Gilbreth - non-member
Presented at the Annual Meeting - Dec. 1921
1921 ASME TRANS., Vol. 43, pp. 1029-1050

THE QUEST OF THE ONE BEST WAY
by Lillian Moller Gilbreth
A Sketch of the Life of Frank Bunker Gilbreth
1925, Society of Women Engineers, N.Y., 64 pages

The Present State of the Art of Industrial Psychology
by Lillian M. Gilbreth, Montclair, N.J.
Presented at the ASME Annual Meeting, Dec. 1925
Joint meeting with the Taylor Society
1925 Mechanical Engineering, Vol. 47, pp. 1039-1042

Women in Engineering
by Lillian M. Gilbreth, President, Gilbreth, Inc., Montclair, N.J.
Presented at ASME Fall Meeting, Rochester, N.Y., Oct. 12-14, 1942
1942 Mechanical Engineering, Vol. 64, pp. 856-857 and 859



FRANK BUNKER GILBRETH

1868-1924

LILLIAN MOLLER GILBRETH
1878-1972

The life of the Gilbreths was entertainingly portrayed in the 1950 movie Cheaper by the Dozen starring Clifton Webb and Myrna Loy. Amusing incidents were shown which demonstrated applications of motion study and work simplification not only at the work place but also at home and in the hospital.

Managements Past - A Guide to Its Future
by Lillian M. Gilbreth, Honorary Member - ASME and
W. J. Jaffe, Professor, Dept. of Industrial and Management Engineering, Newark College of Engineering
Presented at Annual Meeting, Dec. 1960
Part of 10 Year Progress in Management Report and Special 50 Year Anniversary Book 1910-1960
1961 ASME TRANS., Vol. 83, pp. 237-248

THE FRANK GILBRETH CENTENNIAL
"Frank B. Gilbreth 1868-1924 The Centennial of a Contemporary"
1969 The American Society of Mechanical Engineers, 116 pages

LEON P. ALFORD

Present State of the Art of Industrial Management
Edited by L. P. Alford and Presented at Annual Meeting of ASME
1912 ASME TRANS., Vol. 34, pp. 1131-1229

The Status of Industrial Relations
by L. P. Alford, New York, Member of the Society
Presented at Spring Meeting ASME, Detroit, June 1919
1919 ASME TRANS., Vol. 41, pp. 163-208

Ten Years' Progress in Management
authored by L. P. Alford
Presented at Annual Meeting of ASME, Dec. 1922
1923 Mechanical Engineering, Vol. 44, pp. 1262-1296

Ten Years' Progress in Management - 1923-1932
Author - L. P. Alford, Vice President - Ronald Press, Member ASME
Presented at Annual Meeting of ASME, Dec. 1932
1933 ASME TRANS., Vol. 55, MAN 55-2, pp. 7-21

Laws of Manufacturing Management
by Leon P. Alford, Vice President - Ronald Press, N.Y., Member of the Society
Presented at the Annual Meeting of ASME, Dec. 1926
1926 ASME TRANS., Vol. 48, pp. 393-438

LAWS OF MANAGEMENT APPLIED TO MANUFACTURING
by Leon P. Alford
1928 Ronald Press, N.Y., 266 pages

A Basis for Evaluating Manufacturing Operations
by Leon P. Alford, Vice President - Ronald Press, Member ASME, and J. E. Hannum, Editor, Engineering Index Service - Assoc. Member ASME
1929 ASME TRANS., Vol. 51, MAN 51-2, pp. 9-24

LEON P. ALFORD (Continued)

Applications of the KMH Method of Analyzing Manufacturing Operations
by L. P. Alford, Vice President - Ronald Press, Member ASME and J. E. Hannum, Editor, Engineering Service Index - Assoc. Member ASME
1933 ASME TRANS., Vol. 55, MAN 55-7, pp. 59-72

PRINCIPLES OF INDUSTRIAL MANAGEMENT FOR ENGINEERS
by L. P. Alford
1940 Ronald Press, N.Y., 331 pages

MANAGEMENTS HANDBOOK
by L. P. Alford
1924 Ronald Press, N.Y., 1607 pages

COST AND PRODUCTION HANDBOOK
by L. P. Alford
1934 Ronald Press, N.Y., 1544 pages

PRODUCTION HANDBOOK
L. P. Alford and J. R. Bangs, Editors
1944 Ronald Press, N.Y., 1676 pages

DEXTER S. KIMBALL

PRINCIPLES OF INDUSTRIAL ORGANIZATION
By Dexter S. Kimball, Professor of Machine Design, Cornell University
1913 McGraw-Hill Book Co., N.Y., 272 pages
1919 Second Edition, 325 pages
1925 Third Edition, 436 pages
1933 Fourth Edition, 460 pages

PRINCIPLES OF INDUSTRIAL ORGANIZATION
by Dexter S. Kimball, A.B., M.E., Dr. Sc., Dr. Eng., LLD., Professor Emeritus of Industrial Engineering and Dean Emeritus of the College of Engineering, Cornell University, and Dexter S. Kimball, Jr., M.E., MME., Technical Assistant to Production Manager, Agfa-Ansco Corp.
1939 Fifth Edition, 478 paes

PRINCIPLES OF INDUSTRIAL ORGANIZATION
by Dexter S. Kimball and Dexter S. Kimball, Jr., Factory Manager, Bendix Westinghouse Automatic Brakes Co.
1947 Sixth Edition, 531 pages

Profits and Panaceas
by Dexter S. Kimball, Dean, College of Engineering, Cornell University
Seventh Henry Robison Towne Lecture at Annual Meeting, Dec. 1934
1935 Mechanical Engineering, Vol. 57, Jan. 1955, pp. 5-8

JOSEPH W. ROE

ENGLISH AND AMERICAN TOOL BUILDERS
by Joseph Wickham Roe
1916 Yale University Press, 315 pages

JOSEPH W. ROE (Continued)

Measurement of Management
by Joseph W. Roe, Professor of Industrial Engineering, New York University
Member of the Society
1923 ASME TRANS., Vol. 45, pp. 825-840

Principles of Jig and Fixture Practice
by Joseph W. Roe, Professor of Industrial Engineering, New York University
1929 ASME TRANS., Vol. 51, MSP. 51-111, pp. 79-95
1941 Mechanical Engineering, Vol. 63, Feb., pp. 117-125
Revised and Republished

FACTORY EQUIPMENT
by Joseph W. Roe and Charles W. Lytle
1935 International Textbook Co., Scranton, Pa., 517 pages

Humanistic Subjects in the Engineering Training
by Joseph W. Roe, New York University, N.Y.
1937 Mechanical Engineering, Vol. 59, June, p. 434

SANFORD E. THOMPSON

Development of Scientific Methods of Management in a Manufacturing Plant
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Henry P. Dutton, Dean - Evening School - Armour Institute of Technology;
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PHIL CARROLL

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JAMES F. LINCOLN

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WILLIAM J. JAFFE (Continued)

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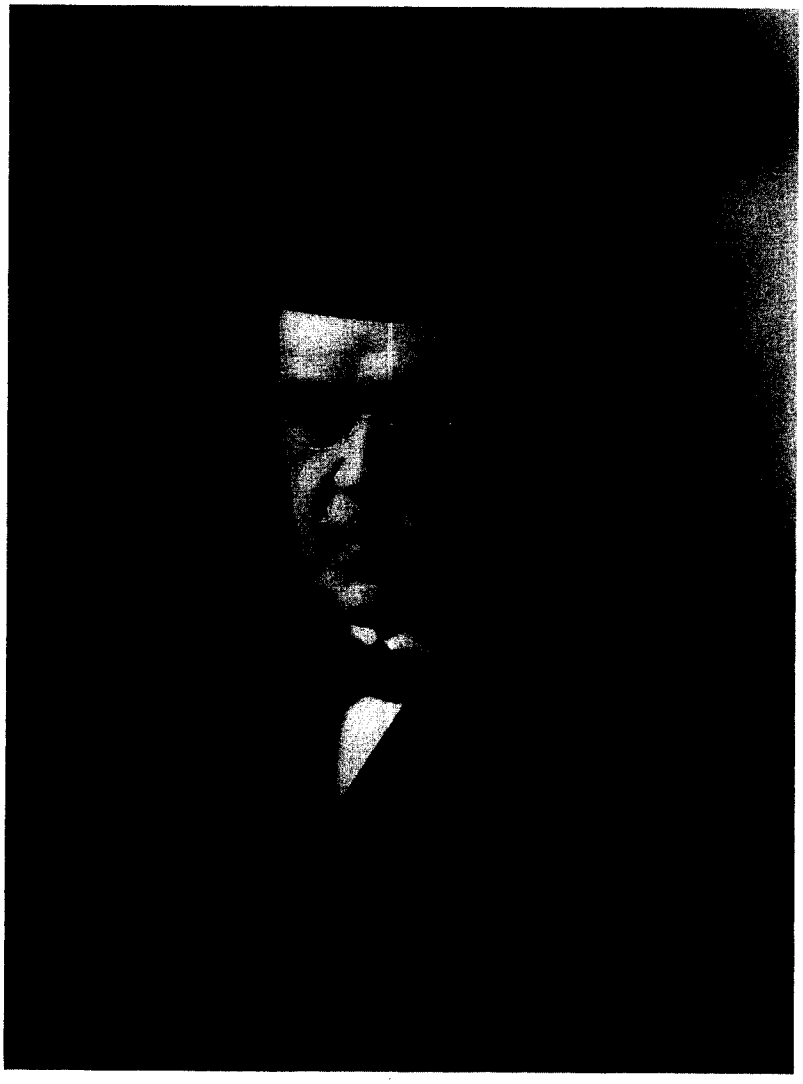
HENRY R. TOWNE

*The Engineer as an Economist**

1886

Management Science—like all sciences—attempts to organize the existing knowledge of a particular subject. Seventy years ago—1886—a perceptive engineer, Henry Towne, discerned the need for the statement and dissemination of professional managerial concepts. For more efficient operation of a business and more profitable returns from the time, work and money invested in it, Towne advocated engineers developing broader knowledge and more profound insights into the nature of the business.

* Towne, Henry R., "The Engineer as an Economist," American Society of Mechanical Engineers, *Transactions*, No. 207, 1886.



HENRY ROBINSON TOWNE

1844-1924

THE ENGINEER AS AN ECONOMIST

Henry R. Towne

THE MONOGRAM OF OUR NATIONAL INITIALS, which is the symbol for our monetary unit, the dollar, is almost as frequently conjoined to the figures of an engineer's calculations as are the symbols indicating feet, minutes, pounds, or gallons. The final issue of his work, in probably a majority of cases, resolves itself into a question of dollars and cents, of relative or absolute values. This statement, while true in regard to the work of all engineers, applies particularly to that of the mechanical engineer, for the reason that his functions, more frequently than in the case of others, include the executive duties of organizing and superintending the operations of industrial establishments, and of directing the labor of the artisans whose organized efforts yield the fruition of his work.

To insure the best results, the organization of productive labor must be directed and controlled by persons having not only good executive ability, and possessing the practical familiarity of a mechanic or engineer with the goods produced and the processes employed, but having also, and equally, a practical knowledge of how to observe, record, analyze and compare essential facts in relation to wages, supplies, expense accounts, and all else that enters into or affects the economy of production and the cost of the product. There are many good mechanical engineers;—there are also many good "businessmen";—but the two are rarely combined in one person. But this combination of qualities, together with at least some skill as an accountant, either in one person or more, is essential to the successful management of industrial works, and has its highest effectiveness if united in one person, who is thus qualified to supervise, either personally or through assistants, the operations of all departments of a business, and to subordinate each to the harmonious development of the whole.

Engineering has long been conceded a place as one of the modern arts, and has become a well-defined science, with a large and growing literature of its own, and of late years has subdivided itself into numerous and distinct divisions, one of which is that of mechanical engineering. It will probably not be disputed that the matter of shop management is of equal importance with that of engineering, as affecting the successful conduct of most, if not all, of our great industrial establishments, and that the *management of works* has become a matter of such great and far-reaching importance as perhaps to justify its classification also as one of the modern arts. The

one is a well-defined science, with a distinct literature, with numerous journals and with many associations for the interchange of experience; the other is unorganized, is almost without literature, has no organ or medium for the interchange of experience, and is without association or organization of any kind. A vast amount of accumulated experience in the art of workshop management already exists, but there is no record of it available to the world in general, and each old enterprise is managed more or less in its own way, receiving little benefit from the parallel experience of other similar enterprises, and imparting as little of its own to them; while each new enterprise, starting *de novo* and with much labor, and usually at much cost for experience, gradually develops a more or less perfect system of its own, according to the ability of its managers, receiving little benefit or aid from all that may have been done previously by others in precisely the same field of work.

Surely this condition of things is wrong and should be remedied. But the remedy must not be looked for from those who are "businessmen" or clerks and accountants only; it should come from those whose training and experience has given them an understanding of both sides (*viz.*: the mechanical and the clerical) of the important questions involved. It should originate, therefore, from those who are also engineers, and, for the reasons above indicated, particularly from mechanical engineers. Granting this, why should it not originate from, and be promoted by The American Society of Mechanical Engineers?

To consider this proposition more definitely, let us state the work which requires to be done. The questions to be considered, and which need recording and publication as conducing to discussion and the dissemination of useful knowledge in this specialty, group themselves under two principal heads, namely: SHOP MANAGEMENT, and SHOP ACCOUNTING. A third head may be named which is subordinate to, and partly included in each of these, namely: SHOP FORMS AND BLANKS. Under the head of Shop Management fall the questions of organization, responsibility, reports, systems of contract and piece work, and all that relates to the executive management of works, mills and factories. Under the head of Shop Accounting fall the questions of time and wages systems, determination of costs, whether by piece- or day-work, the distribution of the various expense accounts, the ascertainment of profits, methods of book-keeping, and all that enters into the system of accounts which relates to the manufacturing departments of a business, and to the determination and record of its results.

There already exists an enormous fund of information relating to such matters, based upon actual and most extensive experience. What is now needed is a medium for the interchange of this experience among those whom it interests and concerns. Probably no better way for this exists than that obtaining in other instances, namely, by the publication of papers and reports, and by meetings for the discussion of papers and interchange of opinions.

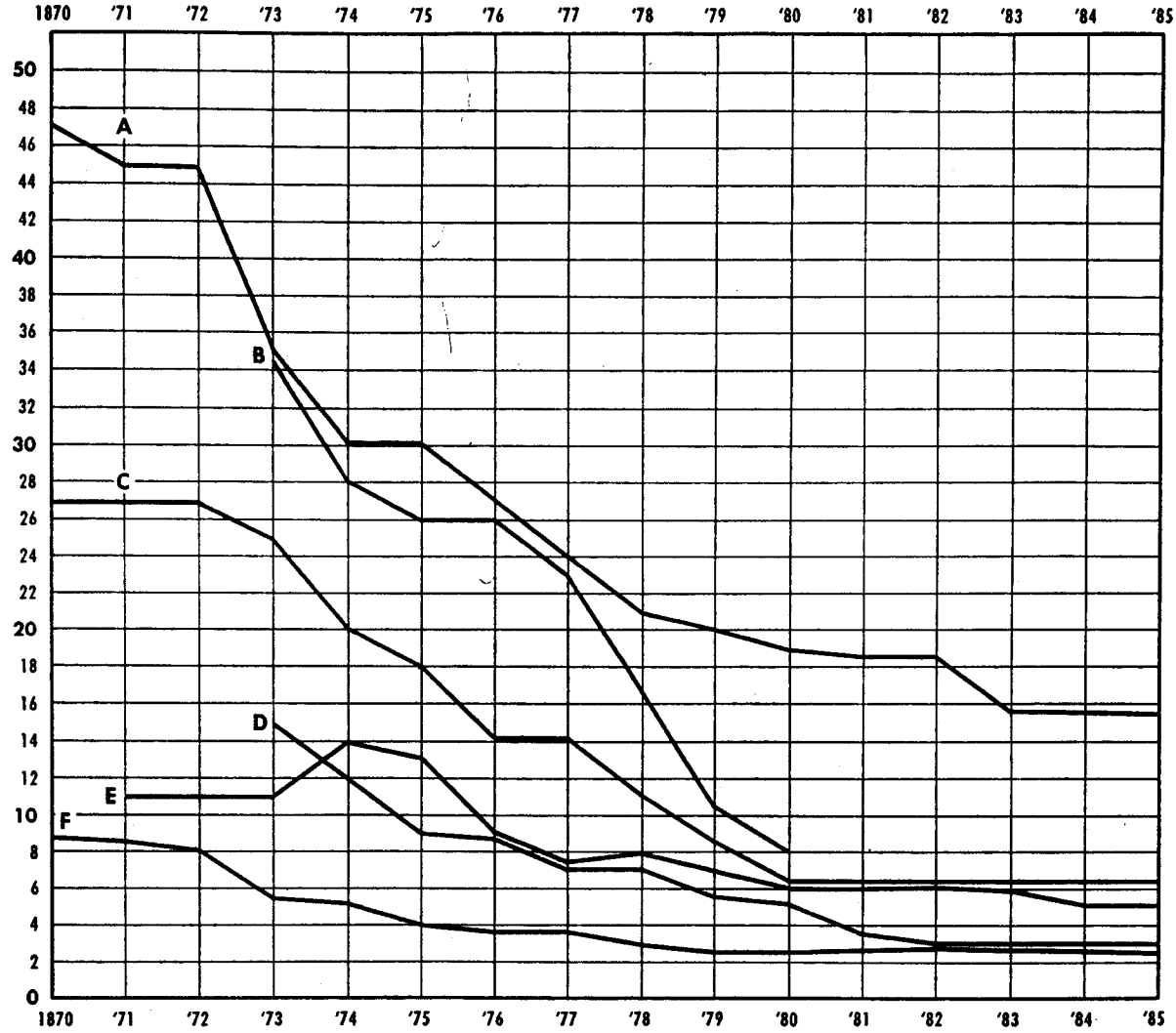
The subject thus outlined, however distinct and apart from the primary functions of this Society, is, nevertheless, germane to the interests of most, if not all, of its

members. Conceding this, why should not the functions of the Society be so enlarged as to embrace this new field of usefulness? This work, if undertaken, may be kept separate and distinct from the present work of the Society by organizing a new "section" (which might be designated the "Economic Section"), the scope of which would embrace all papers and discussions relating to the topics herein referred to. The meetings of this section could be held either separately from, or immediately following the regular meetings of the Society, and its papers could appear as a supplement to the regular *Transactions*. In this way all interference would be avoided with the primary and chief business of the Society, and the attendance at the meetings of the new section would naturally resolve itself into such portion of the membership as is interested in the objects for which it would be organized.

As a single illustration of the class of subjects to be covered by the discussions and papers of the proposed new section, and of the benefit to be derived therefrom, there may be cited the case of a manufacturing establishment in which there is now in use, in connection with the manufacturing accounts and exclusive of the ordinary commercial accounts, some twenty various forms of special record and account books, and more than one hundred printed forms and blanks. The primary object to which all of these contribute is the systematic recording of the operations of the different departments of the works, and the computation therefrom of such statistical information as is essential to the efficient management of the business, and especially to increased economy of production. All of these special books and forms have been the outgrowth of experience extending over many years, and represent a large amount of thoughtful planning and intelligent effort at constant development and improvement. The methods thus arrived at would undoubtedly be of great value to others engaged in similar operations, and particularly to persons engaged in organizing and starting new enterprises. It is probable that much, if not all, of the information and experience referred to would be willingly made public through such a channel as is herein suggested, particularly if such action on the part of one firm or corporation would be responded to in like manner by others, so that each member could reasonably expect to receive some equivalent for his contributions by the benefit which he would derive from the experience of others.

In the case of the establishment above referred to, a special system of contract and piece-work has been in operation for some fifteen years, the results from which, in reducing the labor cost on certain products without encroaching upon the earnings of the men engaged, have been quite striking. A few of these results, selected at random, are indicated by the accompanying diagram on page 5, the diagonal lines on which represent the fluctuations in the labor cost of certain special products during the time covered by the table, the vertical scale representing values.

Undoubtedly a portion of the reductions thus indicated resulted from improved appliances, larger product, and increased experience, but after making due allowance for all of these, there remains a large portion of the reduction which, to the writer's knowledge, is fairly attributable to the operations of the peculiar piece-work system



adopted. The details and operations of this system would probably be placed before the Society, in due time, through the channel of the proposed new section, should the latter take definite form. Other, and probably much more valuable, information and experience relating to systems of contract and piece-work would doubtless be contributed by other members, and in the aggregate a great amount of information of a most valuable character would thus be made available to the whole membership of the Society.

In conclusion, it is suggested that if the plan herein proposed commends itself favorably to the members present at the meeting at which it is presented, the subject had best be referred to a special committee, by whom it can be carefully considered, and by whom, if it seems expedient to proceed further, the whole matter can be matured and formulated in an orderly manner, and thus be so presented at a future meeting as to enable the Society then intelligently to act upon the question, and to decide whether or not to adopt the recommendations made by such committee.

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President, Gilbreth Inc., Montclair, N. J. Honorary Mem. ASME

W. J. JAFFE
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Management's Past—A Guide to Its Future[1]

Of What Use Is History

History serves many purposes—some more practical than others. By seizing an example from the past, it may be possible to solve a problem in the present and avoid another in the future. Truly, the unyielding past is all that we really know about the changing present.

History is more than an integral part of the educated person's background; it is the *sine qua non* of mature thinking. It is only by a study of history that the work of those who came before us—and, eventually, the work that we ourselves do—can be examined objectively. Under history's microscope, the "politician" becomes the "statesman" only if he is deserving of that honor, and, in some cases, the "captain of industry" may very well be shown as a figment of the imagination of a successful publicity campaign. History does more than record and evaluate what our predecessors did and thought. It makes us know the complexities of the accomplishments we so often take for granted. Most important, it often furnishes the spark to light our own paths.

We cannot overlook history any more than did the Babylonian "accountant" who kept his records in cuneiform style with a reed and some soft clay or any more than does the present practitioner with punched tape and electronic devices.

Management's Beginnings

Reference is often made to Collier's "Outline of General History," published in Scotland almost a century ago; particularly to the title of its first chapter, "Adam to Babel." Unfortunately, management does not have so definite a beginning. Hopefully, its progress may be said to be a little beyond such utter confusion.

When and where *did* management begin? Using the Bible as a reference source, we can find the Principle of Exceptions expounded by Jethro to his son-in-law Moses (Exodus 18: 12–26), and we can detect aspects of forecasting, planning, and personnel selection in Joseph's interpretation of Pharaoh's dream (Genesis 46: 15–43). Alford, ASME's great recorder and interpreter of management history, found minimum wage rates among the Babylonians (1956–1916 BC), division of labor among the Chinese (1644 BC), and the transfer of skill in the writings of Aristotle. Coming to more modern times, The British Management Review shows the Principle of Overhead in use in 1591, and Urwick's "The Golden Book of Management" lists an amazing array of management techniques (market research, planned site location, planned machine layout, executive development, and so on) that were to be found, before 1800, in the Soho Foundry of Boulton, Watt & Co., where they were instituted by the sons of the steam-engine pioneers. Then, too, in England, during the earlier years of the 19th Century, there were Robert Owen and his New Lanark accomplishments, and Babbage [1][2] and his studies on "The Economy of Machinery and Manufacturers" (1832). In France, for example, there were Perronet (the pin manufacturer who was well acquainted with division of labor), Coulomb (the physicist who was not unacquainted with the stop watch), Saint Simon (for whom "France was to be turned into a factory and the nation organized in the mode of a vast workshop"). And there were others.

Where, then, can we start? No matter where we attempt to begin, it will be more than likely that an earlier example can be found. Oliver Sheldon [2], tracing "The Development of Scientific Management in England" ascribed to:

"Each generation . . . its scribe who thought scientifically about the ploughing of the soil, the throwing of the shuttle . . . Then came the day when the ploughmen, the weaver . . . discarded the old tools of their crafts, and strode amazedly into the towns where the new factories reared their ugly forms . . . So finally, the torch was handed on from one generation to another, till, amid the immense structure of American industry it passed to the hand of Frederick Taylor."

Yet Taylor, himself, claimed no monopolistic right to or authorship of management, whether it was "scientific management," or any other kind. Before the Special Committee of the House of Representatives to Investigate the Taylor and Other Systems of Shop Management, during the session on January 25, 1912, Taylor [3] said:

"I have had a very great deal to do with the development of the system of management which has come to be called by certain people the "Taylor system," but I am only one of the many men who have been instrumental in the development of this system."

And, at the evening session, five days later, he said:

"My gracious I do not believe that there is any man connected with the scientific management who has the slightest pride of authorship in connection with it. Every one of us realizes that this has been the work of 100 men or more, and that the work which any one of us may have done is a small fraction of the whole. This is a matter of large proportions, and no man counts for much of anything in it. It is a matter of evolution, of many men, each doing his proper share . . ."

Despite the futility of any search for a beginning point or an author, one fact seems fairly evident: Those practices which we now identify under the "classic" management category have been with us for a long time.

What Is Management?

If it is not easy to find universal agreement as to its genesis,

[1] Part of the report, "Ten Years Progress in Management, 1950–1960."

Contributed by the Management Division for presentation at the Winter-Annual Meeting, New York, N. Y., November 27–December 2, 1960, of The American Society of Mechanical Engineers. Manuscript received at ASME Headquarters, July 26, 1960. Paper No. 60—WA-67.

[2] Numbers in brackets designate References at end of paper.

one will not be very surprised to discover a similar lack of agreement as to the term "management" itself as well as to what it means.

Among the terms that have been used and, as a matter of fact, are often still used are: management, scientific management, productivity, rationalization, administration, organization, *organization scientifique, Wirtschaftlichkeit, Betriebslehre, Wissentschaftliche (or Wirtschaftliche) Betriebsfuhrung, organizacao racional de trabalho, racionalizacion del trabajo, organizzazione del lavore, rationel* (1) *organisation, rasjonell organisasjon,* and (alas!) efficiency. Although a goodly number will take issue with the last named term, some will take issue with the others, too.

Thus, on the basis of Sheldon's [4] definition, ". . . rationalisation is that form of industrial combination which is undertaken with the object of widening the scope for the application of scientific management to the extent of whole industries . . .," Person insisted: "Starting from the opposite poles scientific management and rationalization are apparently moving each toward the other."

Again, when Fayol's [6] great work, "Administration Industrielle et Generale," was first translated into English, in 1929, by Conbrough, he translated "administration" as "administration." However, in the Storr's translation twenty years later, it became "management," an action which Urwick [7], in his Foreword, regretted but which, he agreed, was accurate, since "the activity which Fayol discusses in this book is unquestionably the activity popularly described in the English speaking countries as *management.*" Unfortunately, the word, "management," has taken on many meanings in popular usage, and the dictionaries include such terms as "cajolery" and "trickery" among them. Urwick very correctly objects to the many ways in which it is used even by the practitioners; as a noun, it identifies a mental attitude, an activity, a body of knowledge, a group of persons. Its use as an adjective fares no better, and here it meets head-on the term "managerial." The French, incidentally, had their own difficulties, and when Le Chatelier translated the writings of Taylor, there being no exact equivalent of our "management," he used *"l'organisation scientifique du travail,"* a term which, in France, sounded very much like that used for the labor organization. Perhaps the time *is* ripe for a glossary standardizing management terminology.

Certainly something should be done to consolidate the definitions of Sheldon [8], Schulze [9], and others, and to collect and standardize the many more terms that have come into the field during the passing years. In this regard, it may well be the engineers to whom the task might properly fall. And, of all the engineers, it may well be the Management Division of ASME where the work may be accomplished. Its pioneering work on an *Industrial Engineering Terminology* may well be an indication of its potentiality.

As a matter of fact, as early as 1921, the Management Division asserted:

"Management is the art and science of preparing, organizing, and directing human effort applied to control the forces and to utilize the materials of nature for the benefit of man."

Perhaps the time has come for a re-examination of even this definition, now that almost half a century has passed and, more important, for the establishment of some stabilizing force for the adoption and maintenance of terms which will be understood and accepted by all. Definitions in human thought are not unchanging, and the proper maintenance of standards is one of the many tasks that the engineer ought to do well.

ASME and Management

ASME's interest in management came very early, for its first president, Thurston [10], in his Inaugural Address of 1880 declared:

"The Society will have much work to do as a union of citizens having important interests confided to them, and its promise will lie no less in the field of social economy than in that which has reference only to the individual interests of its members."

More specifically, however, in 1886, Towne [11] delivered his paper, "The Engineer as Economist," and he said:

". . . It will probably not be disputed that the matter of shop management is of equal importance with that of engineering, as affecting the successful conduct of most, if not all, our great industrial establishments, and that the *management of works* has become a matter of such great and far-reaching importance as perhaps to justify its classification as one of the modern arts . . . A vast amount of accumulated experience in the art of workshop management already exists, but there is no record of it being available to the world in general, and each old enterprise is managed more or less in its own way, receiving little benefit from the parallel experience of other similar enterprises, and imparting as little of its own to them . . .

"Surely this condition of things is wrong and should be remedied. But the remedy must not be looked for from those who are businessmen or clerks or accountants only; it should come from those whose training and experience has given them an understanding of both sides (viz., the mechanical and the clerical) of the important questions involved. It should originate, therefore, from those who are also engineers, and for the reasons above indicated, particularly from mechanical engineers. Granting this, why should it not originate from, and be promoted by, THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS?"

In this manner, then, ASME was committed to a concern for management problems. Little wonder then that, by such a commitment, Person [5] insisted that "A convenient milestone to mark the beginning of this . . . (management) . . . movement was Henry R. Towne's classic paper, 'The Engineer as Economist.'" Thus, ASME became the early rostrum of management and, by 1920, officially adopted a related recommendation:

". . . that Industrial Engineering is a major subject for consideration by the Society and shall be placed on par with all major technical subjects."

Taylor and the 1912 Report

For almost the score of years that followed Towne's paper, numerous discussions on management practices took place under ASME auspices. Wage plans, mnemonic systems, tool-room organization, inventory problems, and so on, were considered. Generally they were treated not as an integrated problem but rather as several isolated problems. Among those who were impatient with this approach was Frederick W. Taylor [12], the man who eventually became known as the "father of scientific management."

Convinced that management ought to be treated as an integrated whole, Taylor was anxious for the answer to what he considered the really basic problem: What is a fair day's work? And he introduced this problem under the guise of "A piece-rate system" in 1895, even though few were ready for his over-all treatment. He tried again in 1903 with his "shop management," and again he was not too successful. Despite the universal acclaim of his ASME Presidential Address "On the Art of Cutting Metals," he still felt that his fair day's work question needed an audience. And, when Taylor brought his views together in "The Principles of Scientific Management" and found this paper buried in an ASME paper committee, he impatiently published an edition himself and distributed a copy to each member of the Society.

Taylor's views came from the very realistic environment of his shop experience. After preparing for Harvard at Phillips-Exeter, he abandoned a proposed study of law because of a vision impairment, and took on an apprenticeship as a machinist

and pattern maker and, then, after the Panic of the 1870's he went to work at Midvale as a laborer and eventually as clerk, machinist, gang boss, and chief engineer. Here he made an outstanding discovery; the plant was being run by the men and not by the owners and managers. Having been on both "sides of the fence," he was convinced that output was "limited . . . to about . . . one-third of what we could very well have done," and he felt that this was deliberate as well as natural. In this "piece-work fight that lasted for nearly three years," he noted in his "Testimony" [3], he was well aware of the ". . . worry, meanness, and contemptibleness of the whole damn thing.

"This life was a miserable one and I made up my mind either to get out of the business or to find some remedy for this unbearable condition."

He did not condemn the attitude, for he asserted it was due to many things—industry's mechanization, inability of management's planning and supervision to keep pace with specialization, unemployment of the depression, improper cutting of rates by some managements, and mutual distrust. Hence:

"When I came to think over the whole matter I realized that the thing which we on management's side lacked more than anything else was exact knowledge as to how long it ought to take the worker to do his job."

Although Taylor's best presentation of his own views is in his "Testimony" [3] in 1912 before the congressional investigating committee, Person, in a publication [5] for the Taylor Society, assembled some statements made by Taylor in three of his written presentations "A Piece Rate System. A Step Toward Partial Solution of the Labor Problem" [13], "Shop Management" [14], and "Principles of Scientific Management" [15], as showing Taylor's "growth in breadth of vision and capacity for generalization as he came to be the central figure in the management movement."

In "A Piece Rate System" (1895) . . . a summary of conclusions, of which the most important are the following:

1 Wages should be paid to men, not to positions.

2 Rate-fixing should be based on accurate knowledge, not guess.

3 Rates based on exact observations are more uniform and just.

4 With rates so established, "manufactures are produced cheaper . . . while at the same time the workmen earn higher wages . . ."

5 Wages based on exact knowledge develop better workmen . . . remove motives for soldiering, promote a friendly feeling between the men and their employers . . .

In "Shop Management" (1903) . . . the first object in management is to unite high wages and low labor cost . . . this object can be most easily attained by . . .

(*a*) A large daily task . . .
(*b*) Standard conditions . . .
(*c*) High pay for success . . .
(*d*) Loss in case of failure . . .

In "The Principles of Scientific Management" (1911) . . . Scientific management, in essence, consists of a philosophy, which results . . . in a combination of the four great underlying principles of management:

First. The development of true science.
Second. The scientific selection of workmen.
Third. Their scientific education and development.
Fourth. Intimate friendly co-operation between the management and the man.

No account of the development of management—no matter how brief—can neglect mention of Taylor, *the man*. Thus, although Taylor died in 1915, as recently as 1958, Urwick [16] felt it necessary to challenge some statements appearing in a recent book [17] on scientific management and the unions. To many of Taylor's disciples—Barth (Taylor's mathematician and "systems man"), Diemer (Taylor's choice to head, at Pennsylvania State College, the country's first department teaching "mechanical engineering from the standpoint of production rather than machine performance"), Babcock (who introduced the Taylor system to the automotive industry), Metcalfe (whom Taylor praised for "the card system of shop returns" at Frankford Arsenal), Sanford Thompson (time-study developer and designer of the "watch book"), Hathaway (Taylor's "best all-round man in the movement"), Cooke (Taylor's staunch advocate)—there was little room for disagreement. On the other hand, other contemporaries—Gantt (the "humanitarian" of the movement), Gilbreth (the observer of the worker from both the outside and the inside), Hoxie [18] (who tried to reconcile the conflict between labor and some scientific management advocates, who succeeded in getting AFL and Emerson approval, but who, on Taylor's opposition, added an appendix to his book incorporating Taylor's views)—found earnest differences in methods and concept.

Although some of those who worked with and knew Taylor personally might question his tact and diplomacy, none would deny his earnestness, his sincerity, and his dedication to his high-principled goal. Unfortunately, there were, however, others, who, through either ignorance of his purpose or misunderstanding of some of his methods or even overzealousness on their own part, brought serious discredit to the movement. The "efficiency experts"—the opportunists whom the ASME 1912 Report took to task—performed serious damage to the movement about which the lay public had only superficial knowledge. The quiet dignity of the Conference at the Tuck School at Dartmouth [19] in 1911 plus the brilliant analysis by Brandeis of scientific management (even the coining of the name came at this time) plus Emerson's testimony that an "economy of . . . not less than $1,000,000 a day" could be achieved by the railroads if they were to adopt a "proper efficiency system or scientific management" brought much favor to the movement. On the other hand, other things had an opposite effect: Labor's opposition, the strike at the Watertown Arsenal, and, of course, the aggressive "efficiency experts."

It was in this atmosphere—which also included Taylor's withdrawal of his paper on "The Principles of Scientific Management"—that an ASME Committee, with Dodge as chairman and Alford as secretary, was appointed to report on the "Status of Management."

Present State of the Art of Industrial Management—1912

The task of preparing this Report was not easy. For example, information was most difficult to obtain, since not many executives for whom Taylor had installed his system were willing to give much, if any, help. As Copley [12] asserted, these people had little "missionary zeal" for Taylor and his system, and all that they were concerned with was "confined to the benefits they could derive from it."

The Report emphasized the growing interest in Management of business executives and employers, the opposition of labor, the increasing governmental concern (e.g., congressional investigation of management systems in federal arsenals and shops, civilian investigation of management in the Navy yards, the prohibition of time-study and premium payment plans in government work), the growing management literature, the unfortunate rise of the "efficiency experts"—but, most of all, the Report stressed the fact that management principles could be applied to unskilled work (Taylor's shoveling experiments) as well as to ancient trades (Gilbreth's bricklaying studies).

The Report gave the background of the development of man-

agement—the increase in labor-saving machinery, the basic aspects of the division of labor principles as presented by Adam Smith and other British economists, the contention of Babbage that the manufacturer could consequently obtain the "precise quantity" of skill needed, the transference of skill from the inventor to the machine, the development of analytical methods and operations (e.g., Smith's listing of manufacturing operations, Babbage's tables of operations, operator cost, and tool and material cost, Coulomb's time-study work), and the increased interest in the worker (as exemplified by incentive wage plans, accident prevention, and working-conditions improvement).

Of great importance, too, was the increase of questioning, investigation, and a search for facts. Motion and time study executed such investigations, planning departments applied such such facts, and wage systems stimulated co-operation. Yet, this should not be interpreted as meaning that, at the time, there existed a "science rather than an art of management," and the Report indicated that "labor-saving management" (rather than "scientific management") might be a more meaningful term to cover the "new" fundamental element, viz.:

"The mental attitude that consciously applies to the transference of skill to all activities of industry."

This transference—and it was meant to be applicable to *all* activities and not limited to transference of skill to a machine—was put into effect by "three regulative principles," first stressed by Church and Alford in a previous publication [20]:

"The systematic use of experience.
The economic control of effort.
The promotion of personal effectiveness."

These were fundamental, for inherent in them were the setting up and use of records and standards, the application of skill by executives, and the understanding of human workers.

Although the 1912 Report has since come to be accepted as one of the milestones in management literature, it was bound to beget, at the time, some differences of opinion. Some of these were valid and important, some valid and of questionable importance, and some quite invalid and unimportant.

Consider, for example, the "Minority Report," which was written and signed by Voughan, one of the eight members of the Committee. Gantt, in discussing it, said:

"... a careful reading seems to indicate that the writer is fundamentally in accord with the majority, except that he wishes to take a shot at the statement made before the Interstate Commerce Commission that the railroads were losing a million dollars a day."

Again, C. B. Thompson felt that the Report did not take a vigorous stand against labor's organized opposition. Although Taylor's discussion, for the most part, consisted of a further exposition of scientific management, he confined his criticism to a feeling that the Report's reference to time studies, as presently used, he insisted, were really "begun in the machine shop of Midvale Steel ..."

In general, however, there seemed to be general agreement—among such leaders as Taylor, Gantt, Gilbreth, Church, Hathaway, and others—that the Report had essentially presented the current status of management and the fundamental aspect of the movement, the notion of mental attitude, and the transfer concept.

There were, however, among the discussers of the Report, two leaders whose accomplishments—on account of their own validity as well as the fact that they served as a fountainhead of much of the progress that came later in the movement—deserve special attention in any survey of management, no matter how brief—Gantt and Gilbreth. To both, the "human element" was a matter of great concern.

Gantt, Industrial Relations, and "Service"

To many of today's practitioners, the name of Gantt—in spite of the fact that his principles serve them, industry, and society as major goals and ideals—is mostly confined to a production-control chart. Certainly this aspect of his work is a most important contribution. (It began with a daily balance chart, a cost-control graph, and an idle expense chart, but, in its final form, its great contribution was in its use of *time* rather than *quantity* as its variable. And, in this connection, the reader is strongly urged to examine the first chart made by David Porter [21] as well as the book by Wallace Clark [22] which presents the chart's universal applications.) But the chart, his task and bonus plan, his contributions to the mechanics of management (like "order point"), these were only some of the aspects of his basic philosophy of management.

Associated with Taylor for a long time—e.g., at Midvale and Bethlehem, where he remained after Taylor left—Gantt was also concerned with the application of scientific methods. As the movement grew and as time passed, the emphasis began to change. Taylor felt that the improvement of the worker's position could come from process analysis, work planning, proper organization, and, of course, financial incentives. Gantt and his humanism went beyond this. Not only was his bonus plan [23] less severe than Taylor's for a worker not reaching task, but it provided a reward for the accomplishment of task in the alloted time and a bonus for completion in shorter time. But even this is only a small part of Gantt's work. Perhaps it would be wise to present some of his concepts:

His lectures at Yale [24] deserve first mention, for here he attempted to innoculate contemporary management with a greater concern for the human element and a consideration of incentives other than the purely financial ones. He attached so much importance to some of the views on workmen training [25] that he repeated some of the important ones in his "Work Wages and Profits" [26]:

"A system of management may be defined as a means of causing men to co-operate with each other for a common end. If this co-operation is maintained by force, the system is in a state of unstable equilibrium, and will go to pieces if the strong hand is removed. Co-operation ... needs no outside support ...

"The general policy of the past has been to drive, but the era of force must give way to that of knowledge, and the policy of the future will be to teach and to lead, to the advantage of all concerned."

The book expressed many more of his views:

"The man who undertakes to introduce scientific management and pins his faith to rules, and the use of forms and blanks, without thoroughly comprehending the principles upon which it is based, will fail ...

"This book is an effort to explain the principles of Modern Industrial Organization. ... in discussing the relations between employer and employed, we must recognize the fact that, in the majority of cases, men still act on the principle that 'they should take who have the power and they should keep who can.' ... This is true whether you are speaking of employer, or employed ...

"As long as the interests of the employer and employee seem antagonistic there will be conflict ... Until we can find some means of doing away with antagonism, the conflict will continue. Our search, then, must be for such means ...

"As long, however, as one party—no matter which—tries to get all it can of the new wealth, regardless of the rights of the other, the conflicts will continue ...

"As business increases in volume, profits will normally increase correspondingly; but there are only two ways of substantially increasing the profits per unit of output—one by increasing the selling price, the other by reducing the cost of production ...

"With increase of prices comes higher cost of living; with higher cost of living comes demand for higher wages; with higher wages (unless accompanied by greater efficiency) comes higher cost of production. Then, to maintain the same profit under the new conditions, we must again increase our selling price, and the cycle repeats itself . . .

"Let us now consider the other alternative—that of reducing cost . . ."

It is probably in the book, "Organizing for Work" [27], which appeared in 1919, the year of his death, that Gantt expresses best his concern for "service" and for "industrial democracy." In the opening chapter, "The Parting of the Ways," and in the closing one, "The Religion of Democracy," he maintained:

". . . our modern civilization is dependent absolutely upon the service it gets from the industrial and business system . . . (There has arisen a) . . . conflict of ideals which is the source of the confusion into which the world now seems to be driving headlong. *The community needs service first, regardless of who gets the profits, because its life depends upon the service it gets* . . . The . . . *business system had its foundation in service, and as far as the community is concerned has no reason for existence except the service it can render* . . .

"I say, therefore, we have come to the 'parting of the ways,' for we must not drift on indefinitely toward an economic catastrophe such as Europe exhibits to us . . . In Russia and throughout eastern Europe, the community through the Soviet form of government is attempting to take over the business system in its effort to secure the service it needs . . . We all realize that any reward or profit that business arbitrarily takes over, and above that to which it is justly entitled for service rendered, is just as much the exercise of autocratic power and a menace to the industrial peace of the world as the autocratic military power of the Kaiser was a menace to international peace. This applies to Bolshevists as well as to Bankers . . .

"America holds a unique place in the world and by its traditions is the logical nation to continue to develop its business system on the line of service. What is happening in Europe should hasten our decision to take this step, for the business system of this country is identical with the business system of Europe, which, if we are to believe the reports, is so endangered by the crude efforts of the Soviet system to make business serve the community.

"The lesson is this: the business system must accept its social responsibility and devote itself primarily to service, or the community will ultimately take it over in order to operate it in its own interest . . .

"Reward according to service rendered is the only foundation on which our industrial and business system can permanently stand. It is a violation of this principle which has been made the occasion for socialism, communism, and Bolshevism. All we need to defeat these "isms" is to re-establish our industrial and business system firmly on the principles advocated by Abraham Lincoln in 1847, and we shall establish *an economic democracy that is stronger than any autocracy.*

"Moreover, it conforms absolutely to the teachings of all churches . . .

Gantt's motive was, according to Alford [28], his disciple and biographer, the biblical quotation that appears on the marker on Gantt's grave: "I am among you as he that serveth."

Gantt's influence was great, and his call has, in recent years, taken on renewed significance. Among his many advocates was Alford, the author of the 1912 Report [29–30], who, mindful of Gantt's criticism of the underemphasis of the personnel problem, wrote another report in 1919 for ASME, dealing entirely with "The Status of Industrial Relations." The 1919 Report came at an opportune time, when, despite ". . . out witnessing the payment of higher wages than were ever before known in this country, there is a feeling of uneasiness and unrest throughout our entire nation, labor is making many demands . . ." Quite properly, but still unfortunately, the 1919 Report is concerned mainly with developments in the U.S.A., and the accomplishments of Watt, Boulton, Owen, and even the more contemporary Rowntree, for example, are not mentioned.

Nevertheless, the Report correctly states that most of the remedies set forth during the closing years of the 1800's and the beginning years of the 1900's were profit-sharing and wage-incentive plans. Supplementing the Report, some instances of the first category can be found in the plan that the Pennsylvania Railroad had in 1868 in connection with a material waste program [31] and in the program adopted by Towne in 1887, two years before he presented his paper [32] at ASME. As for the wage plans, in addition to those of Taylor and Gantt, there were those of Halsey [33], of Rowan [34], and of Schoenhof [31], who, in 1892, in his "The Economy of High Wages," "had resurrected John Stuart Mill's old principle that the high individual wages may mean cheap labor as a whole."

Lytle [31] has recorded and criticized the unhappy spectacle of the efficiency experts who, with no regard to proper standardization, would install a new incentive plan, "make a temporary showing, collect sizeable fees, and rush to other clients before the real trouble started to develop." It may not be amiss to point out here that it was Lytle, who first, in the Ronald magazine, *Management Engineering* (May, 1922), and then in the first of Alford's handbooks [35] (1924), and finally in his own text, developed a method for studying incentive plans, which neatly combined all their elements so as to be capable of uniform representation (both algebraically and graphically), and thereby properly called to halt a seemingly never-ending stream of individual plans bearing the individual names of their inventors.

The 1919 Report was concerned with the impending "evils" of "absentee" directorates which, located in a major city miles away, controlled plants throughout the country. Surprisingly, the Report failed to emphasize the fact that the problem was changing from one of employer-employee to one of management-labor. Perhaps, this phase was, as yet, not so apparent as it was when Juran commented on a December, 1947, advertisement, signed by President Gifford on "The Responsibility of Management in the Bell System" and the "Management—A Trusteeship" concept.

However, the 1919 Report did note the rise of interest in safety engineering and industrial accident control, the allocation of accident cost to industry, employee, and public, the improvement of welfare plans, and the growth of a "new profession in industry, that of employment management" (the repository of policies on hiring, firing, welfare, job analysis, job evaluation, merit rating, and so on). Moreover, the Report did discuss the establishment, by the National War Labor Board of World War I, of "three rights of labor: The right to organize and bargain collectively; the right to a limited number of hours of labor; the right to a living wage," and the recognition of the rights—as well as such goals as an 8-hour day, a 48-hour week, abolition of child labor, and equal remuneration for equal work without discrimination as to sex—by the Versailles Treaty. Again, the noncommodity aspects of labor, recognized by the Versailles Treaty, had already been asserted in our own Clayton Act (1912). However, some of the other matters were ones that were slowly being recognized by state legislatures here. As a matter of fact, much of the legislation was to come after the establishment of the NRA Codes.

During the 1930–1931 Winter, President Hoover proposed to Wallace, Secretary of the American Engineering Council—an outgrowth of the Engineering Council of the National Technical Societies of America and the forerunner of the present Engineers Jount Council—that an investigation be made of the problems

of business depressions, their causes, and how they can be avoided. The American Engineering Council [30] had already authored three major reports—"Waste in Industry" (1921), "The Twelve Hour Shift in Industry" (1922), "Safety and Production" (1928)—and had co-operated with the National Bureau of Economic Research in preparing the monumental two-volume study, "Recent Economic Changes" (1929). The result was "The Balancing of Economic Forces." Supplementing its own contributions, ASME appointed a Committee on Capital Goods Industries to study the durable goods industry and engineering employment. Here, among other matters, the NRA Codes were treated. So important were the managerial aspects of the Codes as expressions of self-government that they were the subject of a paper by Alford [37] in 1935. Interestingly enough, such codes were not new nor were they originally sought by the government. Except for the war period, the government was not willing to enter into "such regulation." But, with the events of 1929, business associations sought a modification of the antitrust acts so that the respective trade associations could check price cutting and other "unfair" practices and curtail production to prevent oversupply. As a matter of fact, the last Congress under the Hoover Administration had under consideration the Black-Connery Bill advocating a 30-hour week for businesses engaged in interstate commerce. Many of these notions were assembled under Franklin Roosevelt's 1933 Industrial Recovery Act "to put the people back to work." This Act's famous Section 7a (with "the first legislative protection for collective bargaining" [38]) and the Wagner Act and the succeeding legislation have done much to create a "new" branch of law—labor law—which now command's management's attention as completely as does corporation law. Moreover, the rise of the unions—particularly the CIO, its affiliation with AFL, and other union activities—have created other problems for management's consideration.

Finally, no discussion of industrial relations can overlook the work of Mayo [39], an Australian teacher of logic, ethics, and philosophy who came to America and entered industrial research some three years after the 1919 Report. For, to him and his associates, Roethlisberger and Dickinson [40] and Whitehead [41], to name but three, goes the credit for one of the great experiments of all time—the Hawthorne Experiment at Western Electric. Here a great wealth of information was unearthed about industrial workers—the potency of worker participation and team membership as a motivating force, important as it is, was but one of the findings.

Gilbreth, the Human Sciences, and the Worker

In any treatment of management, in general, and the human element, in particular, the Gilbreth [42] work cannot be overlooked. As early as 1898, Gilbreth was disturbed when one of Taylor's "disciples" started to "time" men on one of the Gilbreth construction jobs without consideration of the "One Best Way." Although Taylor, as early as 1910, in a talk before the Birmingham Meeting of The Institution of Mechanical Engineers, was using the Gilbreth bricklaying work as an example of what could be accomplished, the field of motion study was too often considered a part of time study. It was the Gilbreth accomplishments that eventually set the subject in its rightful place. The unique contribution of the Gilbreth work involved "the One Best Way" for doing work—with wasteful and unproductive motions removed. Yet this was only a small part of the Gilbreth contributions.

In discussing the 1912 Report, Gilbreth felt that the term "labor-saving management" was not really descriptive of all that the new movement could accomplish. Hence, he favored the term "measured functional management." Very properly he [43] insisted, in a later paper, in 1922, that, if there is to be "science," there must be measurement, and, for measurement, management must have measuring units, measuring methods, and measurement devices. Although ethics, and not science, can furnish "standards of right and wrong," science *can* measure and compare actual to standard. Management has such standards—"such as the One Best Way to learn, to do, or teach any kind of work." Of course, a major part of the organization task requires one to plan, to gather, to arrange, to systematize all necessary information and data, and management devices are available for these purposes.

Of course, motivation is necessary to lead an organization to highest success and highest returns. In this connection, a management method is "ethical" if it offers a "square deal" to those concerned. Thus, the spying "stop-watch book" was to be condemned, because it infringes on human rights. And, although the science of management cannot determine right and wrong standards, it can determine efficient standards; e.g., the One Best Way. The standard must "conserve the best of the past," it must "organize the present," and it must "plan for the future." The science of management can benefit greatly from co-operation with other fields—safety engineering, "vocational guidance," teaching, physics and chemistry, economics and statistics, psychology, psychiatry, and physiology, and all of the other "human sciences."

The Gilbreth micromotion and chronocyclegraphic studies indicated that office work was also governed by the One Best Way, as far as analysis, planning, routing, motion study, fatigue study, waste elimination, standardization, and control were concerned. He put special emphasis on fatigue study as the first step in motion study. Of course, skill study and time study are also necessary in order to find the One Best Way. Thus, Gilbreth felt that Taylor made an important contribution by timing a job—for this was indeed different from merely prophesying how long a job should take—but, from the beginning, he condemned the secret time studies which Taylor, himself, later repudiated. He insisted that "motion study antedates time study," but more important " 'How long it takes to do work' is not so important as 'How to do it in the One Best Way.' "

The "therbligs," micromotion study, cyclegraphic and chronocyclegraphic analyses, the process charts, the route models, the "three-position plan of promotion" (forerunner of today's systematic management development), the fatigue studies, the improvement of tools in the shop and equipment in the office, the work with the handicapped, the spreading of management know-how and know-why throughout the world—which of these important contributions can be identified as the *one* great Gilbreth accomplishment? As great as these studies are and as great as their import has been, the fundamental and basic Gilbreth work lies in the development of management as a science focused directly on the human being.

In more recent years, the study of what had come to be known as "human engineering," has taken on an even wider field with the connotation of "human factors." In line with Gilbreth's assertion at Milan [43] in 1922, the engineer must now take on wider studies in many diverse fields—electrical engineering, mechanical engineering, industrial engineering, mathematics, statistics, psychology, physiology, anthropology. It includes systems engineering (including game theory, information theory, operations research, servomechanisms, and control), electronic data-processing, display, and control relationships (operator comfort, safety, audiometry accoustics, instrument design, and applied sensation and perception), physiology and environmental psychology (human organisms under stress, strain, heat, noise, radiation), systems analysis (group dynamic organization, decision theory), human variability (anthropological and anthropometric studies in human limitations, personnel selection, and so on).

Eventually, the work of such men as Brouha [44] in the physiological evaluation of human effort will become more widespread. The use of heart rate as work measure and heart recovery as a fatigue evaluation will become more common and the measurement of oxygen consumption more commonplace. However, according to Barnes [45] "the stop watch is the most commonly used method of measuring work in industry today." He lists at least nine "systems of motion-time data," and, at least three of the more widely used of these systems come within the time period allotted to this historical summary—the Motion-Time Analysis of Segur, the Work Factor System of Quick, Shea, and Kohler, and the Methods-Time Measurement [46] of Maynard, Stegemerten, and Schwab.

Alford, Management Principles, and Management Philosophy

The 1912 Report, with its notion of the basic principle of transfer of skill, attempted to bring into focus the principles and philosophy of management. Since the early practitioners were such enthusiastic adherents of systematic procedure, it was only natural that they began to inquire as to whether management itself had a system. It was natural, too, that many of their individual experiences formed the basis which led to generalizations. And so the early literature contains many papers in which are listed individual *principles*, *axioms*, *fundamentals*, e.g., Taylor [15] had four (see above), Emerson [47] listed twelve, Towne [48] gave twenty-three. And concomitant with these notions there was a continuing questioning as to whether management was *art or science*. Thus, Church and Alford [20], as noted in the foregoing, gave their own three regulative principles which, they felt, represented a more systematic attempt to search for the basis of the management art. They also asserted that the search for principles was a necessary one if management was to attain the "dignity of a science."

It was soon after writing the 1919 Report that the problem of principle codification confronted Alford. It began with his feeling that management—especially since engineers played so important a role—might be ready for a handbook. Like the ASME "Ten Year Reports," whose preparation, during his life, was a single-handed feat for him, he also felt the need for handbooks [35] at ten-year intervals. More specifically, he began his codification in the 1920's, first in an ASME paper and then in a book [49]. Influenced later by Urwick's thinking, Alford began to differentiate between *law* ("statement of fact") and *principle* ("guide to action"), and his "1934 Handbook" [35] and as his posthumous "1944 Handbook" [35] list *principles* of specialization, standardization, leadership, organization, production planning, materials control and handling, quality control and inspection, individual productivity, wage payment, and so on.

Incidentally, Fayol's work, especially that relating to the principles and elements of management, unfortunately reached the United States slowly. An English translation of a 1923 paper [51] he delivered at the Second International Congress of Administrative Science in Brussels appeared in 1937 in a collection of papers. And, although a limited edition of an English translation of his 1916" Administration Industrielle et Generale" [6] appeared abroad in 1929, this book did not have wide circulation until the second translation appeared in 1949. However, Fayol was not entirely unknown here, for Alford included many of his concepts in the "1934 Handbook."

Nevertheless, there were many others who explored the field of principles and philosophy. Thus, in the United States, for example, Mary Parker Follett [52], deserves special mention for her keen application of psychological and sociological concepts to industry, in general, and to organizational groups and its members, in particular. Her profound ideas on leadership, constructive conflict, power, psychology of control, responsibility, consent and participation, conciliation and arbitration certainly entitle her to a high place in the "profession of management."

Among the names of other leaders in this aspect of management here and in England, there are Robb [53], Sheldon [8], Urwick [54], Brown [55], Barnard [56], Graicunas [57], Dennison [58], Mooney and Riley [59]. Finally, in even this brief treatment, it is not amiss to point out the contributions of at least two U. S. A. presidents in the field of public administration—one, a political scientist (Wilson [60]) and the other an engineer (Hoover).

Planning and Control

The formal definition of management adopted by ASME in 1921 (see above) was often abbreviated into the simple "art of getting work done" [61]. This was essentially the objective of the men and women who practiced management. Inventory control, budgetary control, production planning and control, quality control, cost control—these were among the methods they developed with the intent of accomplishing the job (whether it was shoveling, moving pig iron, making shoes, or motivating workers). Fayol, in the very beginnnig of his classic work [6], insisted that industrial undertakings consisted of six main activities; i.e., technical (production, manufacture, and so on), commercial (buying, selling, and so forth), financial (optimum use of capital), security (protection of people and property), accounting (stocktaking, costs, balance sheets, and so on), and managerial. The last subgroup consisted of such activities as forecasting and planning, organization, command, co-ordination, and control.

It is difficult to insist that any single one of the managerial activities is of greater importance than any other, but control might be considered as one which is quite inclusive. For, as Fayol maintained, in the close of his first chapter:

"To control means seeing that everything occurs in conformity with established rule and expressed command."

Seemingly, then, *control* implies the existence of a plan, the organization to carry matters out, the necessary command as well as the needed co-ordination. Thus, if we take *control* to mean a comparison of actual to plan (or standard), we can briefly bring together some of the more potent mechanisms of the management field.

What really is production control? Is it not the comparison of the bogey to the actual? As for the Gantt chart [22], does it not compare, on a time basis, actual performance to plan? Quality control? Is it not a comparison of actual product to specifications? And is not Shewhart's [62] Control Chart merely a device that tells one, before it is too late, whether the actual performance is proceeding according to plan?

Historical costing gave much helpful information on costs after they were incurred. But what was it that Emerson's "two column system" (later highly refined into standard costing as we now know it by Harrison [63]) did? The newer predetermined cost systems are cost-control mechanisms that do everything the older systems did—plus keeping everyone informed if, when, how, and why standard costs are or are not being met. In the sales field, there is control achieved by the "quota." And throughout the enterprise, there is the budget (advocated in the management field by such writers as Sinclair [64], McKinsey [65], and the variable budget advocate, Williams [66].) Finally, mention must be made of the break-even chart. Two of its most famous advocates were Knoeppel [67] (who used it as early as 1909) and Rautenstrauch [68].

These, then, are some of the devices that management has taken on to perform the important control function. In more recent years, another development has taken place, viz., the establishment of a control section in an organization to aid in the controlling process.

And What About Measurement?

The very existence of a standard implies a "yardstick," and a comparison of actual to standard implies a means of measuring discrepancies—as well as explaining why they occurred and the providing of a means to make the necessary corrections. Management, consequently, has for a long time been engaged in this search for a standard and for a measuring device. Thus, Taylor [15], borrowing units from the physical sciences, at first hoped to determine "what fraction of a horsepower a man was able to exert, that is, how many foot-pounds of work a man could do in a day."

Although Taylor could not find the precise answer to this question and although, for many years, many contributions were made to the *art* of management, there remained a continuing and growing emphasis on the quantitative aspects of the field. This was especially true for some of the individual problems with which managers were confronted. Thus, on the basis of a law evolved by Lord Kelvin (the economical size of a conductor is that for which the annual investment charges are equal to the annual cost of lost energy), several "minimum-cost" formulas [69] were obtained: Economic lot size for production (Raymond), minimum cost of quantity to be purchased (Davis), labor-saving equipment economies (Shepherd and Hagemann). These were all developed under ASME auspices. Another ASME contribution—but this time in conjunction with other engineering societies—was the device known as "preferred numbers." This was an attempt at securing economies through the use of a planned series for sizes, ratings, and so on. Although a good deal of the early work was done in France and Germany, it was discussed quite early at ASME and finally adopted in 1927 by the American Engineering Standards Committee (forerunner of today's American Standards Association) [30].

In addition, the work of some of the other engineering societies cannot be overlooked—particularly that of the civil engineers on depreciation and the mining engineers on depletion problems. The ASCE, almost half a century ago, issued a report on the valuation of railroad and public utility properties [70].

Although there were many instances of the use of quantitative methods for treating many management problems, there still was continued agitation for a more extensive use of mathematical methods for more of management's problems, particularly in the more fundamental and basic aspects of the field. One of the most ambitious of these attempts concerned the evaluation of manufacturing performance. These were the famous kilo man-hour (kmh) studies of Alford and Hannum, which were treated in a series of papers, the first of which was presented at ASME in 1929 [71].

Frankly, however, the use of mathematical methods in treating the *entire* organization was not too extensive. Many had insisted—and some still insist—that management problems are not capable of the same precise solutions as were the problems in the physical sciences. Nevertheless, in more recent years (particularly during World War II)—with the development of statistical methods and a fuller realization of some of the accomplishments of the mathematical, physical, and behavioral sciences—quantitative methods, *especially those* grouped under the title "operations research," have come to the forefront. The name probably arose by virtue of the fact that the scientists involved, e.g., among many others, Roberts, Williams, Blackett, and Zuckerman in England, and Morse, Johnson, Michels, and Von Neumann in the United States, were concerned principally with military problems of strategy, tactics, and other operational matters. Except for some more or less isolated cases (e.g., Levinson's [72] study of mail-order house returns and department store evening openings), most of the applications to nonmilitary problems came after the 1940's (hence, beyond the scope of this historical summary). Nevertheless, it is proper to note that the field is presently described by means of definitions ranging from an emphasis on its use of scientific method through its outlook in making decisions objectively [73].

Some of OR's characteristics are of particular interest: The emphasis of research on the *whole* organization, the involvement with the optimization of operations from both the long and short-range viewpoint, the extension of techniques already in use in management, the development of models, the design and study of simulated operations, the use of a team of experts from many fields, and, of course, the utilization of the most recent mathematical techniques.

Certainly OR is an invigorating and stimulating approach. Certainly it is attuned to the complicated times in which we live. Yet, only Minerva sprang full-born from Jupiter's brain. Most ideas have roots stretching back to the past, and OR is no exception. As a matter of fact, by its very admission of its purposive extension of management methods, some of its beginnings can be found in management history.

Thus, consider, for example, one of the papers delivered in London at the 1935 International Management Congress. Its author was Harry Hopf [74], a man whose contributions to management were many—from international activities through organization problems—but whose name is probably most often linked, along with that of Leffingwell, to the application of scientific management to *the office*.

In this paper, he developed the thesis that "the time is ripe for transformation of the science of management into a new and more inclusive science—optimology, the science of the optimum." For him, the *optimum* was "that state of development of a business enterprise which tends to perpetuate an equilibrium among the factors of size, cost, and human capacity and thus to promote in the highest degree regular realization of the business objectives." In this connection, he had measured results and capacities in almost a dozen insurance companies, and he had hoped that similar work would be done in other enterprises. Certainly, in this work, which remained unfinished at the time of his death, we can find some points of resemblance with at least one of the aspects of today's OR.

Consider the "model." OR would never lay claim to any originality in this matter, for it borrowed the concept from the mathematical and physical sciences where it had been used by Galileo, Kepler, Newton, and a host of others. But what of the use of the model by "older" management methods? Is not, for example, the familiar economic lot-size formula (see above) a model? Does it not express and choose, from the very many parameters, those which are strategic and quantifiable, and does it not so relate them mathematically that there can be obtained a finite, objective, and decisive answer which is in keeping with the optimum sought? (Frankly, this is only one of the many more instances utilized by management employing engineering economics and industrial engineering methods.) As a matter of fact, if the reader would prefer, in this connection, some OR overtones which are more theoretical, Barnard's [56] definition of "limiting and complementary" factors will be of great interest.

And what of the team approach? Surely, from the very beginning, whenever that was, the need for calling on the other disciplines was evident. This was natural, because (*a*) most people entered the management field on account of it being a necessary adjunct to what was originally their main pursuit, and their original training became an integral part of their thinking, and (*b*) the management field was very early recognized as being sufficiently complex and made up of many facets.

Such pioneers as Taylor (who gave up Harvard for an apprenticeship in a small machine shop), Gilbreth (who decided to forego M.I.T. for work in the construction business), Gantt (who

taught natural science before he worked as a draftsman and studied at Stevens), and Emerson (who taught modern languages at Nebraska before his railroad activities) found, in management, a necessary part of their missions. Even the most casual perusal of Urwick's [75] "The Golden Book" will yield names of persons whose contributions were not limited to the management field. Thus, to mention but a few, there are a member of the U. S. Supreme Court (Brandeis), two tire manufacturers (Michelin Brothers), a psychiatrist (Sollier), a couple of psychologists (Munsterberg and Myers), a couple of chemists and metallurgists (Le Chatelier and Solvay), a social worker (Follett). Frankly, would it have been possible for any of these, in their work in the management field, not to have been mindful of the needs and methods of the other fields?

Moreover, could it have been possible for any worker in the management field to face problems here without being aware of the overtones of the mathematical, physical, social, and biological sciences? The management theorist and practitioner alike still marvel at the remarkable mechanism and the wonderful organism that is the human body. Certainly here is an ideal to which all organizations might strive.

Finally, the need for the team approach was clearly indicated by Gilbreth [43] at Milan more than a third of a century ago. Under the heading, "Cooperation Stimulates Progress," he said:

"More than this, the engineer has welcomed investigators and thinkers in other lines into the field of management.

"... The engineer has gladly cooperated with the chemist, the physicist, and with all other scientists whose work leads them into the field of materials. Increasingly, also the engineer is cooperating with, and inviting into management, the educator, the physiologist, the psychologist, the psychiatrist, and other scientists engaged in what are known as the human sciences—also the economist and the statistician."

Today's co-ordinated multidiscipline approach of OR may well be considered an answer to the Gilbreth invitation. In addition, OR, itself, has borrowed heavily from the mathematician and logician in using such tools as linear (and nonlinear) programming, symbolic logic, value theory, matrix algebra, stochastic processes, game, information, and search theories, and so on, in minimizing cost, in market research, in selecting distribution centers, in locating customers, in determining optimum inventory, and in the myriad of other management problems.

Yet, in spite of all these "newer" applications and developments, OR owes much to those who already made history in management and other fields.

Promulgating Management Here and Abroad

Norbert Wiener [76] is quite insistent in his belief that "language is perhaps the most distinctive feature of men as compared with the lower animals." Frankly, science's development is greatly dependent upon a free exchange of ideas, and management, itself, puts high priority on communication. Little wonder, then, that management information has been spread so widely—despite the early (and sometimes present) attempts at secrecy. Just as there were, in the United States, for example, notable exceptions to the early secrecy (like Taylor's conferences at Chesnut Hill, the meetings in the Gilbreth homes in Providence and Montclair, the Hopf Institute of Management at Ossining, the work at the colleges, Kimball at Cornell, Diemer at Penn State, Roe at NYU, the 1911 Conference at Dartmouth, the work of the societies, like ASME, Society of Industrial Engineers, and the Taylor Society, the magazines, like *American Machinist*, *Industrial Management*, and *Manufacturing Industries*), so, too, one will find a few exceptions today from the more frequent free and open discussions.

In any event, although management exerted a tremendous impact here, the United States held no monopoly. England, the countries on the European continent, as well as those in this hemisphere were no strangers to management principles and practice. In addition to people like Wallace and Pearl Clark [77] who did work abroad, there were people like Mayo, the Australian who made important contributions here. Furthermore, management ideas did not stop at the water's edge, for many Americans delivered papers abroad and many persons from other countries delivered papers here. Even the Stkhanovism of the USSR can be related to early scientific management attempts here; moreover, the Gantt chart has, for many years, been used by the Russians.

Probably 1924 may be set as the date marking a free interchange of management ideas throughout the world, for that was the date of the First International Management Congress in Prague. Its program covered the application of management to all areas of activity—including education—and stimulated the authors of future ASME papers and reports to widen their scope.

Management's Challenge to the Engineer

It is, as history is our witness, extremely difficult to divorce the action of the engineer from the development of management. Urwick expressed it very concisely in the title of his paper—which was the Calvin Rice (after ASME's great secretary) Lecture at the Western Hemisphere Congress—"Management's Debt to Engineers" [78]. And, of all the contributions by engineers, none can, to date, approach the number, magnitude, and quality of those that came from the ASME.

The engineer cannot afford to consider these contributions to be a thing of the past, for management is a matter that is still deserving of his earnest and sincere attention. It needs his technical training, his logical approach, his practical attitude now more than ever before, for we are now living in an even more highly complicated technical society. Many years ago, Thorstein Veblen [79], America's iconoclast economist, paid homage to the engineer. Although some may still refuse to travel the full length with him, the fundamental truth of at least some of his observations is as correct today as it was half a century ago:

"These expert men, technologists, engineers, or whatever name best suits them, make up the indispensable general staff of the industrial system; and without their immediate and unremitting guidance and correction the industrial system will not work. It is a mechanically organized structure of technical processes designed, installed, and conducted by these production engineers. Without them and their constant attention, the mechanical appliances of industry will foot up to just so much junk. The material welfare of the community is unreservedly bound up with the due working of this system, and therefore with its unreserved control by the engineers, who alone are competent to manage it."

The growth of automation, the increased reliance on electronic data-processing equipment, its language, and the interpretations of the computations it makes—these are matters which the engineer is uniquely able to understand quickly and effectively. Of course, these are matters that will require the services of engineers of growing stature. Surely, the growth of engineering is in itself a challenge—but the meeting of the demands of industry and society is even a greater challenge. The engineer cannot allow himself—nor can society afford to allow him—to be overtaken by nonengineers in meeting this challenge.

After all, Wiener's [76] admonition about the "inhuman" use of human beings. "... any use of a human being in which less is demanded of him, and less attributed to him than his full status is a degradation and a waste ..." is as applicable to the engineer as to those who operate the machines he designs. The

engineer must work to his fullest capacity for all of society. He must, like Gantt, "be among you as he that serveth," and live up to his responsibility to utilize the resources of nature and of human nature for the benefit of mankind.

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ASME MANAGEMENT PROGRESS REPORTS

Charles M. Merrick

TEN YEARS' PROGRESS IN MANAGEMENT REPORTS

1912	1942
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"FIFTY YEARS PROGRESS IN MANAGEMENT" 1910-1960
The 1960 Report Included All The Earlier Reports

1912

THE PRESENT STATE OF THE ART OF INDUSTRIAL MANAGEMENT
Leon P. Alford - Editor

1919

THE STATUS OF INDUSTRIAL RELATIONS
Leon P. Alford - Author

1922 - TEN YEARS PROGRESS IN MANAGEMENT

Leon P. Alford - Author

1932

TEN YEARS' PROGRESS IN MANAGEMENT: 1923-32
Leon P. Alford - Author

1942 - TEN YEARS' PROGRESS IN MANAGEMENT

INTRODUCTION
George E. Hagemann
Vice-Chairman, Ten Years' Progress in Management Committee, and Editor of Report

ADMINISTRATIVE ORGANIZATION
Lounsbury S. Fish
On loan from Standard Oil Company of California as Director of Organizational Planning for War Production Board, Washington, D.C.

PURCHASING
Stuart F. Heinritz
Editor of Purchasing Magazine, New York, NY

DEFUNCTIONALIZATION OF INDUSTRY
Henry F. Farquhar
Organization and Management Counsel, Alexandria, VA

GAGING AND INSPECTION IN INTERCHANGEABLE MANUFACTURE
Carlos deZafra
Director, Gage Laboratory, College of Engineering, New York University, New York, NY, Member ASME

STATISTICAL CONTROL IN APPLIED SCIENCE
W. A. Shewhart
Bell Telephone Laboratories, Chairman of the Joint Committee for the Development of Statistical Applications in Engineering and Manufacturing, New York, NY

JOB STANDARDIZATION AND WORK SIMPLIFICATION
Harold B. Maynard
President, Methods Engineering Council, Pittsburg, PA

COST ACCOUNTING AND BUDGETARY CONTROL
John A. Willard
Partner, Bigelow, Kent, Willard & Co., New York, NY, Member ASME

INDUSTRIAL MARKETING
Harry J. Loberg
Associate Professor of Administrative Engineering, Cornell University, Ithaca, NY

JOB EVALUATION AND MERIT RATING
Asa S. Knowles
Dean, School of Business Administraton and Director of Industrial Extension, Rhode Island State College, Kingston, RI

WAGE PLANS
J. M. Juran
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A HISTORY OF THE MAN SITUATION
C. G. Marcy
Engineering General Department, General Electric Company, Schenectady, NY

M. M. Boring
Supervisor of Personnel, Schenectady Works, General Electric Company, Schenectady, NY

LABOR RELATIONS IN EVOLUTION
W. R. Burrows
Vice-President in Charge of Manufacturing, General Electric Company, Schenectady, NY

FEDERAL ADMINISTRATIVE MANAGEMENT 1932-1942
Donald C. Stone
Assistant Director in Charge of Administrative Management, Bureau of the Budget, Executive Office of the President, Washington, D.C.

INCREASE IN ADAPTABILITY OF WORKERS TO JOB REQUIREMENTS
Edgar W. Lancaster
Research Specialist, Civilian Personnel Division, War Department, Washington, D.C.

MANAGEMENT RESEARCH
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MANAGEMENT ATTITUDES
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In charge of the Department of Business and Engineering Administration, Massachusetts Institute of Technology, Cambridge, Mass., Member ASME

1952 - TEN YEAR'S PROGRESS IN MANAGEMENT

Arthur M. Perrin and Ercole Rosa, Jr. - Editors

FOREWORD
Lillian M. Gilbreth
President, Gilbreth, Inc., Montclair, NJ, Honorary Member ASME

THE THEORY OF ORGANIZATION AND MANAGEMENT
Robert T. Livingston
Professor of Industrial Engineering, Columbia University, New York, NY, Member ASME

STATISTICAL QUALITY CONTROL
Ellis R. Ott
Chairman, Department of Mathematics, University College, Rutgers University, The State University of New Jersey, New Brunswick, NJ

PRODUCTION PLANNING AND CONTROL
Eugene H. NacNiece
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WORK SIMPLIFICATION AND WORK MEASUREMENT
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Phil Carroll
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INDUSTRIAL-PLANT OPERATION
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PURCHASING
Stuart F. Heinritz
Editor of Purchasing, New York, NY

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Manager, Marketing and Research, The Atlantic Refining Company, Philadelphia, PA

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Industry Member, Wage Stabilization Board, Washington, D.C.

PUBLIC RELATIONS
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Assistant to the President, Armstrong Cork Company, Lancaster, PA

LABOR RELATIONS
Gideon M. Varga
Industrial Engineer, Management Consultant, Assistant to President, Mercer-Robinson Co., Inc., Panel Member, American Arbitration Association, Lecturer, Department of Industrial Engineering, Columbia University, New York, NY, Member ASME

COST ACCOUNTING
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President, Wyman P. Fiske Associates, New York, NY

FEDERAL ADMINISTRATIVE MANAGEMENT
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INTERNATIONAL CO-OPERATION
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1960 - TEN YEARS' PROGRESS IN MANAGEMENT 1950-1960

Oliver J. Sizelove and Marshall Anderson - Co-Editors

FOREWORD
Walker L. Cisler
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MANAGEMENT'S PAST - A GUIDE TO ITS FUTURE
L. M. Gilbreth
President, Gilbreth, Inc., Montclair, NJ, Honorary Member ASME

W. J. Jaffe
Professor, Department of Industrial and Management Engineering, Newark College of Engineering, Newark, NJ, Associate Member ASME

THE PHILOSOPHY OF MANAGEMENT
L. Urwick
Urwick House, London, England, Member ASME

A. M. Lederer
President, A. M. Lederer and Company, New York, NY, Member ASME

MANAGEMENT AS A PROFESSION
Harold F. Smiddy
Vice-President, General Electric Company, New York, NY, Member ASME

PRACTICES IN GENERAL MANAGEMENT - NEW DIRECTIONS FOR ORGANIZATIONAL PRACTICE
B. J. Muller-Thym
Manager Consultant, Visiting Professor of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass.

PRACTICES IN GENERAL MANAGEMENT - FINANCIAL
R. B. Curry
Vice-President and Comptroller, Southern Railway Company, Washington, D.C.

PRACTICES IN GENERAL MANAGEMENT - MEASUREMENTS AND CONTROL
A. W. Rathe
Associate Professor of Management Engineering, New York University, New York, NY, Member ASME

PRACTICES IN OPERATIONAL MANAGEMENT - THE MANAGEMENT OF INDUSTRIAL RESEARCH
Harold K. Work
Director, The Engineering Foundation of United Engineering Trustees, Inc., New York, NY

PRACTICES IN OPERATIONAL MANAGEMENT - ENGINEERING MANAGEMENT
C. E. Paules
Vice-President of Engineering (Ret.), Esso Research and Engineering

PRACTICES IN OPERATIONAL MANAGEMENT - MANUFACTURING MANAGEMENT
Harold B. Maynard
President - Maynard Research Council, Pittsburgh, PA, Fellow ASME

PRACTICES IN OPERATIONAL MANAGEMENT - PERSONNEL MANAGEMENT
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President, Industrial Relations Counselors, Inc., New York, NY

PRACTICES IN OPERATIONAL MANAGEMENT - DISTRIBUTION MANAGEMENT
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PRACTICES IN OPERATIONAL MANAGEMENT - THE FEDERAL GOVERNMENT
Howard K. Hyde
Management Evaluation Officer, Office of the Secretary of Defense, Washington, D.C.

PRACTICES IN OPERATIONAL MANAGEMENT - LOCAL GOVERNMENT AND OTHER NONPROFIT ORGANIZATIONS
George M. Goettelman
Consultant, Philadelphia, PA

MANAGEMENT SCIENCE
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MANAGEMENT EDUCATION - COLLEGES AND UNIVERSITIES
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Dean Emeritus, School of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass.

MANAGEMENT EDUCATION - PROFESSIONAL SOCIETIES
Clarence E. Davies
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MANAGEMENT EDUCATION - INDUSTRIAL
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Management Consultant, Croton-on-the-Hudson, NY

INTERNATIONAL PROGRESS IN MANAGEMENT
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FIFTY YEARS OF MANAGEMENT - A LOOK BACK AND A LOOK FORWARD
Peter F. Drucker
Professor, New York University, New York, NY

1970 - TEN YEARS' PROGRESS IN MANAGEMENT, 1960-1970

FOREWORD
Charles M. Merrick
Professor Emeritus, Industrial Engineering Department, Lafayette College, Easton, PA, Member ASME

THE PRICE OF SUCCESS - MANAGEMENT LEADERSHIP IN A PLURALISTIC SOCIETY
Peter F. Drucker
Professor of Management, New York University, New York, NY

EDUCATION AND TRAINING FOR THE PROFESSION OF MANAGEMENT 1960-1970
Lt. Col. L. F. Urwick
Chairman (Ret.), Urwick, Orr, and Partners, Ltd., Longueville, N.S.W., Australia

BEYOND SALARY - EXECUTIVE COMPENSATION PAST AND PRESENT
Frank R. Dunaway, Jr.
Senior Consultant, Golightly & Co. International, New York, NY, Member ASME

MANAGERIAL PROGRESS IN THE SIXTIES - SOME SUMMARY REACTIONS
Harol F. Smiddy
Executive Consultant, New York, NY, Member ASME

A PHILOSOPHY OF INDUSTRIAL AIR POLLUTION CONTROL
Herbert F. Lund
Editor-in-Chief, Modern Manufacturing Magazine, McGraw-Hill Publications Co., New York, NY, Member ASME

THE UTILIZATION OF ENGINEERS IN INDUSTRY
Fred Landis
Chairman, Department of Mechanical Engineering, New York University, Bronx, NY, Member ASME

THE ENGINEER'S RESPONSIBILITY FOR PRODUCT SAFETY
Herbert Egerer
President, Herbert Egerer & Co., Consulting Engineers, Omaha, Neb., Member ASME

PLACING THE MANAGEMENT OF DEFENSE AND SPACE PROGRAMS IN PERSPECTIVE
David D. Acker
Engineering Management Systems, Autonetics Division, North American Rockwell Corp., Anaheim, Cal., Member ASME

PHYSICAL DISTRIBUTION - A NEW DIMENSION OF MANAGEMENT CONTROL
John F. Spencer
Executive Editor, Handling & Shipping Magazine, Cleveland, Ohio

A CONCEPT OF A PLAN
George C. Grogan, Jr.
Vice-President, Product Development, Northrop Corporation, Ventura Division, Newbury Park, Calif.

LONG-RANGE AND STRATEGIC PLANNING - ITS HISTORY AND ITS FUTURE
Bruce Payne
President, Bruce Payne & Associates, Inc., New York, NY

DILEMMAS FOR BUSINESS EDUCATION IN THE 1970's
John S. Day
Dean, Krannert Graduate School of Industrial Administration, Purdue University, Lafayette, Ind.

CONTINUING MANAGEMENT EDUCATION IN THE UNIVERSITIES
Andrew Schultz, Jr.
Dean, College of Engineering, Cornell University, Ithaca, NY

MANAGEMENT EDUCATION - INDUSTRIAL, 1960-1969

F. S. Rothe
Consultant, Modern Engineering Applications, General Electric Co., Schenectady, NY

J. F. Young
Vice-President, Technical Resources, General Electric Co., New York, NY, Fellow ASME

CHAPTER 4

CONFERENCES

Management Executives' Conferences

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Conference List 1947-1980

Joint Engineering Management Conferences

History - JEMC

Conference List 1953-1978

SAM-ASME Management Engineering Conferences

The American Society of Mechanical Engineers (ASME)

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History

Conference List 1946-1963

International Management Congresses

History

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European Region List 1954-1971

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THE MANAGEMENT EXECUTIVES' CONFERENCES

J. Keith Louden

Annually, beginning in 1947, the ASME Management Division has provided a forum for intimate off-the-record discussion of important industry matters by an invited small group of policy-level executives. Members of the society in top management positions are invited to participate with selected specialists in the areas of management in a three day conference with an informal atmosphere free of restraints and distractions and the number of conferees is limited. There are panel sessions, swap sessions and frank discussions of management problems outlined by the speakers and leaders of discussions. Innovations and new approaches are emphasized.

Invitations are issued in June by the President of the Society to a select list of managers of small and middle-sized companies with a follow-up letter in September. The program is directed toward their interests, so unique problems of large multi-plant corporations are avoided. The list is reviewed and revised each year by a conference advisory group comprising the President and a few past-Presidents of the Society together with the Chairman and some past members of the Management Division Executive Committee.

Attendance at each of the Conferences is usually 50 to 80 men and about 40-60 ladies and many attend regularly, year after year. The Conference Chairman has always had experience as a member of the Executive Committee of the Management Division and the Society President and other officers are usually there.

The concept of The Management Executives' Conferences grew out of a challenge Colonel Clarence Davies, Executive Secretary of ASME gave to Mr. J. Keith Louden after a meeting of the Executive Committee of the Management Division in 1946. Colonel Davies said in effect "Why doesn't the Management Division put on a program that would be of interest to top management?" It should be held at a location away from a large city with excellent facilities for recreation and relaxation. It was the feeling that the technical sessions of the Society were not meeting the intellectual interests of the engineers who had moved into top management positions.

Since Keith Louden was a member of the Skytop Club at Skytop, Pa. in the Poconos, it was decided that the Skytop Lodge would be a good place to hold the conference. Mr. Keith Louden conceived and organized the first program and served as chairman. It was held at Skytop Lodge on February 18-19, 1947. At the last minute urgent business prevented Mr. Louden from attending the conference. Fortunately, his good friend, Harold B. Maynard, was available,

so "Mike" conducted the conference. The interest and enthusiasm generated by this first conference led to the establishment of a sound policy and procedure for future conferences.

The Annual Management Executives' Conferences have been held in October at "Skytop" in the Poconos for the first twenty-five years from 1947 through 1971. October is a fine time of the year to enjoy the beautiful Pocono Mountains. There is brisk air, a relaxed atmosphere, delightful dining and sports and recreation for the men and their wives. It is a convenient time for the manager-engineers. The fourth quarter business is under way and pressure has not started for making projections for the coming year.

It was appropriate that Howard M. Sadwith and his wife Libby would serve as hosts at the 25th Silver Anniversary Management Executives' Conference at Skytop, October 1971. They were among those who set records for the number of conferences attended since there is a suprising number of repeats.

Since 1971 the Conference location has alternated between - Hilton Head Inn, Hilton Head, South Carolina; the Greenbrier, White Sulphur Springs, West Virginia; and Colonial Williamsburg, Virginia. They continue to be held in late October with a background and atmosphere to stimulate dialogue and constructive interplay of ideas. Husbands and wives participate in all events: there is no separate program organized for the ladies. The format for each session involves short talks by each of two or three speakers followed by 90 minutes of discussion and questions. The themes continue to be modern and current covering the effects upon management of such subjects as new legislation and public attitudes, energy management and challenges for management in the third century of our nation.

These Management Executives' Conferences continue to maintain the interest of top management in the society and the Management Division and contribute to ASME.

MANAGEMENT EXECUTIVES' CONFERENCES

NO.	YEAR	CONFERENCE CHAIRMAN	THEME DIVISION CHAIRMAN SOCIETY PRESIDENT
1	1947 Feb. 18-19	J. Keith Louden Vice President and General Manager, Commercial Division, York Corporation, York, Pa. (Harold B. Maynard)	"The Manager and the Forces He Contends With Today" J. A. Willard Eugene W. O'Brien
2	1948 Oct. 26-27	J. Keith Louden Vice President and General Manager, Commercial Division, York Corporation, York, Pa.	"Management - A Trusteeship" W. R. Mullee Ervin G. Bailey
3	1949 Oct. 23-25	J. Keith Louden Vice President and General Manager, Commercial Division, York Corporation, York, Pa.	"Scientific Management - A Challenge to Statism" J. K. Louden James M. Todd
4	1950 Oct. 30- Nov. 1	J. Keith Louden Vice President and General Manager, Commercial Division, York Corporation, York, Pa.	"The Manager In A Changing World" H. B. Maynard James D. Cunningham
5	1951 Oct. 29-31	Harold B. Maynard President, Methods Engineering Council, Pittsburgh, Pa.	Theme - Not Known G. M. Varga J. Calvin Brown
6	1952	Gideon M. Varga Industrial Engineer and Assistant to President, Mercer-Robinson Company, New York, N.Y.	"Spotlight on Leadership" E. H. MacNiece Reginald J. S. Pigott
7	1953 Oct. 25-28	T. A. Marshall, Jr. Assistant Secretary, American Society of Mechanical Engineers, New York, N.Y.	"Strengthening American Industry" A. M. Perrin Frederick S. Blackall, Jr.
8	1954 Oct. 24-27	Louis E. Newman Manager, Health and Safety Services, General Electric Company, New York, N.Y.	"Changing Ethics in Business" P. Carroll Lewis K. Sillcox

NO.	YEAR	CONFERENCE CHAIRMAN	THEME DIVISION CHAIRMAN SOCIETY PRESIDENT
9	1955 Oct. 23-26	Ray F. Dauer Manager, Home Heating and Cooling Dept., General Electric Company, Trenton, N.J.	"Spotlight on Long Range Plannning" L. E. Newman David W. R. Morgan
10	1956 Oct. 21-24	F. W. Hornbruch, Jr. Chief Engineer, Rath and Strong, Inc., Boston, Mass.	"Organizing for Competitive Versatility" H. N. Muller Joseph W. Barker
11	1957 Oct. 20-23	Robert G. Hess Executive Vice-President, Walworth Co., New York, N.Y.	"Yardsticks for Management Performance" F. W. Hornbruch, Jr. William F. Ryan
12	1958 Oct. 19-22	Charles A. Jurgensen Vice President, Manufacturing, DeLaval Steam Turbine Company, Trenton, N.J.	"New Ideas - Key to Survival" R. G. Hess James N. Landis
13	1959 Oct. 18-21	Hugh A. Bogle Manager, Industrial Engineering, E. I. DuPont Company, Wilmington, Del.	"The 1960's - Decade of Management Challenge" C. A. Jurgenson Glenn B. Warren
14	1960 Oct. 23-26	Matthew J. Murphy Editor, Factory Management and Maintenance, McGraw-Hill Publishing Company, New York, N.Y.	"Meeting Competitive Challenge" H. A. Bogle Walker L. Cisler
15	1961 Oct. 22-25	James C. Skinner President, Thomas and Skinner Inc., Indianapolis, Ind.	"What About Tomorrow?" M. Anderson William H. Byrne
16	1962 Oct. 21-24	Burton D. Morgan President, Morgan Adhesives Company, Stow, Oh.	"New Technologies For Profit" O. J. Sizelove Clifford H. Shumaker
17	1963 Oct. 20-23	Lester R. Bittel Editor-in-Chief, Factory Magazine, McGraw-Hill Publishing Company, New York, N.Y.	"How to Shorten the Lead Time To Profits" A. M. Smith Ronald B. Smith

NO.	YEAR	CONFERENCE CHAIRMAN	THEME DIVISION CHAIRMAN SOCIETY PRESIDENT
18	1964 Oct. 25-28	Oliver J. Sizelove Professor and Chairman, Department of Industrial and Management Engineering, Newark College of Engineering, Newark, N.J.	"Making Plans Profitable" D. E. Farr Elmer O. Bergman
19	1965 Oct. 24-27	Hugh A. Bogle Manager, Industrial Engineering, E. I. DuPont Company, Wilmington, Del.	"Your Changing World of Business" J. C. Skinner Henry N Muller
20	1966 Oct. 23-26	Wencel A. Neumann, Jr. President, DeLaval Separator Company, Poughkeepsie, N.Y.	"Creating Opportunities For The 70's" L. R. Bittel James H. Harlow
21	1967 Oct. 22-25	Wencel A. Neumann, Jr. President, DeLaval Separator Company, Poughkeepsie, N.Y.	"New Management Frontiers" W. J. Richardson Louis N. Rowley, Jr.
22	1968 Oct. 20-23	Herbert F. Lund Editor-in-Chief, Modern Manufacturing, McGraw-Hill Publishing Company, New York, N.Y.	"Management Opportunities in Mechanical Engineering" H. Estes George F. Habach
23	1969 Oct. 19-22	D. Robert Yarnall, Jr. President, Yarway Corporation, Blue Bell, Pa.	"Managing Your Company in The 1970's" B. B. Winer Donald E. Marlowe
24	1970 Oct. 25-28	John S. Leslie President, Leslie Company, Parsippany, N.J.	"Preparing For Tomorrow" R. A. Brauburger Allen F. Rhodes
25	1971 Oct. 24-27	Howard M. Sadwith President, Industrial Washing Machine Company, Matawan, N.J.	"Learning From the Past - Look To The Future" H. F. Lund Kenneth A. Roe

NO.	YEAR	CONFERENCE CHAIRMAN	THEME DIVISION CHAIRMAN SOCIETY PRESIDENT
26	1972 Oct. 22-25	Wallace J. Richardson Professor of Industrial Engineering, Lehigh University, Bethlehem, Pa.	"Responding Positively to New Legislative and Public Attitudes" E. Rosa Richard G. Folsom Hilton Head, S.C.
27	1973 Oct. 14-17	Gregor W. Betz Executive Vice President, Cumberland Steel Company, Cumberland, Md.	"Planning For Profit" D. D. Acker Daniel C. Drucker Hilton Head, S.C.
28	1974 Oct. 20-23	John W. Hannon President, Maynard Research Council, Inc., Pittsburgh, Pa.	"Energy Management - Physical and Human" J. S. Leslie Richard B. Robertson The Greenbrier, White Sulphur Springs, Va.
29	1975 Oct. 12-15	James B. Matthews Vice President, Academic Affairs, Rose-Hulman Institute of Technology, Terre Haute, Ind.	"Managing In A Changing Economy" W. K. McAleer Charles Tutt, Jr. The Greenbrier, White Sulphur Springs, Va.
30	1976 Oct. 31- Nov. 1	I. Russell Berkness President, Berkness Control and Equipment Corporation, Richmond, Va.	"Challenges for Management in the Third Century" G. L. Thuering Earle C. Miller Williamsburg Lodge, Williamsburg, Va.
31	1977 Oct. 16-19	Lee W. Gregg Head, Department of Psychology, Carnegie-Mellon University, Pittsburgh, Pa.	"Expanding Managerial Vision" H. B. Wallace S. P. Kezios Colonial Williamsburg, Va.
32	1978 Oct. 15-18	Frank L. Jennings President, Jennings Engineering Company, Binghamton, N.Y.	"Management in the Eighties" Gregor W. Betz O. L. Lewis The Greenbrier, White Sulphur Springs, Va.

NO.	YEAR	CONFERENCE CHAIRMAN	THEME DIVISION CHAIRMAN SOCIETY PRESIDENT
33	1979 Oct. 14-17	William J. Fritton President, W. J. Fritton Company, Olean, N.Y.	"How to Manage in Today's Business Environment" E. N. Friesen Donald N. Zwiep The Homstead, Hot Springs, Va
34	1980 Oct. 19-22	J. E. Chojnacki President, Edward Manufacturing Company, Houston, Texas	"Strategic Planning - The Mechanism for Achieving Personal and Business Success" E. L. Martinec Charles Jones Pinehurst Country Club, Pinehurst, N.C.
MEC-WEST - 1980	Aug. 10-13	Emil L. Martinec Argonne National Laboratory, Argonne, Ill.	"Engineering Management Needs in The 80's" E. L. Martinec Charles Jones Silverado Country Club, Napa, Cal.

THE JOINT ENGINEERING MANAGEMENT CONFERENCES

Ercole Rosa

Abstract: The Joint Engineering Management Conference activity is an outgrowth of the series of engineering management conferences started in 1952 by the Management Division of the American Society of Mechanical Engineers. At its peak, the Joint Engineering Management Conference in 1969 was supported by eight engineering societies. The last Joint Engineering Management Conference held in 1978 was supported by the ASME, the IEEE, and the Engineering Institute of Canada. The newly-established Joint Engineering Management Council will develop new programs to meet the needs of senior engineering managers who constitute the audience of the former Joint Engineering Management Conferences while at the same time providing support to the activities of the several engineering management groups in the engineering societies without duplicating functions already carried on by these groups.

At its meeting on April 11th, 1978, the Sponsor's Committee for the Joint Engineering Management Conference voted to change the name of the organization to the Joint Engineering Management Council and to initiate a new program of activities in support of the engineering management groups in the engineering societies. This event represented the termination of a conference program that had started in late 1952 when the Executive Committee of the Management Division of the ASME voted to convene the first engineering management conference to be held in Detroit on April 15th, 1953. Subsequent conferences were held in different cities throughout the nation, and after 1963, there were eight engineering societies which supported the conference program. Maximum interest occurred at Los Angeles in 1959 and at Montreal in 1969 with over four hundred engineering managers attending each.

Two important features of these conferences were the planning of the individual conferences and the changing pattern of the themes of the conferences.

The conference planning and execution was the result of the joint efforts of the JEMC Sponsors' Committee and the Conference Committee. The Sponsors' Committee selected the conference chairman and approved the conference theme and operating budget. The detailed planning of the conference was delegated to the Conference Committee approximately ten months before the scheduled date of the conference. The primary audience projected for the Joint Engineering Management Conferences was the group of senior-level engineering managers in medium-to-large firms, and the members of the Sponsors' and Conference

Committees were drawn from this population. Additional members of both the audience and the planning committees were drawn from governmental and academic groups.

Once the theme was approved, the conference plannning consisted of selecting session chairmen for the individual sessions of the conference. The session chairmen obtained the speakers and the conference chairman selected the keynote speaker and the luncheon speakers. The papers for each conference were collected and bound into a conference proceeding which was often available at the start of the conference.

The early conferences were devoted to the human element in engineering with consideration of the elements of policy-making and their effect on communications, motivation and the engineer. In addition, even the first conference devoted attention to the impact of new technology on the practice of engineering management. One of the papers described the use of the then brand-new electronic digital computer in engineering analysis.

The following table illustrates the diversity and the shifting emphasis on topics of the conference themes from the beginning:

Category	Conference Year
Managing Engineers and the Engineering Function	1953, 1956, 1961, 1963, 1966, 1967
Cost Effectiveness	1955, 1970, 1973, 1977
Plans and Controls	1954, 1967, 1958, 1959, 1962, 1972, 1975
Managing Change	1960, 1964, 1968, 1969, 1971, 1976, 1978
International Aspects	1965, 1974

As more interest developed within each sponsor society, the individual societies developed their own engineering management conferences and then withdrew from the sponsorship of the Joint Engineering Management Conferences. When the Twenty-Sixth JEMC was conducted in 1978, it was sponsored only by the two original sponsors, the American Society of Mechanical Engineers and the Institute of Electrical and Electronics Engineers, and by the Engineering Institute of Canada.

The new Joint Engineering Management Council will assume the responsibility of developing new functions and programs to meet the current and future needs of engineering societies. Some of the specific functions include the distribution of information concerning engineering management practices, and, where appropriate, the support of engineering management conferences where the topics are of interest to several societies.

JOINT ENGINEERING MANAGEMENT CONFERENCES (JEMC)

NO.	YEAR	CHAIRMAN/HOST SOCIETY	CONFERENCE THEME/LOCATION
1	1953 Apr. 15-16	Arthur M. Perrin, ASME[1]	"How to Administer Engineering Activities" Walker L. Cisler, Keynote Speaker Rackham Building, Detroit, Mich.
2	1954 Mar. 31- Apr. 1	Phil Carroll, ASME	"Engineering Management In A Dynamic Economy" Benjamin Franklin Hotel, Philadelphia, Pa.
3	1955 Mar. 23-24	Louis E. Newman, ASME	"More Engineering At Less Cost"
4	1956 Mar. 14-15	Robert M. Boyles, ASME	"Improving Management - With And For Engineers" Commemorated 100th Anniversary of Birth of Frederick W. Taylor Hotel Statler, St. Louis, Mo.
5	1957 Mar. 27-28	Donald E. Farr, ASME	"Engineering Management Controls" Penn-Sheraton Hotel, Pittsburgh, Pa.
6	1958 Mar. 19-20	J. Dwight Bird, AIEE[2]	"An Integreted Program" "Planning Ahead & Measuring Progress" "Management In Action" Hotel Somerset, Boston, Mass.
7	1959 Sept. 17-18	David D. Acker, ASME	"Managing Engineering Resources" The Statler Hilton, Los Angeles, Cal. Attendance: 432
8	1960 Sept. 15-16	H. H. Race, AIIE[3]	"Managing Tomorrow", Peter F. Drucker Morrison Hotel, Chicago, Ill.
9	1961 Sept. 14-15	Wallace J. Richardson, ASME	"Problems Facing Engineering Managers" Presented Gantt Medal to Lyndall F. Urwick, Sept. 15 Hotel Roosevelt, New York, N.Y.

[1]ASME - American Society of Mechanical Engineers
[2]AIEE - American Institute of Electrical Engineers
[3]AIIE - American Institute of Industrial Engineers

NO.	YEAR	CHAIRMAN/HOST SOCIETY	CONFERENCE THEME/LOCATION
10	1962 Sept. 13-14	Jere Cave, AIEE	"Latest Advances in Rapidly Changing Field of Engineering Management" Roosevelt Hotel, New Orleans, La.
11	1963 Sept. 12-13	Hugh Estes, ASME	"The Management of Technical Work" Hotel Biltmore, Los Angeles, Cal.
12	1964 Sept. 17-18	Jerome Fox, IEEE[1]	"Face Up To Automation" Pick-Carter Hotel, Cleveland, Ohio
13	1965 Sept. 16-17	Peter C. Renzo, ASME	"International Impact On Engineering Managers" New York Hilton, New York, N.Y. Attendance: 201
14	1966 Sept. 26-27	Homer M. Sarasohn, IEEE	"Creating Second Sources of Engineering Manpower" The Statler Hilton, Washington, D.C. Attendance: 344
15	1967 Oct. 9-10	Bernard B. Winer, ASME	"Managing Engineering Manpower" Jack Tar Hotel, San Francisco, Ca. Attendance: 339
16	1968 Sept. 30- Oct. 1	Norman Lieblich, ASME	"Computer Impact on Engineering Management" Marriott Motor Hotel, Philadelphia, Pa. Attendance: 346
17	1969 Oct. 9-10	James G. Ripley, EIC[2]	"The Engineering Manager: Survival in the Seventies" Hotel Bonaventure, Montreal, Quebec, Canada Attendance: 430
18	1970 Oct. 29-30	Gunnar J. Lukas, AIIE	"The Engineering Manager and the Progress-Profit Dilemma" Drake Hotel, Chicago, Ill. Attendance: 110
19	1971 Oct. 4-5	Roger W. Sampson, IEEE	"New Realities for Engineering Managers" International Hotel, Los Angeles, Cal. Attendance: 108

[1] IEEE - Institute of Electrical and Electronic Engineers (formerly AIEE)
[2] EIC - Engineering Institute of Canada

NO.	YEAR	CHAIRMAN/HOST SOCIETY	CONFERENCE THEME/LOCATION
20	1972 Oct. 30-31	Robert E. Weiler, ASME	"Managing For Improved Engineering Effectiveness" Sheraton Biltmore Hotel, Atlanta, Ga. Attendance: 237
21	1973 Oct. 25-26	Harry P. Howard, ASQC[1] Ercole Rose, ASME	"The Impact of Competitive Technology on Engineering Management" St. Petersburg Hilton, St. Petersburg, Fla. Attendance: 150
22	1974 Oct. 28-29	Margaret A. Pritchard, ASME	"International Patterns of Engineering Management - A Constructive Analysis" Camino Real, Mexico City, Mexico Attendance: 130
23	1975 Oct. 9-10	Louis Kuh, ASME Paul H. Bluestein, AIIE	"Effective Management of Engineering Resources" Marriott Twin Bridges Hotel, Washington, D.C. Attendance: 110
24	1976 Oct. 25-26	Kenneth L. Coupland, EIC	"Engineering Management in Radically Changing Times" Hyatt Regency Hotel, Toronto, Ontario, Canada Attendance: 159
25	1977 Oct. 31- Nov. 1	Paul H. Bluestein, AIIE	"Engineering Management: Key To Productivity" Stouffer's Cincinnati Towers, Cincinnati, Ohio Attendance: 119
26	1978 Oct. 16-18	William C. Dean, IEEE	"Engineering Management In The Computer Age" The Regency Hotel, Denver, Col.
	1979	NO CONFERENCE	

[1]ASQC - American Society for Quality Control

SAM-ASME MANAGEMENT ENGINEERING CONFERENCES

JOINT SPONSORS
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
THE SOCIETY FOR THE ADVANCEMENT OF MANAGEMENT (SAM)

J. Keith Louden

THE ANNUAL TIME STUDY AND METHODS CONFERENCES were initiated in April 1946 and continued through June 1963. Mr. J. Keith Louden as a Director and Past-President of the Society for Advancement of Management, proposed a two-day conference devoted to discussion of actual problems encountered in the practice of the techniques of industrial engineering. Sessions of the conference would be factual and specific and policy and philosophy would be held to a minimum.

The original plans conceived of a joint venture of SAM and of the Management Division of ASME to be held in New York City in April each year. Under ASME rules attendance fees could not be charged to members, hence the conference was sponsored by the Society for Advancement of Management with support from ASME Management Division in the form of program assistance and promotion.

The First Annual Time Study and Methods Conference was held April 26-27, 1946 at the Hotel Pennsylvania, New York. Attendance far exceeded the numbers anticipated which taxed the facilities and staff planned to accomodate the conferees. The outstanding feature of the conference was the Friday evening banquet to honor the Gilbreths. It was a memorable occasion recognizing Dr. Lillian Gilbreth and her late husband, Frank Gilbreth. Eight of the Gilbreth sons and daughters were present with their wives or husbands and many of the colleagues of Frank and Lillian which made it a noteworthy occasion.

The First Conference set a precedent for succeeding conferences and for many years attendance at the conferences was around 1,500. Each conference had Co-Chairmen, one representing SAM members and one the Management Division of ASME. Usually the chairmen were members of both societies.

Lately interest has waned in the specific techniques and specialized details of time study and methods. Other societies and organizations conduct conferences and programs to accommodate the overall scope of industrial engineering activities. Hence the last Time Study and Methods Conference was held in June 1963.

For almost two decades this joint program contributed to the progress and development of many engineers and managers. Complete data about some of the conferences is no longer available.

SAM-ASME MANAGEMENT ENGINEERING CONFERENCES

NO.	YEAR	CONFERENCE CO-CHAIRMEN	CONFERENCE THEME/LOCATION
1	1946 Apr. 26-27	J. Keith Louden, SAM Vice President, York Corporation, York, Pa. Joseph M. Juran, ASME Professor and Chairman, Department of Administrative Engineering, New York University, N.Y.	First Time Study & Methods Conference Hotel Pennsylvania, N.Y.
2	1947 Apr. 18-19	NA[1]	Second Time Study & Methods Conference Hotel Pennsylvania, N.Y.
3	1948	NA	Third Time Study & Methods Conference
4	1949 Apr. 21-22	David B. Porter, ASME Professor of Industrial Engineering, New York University, N.Y.	Fourth Time Study & Methods Conference Hotel Statler, N.Y.
5	1950 Apr. 20-21	NA	Fifth Time Study & Methods Conference Hotel Statler, N.Y.
6	1951 Apr. 19-20	William R. Mullee, ASME Professor of Administrative Engineering, New York University, N.Y.	Sixth Time Study & Methods Conference (First public showing of the SAM time study rating films) Hotel Statler, N.Y.
7	1952 Apr. 24-25	A. J. Bergfeld, SAM NA Harold B. Maynard, ASME President, Methods Engineering Council, Pittsburgh, Pa.	Seventh Time Study & Methods Conference Hotel Statler, N.Y.
8	1953 Apr. 16-17	Frederick W. Hornbruck, Jr., ASME Chief Engineer, Rath & Strong, Incorporated, Boston, Mass.	"Time Study & Methods for Lower Total Costs" Hotel Statler, N.Y.

[1] NA - Not Available

NO.	YEAR	CONFERENCE CO-CHAIRMEN	CONFERENCE THEME/LOCATION
9	1954 Apr. 29-30	Paul J. MacCutcheon, SAM Manufacturing Services Division, General Electric Company, Schenectady, N.Y.	"Creative Time Study and Methods" Hotel Statler, N.Y.
10	1955 Mar. 23-24	Louis E. Newman, ASME Manager, Propulsion Study Atomic Power, General Electric Company, Schenectady, N.Y.	"More Engineering at Less Cost" Hotel Statler, Cleveland, Oh.
11	1956 Apr. 26-27	Matthew J. Murphy, ASME Editor, Factory Management & Maintenance, N.Y. Bruno Moski, SAM Director, Industrial Engineering, Yale & Towne Manufacturing Co., Philadelphia, Pa.	"Management Know-How - USA" Hotel Statler, N.Y.
12	1957 Apr. 25-26	Hugh A. Bogle, ASME Manager, Industrial Engineering, E. I. DuPont Company, Wilmington, Del. Harry M. Kaiser, SAM Management Consultant, Washington, D.C.	"Management Meets Competition" W. L. Batt - Banquet Speaker "Good Management - A Requirement for Peace" Hotel Statler, N.Y.
13	1958 Apr. 24-25	Oliver J. Sizelove, SAM Professor and Chairman, Industrial and Management Engineering, Newark College of Engineering, Newark, N.J. Victor A. Grove, ASME Chief Industrial Engineer, DeLaval Turbine Company, Trenton, N.J.	"Are You Making Your Cost Reduction Pay-Off" Hotel Statler, N.Y.
14	1959 Apr. 23-24	V. Donald Schoeller, SAM Director, Management Development, Remington Rand, Norwalk, Conn. Wallace J. Richardson, ASME Professor, Industrial Engineering, Lehigh University, Bethlehem, Pa.	"Profitable Management Engineering - 1959" Statler-Hilton Hotel, N.Y.

NO.	YEAR	MEDALIST	CITATION
24	1956	Henning Webb Prentis, Jr. Chairman of the Board, Armstrong Cork Company.	"In recognition of the dynamic contribution he has made to management as a service to the community, state and nation, through his personal participation in that service, through the successful direction of his company into this philosophy, and through his understanding and leadership of those associated with him."

Conferred by E. M. Derby at the 28th Annual Personnel Conference of AMA at the Hotel Statler, N.Y., September 17, 1956. Laurence A. Appley was Chairman and J. Keith Louden made the presentation address.

25	1957	Harold F. Smiddy Management Consultant, retired; Vice President, Management Services, General Electric Co.	"Experienced, forward-looking exponent of civic responsibility as a fundamental attitude of managers; successful in decentralizing larger industry to increase its community usefulness and give managers their full responsibility; outstanding teacher of management practice and philosophy and devoted servant of his professional organizations, nationally and internationally."

Conferred by J. A. Handy, Jr., at the Management Luncheon of the Annual Meeting of ASME at the Sheraton-McAlpin Hotel, N.Y., December 3, 1957. R. G. Hess was chairman and John A. Willard made the presentation address.

26	1958	Richard Redwood Deupree Chairman of the Board, Proctor and Gamble Co.	"A man who has infused in his own company the continuing recognition that the interests of a company and its employees are inseparable; one who has proved the value of this philosophy as he has guided his company through its greatest growth period; and one who has sought diligently to foster such a philosophy throughout American industry."

Conferred by John A. Handy, Jr., at the 30th Annual Personnel Conference of AMA at the Hotel Statler, N.Y., September 24, 1958. Lawrence A. Appley was Chairman and Henning Webb Prentis, Jr. made the presentation address.

--	1959	----------NO AWARD MADE----------

NO.	YEAR	MEDALIST	CITATION
27	1960	Charles Perry McCormick Chairman of the Board, McCormick & Company.	"A dynamic leader in business; a successful practitioner of modern principles of scientific management and valuable contributor of accepted improvements to the management profession, encompassing the humanities without sacrifice of profitable corporate performance and in addition, to influential leadership in the local community and national affairs. Self sacrifice is the unadmitted motivating force behind a record equal to the Gantt Medal Award."

Conferred by Robert G. Hess at the 32nd Annual Personnel Conference of AMA at the Hotel Statler-Hilton, N.Y., September 28, 1960. Lawrence A. Appley was Chairman and Paul G. Hoffman made the presentation address.

28	1961	Col. Lyndall Fownes Urwick Chairman, Urwick, Orr Partners, Ltd., London.	"Recognized authority on management with unusual ability in the field of & organization whose pronouncements have world-wide recognition; devout apostle of the professional stature of the manager; creative leader in adult education for managers; constructive and generous contributor to the world community through his profound works in management in both government and industry."

Conferred by John D. Foster at the 9th Joint Engineering Management Conference at the Hotel Roosevelt, N.Y., September 15, 1961. Marshall Anderson was Chairman and Harold B. Maynard made the presentation address.

29	1962	Austin Joseph Tobin Executive Director, The Port of New York Authority.	"Distinguished public administrator, whose dedication to the principles and practices of progressive management is a vital force which makes the great public terminal and transportation enterprises of Port of New York Authority glow with creative energy. Whose spirited, imaginative, and courageous leadership is a constant source of guidance and encouragement to his associates and to public officials everywhere; and whose area of activity, the Port of New York Authority, has become the symbol of effective management in government."

NO.	YEAR	MEDALIST	CITATION
		Conferred by Charles A. Jurgensen at the 34th Annual Personnel Conference Luncheon of AMA at the Hotel Roosevelt, New York, September 25, 1962. Lawrence A. Appley was Chairman and Dr. Jess H. Davis gave the presentation address.	
30	1963	Lawrence A. Appley President, American Association.	"Distinguished contributor to management practice through his widely acclaimed, imaginative, leadership in broadening the scope and effectiveness of management education programs. Devoted advocate of the importance of the professional attitude in the manager's work; articulate spokesman for the profession of management. Earnest protagonist of sound human relations as the basis for successful business and industry."
		Conferred by Theodore T. Miller at the 13th International Management Congress Luncheon at the New York Hilton Hotel, N.Y., September 17, 1963. Ronald B. Smith was Chairman and Clarence Francis made the presentation address.	
31	1964	Harold Bright Maynard President, Maynard Research Council, Pittsburg, Pa.	"Inspired management scientist who through his creative approaches to increased productivity, his perceptive writings in the United States and abroad, his leadership in organizing many national and world forums, has become a distinguished authority in the world community of scientific management."
		Conferred by Marshall Anderson at the 36th Personnel Conference of AMA at the Palmer House, Chicago, Ill., February 12, 1965. Lawrence A. Appley was Chairman and Louis E. Newman made the presentation address.	

NO.	YEAR	MEDALIST	CITATION
32	1965	Ralph J. Cordiner Retired Chairman and Chief Executive Officer, General Electric Co.	"For contributing to a more open society by researching, articulating and teaching a new, advanced philosophy of managing and organizing. For bold application of decentralization based on his belief in individual responsibility and professional management. For support of educational and personal development through his company's management education programs and aid to schools and colleges. For articulating a concept of social responsibility inseparable from profitable growth, through service to customers, share owners, employees, other businesses, and government. For creative assistance to the Government on critical national problems, and for outstanding service as an executive with the War Production Board."

Conferred by Theodore T. Miller at the 14th Joint Engineering Conference at the Statler-Hilton Hotel, Washington, D.C., September 27, 1966. Gardner M. Reynolds was Chairman and Walker L. Cisler made the presentation address.

--	1966	----------NO AWARD MADE----------
--	1967	----------NO AWARD MADE----------

33	1968	John Erik Jonsson of Dallas and retired Chairman of Texas Instruments, Inc.	"For his management eminence and Mayor imaginative leadership in building a vast industry; for his services to the community as a vigorous protagonist of education, research and civic endeavor for the benefit of his fellowmen and as Mayor of a great metropolis whose inspired enthusiasm has brought new meaning to citizenship."

Conferred by Alexander B. Trowbridge at the 45th Anniversary Banquet of the American Management Association at the Waldorf Astoria Hotel, N.Y., September 26, 1968. Lawrence A. Appley was Chairman and Alex W. Rathe and James F. Oates made presentation addresses.

NO.	YEAR	MEDALIST	CITATION
34	1969	David Packard Deputy Secretary of Defense; Former President Hewlett-Packard, Palo Alto, Calif.	"For his imaginative and decisive leadership in business management, education, community life, and now the national security. Formidable but accessible, an early and ever vigorous champion of minority groups, his labors on behalf of his fellow man are a chronicle of success."

Conferred by Theodore T. Miller at the 41st Personnel Conference of AMA at the Palmer House, Chicago, Ill., February 13, 1970. Alexander B. Trowbridge was Chairman and Lawrence A. Kimpton made the presentation address.

35	1970	Frederick R. Kappel of the Board, International Paper Co., New York, N.Y.	"In recognition of his unique Chairman contributions, not only to the field of business and management, but also to the nation's civic, social, educational and governmental institutions over a period of close to 50 years. For his continuing pursuit and encouragement of individualism and excellence; for his exemplary acceptance and performance of the responsibilities of citizenship; and in particular, for his outstanding contributions to the organization of the new United States Postal Service through his chairmanship of the Presidential Commission, which has become, unofficially, but deservedly, to bear his name."

Conferred by Edwin L. Foltz at the 42nd Annual Personnel Conference of AMA at the Americana Hotel, N.Y., Feburary 9, 1971. Malcolm L. Denise was Chairman and General Lucius D. Clay made the presentation address.

36	1971	Donald C. Burnham Chairman of the Board, Westinghouse Electric Corp., Pittsubrgh, Pa.	"In recognition of his inspirational leadership, constant championing of productivity - improvement, contagious enthusiasm in challenging his associates, and deep concern for the welfare of mankind."

Conferred by Lester R. Bittel at the 43rd Annual Personnel Conference of AMA at the Palmer House, Chicago, Ill., Feburary 10, 1972. Malcolm L. Denise was Chairman and Dean Richard M. Cyert made the presentation address.

NO.	YEAR	MEDALIST	CITATION
37	1972	Robert E. Brooker Chairman, Executive Committees of Marcor, Inc. and Montgomery Ward Company, Chicago, Ill.	"In recognition of his constant search for new solutions to business, civic, social, educational and governmental challenges; for his recognition and acceptance of the responsibilities of corporate citizenship and for his continuing quest for excellence."

Conferred by Frederick K. Atkinson at the 44th Annual Personnel Conference of AMA at the American Hotel, N.Y., February 22, 1973. J. Wade Miller, Jr. was Chairman and John D. DeButts made the presentation address.

38	1973	John T. Conner Chairman and Chief Executive Officer, Allied Chemical Corp., Morristown, N.J.	"In recognition of his tireless efforts to promote the concept of the manager, as a social servant as well as profit producer; his consistent motivation of others to achieve not only within the world of business, but to participate energetically in public life as well; his continuing concern for an interest in people and the human relations aspect of management; and his enduring commitment to the endorsement of socially useful objectives through voluntary action."

Conferred by Harold F. Smiddy at the 45th Annual Personnel Conference of AMA at the Palmer House, Chicago, Ill., February 14, 1974. J. Wade Miller, Jr. was Chairman and The Reverend Theodore M. Hesburgh made the presentation address.

39	1974	Willard F. Rockwell, Jr. Chairman of the Board, Rockwell International Corp., Pittsburgh, Pa.	"In recognition of his life-long concern for the community and the conservation of its resources, his recognition and application of advanced technologies to the improvement of consumer and industrial products, the encouragement and motivation of our youth in facing the challenges and opportunities of our free society, and the dedication of his time and talent to the advancement of the disadvantaged."

Conferred by Dr. George H. Brown at the 46th Annual Personnel Conference of AMA at the Americana Hotel, N.Y., February 25, 1975. Guy B. Ford was Chairman and James R. Shepley made the presentation address.

NO.	YEAR	MEDALIST	CITATION
40	1975	Patrick E. Haggerty Chairman, Texas Instruments, Inc., Dallas, Texas.	"In recognition of his life-long leadership in and contribution to, the field of electronics resulting in far-reaching benefits to society; his skill in the field of human relations, bringing about enlightened personnel policies and programs as well as the development of innovative quality products and service; his dedication to the communication of sound management principles as well as his encouragement of others to distinguish themselves in management by application of these principles; his acceptance of and his generous contributions to numerous responsibilities of citizenship."

Conferred by Wallace J. Richardson at the 47th Annual Personnel Conference of AMA at the Palmer House, Chicago, Ill., February 5, 1976. Guy B. Ford was Chairman and John E. Jonsson made the presentation address.

41	1976	Kenneth R. Daniel President, American Cast Iron Pipe Company, Birmingham, Ala.	"In recognition of his dedication to and application of sound management principles; his leadership in motivating others to become involved in community activities and civic improvements; his contribution to the improvement of minority relations and innovative employee relations programs; his pioneering efforts in preserving the environment; his deep commitment to the responsibilities of corporate citizenship and his recognition of the need for and encouragement of social improvement through voluntary action."

Conferred by John N. Dempsey at the 48th Annual Personnel Conference of AMA at the Americana Hotel, N.Y., March 10, 1977. Lowell F. Johnson was Chairman and Prime F. Osborn made the presentation address.

NO.	YEAR	MEDALIST	CITATION
42	1977	John Dickson Harper Chairman of the Executive Committee, Aluminum of America, Pittsburgh, Pa.	"In recognition of his service to society through his outstanding leadership of a major corporate Company producer of essential materials and products; his positive efforts to forge stronger relationships and better understanding among business, labor and government; his acceptance of duty to the community and the nation as reflected by his aggressive leadership in fighting local, regional, and national social problems; and his encouragement of others to recognize the social responsibility of private enterprise."

Conferred by Hugh H. Estes at the Human Resources Conference of AMA at The Palmer House, Chicago, Ill., February 9, 1978. Lowell F. Johnson was Chairman and W. H. Krome George made the presentation address.

NO.	YEAR	MEDALIST	CITATION
43	1978	John M. Belk President, Belk Stores Services, Inc., Charlotte, N.C.	"In recognition of his contributions which have advanced the cause of professional management within his own organization as well as the community of Charlotte, North Carolina; his role in directing an extensive program of company growth; his service to the City of Charlotte during four consecutive terms as Mayor; his concern for and involvement in the personal growth and development of people within his company and at all levels of city government; and his leadership which has been an inspiration to his business associates and to the members of his community."

Conferred by Donald H. Lyons at the 50th Annual Human Resources Conference of AMA at the New York Hilton Hotel, New York, March 6, 1979. Lowell F. Johnson was Chairman and James L. Hayes made the presentation address. A surprise guest was Mrs. Margaret Gantt Tabor.

NO.	YEAR	MEDALIST	CITATION
44	1979	William Beverly Murphy Retired President, Chief Executive Officer and Member of the Board, Campbell Soup Company, Camden, N.J.	"In recognition of his dedication to sound management principles and leadership; his continuing pursuit of corporate integrity and high standards of product excellence; his personal contribution to his community in organizing and implementing major efforts for urban renewal and civic improvement; his leadership and motivation of others to accept the responsibilities of citizenship."

Conferred by John S. Leslie at the 51st Annual Human Resources Conference of AMA at the New Orleans Mariott Hotel, New Orleans, La., March 27, 1980. Robert E. Palenchar was Chairman and Paul E. Grey, Chancellor, Massachusetts Institute of Technology, made the presentation address.

NO.	YEAR	MEDALIST	CITATION
45	1980	Thornton F. Bradshaw Chairman of the Executive Committee, Atlantic Richfield Company, Los Angeles, Calif.	"In recognition of his acknowledgement and acceptance of business management's responsibility to society at large; his innovative leadership in implementing programs which are models of corporate social responsibility; his concern for the personal growth and development of others; his deep personal commitment to civic responsibility, and his leadership and dedication which have been an inspiration to leaders of business, industry, education and government."

Conferred by H. Gordon Fromm at the 52nd Annual Human Resources Conference of AMA at the Sheraton Washington Hotel, Washington, D.C., March 31, 1981. James L. Hayes was Chairman and The Honorable William F. Smith, Attorney General of the United States, made the introduction of the Gantt Medalist.

THE WALLACE CLARK AWARD

Albrecht M. Lederer

In 1949, one year after the death of Wallace Clark, the Award was established, sponsored by the American Management Association, the American Society of Mechanical Engineers, the Association of Consulting Management Engineers and the Society for Advancement of Management to honor "distinguished contribution to Scientific Management in the international field" as exemplified by the work of Wallace Clark. In later years the title of the Award was changed by the Award Board to "Distinguished Contribution to Professional Management in the International Field."

The Golden Book of Management, edited by L. Urwick, Fellow of ASME, describes the work of Wallace Clark (1880-1948) as follows:

> Wallace Clark made one of the greatest single contributions of any American towards making American methods of management known and used outside his own country. During many years he worked in European countries as a management consultant, advising both private and public concerns. That the older societies of Europe appreciated his exceptional understanding of their problems is shown by the offices and honours which came to him and by the number of languages into which his writings have been translated.
>
> The basis of the philosophy of management which Wallace Clark introduced into Europe was the principles and methods of Henry L. Gantt under whom he had begun his career. He developed and adapted the work of Gantt, adding in his maturity contributions of his own. His industrial gospel for Europe was 'to remove all obstacles to a free flow of work, starting from the bottom up considering nothing as static or impossible.' This implied, of course, more production and better quality in less time at a lower cost but even more, it connoted better working conditions and the philosophy characteristic of Gantt towards human beings in their work. It was nothing else than the 'mental revolution' postulated by Taylor. In Europe it merged into the productivity drive which has become an integral part of the effort for economic recovery after the Second World War. Wallace Clark helped to lay the foundations on which the European productivity movement is based.

The Wallace Clark Award is given not more than once a year. In administering the Award, the Board of Award consisting of representatives of the Sponsors and augmented, on occasions, by representatives of the American

Institute of Industrial Engineers and the Administrative Management Society, will select recipients regardless of their national origin.

The three criteria for the Award are:

1. Evidence of actual practice of scientific management in the Management of commercial enterprises or in professional management consulting outside one's own country.

2. Evidence of scientific management within and outside one's own country through extensive lecturing or teaching, developing schools or courses, service in management associations, writing books and papers, translations or writings, awards, scrolls or titles.

3. Evidence of actual practice of scientific management in management of commercial enterprises or in professional management consulting in one's own country.

The Council for International Progress in Management, (U.S.A.), now the National Management Council, is the trustee of the Award.

The Management Division of ASME participates in the selection of recipients through its Wallace Clark International Award Board. One representative from the Management Division is appointed to this Board for a four year term and he can be eligible for reappointment to a second term.

No Awards have been made in 1975, 1976, and 1977 because the National Management Council has been inoperative. Efforts are now being made to reconstitute the Award on an annual basis.

THE WALLACE CLARK MEDALISTS

THE WALLACE CLARK INTERNATIONAL AWARD

NO.	YEAR	RECIPIENT	COUNTRY
1	1949	Hugo de Haan	Geneva, Switzerland
2	1950	Theodore Limpberg, Jr.	Amsterdam, The Netherlands
3	1951	Lillian M. Gilbreth	New York, N.Y.
4	1952	Rene de Valliere	Zurich, Switzerland
5	1953	Erwin H. Schell	Cambridge, Mass.
6	1954	M. Rolf Nordling	Paris, France
7	1955	Col. Lyndall F. Urwick	London, England
8	1956	Harold B. Maynard	Pittsburgh, Pa.
9	1957	Sir Walter Scott	Sidney, Australia
10	1958	Harold F. Smiddy	New York, N.Y.
11	1959	Count Pierre Baruzy	Paris, France
12	1960	Prof. B. William Berenschot	The Hague, The Netherlands
13	1961	James Joseph Cussen	Santiago, Chile
14	1962	Henry Toulouse	Paris, France
15	1963	Peter F. Drucker	Montclair, N.J.
16	1964	Erich Mittelsten Scheid	West Germany
17	1965	Albrecht M. Lederer	New York, N.Y.
18	1966	Kalyan S. Basu	India
19	1967	Prof. Joseph M. Juran	New York, N.Y.
20	1968	Gerrit van der Wal	The Netherlands
21	1969	Dwayne Orton	New York, N.Y.
22	1970	Gaston Duerinck	Belgium
23	1971	Marvin Bower	U.S.A.
24	1972	Filemon Rodriquez	The Phillippines

NO.	YEAR	RECIPIENT	COUNTRY
25	1973	Eberhard Schmidt	West Germany
26	1974	Pieter Kium	The Netherlands
	1975	NO AWARD	
	1976	NO AWARD	

CHAPTER 6

FUTURE OF THE MANAGEMENT DIVISION

FUTURE OF THE MANAGEMENT DIVISION

Henry B. Wallace, Jr.

THE NEXT ONE HUNDRED YEARS.....

> .....will see other Taylors, Townes, Gantts, Gilbreths of the epochal past emerge to become the visionaries to prescribe mechanisms for coping with the inevitable changing directions of the future influenced by time, space, circumstances and mores. These successors, building on a great heritage, will provide guidance and counsel toward meeting the challenges to management in consequence of the vastly different socio-economic era that will characterize the 21st Century. Their names will be inscribed in the History of the Society's Second One Hundred Years. Along with theirs will be the names of those who assume leadership and associated roles in directing the affairs of the Management Division.

Among many global problem categories that may be expected to influence the next one hundred years are food production, natural resources including potable water, demographic transitions, pollution, cultural changes, weather variations, energy needs, education, employment, land use and preservation, poverty, disease, life extension, geologic adjustments, arms control, technological innovation, money or medium of exchange, political ideology differences, communications, and more. The myriad combinations of these critical categories describe the magnitude of the external pressures to be identified and viable alternatives timely applied to provide the infrastructure for their resolutions to the ultimate benefit of mankind.

This is not to imply that preoccupation with survival will be rampant in the next one hundred years. To the contrary, emerging new technologies and systems in each of the basic disciplines will provide foundations for achievement of the best available solutions to properly identified problems. Concomitantly, reassessment and redirection of values and lifestyles to the realities of a constantly changing order will demand special sensitivity in the development of effective alternate management technologies.

The tradition of ironmongery and blacksmithing that characterized the 17th and early 18th Centuries were replaced dynamically by the high technologies evolved in this Century. Many of the latter will be superseded in the 21st Century. The Goals of A.S.M.E. and the structures of its Divisions will undergo periodic revision to accommodate the new order. In addressing its responsibilities, the Management Division will systematically identify, synthesize and harmonize the persistent and urgent needs for effective new

scientific management principles. Prerequisite to doing so will require recognition that our educational system must be improved to provide manpower needs for the new projects construction and to develop innovative, entrepreneurial talent for their creation.

The words in the prologue will be fulfilled.

APPENDIX

MANAGEMENT BIOGRAPHIES

PIONEERS IN SCIENTIFIC MANAGEMENT WHO WERE ASSOCIATED WITH AND ADDED PRESTIGE TO ASME

"Henry Laurence Gantt: Leader In Industry"
Leon P. Alford - 315 pages, Harpers, N.Y. 1934

"Frederick W. Taylor: Father Of Scientific Management"
Frank B. Copley - Vol. I, 467 pages; Vol. II, 472 pages, Harpers, N.Y. 1923

"Challenge Of The American Know-How"
Pearl F. Clark - 172 pages, Harpers, N.Y. 1948

"The History Of Management Thought"
Claude S. George, Jr. - 210 pages, Prentice Hall, N.J. 1968

"The Quest Of The One Best Way"
Lillian M. Gilbreth - 64 pages, Society of Women Engineers, N.Y. 1924

"L. P. Alford And The Evolution Of Industrial Management"
William J. Jaffe - 366 pages, New York University Press 1957

"I Remember" - 'An Autobiography'
Dexter S. Kimball - 259 pages, McGraw-Hill, N.Y. 1953

"The Golden Book Of Management" - 'An Historical Record of the Life and Work of Seventy Pioneers'
Lyndall Urwick - 298 pages, Newman-Neame, London 1956

"Frank and Lillian Gilbreth: Partners For Life"
Edna Yost - 372 pages, Rutgers University Press, N.J. 1949

"Gantt On Management"
Alex W. Rathe, Editor - 288 pages, The American Management Association, The American Society of Mechanical Engineers 1961

NO.	YEAR	CONFERENCE CO-CHAIRMEN	CONFERENCE THEME/LOCATION
15	1960 Apr. 7-8	Hugh Bogle, ASME Supervisor, Industrial Engineering, E. I. DuPont de Nemours Company Dause L. Bibby, ASME Executive Vice President, Remington Rand Division, Sperry-Rand Corporation, N.Y.	Work Sampling & Time Standards, Cost Reduction and Production and Inventory Control Concurrent Sessions "Meeting the Challenges of the '60's" Hotel Statler, N.Y.
16	1961 Apr. 6-7	Marshall Anderson, ASME Manager, General Purpose Controls, General Electric Company, Bloomington, Ill.	Improving the Technologies of Managing for Profit Concurrent Sessions Statler-Hilton Hotel, N.Y.
17	1962	John F. Blazier, SAM Remington-Rand-Univac Division, New York, N.Y. William T. Short, ASME Manufacturing Engineering Services Department, General Electric Company, Schenectady, N.Y.	Work Management - Cost Reduction - Manpower Management - Management Games Management Games Special Workshops, Concurrent Sessions "Overcoming the Profit Squeeze" Statler-Hilton Hotel, N.Y.
18	1963 June 5-7	R. N. Paulson, SAM Assistant Manager, American Cyanamid, Wayne, N.J. W. E. Porter, ASME Consultant, Rath & Strong, Boston, Mass.	Conference for Profit Oriented Management Special Workshops Concurrent Sessions Pittsburgh-Hilton Hotel, Pittsburgh, Pa.

INTERNATIONAL MANAGEMENT CONGRESSES (CIOS)

Albrecht M. Lederer

The creation of CIOS (Comite International de l'Organization Scientifique) was the logical sequence to the first International Management Congress, held in Prague, Czechoslovakia, July 20-24, 1924. The idea for that Congress was first articulated by the President of the Republic of Czechoslovakia, Dr. T. G. Masaryk who, during his stay in the U.S.A., was immensely impressed with the American theory and practice of industrial efficiency demonstrated during the First World War. Mr. Herbert Hoover, then Secretary of the U.S. Department of Commerce, supported Dr. Masaryk in his plans for such a Congress and indeed became the Honorary Chairman of that Congress.

The Government of Czechoslovakia and the Masaryk Academy of Work extended the official invitation for that Congress to the American Society of Civil Engineering, American Institute of mining and Metallurgical Engineers, American Society of Mechanical Engineers and the American Institute of Electrical Engineers. A joint committee of these four associations accepted the invitation to the Prague Congress and authorized the American Management Association, the Management Division of ASME, the National Association of Cost Accountants, the Society of Industrial Engineers and the Taylor Society to form a joint Committee on American participation.

Leading roles in the preparation of that Congress were taken by Mr. C. W. Rice, the then Secretary of ASME and Mr. L. W. Wallace, the then Secretary of the Federated American Engineers Societies. The American members of the Board of Chairmen for the Congress were Mr. Morris L. Cooke, Mrs. Lillian M. Gilbreth, Mr. C. W. Rice, Mr. J. W. Roe and Mr. L. W. Wallace.

The Congress was attended by 801 persons from 21 countries. From the deliberations during that Congress emerged the desire to form an International Committee (CIOS) and to hold International Congresses every three years. The foundation meeting of CIOS took place in Milan, Italy in 1927.

As membership in CIOS grew, Regional Committees were set up to serve the management development needs in these regions. Thus the European Committee (CECIOS) was organized in 1953, the Panamerican Committee (PACCIOS) in 1954 and the Indo Pacific Committee (IPCCIOS) in 1960. In 1960 IPCCIOS's name was changed to Asian Associations of Management Organizations of CIOS (AAMOCIOS).

CIOS itself changed its name but not its acronym in 1963 to International Council for Scientific Management and then in 1975 to World Council of Management.

Management Associations from 40 countries are now represented in CIOS directly or through three Regional Councils. A fourth Regional Council for North America (U.S.A., Canada and possibly Mexico) was authorized by the Management Board of CIOS, meeting in New Delhi in December 1978. The present American members in CIOS are the American Management Association and the International Management Development Institute.

CIO has consultative status with:

United Nation Economic and Social Council (UN/ECOSOC)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Industrial Development Organization (UNIDO)
International Labour Office (ILO)

In 1977 the CIOS Secretariat was moved from Geneva, Switzerland to the CIOS member in the Netherlands, NIVE.

In 1958 CIOS created the International Academy of Management (IAM) for the purpose of providing CIOS members with a consultative organ at the international level and to exert a creative, intellectual impact and stimulus upon the organizations, bodies, individual researchers or other persons interested in the management movement.

The IAM has presently approximately 175 Fellows and the present Chancellor is Dr. Harold Koontz (USA).

INTERNATIONAL MANAGEMENT CONGRESSES

CIOS

NO.	YEAR	LOCATION	TITLE
1	1924 July 21-24	Prague, Czechoslovakia	FIRST International Congress on Scientific Management Attendance: 801
2	1925 Oct. 14-16	Brussels, Belgium	SECOND International Congress on Scientific Management Attendance: 1100
3	1927 Sept. 5-8	Rome, Italy	THIRD International Congress on Scientific Management Attendance: 1284
4	1929	Paris, France	FOURTH International Congress on Scientific Management Attendance: 1917
5	1932 July 18-23	Amsterdam, The Netherlands	FIFTH International Congress on Scientific Management Attendance: 912
6	1935 July 15-20	London, England, Great Britain	SIXTH International Congress on Scientific Management Attendance: 1645
7	1938 Sept. 19-23	Washington, D.C., U.S.A.	"Economic and Social Significance of Scientific Management" Attendance: 1419
8	1947 July 3-8	Stockholm, Sweden	World Progress in Management Since 1938 William L. Batt, Chairman Attendance: 1400
9	1951 July 5-11	Brussels, Belgium	"Productivity, The Test of of Management Today" William L. Batt, Chairman Attendance: 1287
10	1954 Feb. 19-24	Sao Paulo, Brazil	"Top Management Problems" "The Leadership Role of Management" H. W. Prentis, Jr., Chairman Attendance: 864

NO.	YEAR	LOCATION	TITLE
11	1957 June 24-28	Paris, France	"Concrete Achievements of Enterprises and Other Bodies in the Field of Scientific Management. Future Prospects in the Light of Technical and Social Developments" Attendance: 1633
12	1960 Feb. 22- Mar. 4	Sidney/Melbourne, Australia	"Management in A Developing Country" Attendance: 1727
13	1963 Sept. 16-20	New York, N.Y., U.S.A.	"Human Progress Through Better Management" Attendance: 3073
14	1966 Sept. 19-23	Rotterdam, The Netherlands	"Management and Growth" Attendance: 1069
15	1969 Nov. 4-8	Tokyo, Japan	"The New Role of Management - Innovation, Integration and Internationalization" Attendance: 1068
16	1972 Oct. 22-27	Munich, West Germany	"Management's Commitment in Building the World of Tomorrow" Attendance: 1200
17	1975 Nov. 2-6	Caracas, Venezuela	"Management's Confrontation With New Reality
18	1978 Dec. 5-8	New Delhi, India	"Management Perspectives For Economic Growth and Human Welfare"

EUROPEAN REGIONAL COMMITTEE OF CIOS
"CECIOS"

(Established 1953)

NO.	YEAR	LOCATION	TITLE
1	1954 Oct. 20-23	Torquay, England	"The Contribution of Management to European Prosperity" Attendance: 1200
2	1958 Sept. 30- Oct. 3	Berlin, Germany	"A Free European Market - A Challenge to European Management" Attendance: 860
3	1960 Sept. 19-23	Vienna, Austria	"The Contribution of Scientific Management to the Firm and Its Management" Attendance: 309
4	1962 Oct. 10-13	Rome, Italy	"Scientific Management Facing European Integration and Progress of the Countries Now Being Developed" Attendance: 500
5	1965 June 13-16	Munich, West Germany	"Dynamic Management in A Changing World" Attendance: 672
6	1968 Nov. 25-27	Cannes, France	"Modern Forecasting Methods Available to Management"
7	1971 June 22-25	Brussels, Belgium	"The Strong Company in 1980" Attendance: 430

PAN-AMERICAN REGIONAL COMMITTEE OF CIOS
"PACCIOS"

(Established 1954)

NO.	YEAR	LOCATION	TITLE
1	1956 Nov. 12-17	Santiago, Chile	"The Problems of Scientific Management in Growth Countries" "Management and Organization Opportunities in Growth Countries" Attendance: 650
2	1958 Nov. 16-21	White Sulphur Springs, West Virginia	"Management Opportunities and Problems in the Western Hemisphere" "Managers for Expanding Economies" Attendance: 152
3	1961 Mar. 2-12	Mexico City, Mexico	"Social Problems in the Americas" Attendance: 774
4	1962 Nov. 5-10	Buenos Aires, Argentine	"Better Techniques for Human Progress" Attendance: 203
5	1964 Nov. 8-14	Lima, Peru	"The Firm Facing The Processes of Development and Integration"
6	1967 June 18-21	Montreal, Canada	"Management in the Future"
7	1971 Sept. 6-8	Cali, Columbia	"Latin American Management and the Challenge of our Time" Attendance: 400
8	1973 Sept. 9-13	Caracas, Venezuela	"Nationalism, Technology and Development"

INDO-PACIFIC REGIONAL COMMITTEE OF CIOS
"IPCCIOS"

ASIAN ASSOCIATION OF MANAGEMENT ORGANIZATIONS OF CIOS
"AAMOCIOS"

(Established 1960)

NO.	YEAR	LOCATION	TITLE
1	1962 Nov. 18-23	Manila, Phillipines	"Management and the Challenge of Change" Attendance: 160
2	1965 May 7-11	Tokyo, Japan	"The Role of Management in Economic Development" Attendance: 417
3	1968 Oct. 1-5	Hong Kong	"Asia - The Challenge to Management" Attendance: 269
4	1971 Nov. 22-27	New Delhi, India	"Tradition and Modernity" Attendance: 700
5	1974 Oct. 20-24	Auckland, Australia	"Management's Role in Improving Productivity and the Way We Live"
6	1977 Oct. 31- Nov. 3	Singapore, Singapore	"The Making of A Manager"

CHAPTER 5

LECTURERS/MEDALISTS

Henry Robinson Towne Lectures

History

Lecturers 1925-1980

Henry Laurence Gantt Medal Awards

History

Gantt Medal Board of Award -
Charter and Rules of Procedure

List of Medalists 1929-1980

The Wallace Clark Award

History

The Wallace Clark Medalists 1949-1974

THE HENRY ROBINSON TOWNE LECTURES

Lester R. Bittel

> To honor Henry Robinson Towne -- ASME President, 1889 -- whose paper in 1886 on "The Engineer as an Economist" initiated valuable society contributions.

If one single event, one brief but impassioned speech before a small body of technicians, can be said to have triggered the search for a rational and systematic science of management, it is Henry Robinson Towne's noted address. Engineering, primitive as it was in the 1880's, was already accepted as a scientific discipline. Management, as an identifiable practice, however, was only vaguely sensed. Shop floor management was recognized as a necessary element of manufacturing support, but generally relegated to paper work and record keeping. What Towne called for in 1886 was something much more than this. He wanted the development of a scholarly craft of general management. Towne observed in his lecture:

> The organization of productive labor must be directed and controlled by persons having good executive ability, possessing the practical familiarity of a mechanic or engineer with the goods produced and the processes employed, but having also a practical knowledge of how to observe, record, and analyze essential facts in relation to wages, supplies, expense accounts and all else that enters into or affects the economy of production and the cost of the product.

Accordingly, Towne concluded that:

> The management of the works has become a matter of such great and far-reaching importance as perhaps to justify its classification as one of the modern arts.

To foster this development, Towne urged an organized exchange of experiences among works managers of different companies, with ASME taking the lead. The data thus gathered and assessed, Towne reasoned, would form a basis for development of a management science. The Society was slow to act upon this recommendation, and it was not until 1907 that it recognized the subject of management engineering, or until 1920 that the Management Division was begun.

Towne's landmark lecture and his other writings reflected the eclectic nature of his thinking in that he projected visions of managerial practices

that are commonplace today. For example, Towne foresaw:

Profit sharing. His term was "gain sharing," a form of group wage incentive developed at his own firm in which gains were awarded to departments on the basis of their relative efficiency.

Data processing. Towne suggested in his lecture a subordinate department of "Shop Forms and Blanks" to serve the two major departments of Shop Management and Shop Accounting.

Management Information Systems. Towne observed that in the ordinary manufacturing company that there were 20 various records and account books with more than 100 forms and blanks. What was needed, he said was "the systematic recording of the operations of the different departments of the works, and the computation from there of such statistical information as is essential to the efficient management of the business, and especially to increased economy of production." Surely, he was thinking in terms of what would now be called "quantitative methods."

Metric conversion. Not surprising for an international figure who could speak French fluently, Towne spoke out in 1906 on "Our Present Weights and Measures and the Metric System."

Henry Robinson Towne was a giant of his time. His education was at the University of Pennsylvania and at the Sorbonne in Paris. He served a 4-year shop apprenticeship, studied engineering practices (notably power transmission) in Europe for a year, then worked as an engineer for a year before founding (with Linus Yale, Jr.) in 1868 what was to become the Yale and Towne Manufacturing Company. Towne was active in diverse areas: president of the Merchants' Association of New York; a president of the Morris Plan Company of New York; a director of the Federal Reserve Bank of New York; and treasurer of the National Tariff Commission Association.

Towne's prescience and diversity has been reflected by the Towne lecturers and their subjects. The lecturers have included notable business leaders, entrepeneurs and professional managers, consultants, university deans, former admirals, public servants, and an individual (Herbert Hoover) destined to be the president of the United States. Lecturers have come from as far away as Australia, England, and Switzerland. The topics that the lecturers have chosen to discuss have typically mirrored their times while looking ahead to the future. These subjects ranged widely from philosophical to the pragmatic; from research and development (Hoover) to credit management (Dewey); from long-range economic planning (Donham) to materials and methods (Swope); from taxation (Adams) to apes as models for human factors engineering (Hooten); from Marxism (Wilson) to free enterprise (Robertson); from inventions (Rabinow) to the threat of technology (Boveri); from leadership (Blackall) to productivity (Burnham). A common, and encouraging thread has run through many of the lectures: a managerial concern for society, human beings, and ethical behavior. These particular lectures have featured: professionalism in the business corporation (Smiddy), management's expanding responsibility (Packard), a concern for the cities (Jonsson), public responsibility (Reinecke), energy development (Seamans), and management leadership in a pluralistic society (Drucker).

The Towne Lecture was established in 1925 by the American Society of Mechanical Engineers to give an opportunity for an outstanding leader in the field of management, economics, or business to reveal his or her experience, preferably related to the scientific method in industry or business. The lectures are intended by the Society to provide a valuable flow of information on scientific management. A certificate is presented to the lecturer.

THE HENRY ROBINSON TOWNE LECTURES

NO.	YEAR	LECTURER	TITLE
1	1925	The Honorable Herbert Hoover United States Department of Commerce, Washington, D.C.	"The Economic Value of Research in Pure Science"
2	1926	Davis Rich Dewey Department of Economics, Massachusetts Institute of Technology, Cambridge, Mass.	"The Credit Factor in the Structure of Industry"
3	1927	T. S. Adams Professor of Political Economy, Yale University, New Haven, Conn. President, American Economic	"The Relationship Between Industry and Taxation" - 'An Economist's View of a Sound Program for American Business in the Field of Association'
--	1928	----------NO LECTURE----------	
--	1929	----------NO LECTURE----------	
--	1930	----------NO LECTURE----------	
4	1931	W. B. Donham Dean, Graduate School of Business Administration, Harvard University, Cambridge, Mass.	"The Temporary Emergency and Twenty-Year Plan"
5	1932	A. W. Robertson Chairman of the Board, Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa.	"The Scientific Approach to Human Affairs"
6	1933	David Cushman Coyle Consulting Engineer, New York, N.Y.	"High Productivity and the Distribution Problem"
7	1934	Dexter S. Kimball Past President, ASME Dean, College of Engineering, Cornell University, Ithaca, N.Y.	"Prophets and Panaceas"
8	1935	Ralph E. Flanders Past President, ASME President, Jones & Lamson Machine Company, Springfield, Vt.	"New Pioneers on a New Frontier"

NO.	YEAR	LECTURER	TITLE
9	1936	James Rowland Angell President, Yale University (Retired), New Haven, Conn.	"Achievements of Westinghouse as Factors in Our Modern Life"
10	1937	Earnest A. Hooten Professor of Anthropology, Harvard University & Curator, Peabody Museum, Cambridge, Mass.	"The Simian - Basis of Human Mechanics - or - Ape to Engineer"
11	1938	Gerard Swope President, General Electric Company, New York, N.Y.	"Mechanical Engineering - Men, Materials and Methods"
--	1939	----------NO LECTURE----------	
--	1940	----------NO LECTURE----------	
--	1941	----------NO LECTURE----------	
--	1942	----------NO LECTURE----------	
--	1943	----------NO LECTURE----------	
--	1944	----------NO LECTURE----------	
--	1945	----------NO LECTURE----------	
12	1946	Charles E. Wilson President, General Motors Corporation, Detroit, Mich.	"The Great Delusion - Where Marx Went Wrong"
--	1947	----------NO LECTURE----------	
13	1948	H. B. Maynard President, Methods Engineering Council, Pittsburgh, Pa.	"The Role of Scientific Management in World Recovery"
14	1949	Frederick S. Blackall, Jr. President & Treasurer, Taft- Pierce Manufacturing Company, Woonsocket, R.I.	"The Obligation to Management to Provide Leadership"
15	1950	A. W. Robertson Chairman of the Board, Westinghouse Electric Corp., Pittsburgh, Pa.	"The Individual and Free Enterprise"
--	1951	----------NO LECTURE----------	
--	1952	----------NO LECTURE----------	

NO.	YEAR	LECTURER	TITLE
16	1953	Philip M. McKenna President, Kenametal, Inc., Latrobe, Pa.	"Economics and the Engineer"
--	1954	----------NO LECTURE----------	
17	1955	Crosby Field President, Flakice Corp., Brooklyn, N.Y.	"The Greatest Achievement of the Engineer in Commerce and Industry"
--	1956	----------NO LECTURE----------	
--	1957	----------NO LECTURE----------	
18	1958	Walter E. Boveri Chairman of the Board, Brown-Boveri Company, Ltd., Baden Switzerland	"Man's Conflict with Technical Progress"
19	1959	James M. Gavin Executive Vice President, Arthur D. Little, Inc., Cambridge, Mass.	"The Challenge of the Sixties"
20	1960	Lyndall F. Urwick Chairman, Urwick, Orr & Partners, Ltd., London, England	"Engineers in Management - Past and Future"
21	1961	Walter D. Scott Director, W. D. Scott & Co., Pty, Ltd., North Sidney, Australia	"The Greatest Challenge - Challenge of Integrity"
22	1962	Harold F. Smiddy President, Academy of Management, New York, N.Y.	"The Professional in the Business Corporation"
23	1963	Louis E. Newman President, Smithcraft Corp., Chelsea, Mass.	"Managing in a Changing World"
24	1964	David Packard Chairman of the Board, Hewlett-Packard Company, Palo Alto, Calif.	"Management's Expanding Responsibilities"
25	1965	George E. Keck President, United Airlines, O'Hara International Airport, Chicago, Ill.	"Engineering's Relation to Objectives"

NO.	YEAR	LECTURER	TITLE
26	1966	Albert G. Mumma Rear Admiral, U.S. Navy (Ret.) Executive Vice President, Worthington Corporation, Harrison, N.J.	"For the Engineer: The Past is Prologue"
27	1967	Donald G. Burnham President, Westinghouse Electric Corp., Pittsburgh, Pa.	"Productivity - Key to Progress"
28	1968	J. Erik Jonsson Mayor of Dallas, Texas Honorary Chairman of the Board, Texas Instruments, Inc., Dallas, Texas	"Avalanche: The Cities and the Seventies"
29	1969	Ed Reinecke Lieutenant Governor, State of California	"Public Responsibility of Engineers"
30	1970	Peter F. Drucker Professor, New York University, New York, N.Y.	"The Price of Success - Management Leadership in A Pluralistic Society"
31	1971	James L. Hayes President, American Management Association, New York, N.Y.	"A Universal Concept"
32	1972	Jacob Rabinow Chief Officer of Invention and Innovation, National Bureau of Standards, Washington, D.C.	"The Art of Economics of Invention"
33	1973	Lester R. Bittel Director, Academy Hall, Inc., Strasburg, Va.	"From Work Measurement to Work Management; From Wage Incentive to Work Itself"
34	1974	Jay W. Forrester Professor of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass.	"The Need to Look Ahead"
35	1975	Robert C. Seamans, Jr. United States Energy Research & Development Administration, Washington, D.C.	"Latest Development in Energy Research and Development"

NO.	YEAR	LECTURER	TITLE
36	1976	Willard F. Rockwell Chairman of the Board, Rockwell International Corp., Pittsburgh, Pa.	"The Alchemists: Fear and Wonderment"
37	1977	Edgar B. Speer Chairman of the Board, U.S. Steel Corporation, Pittsburgh, Pa.	"The Engineer and the Human" Presented for Mr. Speer by Haran W. Bullard, Vice President and General Manager, Southern Steel Div.
38	1978	D. Robert Yarnall Chairman of the Board, Yarway Corporation, Blue Bell, Pa.	"Can Managers Handle Freedom?"
39	1979	Frank A. Lee President and Chief Executive Officer, Foster Wheeler Corp., New York, N.Y.	"The Obsolescent Engineer"
40	1980	Allen Martin President, Computervision Corp., Bedford, Mass.	"CAD/CAM and the Third Industrial Revolution"

THE HENRY LAURENCE GANTT MEDAL

Charles M. Merrick

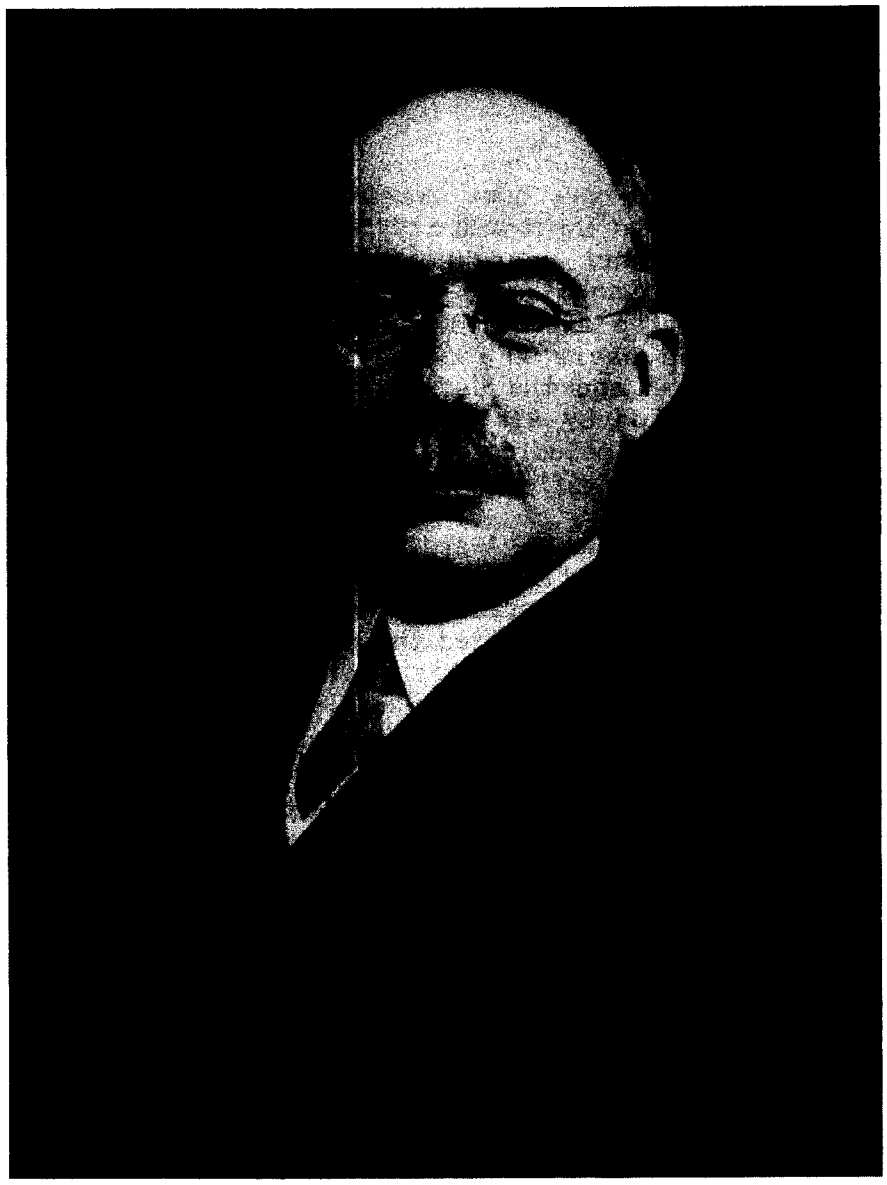
Forty-five Gantt Medals have been awarded "for distinguished achievement in management as a service to the community" beginning with the first award in 1929 to Henry Laurence Gantt post-humously. At the award ceremony the recipient is presented the Gantt Medal which bears on the rim the name of the medalist and the date of the award. The accompanying certificate states the basis for the award and bears the names of the Board of Award and the signatures of the chairman and the secretary. A copy of the book entitled "Gantt on Management" edited by Alex W. Rathe is presented to the medalist. Proceedings of the meeting, including the acceptance speech, are published and distributed.

Since its founding, the Gantt Award has been bestowed upon outstanding leaders of societies associated with management, enlightened industrial and business executives, far-sighted academicians, and prominent consultants who have pioneered, advanced and popularized the profession of management.

Recipients of the Medal are chosen, usually annually, by a distinguished board of ten members, five each from the American Management Associations and the American Society of Mechanical Engineers. Nominations are submitted to the Gantt Board by a cross-section of the foremost management leaders in America.

The Gantt concept, which is honored by the Medal, was the result of over thirty years of work by Henry L. Gantt as a mechanical engineer and management consultant in industry, advising industry, and stimulating production for national defense. Gantt constantly sought to turn the potential of industry into a broad contribution of service, that could revolutionize the future of our civilization.

The idea of the Medal was developed late in 1928 by Walter N. Polakov, an early associate of Gantt, who suggested it to W. L. Conrad, another early associate, and Leon P. Alford, then President of the Institute of Management, a division of the American Management Association. The three initiated the plans to inaugurate a medal as a fitting memorial to the principles and ideals of Gantt. During the summer of 1929, Clarence E. Davies, then Assistant Secretary of the American Society of Mechanical Engineers, became associated with the project and supervised the collection of the fund. The Medal was designed by Julio Kilyeni, a sculptor who had achieved distinction as a designer of fine medals including the Fiftieth Anniversary Medal of ASME. The Medal, fashioned as a square, has on its face the image, in relief, of Gantt.



HENRY LAURENCE GANTT

1861-1919

The reverse side bears the words "For Distinguished Achievement in Management" and the letters of the sponsors - AMA and ASME. The Certificate of Award was designed by Meiric K. Dutton, a well known designer of fine prints and then Professor of Graphic Arts at the Carnegie Institute of Technology.

On Tuesday, November 19, 1929, a convenient date near the tenth anniversary of Gantt's death, the first Medal was awarded post-humously to Gantt at the Hotel Astor in New York. L. P. Alford, President of the Institute of Management, and Conrad N. Lauer, Vice-President-Elect of the American Society of Mechanical Engineers presided jointly over a dinner meeting of sixty friends and former associates of Gantt.

Walter M. Polakov presented the Deed of Gift to the Institute of Management and pointed out that an award of a medal in Gantt's memory would be a:

> "fitting bonus to those who learn his brilliant and human ways and practice them, thus attaining the task of serving the community first."

Fred J. Miller, Past President of ASME and a close associate of Gantt, paid tribute to him as an apostle of industrial peace.

Reginald A. Wentworth read excerpts from the significant writings of Gantt and in a splendid eulogy evaluated his work and philosophy. At the conclusion of his address he presented the first medal to Gantt's daughter, Margaret Gantt Tabor, who received it with a gracious and sincere expression of her appreciation of the recognition of her father's work.

The Gantt Medal Board was established in 1930 by appointment of these representatives for the Institute of Management: Stanley P. Farwell, Dwight T. Farnham, and Joseph W. Roe, and for the American Society of Mechanical Engineers: W. L. Conrad, C. N. Lauer, and D. S. Kimball. Later the Board was increased to four from each organization and currently consists of five each from the American Management Association and from the Management Division of the American society of Mechanical Engineers. Officers are a Chairman and a Vice-Chairman elected each year. Common practice has been to alternate these offices between the two organizations. The Board appoints a Secretary who need not be a member of the Board.

Clarence E. Davies was the conscientious and energetic Secretary of the Gantt Board from 1929 to 1968. At that time the Board recognized Davies' dedicated service by making him an Honorary Lifetime Member. In 1970, Robert G. Butler, Corporate Vice-President and Secretary of AMA, was appointed Secretary of the Gantt Medal Board and continues to serve in that position.

In 1934, the Board Board of Awards purchased twenty-five copies of the Life of Gantt, autographed by the author. Since that time a copy has been presented to each recipient of the Medal. The book is titled "Henry Laurence Gantt - Leader in Industry," (May 20, 1860-Nov. 23, 1919) by Leon P. Alford, 315 pages, Harpers, N.Y., 1934, published by ASME.

At the one hundredth anniversary of Gantt's birth, AMA and ASME jointly published - "Gantt on Management," edited by Alex W. Rathe, New York, 1961. The book resulted from a two year painstaking compilation of Gantt's writings by Professor Rathe and his colleagues, some unpublished and others out of print. Thus is preserved the profound observations of this remarkable management engineer, Henry L. Gantt. This is the book which is now presented to each Gantt Medalist.

The Gantt Medal Board of Award has a Charter and also Rules of Procedure which follow. The documents are amended from time to time subject to the approval of the governing bodies of AMA and ASME. In addition, the Gantt Medal Board has printed Specifications for Nominees for Gantt Medal to assist the members of the Gantt Nomination Board.

GANTT MEDAL BOARD OF AWARD

The Charter, an agreement between the American Management Association and the American Society of Mechanical Engineers, as sponsors, states the general policies governing the award of the Henry Laurence Gantt Medal, establishes the Gantt Medal Board of Award and delegates to it the responsibility and authority to adopt and amend the Rules of Procedure to carry out the Charter provisions.

The Charter

I - The Gantt Medal Board of Award

A. Mission:

The broad mission of the Gantt Medal Board of Award is to increase public awareness of the importance of service to the community-at-large brought about by excellence in management in any segment of our society, and to publicize the teachings of Gantt in these fundamentals. This mission is to be accomplished through the award of the Gantt Medal and related activities.

B. Duties:

The Gantt Medal Board of Award shall:

1. Select recipients for the Henry Laurence Gantt Medal,
2. Direct arrangements for the presentation of the Medal and all related activities,
3. Assure widest possible dissemination of the concepts which the Medal honors,
4. Formulate policies and approve Rules of Procedure consistent with this Charter for the guidance of the work of the Board and the Secretariat.

C. Make-Up of the Board:

The Gantt Medal Board of Award shall consist of ten Members, five named by each sponsor, each to serve a term of five calendar years with the term of one of each sponsor's appointees expiring each year.

Each sponsor shall designate a senior staff officer as an ex-officio member of the Board without vote.

Honorary, Lifetime Members, as designated by the Board, shall be ex-officio members of the Board without vote.

D. Qualifications of Board Members:

Each sponsor shall assume the responsibility of selecting as its appointees persons with:

1. Sound judgment,
2. Wide acquaintance with management leaders,

3. Dedication to the purpose of the Gantt Medal Award and the importance of Gantt's teachings as guides in judging achievement worthy of this particular national recognition,
4. Time and willingness to assume and perform the tasks necessary to carry out Board responsibilities.

The Chairman and Vice Chairman of the Board shall maintain close relation with the sponsors so that the above requirements are met.

E. Officers:

The Officers of the Board shall consist of a Chairman and a Vice Chairman elected by the Board from the Members. The Secretariat responsibility shall be provided by the American Management Association which will appoint the Secretary to the Board from among its members or staff, with the advice and consent of the Board. The Officers shall be chosen for terms of one year.

In addition to performing the customary duties, the Chairman and Vice Chairman are charged with the responsibility of taking steps to insure that the Board fulfills its mission, and the Secretary with the responsibility for administering the procedures of Board operation, providing or securing necessary professional and administrative support, and for safeguarding records and properties of the Board.

F. Meetings of the Board:

The Board shall schedule its meetings at least thirty days in advance. The Annual Meeting shall be held each year, at which time Officers shall be elected and the schedule for future meetings and other steps to be taken in awarding the year's Medal and later Medals shall be determined.

The quorum for transaction of business at a Board meeting shall be six votes, provided there are present at least two appointees of each sponsor.

The Medalist shall be chosen by a confidential letter ballot of the entire Board, eight favorable votes being required for a selection.

II - Criteria for Medalist

The Medal shall be awarded not more than once a year to recognize "distinguished achievement in management as a service to the community."

This qualification, the essence of Gantt's management philosophy, intends to recognize exceptionally significant fulfillment of a manager's obligation to serve the basic aims of the enterprise while making comparable contributions to the advancement of the society-at-large.

III - Medal Funds

The principal of the Gantt Medal fund shall be in the custody and administration of the American Management Association without restriction upon

its investment, and such principal may be pooled for investment purposes with other funds of the Association.

The Income Account of the Gantt Medal Board, also in the custody of the American Management Association, shall also be under the control of the Gantt Medal Board.

IV - Charter Amendments

Changes in the Charter shall be made by the governing bodies of the sponsors upon recommendation of the Board or upon the initiative of a sponsor with the concurrence of the Board.

V - Future Review

In 1980, the Board of Award shall review the policies and procedures for the operation of the Board and make recommendations.

May 27, 1969
Supersedes Version of December 12, 1967

Rules of Procedure

I. Criteria for Selection of Medalist:

The principal criterion for the selection of a Gantt Medalist is his "distinguished achievement in management in advancing society."

To reach a judgment about a Medal recipient on the basis of the principal criterion, the Board needs reliable information on the following points for each candidate:

A. His national or international stature.
B. The contributions of the enterprise in serving the community and the success of the candidate in promoting this function.
C. Efforts of the candidate in other activities to serve the community.
D. The pattern he has followed in inspiring others to distinguished achievements in management in the sense of the Medal.
E. The evidence of the esteem in which he is held by his contemporaries.
F. His contributions to organizations devoted to the advancement of management.
G. His contributions to the literature of management (addresses, writings or teachings).

II. Nominations:

The Board shall appoint a panel of twenty or more Nominators, men of experienced judgment who understand the criteria for the award of the Medal and who possess broad knowledge of the management field. The Nominators will serve for a period of four years. Each Board Member may be assigned several Nominators with whom he will work.

Periodically but at least yearly, the Secretary shall request each Nominator to suggest candidates worthy of consideration, with information from the Nominator's knowledge of the qualifications of the candidates for the bestowal of the Medal. The Secretary will review the nomination and supporting information. If he deems it lacking is some respect, he will consult the Member of the Board assigned to work with the Nominator who made the suggestion and determine the action to be taken: whether to request further information from the Nominator, to seek other sources of information, or to drop the candidate. When the proposal of a candidate is completed to the satisfaction of the responsible Board Member, it will be submitted to the Board for consideration.

At no time shall prospective candidates be informed that they are being, or will be, considered by the Board.

III. Selection of Medalist:

Completed proposals will be sent to each Board Member three weeks before the Board Meeting scheduled as a Selection Meeting at which the Board shall consider the proposals and shall, if possible, select a candidate for a confidential letter ballot of the ten Members, closing two weeks after the date of the Selection Meeting.

The letter ballot shall be canvassed by the Chairman who shall inform the recipient. Upon receipt of the acceptance, the Chairman may make a public announcement.

At the Selection Meeting, the Board shall decide which proposals are to be kept for later consideration. Other proposals shall be destroyed.

IV. Presentation:

The Chairman of the Board who presided at the Selection Meeting when the candidate was given final consideration, shall be responsible for the arrangements of the presentation ceremonies and shall present the Medal. In addition to the Medal, the Medalist will receive a Certificate bearing the citation and date of award, and a copy of "Gantt on Management."

V. Award Pamphlet:

The Board shall publish and distribute a record of the award ceremonies, including the citation for the award and the response made by the Medalist. The record shall be distributed to a list approved by the Board.

VI. Publicity:

The selection of the Medalist and ceremonies of the bestowal provide additional opportunities for public education about the ideals and purposes of the Medal as a measure of eminence in management. These opportunities must be exploited fully with all the resources at the command of the Board and of the sponsors.

VII. Budget:

The Board shall prepare a budget of expense for its work each year, and before committing the expenditures, shall assure the availability of funds.

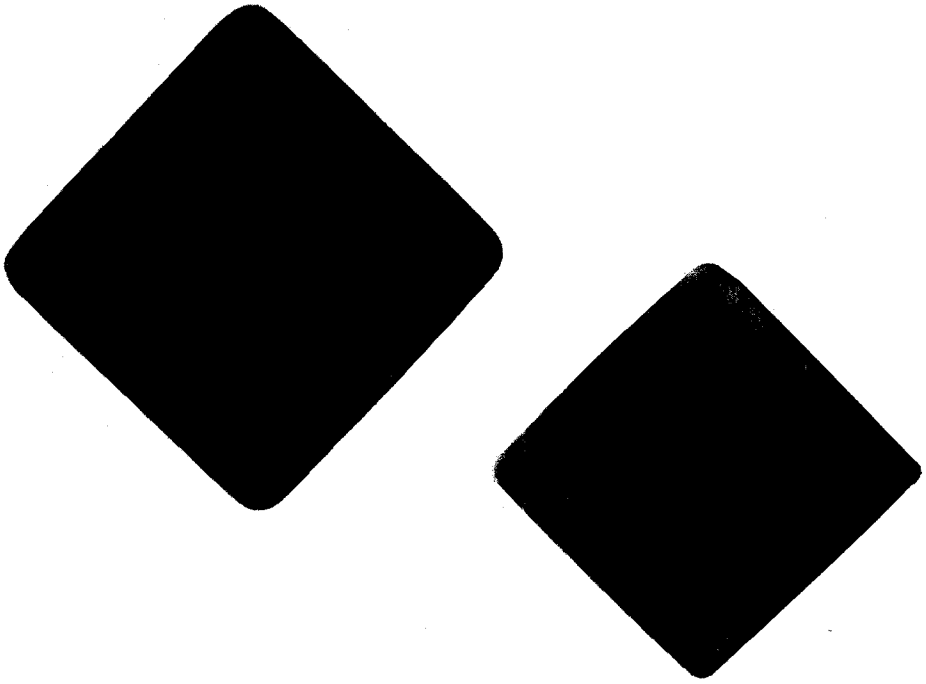
VIII. Income Account Withdrawal:

Vouchers for the withdrawal of funds from the Income Account of the Board shall be signed by any two of the officers.

IX. Amendments:

At any regularly called meeting, the Board may modify these Rules of Procedure, provided the proposed amendments are submitted in writing to the Members of the Board at least twenty days before the meeting.

May 27, 1969
Supersedes Version of December 12, 1967



GANTT MEDALISTS

NO.	YEAR	MEDALIST	CITATION
1	1929	Henry Laurence Gantt	Posthumously awarded to his daughter, Margaret Gantt Talbot by L. P. Alford and Conrad N. Lauer.
		Presented at a dinner meeting at the Hotel Astor, November 19, 1929, arranged by sixty friends and associates of Henry L. Gantt at the tenth anniversary of his death.	
2	1930	Fred J. Miller General Manager, Remington Typewriter Co.; Editor-in-Chief, American Machinist.	Industrial Engineer. "Industrial Administrator, Statesman with a high sense of public responsibility, whose wisdom and experience influenced Gantt's philosophy of management."
		Conferred by Leon P. Alford at the 50th Anniversary of ASME at the U.S. Chamber of Commerce Building, Washington, D.C., April 8, 1930. Conrad N. Lauer was Chairman and Dean Dexter S. Kimball made the presentation address.	

NO.	YEAR	MEDALIST	CITATION
3	1931	Leon Pratt Alford Professor of Engineering, New York University; Gantt's noted biographer.	Engineer and Editor. "For long and distinguished service in the field of Industrial Engineering."

Presented by E. O. Griffenhagen at a special dinner jointly arranged by the Institute of Management of AMA and ASME at the Hotel Pennsylvania, N.Y., October 29, 1931. E. O. Griffenhagen was Chairman and Harolf V. Coes made the presentation address.

4	1932	Henry Sturgis Dennison President, Dennison Manufacturing Company; Between the World Wars he made it one of the most progressive companies in the United States.	"One of the leading contributors to the development of the science and art of management."

Conferred by Joseph W. Roe at the Semi-Annual Meeting of ASME during Engineers Week at the Century of Progress Exposition in Chicago at the Stevens Hotel, Chicago, Ill., on June 28, 1933. Joseph W. Roe was Chairman and E. O. Griffenhagen made the presentation address.

5	1933	Wallace Clark Head of his own consulting firm. Instrumental in making management known overseas.	"In recognition of his distinguished service in the development and promotion of scientific management in the United States and abroad."
6	1934	Horace B. Cheney Vice President, Cheney Brothers, South Manchester, Conn.	"In recognition of his distinguished industrial leadership and his part in making possible Mr. Gantt's notable work at the Cheney Mills, in supporting him in its development, and in its maintenance through the succeeding years."

Conferred by Joseph W. Roe at Special Exercises at Stevens Institute of Technology, Hoboken, N.J., on December 6, 1934. Paul Doty was Chairman. Dr. Lillian M. Gilbreth made the presentation address for Wallace Clark and Colonel Malcolm Rorty for Horace B. Cheney. (Wallace Clark was absent from the country last year.)

7	1935	Arthur Howland Young Vice President, U.S. Steel Corp.; Industrial Relations Counsel and Safety Expert.	"For outstanding and creative work in the field of industrial relations."

NO.	YEAR	MEDALIST	CITATION
		Conferred by Harold V. Coes at a dinner meeting of the Institute of Management of AMA at the Hotel Pennsylvania, May 24, 1935. Harold B. Bergen was Chairman and Clarence J. Hicks made the presentation address.	
8	1936	Morris Evans Leeds President, Leeds & Co.; Engineer and inventor of electrical and temperature measuring instruments. Leader in public humanitarian programs.	"For distinguished achievement in management as a service to the Northrup community."
--	1937	----------NO AWARD MADE----------	
--	1938	----------NO AWARD MADE----------	
--	1939	----------NO AWARD MADE----------	
9	1940	William Loren Batt President, SKF Industries; Chairman of the Board, American Management Association; President of American Society of Mechanical Engineers; Leading administrator of U.S. production during WW II and diplomatic posts.	"For distinguished and liberal-minded leadership in the art, science and philosophy of industrial management in both public and private affairs."
		Conferred by William A. Hanley at the Management Conference on National Defense held by the Management Division of ASME at the Engineers Club of Philadelphia on April 22, 1941. Leon P. Alford made the presentation address and presided.	
10	1941	Paul Eugene Holden Professor of Industrial Management, Stanford University School of Business. World War II industrial and economic adviser to government agencies.	"For outstanding achievement in the application of management principles in industry and business and noteworthy contribution to management knowledge."
		Conferred by Harold V. Coes at the 62nd Annual Dinner Meeting of ASME at the Hotel Astor, N.Y., on December 3, 1941. William L. Batt was Toastmaster and Wallace Clark made the presentation address.	
--	1942	----------NO AWARD MADE----------	

NO.	YEAR	MEDALIST	CITATION
11	1943	Dexter Simpson Kimball Dean, Sibley College of Engineering, Cornell University, Ithaca, N.Y.; Author "Principles of Industrial Organization", 1st Edition 1913; 5th Edition 1939.	Educator and Writer. "For outstanding attainment in the teaching and practice of industrial management and for distinguished contributions to its literature."

Conferred by Wallace Clark at the 64th Annual Dinner Meeting of ASME at the Hotel Pennsylvania, N.Y., December 1, 1943. Edward C. Elliott was Toastmaster and Dr. Harvey N. Davis made the presentation address.

12	1944	Lillian Moller Gilbreth and (posthumously) Frank Bunker Gilbreth Developed motion study basic management techniques.	Consulting Engineers. "In recognition of their pioneer work in management, their development of the principles and techniques of motion study, the and application of those techniques in industry, agriculture, and the home, and their work in spreading that knowledge through courses of training and classes at universities."

Conferred by Wallace Clark at the 65th Annual Meeting Dinner of ASME at the Hotel Pennsylvania, N.Y., November 29, 1944. William L. Batt was Toastmaster and Wallace Clark made the presentation address.

13	1945	John Milton Hancock Partner, Lehman Brothers; World War I naval career; Revitalized Jewel Tea Company; Office of War Mobilization, War II	"In recognition of his part in the forumulation of national policy for the successful prosecution of war and for economic progress in peace: and in acknowledgement of his achievements in increasing effectiveness by his World incisive influence on management thought and action in the development of the abilities, skills and cooperation of men to their maximum potentialities."

Conferred by Harold V. Coes at the AMA Conference on General Management at the Waldorf-Astoria Hotel, N.Y., October 10, 1945. William L. Batt served as Toastmaster and made the presentation address.

NO.	YEAR	MEDALIST	CITATION
14	1946	Paul Gray Hoffman President, Studebaker Corporation; Chairman of Board, Committee for Economic Development; Director, United Nations Special Fund.	"For providing an inspiring, practical example of successful management-labor relations in a free society, preserving the best traditions of the American heritage of individual dignity, democracy and personal responsibility: and for able leadership in developing private and public management policies to promote the general welfare by fostering a stable national economy."

Conferred by John A. Willard at the 18th Personnel Conference of AMA at the Statler Hotel, Boston, Mass., October 8, 1946. Keith McHugh presided and Ralph E. Flanders made the presentation address.

15	1947	Alvin E. Dodd President, American Management Association.	"For his leadership in stimulating greater recognition and acceptance of the social responsibilities of management; and for his success in building the American Management Association into an authoratative forum for collecting, analyzing and disseminating management knowledge."

Conferred by Harold V. Coes at the Management Luncheon of the ASME Annual Meeting at Chalfonte-Haddon Hall, Atlantic City, N.J., December 4, 1947. Eugene W. O'Brien was Chairman and John M. Hancock made the presentation address.

16	1948	Fowler McCormick Former Chairman of the Board, International Harvester Company	"For distinguished leadership of business management in the area of human relations for understanding and advancement of the concept of business operation in the interest of the consumer, the employee, the investor and the community; and for unwavering support of democratic principles in industry."

Conferred by Thomas Roy Jones at the AMA Conference on General Management Problems at the Waldorf-Astoria Hotel, N.Y., June 8, 1949. Thomas Roy Jones was Chairman and made the presentation address.

NO.	YEAR	MEDALIST	CITATION
17	1949	Arthur Clinton Spurr Utility Executive, Companies serving Pennsylvania and West Virginia; President, Monongahela Power Company.	"In recognition of leadership in Public wielding the industrial, agricultural, and human resources of his community into a cohesive and dynamic force that has revitalized and rehabilitated the social and economic life of the entire area to which his influence extends."

Conferred by Harold B. Maynard at the Management Luncheon of the 70th Annual Meeting of ASME at the Hotel Statler, N.Y., November 30, 1949. J. Keith Louden presided and Paul H. Griffith made the presentation address.

18	1950	Charles R. Hook, Sr. Chairman of the Board, Armco Steel Corp.	"Distinguished industrial executive and humanist whose pioneer work in the development of far-seeing policies in the field of human relations within his company became the foundation of a company-community-employee team imbued with the spirit of mutual understanding and respect which is the essential to industrial peace."

Conferred by Thomas Roy Jones at the 22nd Annual Personnel Conference of AMA at the Hotel Statler, N.Y., October 3, 1950. Lawrence A. Appley presided and Thomas Roy Jones made the presentation address.

19	1951	Thomas Roy Jones President, Daystrom, Inc.	"In recognition of his application, in manufacture, of the principles of scientific management; his conduct of business with earnest consideration of the humanities; and his service through extensive, constructive participation in community activities of local, state and national significance."

Conferred by William L. Batt at the Honors Luncheon of the 72nd Annual Meeting of ASME at the Chalfonte-Haddon Hall Hotel, Atlantic City, N.J., November 28, 1951. R. J. S. Pigott was Chairman and J. Keith Louden made the presentation address.

20	1952	Frank H. Neely Chairman of the Board, RICH's, Inc., Atlanta	"A pupil, fellow worker, and disciple of Gantt; a successful manager of manufacturing, merchandising and banking who applied the principles of good management in extraordinary degree to extended social and civic serivce in the fields of agriculture, government, and education."

NO.	YEAR	MEDALIST	CITATION
			Conferred by L. C. Morrow at the 24th Annual Personnel Conference of AMA at the Hotel Astor, N.Y., September 30, 1952. Lawrence A. Appley presided and J. Keith Louden made the presentation award.
21	1953	Thomas E. Millsop President, Weirton Steel Company, Division of National Steel Company.	"Industrialist, educator, humanist, and public official, whose life has been dedicated to selfless service to others and whose efforts and achievements have inspired his fellow citizens and associates to make their community and company an outstanding example of the finest concept of American life."
			Conferred by Lewis K. Sillcox at the Honors Luncheon of the Annual Meeting of ASME at the Hotel Statler, N.Y., December 2, 1953. F. S. Blackall, Jr. presided and J. Keith Louden made the presentation address.
22	1954	Clarence Francis Retired Chairman, General Foods Corp.; Special consultant to President of the United States.	"Administrative executive who has applied the principles of good management in the advancement of communities, as well as in the interest the of the organizations he has served; and who has given generously of himself in matters of great importance to the Federal Government and the National Welfare."
			Conferred by Lawrence A. Appley at the AMA Conference on General Management held at the Hotel Statler, Los Angeles, Calif., January 25, 1955. A. A. Stambough was Chairman and Lawrence A. Appley made the presentation address.
23	1955	Walker Lee Cisler President, Chairman of the Board and Chief Executive Officer, Detroit Edison Company.	"In recognition of his many constructive and inspirational contributions to national, civil, and military affairs, to international economic matters, to corporate management, to education, and to the development of leadership in the individual."
			Conferred by L. C. Morrow and James F. Oates at the Joint Honors Luncheon of the ASME Diamond Jubilee at the Conrad Hilton, Chicago, Ill., November 17, 1955. Thorndike Saville was Toastmaster at the luncheon for the five major award presentations.