

**FLUIDS ENGINEERING DIVISION**

**OPERATIONS MANUAL**

**Issued by the  
Fluids Engineering Division  
Basic Engineering Technical Group  
(Revised April 1994)**

**THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS  
UNITED ENGINEERING CENTER  
345 East 47th STREET  
New York, New York, 10017**

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## I. GENERAL

### A. Division History

The Hydraulic Division of The American Society of Mechanical Engineers was founded in 1926 and functioned under this name until 1963, when the name was changed by action of Council to Fluids Engineering Division.

### B. National Organization

The Fluids Engineering Division is one of the Professional Divisions in the Basic Engineering Technical Group of the Society.

### C. Division Objectives

1. To constitute a Professional Division of the Society, in accordance with the Society's Constitution, Bylaws and Rules, in the field of fluids engineering.
2. To promote the art and science of fluids engineering in research, design, development, and application phases, in accordance with the following statement of scope.

The Fluids Engineering Division was established to afford engineers in the fluids engineering field an open forum for discussion of the many complex problems arising in this specialized field of activity. With the object of promoting the art and science of fluids engineering of interest to researchers, designers, and users of fluids equipment, a Summer Meeting (FEDSM) is organized solely by the Fluids Engineering division or in conjunction with other Divisions of ASME or other Societies. Similar activities are undertaken in at the Winter Annual Meeting of the Society, in conjunction with other Divisions of the Society.

The Division's scope of activity is continuously reviewed as new technology is generated and as the Society structure changes. The present scope is envisioned as embracing the following technical areas, each of which are to be interpreted in their broadest sense:

- (a) basic and applied fluid mechanics;
  - (b) fluid machinery and fluid handling devices;
  - (c) multiphase flows;
  - (d) fluid measurements;
  - (e) computational fluid dynamics; and
  - (f) heat transfer, mass transfer, and thermodynamics as related to fluid mechanics problems.
3. To encourage and foster research and development, and to summarize and publish reliable data of engineering importance pertaining to subjects within the scope of the Division. It is the duty of the Division to continuously assess and promulgate the state-of-the-art of fluids engineering. The Division considers its special responsibility the continuing interchange of information in both directions between research workers and academics in fluid mechanics and engineers designing fluid handling devices.

### **C. Division Objective (Cont'd)**

4. To encourage the interchange of information among engineers and scientists by:
  - a. Encouraging the preparation, presentation, discussion, and publication of useful technical papers on new developments in fluids engineering.
  - b. Organizing meetings in which papers are presented and discussed, with opportunity for all interested parties to meet and exchange new ideas, experience, and technical data.
  - c. Cooperating with other Professional Divisions, Groups, and Committees within the Society, and with other societies with respect to standardization, research, paper preparation, meetings, and special activities.
5. To direct attention to outstanding fluids engineering achievement by recommendations for suitable recognition for such achievement.
6. To provide that the activities of the Division will be directed by Society members who are recognized leaders in the field of fluids engineering and who have shown, by their Society activities, the necessary ability and willingness to discharge such responsibilities effectively.
7. To organize workshops, symposia, forums, short courses, and other educational meetings and curriculum on topics as indicated by needs of engineers in the field; these meetings may be separately or jointly sponsored with other societies, ASME divisions, or educational institutions.
8. To survey the needs of the profession in fluids engineering and to disseminate the results of such surveys to pertinent government bodies, the profession, and the public.
9. To promulgate the highest possible technical standards in the practice of fluids engineering.
10. To disseminate information regarding the meaning and value of fluids engineering to the news media and the public.

### **D. Division Activities**

1. The Division will annually organize, sponsor, and conduct one or more sessions at the Winter Annual Meeting of the Society.
2. The Division will normally organize an annual Division Conference, subject to the approval of the Operating Board of the Basic Engineering Technical Group and the Meetings Committee.

Certain of the conferences can be joint with other Professional Divisions of the Society having mutual technical interests.

3. The Division will, when appropriate, participate in joint sessions with other Divisions or Committees of the Society at Society meetings.

#### **D. Division Activities (Cont'd)**

4. The Division will, when appropriate, and subject to the approval of the Basic Engineering Technical Group Operating Board, participate in joint sessions or conferences with other organizations when such is of benefit to the Division, the Society, and the profession.
5. The Division will organize, staff, and maintain standing and special committees for the purpose of ensuring effective Division operation.
6. The Division will, as appropriate, submit technical papers, reports, and data of importance for publication by the Society. To this end, the Division will organize, staff, and maintain an editorial board responsible for quarterly publication of the *Journal of Fluids Engineering*, Transactions of the ASME.

#### **E. Division Organization**

The Fluids Engineering Division will be organized under the Constitution, By-laws, and Rules of the Society and in case of conflict between Division and Society procedures, those of the Society will govern. The various committees and sub-committees which carry out the work of the Division are:

- (1) Executive Committee;
- (2) Technical Committees and Coordinating Groups;
- (3) Journal of Fluids Engineering Editorial Board;
- (4) Honors and Awards Committee;
- (5) Freeman Scholar Committee;
- (6) Professional Development Committee;
- (7) Student Paper Contest Committee
- (8) Advisory Board; and
- (9) Ad Hoc Committees

In addition to these Committees, the Executive Committee appoints a FED Representative for Government Affairs.

#### **F. Division Finances**

The purpose of the Division is to fulfill certain professional objectives, as set forth above; as such, it is not intended to be a profit-making organization. Nevertheless, the Executive Committee will normally maintain and be accountable for a **Custodial Fund** for such purposes as it sees fit.

These will include, but not be limited to:

- (1) Underwriting costs of technical meetings;
- (2) Defraying costs of travel for invited lectures;
- (3) Supporting the Division Newsletter and other information releases;
- (4) Initiating continuing education activities within the technical scope of division;
- (5) Stimulating student interest in further study of fluids engineering; and
- (6) Defraying costs of special certificates and awards.

## **G. Special Considerations**

### **1. Technical Papers**

Each of the Technical Committees or Coordinating Groups may sponsor the preparation and presentation of papers. Papers, so sponsored, will be the responsibility of the sponsoring committee and/or the editorial Board of the *Journal of Fluids Engineering* with regard to review and recommendations given in "An ASME Paper," ASME Manual MS-4.

Each Technical Committee or Coordinating Group Chair will see that all necessary material and recommendations are submitted to the Division Program Representative on or before the deadline established for each meeting or conference. The Division Program Representative will then make all necessary arrangements with ASME Headquarters for supplying the complete meeting or conference material or program.

### **2. Veto Power of Executive Committee**

The Executive Committee will have the right to ask for withdrawal of a paper or prohibit its publication when it is judged to be misleading, inaccurate, or contains other gross faults detrimental to the Society. All actions and discussions leading to such a veto will be made known to the sponsoring Technical Committee or Coordinating Group and the Journal Technical Editor prior to taking such action.

### **3. Correspondence**

Copies of all pertinent correspondence on Division level affairs will be sent to ASME Headquarters and the Executive Committee Membership. Suitable Division stationery will be made available by ASME Headquarters to those designated by the Secretary. Division stationery will be used whenever possible for letters on Division affairs.

### **4. Review of the Division Manual**

This manual will be reviewed as often as necessary, but in any case it is recommended that such a review should be carried out at least every five years. The next scheduled review would be 1998.

## II. DIVISION OPERATION

The operation of the Division will be conducted in accordance with the By-laws given in Appendix I of the Manual.

The Division is a professional division of ASME and as such depends primarily upon the technical sessions prepared by the various Technical Committees and Coordinating Groups. The Executive Committee of the Division maintains overall guidance for the entire Division in close cooperation with the Chairs of the Technical Committees and Coordinating Groups and the Technical Editor of the *Journal of Fluids Engineering*. The Executive Committee also occasionally appoints Ad Hoc Committees to act on specific business items.

The Division Executive Committee organization chart is shown on page II.3 and II.4. This chart delineates the basic tasks and responsibilities of the five members for each year of office. Each member serves a term of office beginning on July 1 in the year of appointment and ending on June 30 of the fifth year. During the sixth year, the past Senior Member becomes a consultant to the Division Newsletter Editor, but is not a voting member of the Executive Committee.

In addition to Divisional duties, designated members of the Executive Committee act as representatives to the Operating Board of the Basic Engineering Technical Group. As shown on page II.4, these positions occur during the fourth, and fifth year terms of office.

The Technical Editor of the *Journal of Fluids Engineering* is nominated by the Executive Committee and approved by the Board on Communications. The Technical Editor is assisted by the Editorial Board which is composed of representative Associate Editors appointed by the Technical Editor in concurrence with the Technical Committees and Coordinating Groups and the Executive Committee. The appointment of individual Associate Editors must be approved by the Board on Communications (BOC).

The Division Honors and Awards Chair is appointed by the Executive Committee and works with the Honors Representative of each of the Technical Committees or Coordinating Groups and the Executive Committee to expedite the Honors recommendations made by the Division.

The Division is requested annually by ASME to recommend candidates for Society Fellows, and for awards such as Honorary Member. These nominations generally are requested to be submitted on or about the time of the Winter Annual Meeting. Experience shows that the candidates for these nominations should be developed by the Executive Committee at the preceding Spring Division Conference. Otherwise, inadequate time is available for proper discussion and evaluation of potential nominees, and follow-up to confirm that the nominee for office would be willing to accept the nomination.

The Division Professional Development Chair is appointed by the Executive Committee and works with the Technical Committees and Coordinating Groups and the Executive Committee to identify professional development needs of the Division.

The Division Newsletter Editor and Membership Chairs are appointed by the Executive Committee.

The Division Student Paper Award Committee is appointed by the Executive Committee and consists of four members, a representative from each technical committee plus a committee chair.

Plans for the future development of the Division are coordinated by the Executive Committee with guidance offered by an Advisory Board. The Advisory Board, whose members are appointed by the Executive Committee, is composed of past officers and senior members of the Division with industrial, academic, and governmental input. The Chair of the Advisory Board is appointed by the Executive Committee with input from the Advisory Board. The senior member of the Executive Committee serves as liaison to the Advisory Board and helps to facilitate meetings of the Board.

The members of the Freeman Scholar Committee are appointed by the Executive Committee.

At the conclusion of each year's duties, Executive Committee members should pass their files for that year's work on to their successors to assure continuity of effort and experience.

**DUTIES OF THE FLUIDS ENGINEERING DIVISION EXECUTIVE COMMITTEE**

Date	Yr	Title	Spring Conference	Winter Annual Mtg.	Secretary	Program Assistance	Newsletter	Advisory Board
July-Dec  Dec-July	1	Incoming Member	Begin Work on Date, Time, Place, Themes, and Participants. Consult Tech. Comm.  Work with HQ and EC to finalize Mtg. Date, Site and Co-Participants			Get Acquainted with EC duties and roles; help out where assigned.  Help out where assigned.		
July-Dec  Dec-July	2	Secretary and Papers Review Chair	Secure Symposium Approvals; Fix Conf. Date and Site; Plan Exhibits if any.  Issue Calls for Symp. Papers; Secure Forum Approvals; Finalize Exhibits.	Develop themes and discuss with Tech Committees and HQ.  Secure Symposium Approvals.	Take Minutes at WAM and other meetings.  Issue WAM minutes; take minutes at TEC and FEDSM; issue TEC minutes for FEDSM.	Work with Conf. Ch. and Prog. Chairs for next FEDSM. Help finalize sessions.  Help with M&P forms; Help Prog. Chairs to get papers to HQ.		
July-Dec  Dec-July	3	Conference Chair  FEDSM	Secure final prog. issue forum calls; fix local arrgts & keynote speakers.  Work with HQ, Local Reps to finalize. Identify Honors Papers; Chair Conf.	Issue calls for Symposia; secure forum approvals; work with HQ.  Dev. Prog., Keynote, Banquet. Issue call for forums. Handle M&P Forms.	Issue FEDSM minutes			

**DUTIES OF THE FLUIDS ENGINEERING DIVISION EXECUTIVE COMMITTEE**

Date	Yr	Title	Spring Conference	Winter Annual Mtg.	Secretary	Program Assistance	Newsletter	Advisory Board
July-Dec  Dec-July	4	WAM  Executive Committee Chair	Close out FEDSM business; pass on advice to incoming member.	Chair WAM, Chair EC meetings. Freeman Scholar if applic. Identify Honors Pap.		Handle all duties of EC Chair for all aspects of FED business.  Handle all duties of EC Chair for all aspects of FED Business		
July-Dec  Dec-July	5	Senior Member	Help Incoming Member to Plan FEDSM.			Close out EC Chair business; pass on advice to new chair Help anyone you can.  Help anyone you can as Senior States - person	Work with Newsletter Editor to develop themes and generally assist editor; continues into sixth year.	Handle WAM Meeting and Planning; Report to EC.  Handle FEDSM and Planning; Report to EC.

### III. TECHNICAL COMMITTEE OPERATIONS

At the present time there are three Technical Committees and two Coordinating Groups in the Division. These are:

- (a) Fluids Applications and Systems Technical Committee
- (b) Fluid Mechanics Technical Committee
- (c) Multiphase Flow Technical Committee
- (d) Coordinating Group on Computational Fluid Dynamics
- (e) Coordinating Group on Fluid Measurements

The total scope of these Committees and Groups covers the entire range of basic and applied interests in the field of fluids engineering. The Fluid Mechanics Committee evolved from the former Waterhammer Committee. During 1991 the Fluid Applications and Systems Committee began functioning as a merged organization of the former Fluid Mechanics and Fluid Transients Committees. The Coordinating Group on Fluid Measurements (CGFM) grew out of a task force which first met in 1977 and the Coordinating Group on Computational Fluid Dynamics was founded in 1990. The CGFM and the CGCFD do not have committee status in that its membership is composed of two representatives from each of the other technical committees and any other interested committee members.

The operation and organization of the various Technical Committees differ according to the scope of their cognizant technical areas. However, Committee officers normally consist of a Chair, Vice-Chair, an Honors Representative, Professional Development Representative, and two CGFM and CGCFD Representatives. Some committees also have a Secretary. All Committees have one or more Associate Editors for JFE. Generally speaking, the appointments of Committee officers are for a period of two years starting on July 1 of the year of appointment and extending to June 30 of the final year.

The operation and organization of the Coordinating Groups is similar to the Technical Committees. However, the purpose of the Technical Committee Representative is to coordinate efforts between committee and groups.

The Committee/Group Chair gives overall guidance and is the primary driving force behind the activities. The Executive Committee imposes minimum restraint on the operation of the Technical Committees and Coordinating Groups. Each Technical Committee/Coordinating Group should maintain a brief set of Bylaws which describe the basic operation of the Committee, including the method of electing officers and terms of office. Copies of current Bylaws are included in Appendix II for each of the Committees/Groups, members of the Executive Committee, and other interested parties.

The Associate Editors have the very demanding responsibility of processing paper reviews and coordinating their activities with both their Technical Committee/Coordinating Group Chair and the Technical Editor of the *Journal of Fluids Engineering*.

It is the duty of the Honors Representative to be aware of high-quality papers processed by the Committee and to investigate honors consideration for such papers and for any other honors, such as Fellow, etc. The Honors Representative of each Technical Committee or Coordinating Group serves on the Division Honors and Awards Committee, and makes annual nominations of the best paper presented within the preceding two years for each of the Fluids Engineering Division Awards. These nominations will be processed in time for action by the Division Honors and the Executive Committee at the Winter Annual

**Meeting.** The Technical Committee/Coordinating Group Chair, Journal Technical Editor, Associate Editors, and the Session Chairs should make every effort to obtain discussions of all papers presented at technical sessions. The discussion process can be enhanced by sending out duplicated copies of the approved manuscript to potential discussers sufficiently early to permit the preparation of worthwhile and meaningful discussions.

Technical Committees and Coordinating Groups frequently sponsor symposia and forums. The organizers are responsible to process the work for the programs. A comprehensive procedure on organizing programs is given on pages V.12 - V.31.

## IV. DIVISION OPERATION AT MEETINGS AND CONFERENCES

### A. General Procedures

The Executive Committee meets in formal session during each FED Summer Meeting and Winter Annual Meeting. Each Technical Committee and Coordinating Group Chair is expected to attend the session at specified times, or send an alternate, to report on activities of the Committee/Group, and to assist in planning for future meetings. All Executive Committee meetings, unless otherwise indicated, are open to all members of the Society.

To avoid conflicts in meeting schedules, other Committee meetings should not be scheduled in conflict with Executive Committee Meetings or Workshop Sessions. In this way, the desired attendance of Executive Committee members at Committee/Group meetings and conversely can be facilitated. The Program Representative will have the responsibility of devising the schedule of Committee Meetings and of requesting room reservations.

### B. Division Operation at Annual Society Meetings

#### 1. Winter Annual Meeting

##### a. Technical Sessions

The Division normally sponsors many technical sessions at the Winter Annual Meeting, some of which may be jointly sponsored by other Divisions.

The sessions are handled by the sponsoring Technical Committees or Coordinating Groups, who arrange for presentations and Session Chairs and Vice-Chairs, coordinating with the Program Representative for the meeting.

##### b. Social events

The Division normally has one or more social events at the Winter Annual Meeting. These should include the Fluids Engineering Division Luncheon or Dinner, etc.

##### c. Executive Committee Meeting

The meetings of the Executive Committee are planned by the Division Chair with assistance from the Secretary. Attendees usually include the Executive Committee and Chairs of Division Committees and Coordinating Groups. The agenda includes the following:

- (1) Approval of Minutes of previous Executive Committee meeting;
- (2) Program Representative's report on preceding meeting;
- (3) Program Representative's Report on current meeting
- (4) Program Representative's report on next Division Conference and Winter Annual Meeting with a best estimate of the number and type of technical sessions and special meetings;
- (5) Discussion of plans for future Winter Annual Meetings and Division Conferences;
- (6) Honors Chair's Report and selection of Division Awards Recipients;
- (7) Professional Development Chair's Report;

## **B. Division Operation at Annual Society Meetings (Cont'd)**

- (8) Basic Engineering Technical Group Executive Committee Member's Report;
- (9) Division Newsletter Report;
- (10) Reports of Division Technical Committees and Coordinating Groups;
- (11) Technical Editor's Report;
- (12) Discussion of special topics and other initiatives; and
- (13) Items for closed session action.

### **d. Technical Committee and Coordinating Group Meetings**

The Technical Committee and Coordinating Group Meetings are planned by Committee Chairs. Attendees include Committee members and at least one member of the Division Executive Committee. The agenda normally includes, but is not limited to:

- (1) Approval of minutes of Committee meeting at preceding Division Conference and/or Winter Annual meeting.
- (2) Discussion of preceding Division Conference and/or Winter Annual Meeting.
- (3) Discussion of present meeting.
- (4) Discussion of next Division Conference.
- (5) Discussion of plans for future Winter Annual Meetings and Conferences.
- (6) Committee Chair's report of last Executive Committee meeting.
- (7) Discussion of suggestions for potential technical papers and symposia.
- (8) Associate Editor's report.
- (9) Honors Representative's report.
- (10) Professional Development Representative's Report.
- (11) Election of Committee officers; normally every other year at the Winter Annual Meeting.
- (12) Current issues and Committee initiatives.
- (13) Subcommittee reports.

### **e. Society Liaison Meetings**

In the course of the Winter Annual Meeting, various Executive Committee Members and Division Committee Chairs meet with other Society groups and individuals, as appropriate, for purposes of coordination with the Technical Group, other Divisions, and National Staff.

## **2. Summer Annual Business Meetings**

On some occasions, one or both of the Representatives to the Operating Board of the Basic Engineering Technical Group attend the Summer Annual Meeting.

## **3. Technical Executives Conference**

National Staff organizes the TEC meetings annually to discuss problems of mutual interest to the Professional Divisions. Normally these meetings are attended by the first year member, incoming Chair of the Executive Committee, and the Program Representative for the upcoming year.

Other members of the Division may be nominated as delegates to the TEC in place of EC members.

#### 4. Conference with Other Professional Divisions or Societies

From time to time the Fluids Engineering Division Meeting is held jointly with other Professional Divisions or Societies.

### C. Division Meeting Operation

#### 1. General

The Division sponsors an annual meeting normally during the Spring or Summer. Conference locations are established by the Executive Committee on a long term basis (five-year lead-time). Coordination with National Staff is required on choice of meeting location.

The meeting is normally of three or four days duration and consists primarily of technical sessions. Executive Committee meetings, Technical Committee, and Coordinating Group meetings are held during the meeting as well as a luncheon or banquet. Other functions such as inspection trips, tours, etc., are held as appropriate.

#### 2. Meeting Activities

##### a. General

When the Executive Committee has chosen a potential location for a future meeting, it can appoint a Meeting Representative to handle all matters in connection with the meeting. A Meeting Representative handles all meeting activities until the Program Representative is appointed (the Executive Committee member appointed three years before the conference), at which time the latter assumes responsibility for meeting arrangements.

Typically, the technical program is provided by the Division and general meeting arrangements by the Program Representative, with all activity coordinated and supported by the Society National Staff.

##### b. Technical Planning

Normally, the responsibility for technical planning lies with the Technical Committees and Coordinating Groups. These Committees and Coordinating Groups select the technical material to be presented and appoint Chairs and Vice-Chairs for the technical sessions.

##### c. Meeting and Living Accommodations

This activity is the responsibility of the Society National Staff with coordination with the Division and Program Representative and includes provision for the following rooms:

- (1) Technical session rooms.
- (2) Committee meeting rooms.

- (3) Banquet and luncheon rooms (when applicable).
- (4) Reception room adjacent to banquet room.
- (5) Society Headquarters room, with tables, adjacent to registration area, for exclusive use of National Staff, required two days before, as well as during Conference.
- (6) Special rooms, as required.
- (7) Appropriate living accommodations for conference visitors.

It is Society policy not to pay rental charges for any meeting rooms. This matter is resolved with the hotel (if applicable) before entering into a contract and is included in the contract agreement. Arrangements are made for overflow hotel registrations with the Conference hotel (if applicable). Commitments with meal-furnishing agencies are made with care to avoid incurring large deficits on meal costs or underestimating last minute ticket sales.

**d. Meeting Publicity**

- (1) National publicity is the responsibility of the Program Representative, coordinated with National Staff, including a preliminary program, final program and post-meeting report.
- (2) Local publicity is the responsibility of the local organizing group or generally the local society section;
  - (a) Local newspaper, radio, and television coverage.
  - (b) Photographic coverage of important people and events.
  - (c) Invitation of local press to appropriate affairs.
  - (d) Local pre-meeting engineering publicity.

**e. Meeting Spouse Attendance**

It is the responsibility of the local group, coordinated with Division and National Staff, to provide for activities of the spouses of attendees.

**f. Inspection Trips**

It is the responsibility of the local group to organize inspection trips, coordinated with Division and National Staff. Transportation to and from sites visited is financed by ticket sales. All possible care is taken to avoid interference between technical sessions and inspection trips.

**g. Meeting Finances**

Information on financial policy may be found in "Professional Division Manual, ASME Manual MS-11 and also in "Meetings and Conferences," ASME Manual MS-2. The budget is prepared by Program Representative in conjunction with the National Staff and it must be approved by the Meetings Committee.

#### D. Actions Required in Connection with Division Meetings\*

Lead Time (All lead times are prior to Division Meeting)	Action Required
Upon designation of Group Representative	Program Representative furnishes Host Group Host Representatives one copy each of the Fluids Engineering Division Manual and the program of the last meeting.
7 months	Program representatives obtain from Society Headquarters copies of: M&P 1315 A&B - Technical Paper and Program Printing Deadlines.  M&P 1337 Program for Technical Sessions.  M&P 643 order form supplies.  ASME Pamphlet "A Checklist for the Session Chair."
7 months	Society Headquarters distributes copies of ASME pamphlet "A Checklist for sessions Aides" distributes to Host Group Representative who distributes them at the time aides are committed for various sessions.
7 months	Authors be sent a copy of MS 4 manual and M&P 1903 "Offer of a Technical Paper."
6 months	Author returns M&P 1903 form together with the completed paper to the Symposium/Forum organizer.
6 months	Host Group Representative interact with the Program Representative to complete a layout of all meeting and function rooms.
5 months	Program Representative submits to the Basic Engineering Department Meeting Manager the following:  1. Complete registration data and schedule.  2. Ticket price for each luncheon, banquet, inspection trip, and spouse's activities.  3. Specific directions on pre-registration and hotel reservation.

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\*Items marked with an asterisk apply as well to Winter Annual Society Meeting

4. Suggested hotel reservation form.

5. Complete and specific information on any special receptions or functions.

6. Complete program information for the banquet or social event including Preliminary function, if planned, location, ticket data, time, person presiding, speaker, topic of address.

7. Complete program information for Spouse's activities.

4 months

Symposium organizers have all papers reviewed, using the most current review form.

3 months

Symposium/Forum organizers submit final program to Program Representative, including name, title and complete address of each author, Session Chair and Vice-Chair.

4 months

Program Representative submits Advance Conference Program to Society Headquarters together with a lead story explaining the scope and purpose of the meeting. This story and the Advance Program is published in Mechanical Engineering.

3 months

Program Representative submits final Meeting Program to Society Headquarters on M&P 1338 forms, including complete mailing addresses for authors.

1 month

Symposium/Forum organizers will transmit one copy of all prepared discussions on papers to Society Headquarters for inclusion in appropriate session jackets. Symposium/Forum organizers and the Session Chair and Co-Chair will strive to have at least one prepared discussion for each technical paper.

At the meeting

The title of the best paper in each Symposium must be provided by the Symposium Organizer to the Honors Chair of sponsoring Technical Committee or Coordinating Group.

## V. DIVISION TECHNICAL ACTIVITIES

### A. Technical Paper Policy

General guidelines are useful with respect to insuring the quality of papers.

The following criteria have been adopted by the Division as technical paper guidelines for the use of Division personnel, authors and reviewers. It should be noted that symposia papers may follow a different review process than other technical papers (see page V.31).

#### 1. Basic Criteria for Technical Papers

A technical paper suitable for sponsorship by the Fluids Engineering Division:

- (a) Contributes something new to engineering.
- (b) Is technically sound, i.e., free of fallacious, dubious or incomplete engineering analysis.
- (c) Is more than a superficial description of widely accepted engineering practice.
- (d) Is more than an obvious sales approach to technical problems.
- (e) Makes proper acknowledgement of the ideas and results of others.
- (f) Omits personal attacks on rival investigators.
- (g) Meets the criteria of the booklet, "An ASME Manual MS-4" and the most recent "Paper Preparation Instructions" regularly published in the *Journal of Fluids Engineering*.

#### 2. Paper Types and Publication Vehicles

A technical paper suitable for sponsorship by FED can be:

- (a) An original contribution adding a new concept or development to existing knowledge.
- (b) A review paper surveying with appropriate completeness, a specific object, so that the current state-of-the-art is documented.
- (c) A timely progress report on investigations still underway.
- (d) A summary of important foreign papers.

In addition, a paper suitable for presentation and publication can be:

- (a) A permanent interest paper having long-term reference value.
- (b) A current interest paper.

#### 3. Basic Criteria for Review of Technical Papers

An adequate review conducted by the Division of a technical paper:

- (a) Is a confidential process normally involving reviewers, Associate Editors, and the Technical Editor. While the Division will recommend for publication only papers of the highest quality, it nevertheless will also maintain the integrity of its authors and anonymity of its reviewers. Personal remarks, obviously impolite remarks, or undocumented sweeping condemnations on the part of reviewers will not be transmitted to authors. For example, the statement that a comment or formula is erroneous must give a reference, and so on. The

names of reviewers will not be revealed to any person, other than the Associate Editors, Technical Editor's Office, and where a need to know exists. Once a paper has been processed by the Division, all steps will be taken to protect authors from unwarranted, personal, or obviously impolite attacks at the hands of discussers. In extreme instances, discussers may be asked to modify written comments and if they refuse - which is their privilege, under Society rules - they should be advised that the Technical Editor, or the Associate Editor or the Executive Committee, intends to present the Society with a statement to be published with the discussion in question, stating that modification has been requested, with reasons for the request, and adding that such modification was refused by the discusser. These and other relevant steps will be taken to insure a free interchange of technical ideas with a minimum of unnecessary personal ill feelings.

- (b) Recommends acceptance, revision, or rejection of paper.
- (c) Is made preferably by three competent specialists in the field of the paper. The three reviewers should, whenever possible, include one worker especially knowledgeable in the fundamentals underlying the paper, one especially familiar with the current state-of-the-art of applications, and one with a general knowledge, to give an overall opinion.
- (d) Includes specific, critical comments.
- (e) Supports rejection, if recommended, by comments meaningful to the author.
- (f) Suggests appropriate discussers for those papers for which acceptance is recommended.

## **B. The *Journal of Fluids Engineering* and Processing of Technical Papers**

### **1. General**

The Fluids Engineering Division established the *Journal of Fluids Engineering* and launched the first issue of the Journal in March 1973.

### **2. Nature of the *Journal of Fluids Engineering***

It is the policy of the Division Executive Committee that only high professional quality and long-lasting (archival) value papers will be published in the *Journal of Fluids Engineering*. Furthermore, the Executive Committee expects that the Journal will include important features that will make the Journal widely read as a key source by members of the fluids engineering profession. Such features will include: appropriate discussion of papers, periodic technical reviews of subdivisions of the field of fluids engineering, newsworthy developments (both commercial and technical) that impinge upon the field of fluids engineering, and may include such features as biographies, book reviews, information on foreign activity, open-forum notes, educational developments, and notices of meetings of interest within and outside of ASME.

Because of the page limitation of JFE set by the BOC, the editors will be required to assure high quality of papers and to enforce maximum paper length restrictions. There may be periods in which the review process yields more papers marked "acceptable for transactions" than may be

accommodated by current JFE page/word limits. In this situation, the Technical Editor is to select the best papers from the total approved and publish them.

### 3. Lapse Time

Relative to publication, the goal is to publish within six months after a paper is recommended for publication to the Technical Editor of the Journal and the presentation to be scheduled as soon as possible after publication acceptance.

### 4. Author-Prepared Manuscript

Papers published in the Journal are reset in the printed form established by the Board on Communications for all Journals of the ASME Transactions.

### 5. Technical Editor

The Technical Editor is an individual member of ASME who is responsible for the technical content of the *Journal of Fluids Engineering*.

The Technical Editor is nominated by the Executive Committee for a term not to exceed five (5) years unless recommended for reappointment by the Executive Committee. The recommendation for reappointment will be accompanied with appropriate justification for such reappointment

The nomination will be accompanied by a detailed resume of the nominee; and the proposed Editor, together with the Chair of the Executive Committee, will be invited to come before the Board on Communications<sup>\*\*\*</sup>, for a review of his plans and Editorial Policies supported by the Executive Committee.

After recommendation from the Publications Committee, the nominated Technical Editor, if approved by the Board on Communications, will be appointed by the Committee on Planning and organization. The Technical Editor's office is responsible for the management of the Division's paper review operation as described in Section 8 below. This responsibility is for papers destined for Journal publication.

The Technical Editor's responsibilities do not include planning of technical sessions.

Any renewal of terms of office as permitted by the above stated limitations will generally follow the same procedure as the original nomination. A personal appearance by the Editor before the Publication Committee, preferably with the Chair of the Executive Committee, is desirable.

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<sup>\*\*\*</sup>The Board on Communications coordinates the technical communications program of the Society, supervising dissemination of technical knowledge, particularly in meetings and publications.

## 6. Editorial Board

The Editorial Board of the *Journal of Fluids Engineering* is comprised of the Technical Editor who serves as Chair, an Associate Editor for Review Articles named by the Technical editor, and Associate Editors representing the areas of the technical committees and coordinating group.

Associate Editors will be nominated by the Technical Editor with the concurrence of the appropriate Technical Committee or Coordinating Group and the Executive Committee. The nomination will be made in writing to the Publications Committee who, if supported, will request the Board on Communications to approve the applicant(s). The applicants(s) nominations will include a brief resume of the proposed Associate editors. The term of an Associate Editor will be three years. ASME Form CP0-1 may be used for these nominations.

Summary removal from the Board will be only at the direction of the relevant Technical Committee, the Executive Committee, or Board on Communications. The duty of any Associate Editor is to make primary judgments of paper acceptance/rejection. The Associate Editor then makes a recommendation to the Technical Editor who makes the final decision. Technical Committees with heavy paper loads may require more than one Associate editor.

The selection of the appropriate Associate Editor to handle each incoming technical paper is the responsibility of the Technical Editor.

## 7. Relation Between Associate Editors, Technical Editor and Executive Committee

The primary review judgments above pertaining to the Journal publication are in the form of a recommendation to the Technical Editor, who has the responsibility for composing each issue and living within the page limitation and polices imposed by the Board of Communications of ASME. The Technical Editor has veto power over the primary judgments made by the Associate Editors.

## 8. Review Procedure - Conventional Papers

### a. Author Notification of Intent to Submit Paper

The review process is initiated by the author submitting a paper for publication. Upon receipt of a new paper, the Executive Secretary will acknowledge its receipt to the author and log it on the Paper Control Summary which is updated monthly.

### b. Briefing of Author on Procedure

Immediately, the Executive Secretary of JFE delivers to the author instructions relative to the preparation of his paper. The Author at the same time will be informed of the review procedure.

### c. Receipt of Paper

Upon receipt of six copies of the author's paper, it is screened by the JFE Executive Secretary for conformance to the Division and ASME paper standards including length

limitations, prior publication statement, SI units, and indication of experimental uncertainties<sup>\*\*\*</sup>. Once through this screen, the paper is acknowledged and the author informed of the Associate editor who is responsible for management of the review of his paper. Five copies of the paper are transmitted to the responsible JFE Associate Editor for initiation of the review procedure. Failure to pass the initial screen results in delay of initiation of the review process until the author has met the requirements.

d. Reviewing Cadre

Each JFE Associate Editor is expected to maintain a current list of reviewers who normally provide reviews in the Associate Editor's area of technical concern. The Executive Secretary of JFE annually requests from each Associate Editor a list of active reviewers and publishes this list in JFE with a note of appreciation from the Technical Editor.

e. Selection of Reviewers

The JFE Associate Editor selects the reviewers for the subject paper. Normally these will be drawn from the current list of reviewers, but exceptions can be made at the discretion of the Associate Editor.

f. Request to Reviewer

The Associate Editor administers the review process through the Associate Editor's own staff. The JFE office provides the necessary forms, letterheads, Review Forms, and Instructions to Reviewers (see exhibits at the end of this section). The Associate Editor will be provided with five copies of the paper by the JFE Executive Secretary. Once the Associate Editor has made a final choice of reviewers, the Associate Editor transmits the requests to these reviewers along with copies of the author's paper and the Division review forms.

g. Control of Review Timing

The Associate Editor is responsible for receiving reviews, communicating to the author, etc., on a timely basis.

h. Decision

After the review results are assembled by the Associate Editor, the following can be recommended to the Technical Editor:

- rejection
- acceptance with revision
- acceptance without revision

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<sup>\*\*\*</sup>Current Statements of these standards appear as Exhibits VB-1, VB-2, VB-3, and VB-4 at the end of this Section V.B.

The Associate Editor may also accept a paper for presentation in the General Topic sessions at the Division meetings. Such acceptance will be sent to the session organizer with the concurrence of the authors.

If revisions are necessary, the author will transmit the revised paper to the Associate Editor for final approval. At this time, the Associate Editor may or may not return the paper to reviewers for further Judgment. Generally, the Associate Editor will make the decision without further review by reviewers.

i. Paper Control

All papers entering and exiting the Journal paper review operation for publication will pass through the Executive Secretary, *JFE*. The Executive Secretary will maintain a log of papers' status and will distribute quarterly updates of the log to all of the Journal's Editorial Board, to all Technical Committee Chairs, and to Executive Committee members of the Division.

j. Publication Acceptance Notification - *JFE*

Associate Editors should inform authors that their paper is only recommended for Transactions publication. Only the Technical Editor is authorized to make the final decision because the manuscript must remain within his page/year allotment.

The Associate Editor will submit recommendations to the Technical Editor on an ASME M&P 1258 form. This form must be accompanied by one copy of all the review sheets and statement from the Associate Editor that the author has complied satisfactorily with all of the Associate Editor's revision requests.

The Technical Editor will then review both positive and negative recommendations and approve or not approve. If approved, the Editor will so notify the author and transmit the paper copy in suitable form to ASME Headquarters for publication in *JFE*. If not approved, the Editor will contact the Associate Editor immediately in order to discuss the case and then take appropriate action. It is the policy of the Board on Communications, that the decision of the Technical Editor is final.

**Note especially that publication/rejection recommendations by the Associate Editor must be approved by the Technical Editor.**

k. Discussion

The Associate Editor will solicit, in a timely fashion, discussion of all papers to be published in the Journal. The Associate Editor is responsible for editing discussions, enforcing length limits, and securing, editing, and length-controlling the author's closure. The Associate Editor will submit the entire package, properly assembled, to the Executive Secretary.

l. Review Procedure Activities

AB = Associate Editor, *JFE*  
ExS = Executive Secretary, *JFE*

AUTH = Author  
 TE = Technical Editor, JFE

No.	Activity	By
1	Deliver six (6) copies of paper to ExS	AUTH
2	Screen paper for superficial conformation to ASME/FED Standards	ExS
3	Return if grossly unacceptable	ExS
4	Record paper in paper control summary	ExS
5	Acknowledge receipt and inform author	ExS
6	Transmit five (5) copies to AE (if AE administrating review)	ExS
7	Select reviewers	AE
8	Transmit Request/Review form to four or five reviewers with one copy of paper each	AE
9	Administer review process	AE
10	Assemble review results	AE
11	Decide fate of paper and notify TE	AE
12	Notify author of conditional acceptance	AE
13	Negotiate revisions with author, assure conformity to review and make final decision	ExS
14	Transmit final paper copy, M&P 1258, and Paper Decision/Review Summary to TE	AUTH
15	Inform author of recommendation	TE
16	Notify author of papers acceptance for publication in <i>JFE</i>	ExS

## Exhibit VB-1

### THE ASME ENGINEERING DIVISION PAPER REVIEW

#### INSTRUCTIONS TO REVIEWER

##### THE REVIEW PROCESS

Prior to presentation, all papers must be reviewed by competent specialists to determine whether each is acceptable, needs revision, or should be rejected.

The identity of the reviewer is withheld from the author, though anonymous review comments are usually transmitted to him.

Although the reviewer must strive to eliminate any personal bias toward the author or subject matter, he must not avoid the exercise of judgement. Wherever possible, he should cite reasons for his judgements. If, in particular, he recommends rejection of the paper, he should justify that in the way he himself would have wished had he been the author.

If the reviewer recommends specific major modifications to the paper before it be presented or published, he will generally be consulted by the review committee chairman after the paper has been revised by the author.

If the reviewer finds this form inadequate for a particular paper, he is encouraged to modify it appropriately.

##### PUBLICATION CRITERIA

An ASME paper should be: clear, complete with assumptions plainly identified, data presented with their uncertainty, with precise logic, with reference to practice described, and with actual accomplishments of the work plainly stated and honestly appraised.

Papers published in Mechanical Engineering must be:

- a) appealing in topic and dept of treatment to a wide cross-section of ASME membership.
- b) well written and adequately illustrated.

Papers will not be accepted for "preprints without presentation" except under very special circumstances. The Technical Editor may accept papers for JPE under special circumstances.

##### PRESENTATION CRITERIA

Papers acceptable for presentation without publication must be:

- a) of high quality
- b) of current interest only.

## Exhibit VB-1

### DEFINITIONS

Prior Publication means that a paper must not have been published, submitted, or under considerations, either in whole or in part, by any serial, professional journal.

An acceptable Technical Paper is a technically correct report which is free from personal and commercial bias. It supplies information, or a concept, or a development of existing technical knowledge which has not previously been published. It may be a comprehensive review of past or present engineering practice that it is not a superficial description of widely accepted engineering practice.

A Review Paper is a serious survey of a specific technical subject and the literature in that subject, written to assist the reader in grasping the current state of knowledge and technique in that subject.

Originality is a creativity or inventiveness in provision of new devices or machines, concepts, techniques, or methods. It may include the adaptation of an old method to a new problem. It may include novelty in design, construction, and experimentation.

The Significance of the reported work may be evaluated by considering the need for the work undertaken, and the usefulness of its results. The authors must explain significance in the paper.

The Completeness of the reported work may be evaluated by considering whether the work has followed well-defined objectives to a reasonable point of conclusion, and whether it includes adequate information on technique and results.

Acknowledgement of the work of others by reference is required, where appropriate in order that the contribution of the reported work can be related as closely as possible to the results of the other workers. The references should be sufficiently numerous and accurate to assist the reader to locate the most recent and important literature on the reported subject.

Organization of the Manuscript should include attention to the following:

Title: The wording should be brief, yet descriptive.

Abstract: The object, scope, and results of the paper should be clearly indicated.

Body of Paper: The purpose, problem statement, means of solution, results and conclusions should be presented in a logical sequence.

Symbols: The symbols should be in common technical use insofar as possible. All symbols must be defined unambiguously.

## Exhibit VB-1 (cont.)

**Bibliography:** If only four or five references are made, footnotes may be used. Other wise references should be listed at the end of the paper in order of appearance in the text.

**Illustrations:** Clear black and white glossy prints, preferably 8 x 11 inches, of all line drawings, graphs, and photographs should be supplied. Graphs should be free of all lines and lettering that are not essential and coordinate rulings should be limited in number for the sake of clarity. Figure numbers and author name should be on the back of each sheet. A separate sheet of captions is required.

**Length:** A regular paper should not exceed six (6) Journal pages, approximately 6000 words (20 pages of double spaced typing) with figure space included. Conciseness is more important than length, even for short papers.

**Clarity:** This must be demonstrated in writing, tables, graphs and illustrations. Correct choice of words, effective sentence structure, and correct spelling, punctuation and paragraphing are all essential. Accuracy and skill in the use of formula, graphs, and diagrams are also necessary.

### QUALITY RATINGS

#### Outstanding

This rating will be merited by only a few papers of a quality meriting consideration for an honor award; an outstanding paper excels in writing quality, originality, and technical contribution.

#### Good

This rating indicates a high level of accomplishment, suitable for presentation at an ASME meeting and publication in an ASME journal.

#### Marginal

This rating indicates that the paper is basically below the ASME Fluids Engineering Division standard of acceptability, or indicates the need for major improvement.

#### Poor

Unacceptable.

## Exhibit VB-2

### PRIOR PUBLICATION

The policy of the Society is to publish only papers that have not had prior publication in whole or in part. Prior publication is defined as publication that makes the information generally available to the engineering profession.

General availability means that a qualified searcher, exercising reasonable diligence, has a high probability of discovering and obtaining the document. Thesis publication, ASME preprint from author-prepared mats, and ASME Special Publications are not considered as having prior publication.

In the case of papers arising from extensive reports, it is recommended that the author identify the source document and method of obtaining it, but it is unnecessary for the author to provide copies of the source document together with his draft paper upon submission for review by JPE. If an Associate Editor or the Technical Editor has need for information from the source document to expedite the proper review, the author must be prepared to supply it on request.

ASME editors have discretion in deciding matters concerning prior publication.

Each paper submitted to the ASME shall be accompanied by a statement from the author that the paper has not had prior publication and that it is not being considered for publication by any other organization. Concurrent submission of papers to more than one ASME Division or other ASME Papers Review Agency is not permitted. If a paper was previously submitted and not accepted by an ASME Division or other ASME Paper Review Agency, a declaration of this fact must accompany the manuscript.

## Exhibit VB-3

### SI UNITS

Standard International units must be included; preferred form is American Standard (Standard International). See ASME Manual MS-4 "An ASME Paper" and ASM Guide SI-1 "Orientation and Guide for Use of SI (Metric) Units" available to authors from the Technical Editor.

## Exhibit VB-4

In 1987, the Coordinating Group for Fluid Measurements (CGFM) of the Fluids Engineering Division (FED) was asked by Dr. Frank White, the Technical Editor of the *Journal of Fluids Engineering* (JFE) at that time, to prepare a set of guidelines on estimating experimental uncertainty. The purpose was to alert the authors of the Journal to the fact that estimates of experimental uncertainty enhance the value of information reported. It was also felt that the publication of such guidelines would improve the uniformity of presenting experimental data in the pages of the Journal. Many members of the Committee felt at that time that other reasons justified the publication of such guidelines, as for example, the need for authors to differentiate between bias and precision error and the need to handle correctly single-sample experiments.

The CGFM reviewed existing standards, including PTC 19.1 and the material presented in a collection of papers from JFE in 1985. There is no question that the basic information on how to handle uncertainty is already published. However, it is not written in a practical format as evidenced by usage (or the lack thereof). Existing information is in articles that are too long, depend too much on multiple sample analysis, do not provide perception on how to handle bias error, and give the impression that uncertainty analysis requires disproportionate attention. The current statement in JFE refers authors to those articles but leaves the actual reporting format up to each author without stringent requirements.

Over the past two years the CGFM has struggled to reach a consensus agreement on this statement. A perception has

evolved that there must necessarily be three steps to develop good practices in reporting uncertainty estimates. First, a broad outline of policy must be introduced to recognize bias and precision error and the limits for the uncertainty band. Second, terminology must be standardized. Much of the problem in communicating information about uncertainty is in the language. The particular problem is that a differentiation between single and multiple sample experiments *in the context of the notion that these are but endpoints on a continuum* must be made. This seems simple enough, but it is incredibly difficult to accomplish. Third, procedures for handling error, and especially bias error, need to be standardized. So far this seems only possible by using examples.

CGFM intends to continue the steps outlined above, and considers the first step as having been completed with the publication of the following guidelines. These guidelines were arrived at after long discussions and exchange of arguments between the CGFM, some technical associate editors of the Journal, some reviewers and the Technical Editor. Special appreciation is extended to H. W. Coleman and W. G. Steele, the principal authors of the adopted statement.

**Edwin P. Rood**  
Chairman, Coordinating Group for Fluid Measurements

**Demetri P. Telionis**  
Technical Editor, Journal of Fluids Engineering

### Journal of Fluids Engineering Policy on Reporting Uncertainties in Experimental Measurements and Results

#### GUIDELINES

An uncertainty analysis of experimental measurements is necessary for the results to be used to their fullest value. Authors submitting papers for publication to this Journal are expected to describe the uncertainties in their experimental measurements and in the results calculated from those measurements.

The presentation of experimental data should include the following information:

- (1) The precision limit,  $P$ . The  $\pm P$  interval about a result (single or averaged) is the experimenter's 95 percent confidence estimate of the band within which the mean of many such results would fall, if the experiment were repeated many times under the same conditions and using the same equipment. The precision limit is thus an estimate of the scatter (or lack of repeatability) caused by random errors and unsteadiness.
- (2) The bias limit,  $B$ . The bias limit is an estimate of the magnitude of the fixed, constant error. When the true bias error in a result is defined as  $\beta$ , the quantity  $B$  is

the experimenter's 95 percent confidence estimate such that  $|\beta| \leq B$ .

- (3) The uncertainty  $U$ . The  $\pm U$  interval about the result is the band within which the experimenter is 95 percent confident the true value of the result lies. The 95 percent confidence uncertainty is calculated from

$$U = [B^2 + P^2]^{1/2} \quad (1)$$

- (4) A brief description of, or reference to, the methods used for the uncertainty analysis. (If estimates are made at a confidence level other than 95 percent, adequate explanation of the techniques used must be provided.)

The estimates of precision limits and bias limits should be made corresponding to a time interval appropriate to the experiment.

It is preferred that the following additional information also be included:

- (1) The precision limit and bias limits for the variables and parameters used in calculating each result.
- (2) A statement comparing the observed scatter in results on repeated trials (if performed) with the expected scatter ( $\pm P$ ) based on the uncertainty analysis.

## Exhibit VB-4 (Cont.)

Although it is natural in any experimental paper to discuss sources of experimental error in the body of the text, this alone does not satisfy our requirement. All reported data must show uncertainty estimates. All tables should carry estimates. All figures reporting new data should contain uncertainty estimates either on the figure itself or in the caption.

A list of references on the topic, many of which appeared in the pages of this Journal is provided here in alphabetical order.

### EXAMPLE

Consider an experiment in which the pressure drop characteristics for fully developed flow conditions in a particular type of circular pipe are determined over a range of water flow rates. The outcome of this experiment might be presented by plotting one result—the Fanning friction factor,  $f$ , versus another result, the Reynolds number,  $Re$ . To obtain each “data point” that would be plotted on such a figure, the values of  $f$  and  $Re$  could be calculated from

$$f = \frac{\pi^2 D^5 (\rho_1 - \rho_2)}{32 \rho Q^2 (x_2 - x_1)} \quad (2)$$

and

$$Re = \frac{4 \rho Q}{\pi \mu D} \quad (3)$$

where  $Q$  is the volumetric flow rate of the water with density  $\rho$  and dynamic viscosity  $\mu$ ,  $D$  is the pipe diameter,  $p$  is the static pressure,  $x$  is axial position along the pipe, and the subscripts 1 and 2 refer to the upstream and downstream pressure tap locations, respectively.

The measured variables ( $Q$ ,  $D$ ,  $p_1$ ,  $p_2$ ,  $x_1$ ,  $x_2$ ) and the parameters found from reference property data ( $\rho$ ,  $\mu$ ) contain bias errors and precision errors. For example, calibrating pressure transducers under static conditions may later introduce bias errors if the measured field involves dynamic motions. Other bias errors arise from calibration of the measurement systems for  $p$  and  $Q$  against imperfect standards and from using property values originally determined in imperfect experiments. Precision errors could arise, for example, from sensitivity of the pressure transducer, flowmeter and data acquisition system to variations in ambient temperature and hu-

midity. Inability to hold flow rate exactly constant during a period of data acquisition could also appear as a variation in the pressure measurements.

Errors in these quantities will propagate through Eqs. (2) and (3) to produce bias and precision errors in the results  $f$  and  $Re$ . The techniques of uncertainty analysis described in the references can be used to obtain estimates of the bias limits and precision limits for the variables and parameters and the bias limit,  $B$ , the precision limit,  $P$ , and the uncertainty,  $U$ , in the quantities  $f$  and  $Re$ .

If the two pressures,  $p_1$  and  $p_2$ , are measured successively using the same absolute pressure transducer, the bias errors in the measurements of the two variables will not be independent of each other. This phenomenon of correlated bias errors occurs fairly often in the fluid and thermal sciences, usually when variables are measured using the same transducer or using different transducers that have been calibrated against the same standard. These effects must be taken into account in the uncertainty analysis. A method for doing this is shown in one example in ANSI/ASME PTC 19.1 and is derived and discussed in detail in Chapter 4 of Coleman and Steele (1989).

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### **C. Processing Technical Papers for and Planning of Symposia and Forums**

1. In planning a Symposium, it is useful to anticipate all important steps, and plan for specific calendar bench marks, so that adequate timing can be assured for the various stages between Symposium initiation and conclusion. Similar comments apply to Forum papers, although the deadlines and review procedures are different.
2. General Considerations

The start of the real activities by the organizers should occur no later than 18 months before the Symposium. This means that initial conception, all discussions within the respective Technical Committee and/or Coordinating Group, and final approval from the Division Executive Committee have all taken place prior to this initiation. Experience shows that it takes that much time to achieve satisfactory inclusion of all the various organizational steps.

A Symposium normally involves consideration for several ASME sessions which must be planned for or reserved in advance. The papers must be solicited. It may involve the invitation of a keynote speaker, to deliver the keynote address, or panelist if there is to be a panel, in addition to the authors presenting their own papers. It requires early and accurate assessment of the expected number of sessions, for planning purposes with the Executive Committee and ASME Headquarters.

3. Procedure

Starting approximately 16 months before the Symposium date, Calls-for-Papers should be issued with all ASME publications: *Mechanical Engineering*, the *FED Newsletter*, and the *Journal of Fluids Engineering*. This will be coordinated by the Program Representative on the Executive Committee which establishes the deadlines. These Calls must be made to attract the attention of potential authors, state the main Symposium objectives, list the critical deadlines, and mention in a preliminary way, the anticipated form of paper publication. The deadline for submitting abstracts should be no later than nine (9) months before the Symposium date. The deadline for papers, no less than six (6) months before. The Special Publications Department of ASME will need the finally approved version in their hands approximately twelve (12) weeks before the meeting. Before a finally approved draft can be submitted, it must undergo review. It may possibly require revisions, and it must be typed on author-prepared mats (special mats for symposia books). An early date for abstracts is required for planning purposes, a process which normally takes place six or seven months in advance of the meeting. This is related to the advance publicity, the size of the audience, and the planning of other related events in conjunction with the Symposium.

In addition to Calls-for-Papers, the organizers must plan to solicit directly to potential authors. A list of possibly several hundred authors should be prepared, and a solicitation form is mailed to each personally. The form must include all information needed by the authors; namely, the main objectives of the Symposium, the format for the abstract and for the final paper, the listing of all critical dates and deadlines, and also details of the type of publication planned for the papers. The mailing of this invitation should take place shortly after issuing the Calls-for-Papers, keeping in mind that these Calls will only appear in the next convenient issue of the publication, three months away in some cases.

Sometime after this, coordination must begin with the ASME Publications Staff to acquaint them with the forthcoming Symposium and begin to plan for the preparation of the one or more Symposium volumes. In addition, symposium papers can be published as loose papers for individual purchase. The exact date for delivery of all the papers to ASME Publications should be established. The theme for the cover page, the general format, and the preparation of the Foreword should be discussed. The number of papers expected, their grouping in the Symposium volume, the degree of interest raised by Symposium topic will be important elements in determining the form of the publications, as well as its selling price. The authors will be required to type their material on mats, which together with instructions, must be sent out in advance, at the time of acceptance of the abstract.

Responses to the paper solicitation from the authors will be varied. Some will have ready-made material that may or may not fit into the Symposium theme, but which they are very eager to submit. Others may have done the research but have to write the paper. Still others may be required to secure clearances. A few will do nothing, and then come in with a paper at the last minute. The organizers must plan for all these eventualities, and be prepared to screen all submittals, accepting only quality material properly fitting the theme of the Symposium.

The procedure for the review of abstracts, selection of possible candidates, must go on continuously as any delay will eventually crowd the deadlines. When papers are received, the review process is carried out by the organizers themselves. At this point it is not a formal ASME review, but serves the particular purpose of providing a forum for the presentation of the most recent material, while ensuring that poor quality papers, or papers not in fitting with the Symposium format, are turned away. The organizers may furthermore choose to follow the Symposium with possible further publication of the material in the *Journal of Fluids Engineering*. In this case a second round of reviews is required, this time formally by the Associate Editors and in which the best papers will be selected for publication in the permanent literature. After the presentations it must be followed through by encouraging authors of the best papers to prepare and submit the paper in the format required by the ASME review process. The organizers are invited to supply the first set of reviews and the names of the reviewers to the Technical Editor and inform the author that this procedure will help expedite the publication of the paper.

Invitation to a keynote lecturer or a panelist must be started early, approximately 10 months before Symposium date. An invited speaker may take a month or two before answering, and then may decline. No alternative can be contacted until the final word is received from the first invitation.

Because of the rather large amount of work, it is best for a two or three member team to serve as the Symposium Organizers. One organizer should serve as the Chair, and while performing a share of the detailed work, the Chair should see to it that other organizers have their own specific responsibilities clearly defined, that the interfaces are well established, and that no overall task is left unattended. Organizers may want to divide up the paper load on the basis of the subject matter of particular interest to them. They can perform as Symposium paper reviewers, but must maintain all communications with the authors of the papers in their category. This includes soliciting (inviting the responses to be directed to a specific member of the Committee), review of the abstracts, notification of rejections and acceptances of the abstract, review of the

full paper, correspondence with the authors for all reviews, final disposal, and all the required follow-up.

When preparing the Symposium program for headquarters, the organizers may want to designate themselves as Symposium Session Chairs. They also select and invite the Vice-Chairs, and as many additional Chairs as required to cover all the sessions. At the meeting, the Chair of the Symposium Committee may want to chair the opening session. The opening session Chair should plan to give a general introduction, supply background material as to why this Symposium at this time, state the main objectives to be achieved, and outline the general format to be followed. The opening session Chair then introduces the keynote lecturer and the first session is underway. Symposium sessions are planned in the same manner as regular sessions, containing approximately the same number of papers, allowing for discussion and requiring the same amount of paperwork at the close of the session. Symposium papers are eligible for Honors, and as usual, the Chair will be responsible for identifying the best paper for transmittal to the Honors Chair of his Committee.

After the meeting, the authors of the better papers should be contacted and encouraged to submit their papers for publication in the Journal. As mentioned earlier, this requires a second process of review, may require additional revisions, and often may involve the risk of rejection.

At this point in time, the Symposium Organizers have discharged their responsibilities with the possible exception that they may be asked to write a guest editorial if the Editor of the Journal chooses to gather all Symposium papers in a special issue.

#### **4. Review Procedure - Symposium Papers**

In the case of papers for Symposia, the paper may be reviewed for presentation only by the symposium organizers or by outside reviewers. To ensure high quality papers for symposia, the paper review process to be used must be approved by the FED Executive Committee. Exhibit VC-6 summarizes the current paper review process.

## SYMPOSIUM CALENDAR

As a further help, a symposium calendar and check list follows:

	Step	Time Before Symposium
(1)	Symposium topic identified	20-27 months
(2)	Committee member selected to: (a) obtain sponsorship of other persons and committees, and (b) write call for papers	20-27 months
(3)	Obtain Technical Committee or Coordinating Group and FED Executive Committee Approval	18-27 months
(4)	The Symposium organizers then perform the following steps:	18-21 months
(5)	Produce in quantity the Call for Papers (the attached Exhibit VC-1 is an example)	17-18 months
(6)	Place Call for Papers ads in Mechanical Engineering Journals (e.e. JFE) through the Program Chair	16-18 months
(7)	Prepare lists of prospective authors and mail Call with an approximate cover letter	14-16 months
(8)	Notify ASME Special Publications (212-664-7702) of Symposium date, title, and bound volume and find person in the department with publication-related steps	13 months
(9)	Engage Keynote speaker if necessary	12 months
(10)	Receive abstracts. Send out to other symposium organizers as required for review. Agree on date to confer on acceptability.	9-10 months
(11)	Review and confer on abstracts	8-10 months
(12)	Send notification of acceptance or rejection to all submitters of abstracts and remind them of date that draft of paper is due and number of copies required.	8-9 months
(13)	Line up reviewers for papers	8-9 months
(14)	Receive papers (possibly with some follow-up) and send out for review.	8-9 months
(15)	Obtain paper format instructions and paper submittal forms (for bound volume) from headquarters. (The attached Exhibit VC-2 is the paper submittal form and Exhibit VC-3 is the publication format).	7-8 months

(16)	Send paper acceptance (or rejection or revisions required) notice together and paper submittal forms to authors. Include release form (see attached Exhibit VC-4).	7-8 months
(17)	Send follow-up letter to authors about a month before mat submittal deadline	6-7 months
(18)	Symposium organizers meet and (a) organize papers into sessions (typically 5 or 6 papers per 2-hour session) and into parts within bound volume; (b) choose chair and vice-chair of sessions and obtain acceptance; and (c) write preface or foreword (could have keynoter write preface).	6-8 months
(19)	Receive mats and inspect them (being sure that submittal forms are included).	6-8 months
(20)	Type title page, forward (if any), table of contents, and preface.	5-6 months
(21)	Put entire publication in order—Items (20) plus mats—and transmit with paper submittal forms to headquarters' publications person. (Retain copies of author information from submittal forms and of papers if possible.) Be sure bound volume will be available at Symposium.	As designated by ASME Special Publications, usually about 4 months before
(22)	Fill in session forms (see attached Exhibit VC-5) and submit to FED Program Representative	4 months
(23)	Solicit discussions of papers for technical sessions.	2 months
(24)	Remind session chair of their duties and have them contact authors as to time allowed for presentation. Maintain correspondence with authors as to time allowed for presentation.	1 month
(25)	Maintain correspondence with authors as required	0-6 months
(26)	Perform session chair and vice-chair duties at symposium	0 months
(27)	Invite authors to submit their papers which may be of journal quality to the <i>Journal of Fluids Engineering</i> Technical Editor for possible publication.	After meeting
(28)	Obtain written discussions, author replies, and arrange for special publication of publication if JFE with paper, as appropriate	After meeting



## CALL FOR PAPERS

### INTERNATIONAL SYMPOSIUM ON CAVITATION INCEPTION

ASME Winter Annual Meeting  
New Orleans, Louisiana, U.S.A.  
November 28 - December 3, 1993

#### Introduction

The Symposium is sponsored by the Multiphase Flow Committee of the ASME (American Society of Mechanical Engineers) Fluids Engineering Division. This is the fourth in a series of Symposia on Cavitation Inception which started in 1979.

#### Purpose

The purpose of the Symposium is to give engineers and researchers an opportunity to present, comprehend, appreciate and evaluate advances in the understanding of the mechanism of cavitation inception and in the identification of cavitation inception.

#### Scope

Papers are solicited addressing any aspect of cavitation inception such as: microscale phenomena, macroscale phenomena, theoretical predictions, direct numerical simulation, statistical/empirical predictions, nuclei measuring/control techniques, detection techniques, noise, cavitation delay techniques, scaling models, etc.

#### Selection of Papers

Authors should submit three (3) copies of abstracts of between 300 and 500 words, figures and tables as necessary. The cover letter for the abstract should contain: 1) five keywords to describe and categorize the work easily; 2) name, address, telephone number, FAX number (if any) and telex number (if any) of the author to whom subsequent correspondence should be directed. The abstract will be used for preliminary screening and planning for the sessions. The final acceptance of the papers will be based upon the review of the complete manuscript by the organizers. All accepted papers will be published in a symposium volume available at the meeting. After the symposium, authors will be free to submit their papers for review for publication in the Journal of Fluids Engineering. Following is the schedule for submission of abstracts and papers: four (4) copies of abstract due organizers by January 1, 1993; author(s) notified of abstract acceptance by February 1, 1993; draft papers due organizers by April 1, 1993; author(s) notified of paper acceptance by June 1, 1993; and author prepared mats due by August 1, 1993. Please send your abstracts to one of the following organizers.

#### Organizing Committee

Dr. Michael L. Billet  
Fluid Dynamics Department  
Applied Research Laboratory  
Pennsylvania State University  
P.O. Box 30  
State College, PA 16804  
Phone: 814-863-3001  
FAX: 814-865-3287

Dr. William B. Morgan  
Ship Hydromechanics Department  
David Taylor Research Center  
Bethesda, MD 20084-5000  
Phone: 301-227-1578  
FAX: 301-227-3679



The American Society of Mechanical Engineers

United Engineering Center / 345 E. 47th St., New York, N.Y. 10017 / 212-705-7779 TWX-710-581-5267

Date \_\_\_\_\_

Barbara Signorelli  
Papers Control Administrator  
The American Society of Mechanical Engineers  
345 East 47th Street, New York, N.Y. 10017

Subject: Paper Title \_\_\_\_\_

Author(s) \_\_\_\_\_

ASME Membership Grade \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip Code \_\_\_\_\_

In accordance with the requirements of the Board on Communications, given in the pamphlet "An ASME Paper," I am enclosing with this recommendation: clean, revised, and edited manuscript with original illustrations and Form M&P 1903 completed and signed by the author(s), all of which I understand should be submitted in accordance with the deadline data schedule for receipt of papers for National Meetings and Division Conferences. Attached is a list of suggested discussers (5 maximum).

Date Manuscript First Received (At Headquarters or Reviewing Agency) \_\_\_\_\_

RECOMMENDATION FOR PUBLICATION

Paper To Be Presented

- Publish in Transactions
- Publish in pamphlet form with digest in MECHANICAL ENGINEERING  
Meeting to be held at \_\_\_\_\_ on \_\_\_\_\_ 19\_\_\_\_

Paper Not To Be Presented

- Publish in Transactions
- Publish in Transactions as a Technical Brief (paper must be suitably short)
- Not recommended (paper has been returned to author as per attached copy of letter)

NOTE: Paper is timely and of general interest and might be considered as a feature article in MECHANICAL ENGINEERING

RECOMMENDATION FOR HONORS

- This paper should be considered for an Honor. (See Form M&P 1257, page 3, Recommendation. If Honors is checked, Papers Review Chairman should submit Reviewer's Comments to the Division Honors Chairman for transmittal to Honors Department, ASME Headquarters.)

This paper has been reviewed in accordance with the requirements of Form M&P 1257.

Signed \_\_\_\_\_

Sponsored by \_\_\_\_\_

(Division or Committee)

IMPORTANT: This Form, completed and signed, must be submitted to Headquarters with every paper.

HOW TO PREPARE AN ASME PAPER ON 8 1/2 x 11 SHEETS

Author Number 1

Department or Division Name  
Company or College Name  
City, State  
Country (only if not U.S.)

Author Number 2

Department or Division Name  
Company or College Name  
City, State  
Country (only if not U.S.)

ABSTRACT

This document provides information and instructions for preparing an ASME paper on 8 1/2 x 11 in. paper,<sup>1</sup> using your computer and a laser printer. (Do not submit pages created with a dot matrix printer). All guidelines given herein should be used in conjunction with the material provided in MS-4. Follow the specifications in this document and refer to the attached templates to determine the layout of your pages. If you follow the instructions included here, the typeface, style, and basic layout of your paper should look like this document.

Begin your abstract 4 7/16 in. (27 1/2 picas) from the top of the page as shown on the attached cover page template. The **ABSTRACT** heading should be 9 pt.<sup>2</sup> boldface in all capitals; it should be in a sans serif (gothic) typeface such as Helvetica (shown above). It should be flush left with the left margin. The preferred spacing to the next heading is two (2) line spaces.

PAPER TITLE AND AUTHOR(S)

The title of your paper and the author(s) should be included in the space shown on the attached cover page grid (between the lines at the upper right and the point at which your abstract begins).

The *title* should be 11 pt. boldface in all capital letters; it should be in a sans serif typeface such as Helvetica (shown above) with 13 pt. leading. (Leading is the spacing between lines of text.) The title should be centered on the page, the longest line not to exceed 5 5/16 in. (32 picas). All lines (run-

over lines of a long title) should be centered. Three (3) line spaces separate the title from the first author.

*Author name* should consist of first name, middle initial, last name. It should be 10 pt. Helvetica boldface, upper and lower case letters (with 12 pt. leading), centered under the title. *Author affiliation* should consist only of the following as applicable:

- department or division name
  - company or college name
  - city and state (spelled out)
  - country names only for countries other than the U.S.
- Professional titles, street address, and zip code should not be included.

All author affiliation information should be 10 pt. Helvetica medium, upper and lower case letters (with 12 pt. leading), centered under the name. Two (2) line spaces separate the first and subsequent authors.

Please note: The paper title and author name box shown on the attached template is for guidance only and will not accommodate multiple authors. If there are multiple authors, please include this information on a separate sheet and headquarters staff will complete your paper. Also, please do not print the box on your paper.

TEXT HEADING #1

The text of your paper follows the abstract and should be set in 9 pt.<sup>2</sup> Times Roman (or an equivalent typeface) medium with default leading or 11 pt. leading. The text should be 3 5/16 in. wide (but not wider than 3 3/8 in.) (20 picas) and justified on the right and left margins. The first line of each paragraph should be indented two spaces from the left margin. The text should be arranged in a two-column format as shown on the cover page template. The primary text heading (text heading #1) should be 9 pt.<sup>2</sup> Helvetica boldface in all

<sup>1</sup>Standard 50-lb. bond paper is preferred. (See footnote specifications on next page.)

<sup>2</sup>If 9 pt. is unavailable use 10 pt. (with 12 pt. leading, as applicable).

Pg. No.

AUTHOR NAME

capitals, flush left with the left margin. If the heading should run to more than one line, the run-over text should also be flush left. The spacing to the next heading should be two (2) line spaces.

**Text Heading #2**

The next level of heading should be 9 pt.<sup>2</sup> Helvetica bold-face, upper and lower case letters, and underlined. The heading is flush left with the left margin. The spacing to the next heading should be two (2) line spaces.

**Text Heading #3.** The third level of heading should follow the style of text heading #2, but it will be indented and followed by a period, a space, and its text.

**ASME VOLUME NUMBER AND TITLE**

ASME assigns a volume number to its bound volumes. This number, along with the title of the book, appears in the upper right-hand corner of the first page of the paper (cover page):  $\frac{3}{4}$  in. (4 picas) from the top of the page and  $\frac{3}{4}$  in. ( $4\frac{1}{2}$  picas) from the right margin (see cover page template). For use in the production of the bound volume at ASME, please include one of the following per the above specifications on the cover page only:

- (1) two black lines (rules) of identical width to the width of the text column ( $3\frac{3}{16}$  in. or 20 picas); OR
- (2) the title of your paper in 8 pt. medium type — not to exceed the defined space.

**AUTHOR NAME AND PAGE NUMBERS**

Author name should be confined to the area at the lower right-hand corner of the page  $\frac{7}{16}$  in. ( $2\frac{1}{2}$  picas) from the bottom of the page. The page numbers of your paper should be centered in the space between the text columns on the same line with the author name as indicated on the templates. Printing of the page numbers will expedite handling of the paper but not interfere with or hinder the book pagination to be done by ASME.

If this information cannot be printed directly on the page, please hand print the name and number in nonreproducible blue pen in the specified area. Do not print or write your page numbers elsewhere.

**FOOTNOTES**

Footnotes should be numbered consecutively using superscript numbers. They should be positioned flush left at the bottom of the column in which the reference first appears. The text of the footnote should be 8 pt. Times Roman medium (with 10 pt. leading), not to exceed  $3\frac{3}{16}$  in. (20 picas). The footnote should be preceded by a 3 pt. ( $\frac{1}{2}$  in.) rule. There should be one (1) line space between the rule and the text.

<sup>2</sup>If 9 pt. is unavailable use 10 pt. (with 12 pt. leading, as applicable).

<sup>3</sup>Refer to MS-4.

**FIGURES<sup>3</sup>**

All figures should be positioned at the top of the page where possible. If figures cannot be scanned into your paper, leave the appropriate amount of space and then paste in the figures upon completion of your paper. Do not use tape; use adhesives such as glue, rubber cement, or wax. Please note: photographs especially should not be taped. All figures should be clear, sharp, and high quality — photocopies are not acceptable.

One-column figures should not exceed  $3\frac{3}{8}$  in. (20 picas) in width. Those figures that will span the two columns should be no wider than 7 in. (42 picas). All figures should be numbered consecutively and captioned; the caption should be 9 pt.<sup>2</sup> Helvetica, all capital letters, and centered under the figure. All text/callouts within the figure should be no smaller than 7 pt.

There should be a minimum of two line spaces between figures and text.

**TABLES<sup>3</sup>**

All tables should be numbered consecutively and captioned; the caption should be 9 pt.<sup>2</sup> Helvetica, all capital letters, and centered above the table. The body of the table should be no smaller than 7 pt. The use of boldface and italics is encouraged to make necessary distinctions within the table. Nine point (9 pt.) leading is recommended.

Tables should be positioned at the top of the page. Follow the guidelines for figures outlined above if tables will require separate handling (not generated with text). Tables sizes should be the same as for figures, with the exception of those tables that will be turned sideways on the page — these should not exceed  $8\frac{1}{2}$  in.  $\times$   $6\frac{1}{2}$  in.

There should be a minimum of two line spaces between tables and text.

**REFERENCES**

Note: References should be set in the same typeface as the body of the text, following the guidelines in *MS-4* and *the Chicago Manual of Style*. For example:

ASME Manual MS-4, *An ASME Paper*, The American Society of Mechanical Engineers, New York, January 1991.

*The Chicago Manual of Style*, The University of Chicago Press, Chicago, 1982.

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- (2) Make all vertical measurements from top to bottom, allowing for any discrepancies in measurement ( $\pm \frac{1}{16}$  in.) to be absorbed at the bottom of the page.

# COVER PAGE TEMPLATE

Print these  
two lines.

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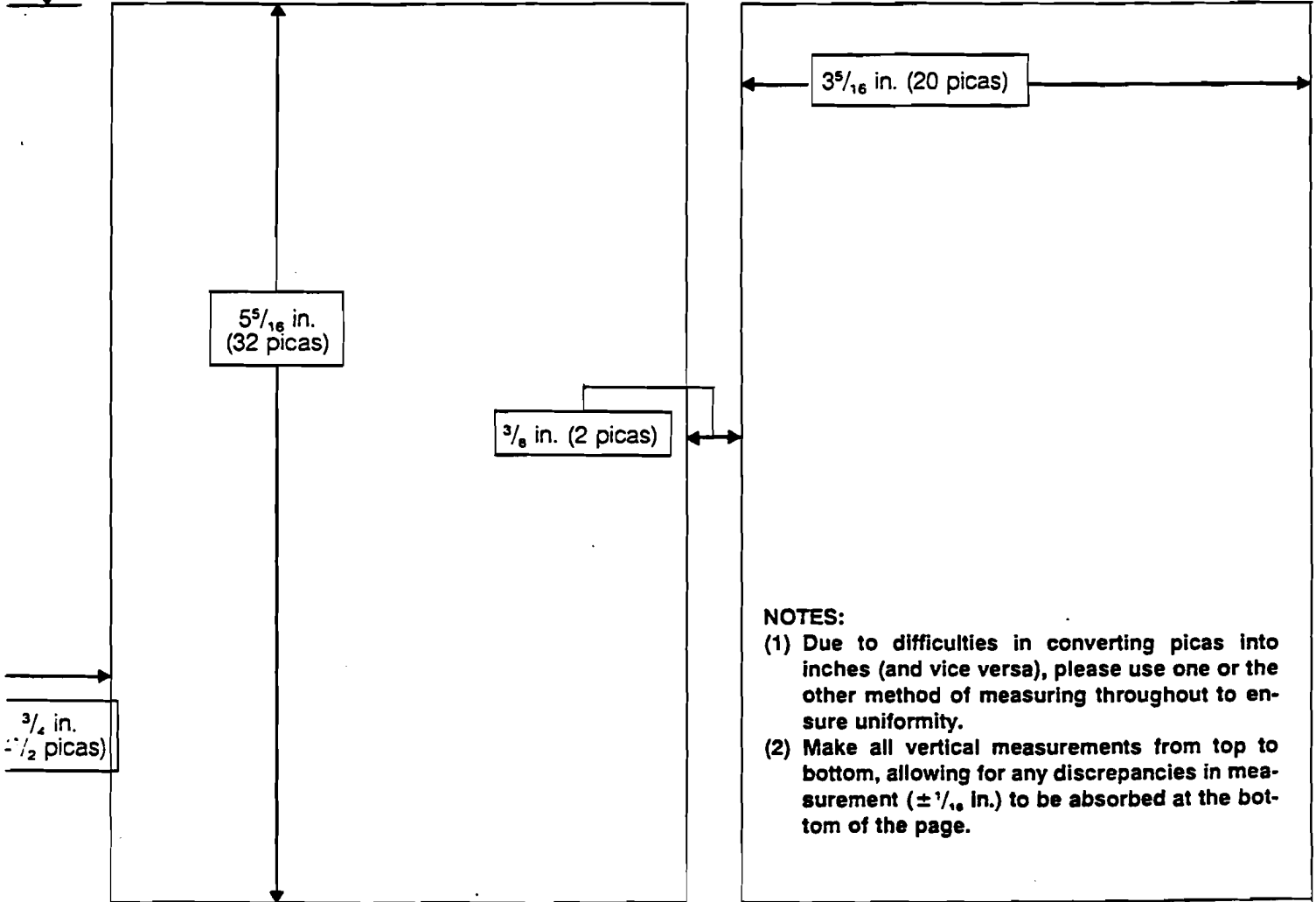
Exhibit VC-3 (cont.)

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AUTHOR(s) \_\_\_\_\_

ABSTRACT (attach, in duplicate, so that the scope and character of the paper may be known)

APPROXIMATE DATE MANUSCRIPT WILL BE AVAILABLE \_\_\_\_\_

PAPER OFFERED FOR PRESENTATION AT THE (conference and session) \_\_\_\_\_

*As part of the Society's continuing effort to encourage greater interaction between the technical and the regional/sectional activities, check this box if you or another author are willing to re-present this paper, and indicate any travel or other limitations.*

In accordance with ASME policy, outlined on the reverse side of this sheet, I certify that to the best of my knowledge this paper will represent:

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**AUTHORS (Lead Authors and Co-Authors):**

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Address \_\_\_\_\_

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Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

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## Exhibit VC-4 (cont.)

### FACTS YOU SHOULD KNOW

**REVIEW AND ACCEPTANCE:** It is the policy of The American Society of Mechanical Engineers to accept for publication only original contributions to the engineering literature. In most cases, this means that a paper should incorporate substantial new information not previously published. Under certain circumstances, reviews or collations or analyses of information previously published in scattered form may be acceptable. To aid the committee that will review your paper, please complete items on the reverse side of this sheet. Material which is not original must be noted by footnotes and/or bibliography.

Receipt of a manuscript by a review committee does not constitute acceptance for presentation and publication by the Society. All manuscripts and author-prepared mats accepted are subject to editing and become the property of the Society. Additional details on the procedure followed in preparation of an ASME paper are presented in the ASME manual MS-4, "An ASME Paper."

**APPROVALS AND CLEARANCE:** It is the author's responsibility to secure such company approvals as may be required. Government clearance on Classified material should be obtained where necessary. If approvals or clearances are involved, the original manuscript should note that these have been obtained. Material not approved should be omitted from the manuscript.

**AUTHORS:** It is ASME policy that all those who have participated significantly in the technical aspects of an ASME paper should be recognized as co-authors or cited in the acknowledgments.

**DUE DATES FOR MANUSCRIPTS:** The manuscript of the paper must be submitted, if solicited, to the Division, Group, or Committee sponsoring the paper at least five months prior to the meeting at which it is to be presented. Unsolicited papers must be submitted to the Editorial Department at least seven months prior to the meeting for which it is being offered for presentation. This period is the minimum time in which the paper can be reviewed, revised, recommended for presentation and publication, edited, styled, printed, sent to discussers, and be made available at the meeting.

**USE OF SI UNITS (METRIFICATION):** "As of July 1, 1974, SI units (in addition to any other units) will be required in ASME papers and in revised, reaffirmed, and new engineering standards." The foregoing resolution, as recommended by the Metric Study Committee and the Council on Codes and Standards, was voted on and approved by the ASME Council at the 1973 Summer Annual Meeting.

**LENGTH:** The text of an ASME Transactions paper should not exceed 6000 words or six Journal pages. An author-prepared pamphlet paper should not exceed eight pages (eight mats).

**EXCESS-PAGE CHARGES: Transactions papers:** A mandatory page charge of \$125 for each page over six will be assessed. **Author-prepared pamphlet papers:** May not exceed sixteen pages. A mandatory page charge of \$50 per page for each page over eight will be assessed. (Papers scheduled for Bound Volumes are not subject to page charges.)

**VOLUNTARY PAGE CHARGES:** The purpose of the Society is to disseminate technical information of permanent interest resulting in the publication of a series of Transactions quarterlies. These quarterlies are deposited, free of charge, in selected libraries throughout the world. Papers of permanent interest having been selected for publication in the ASME Transactions are subject to a Voluntary Page Charge of \$65.00 per page for the first six pages, which will be invoiced, through the author to the author's company, institution, or agency at the time page proofs are submitted to the author. Publication is not dependent upon the payment of the Voluntary Page Charge. Payment of this charge entitles you to 100 free reprints plus a reduced rate for additional copies ordered in lots of 100.

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**WINTER ANNUAL MEETING**  
**REGISTRATION AGREEMENT**

M&P 1336  
4/92

In accordance with ASME Policy, all members, non-members, chairmen/ vice-chairmen authors and panelists, must register for the conference and pay the appropriate fees. No one will be permitted to enter the technical session areas unless they register and are wearing the official ASME Winter Annual Meeting Badge. Please return this form by June 3, 1993 to ASME: Attention Meetings Manager, 345 East 47th Street, New York, NY 10017

TECHNICAL SESSION# \_\_\_\_\_ Day \_\_\_\_\_ Time \_\_\_\_\_

SESSION TITLE \_\_\_\_\_

(Please circle)

CHAIRMAN/

VICE-CHAIRMAN \_\_\_\_\_

Initial  
First Name

Initial  
Middle Name

Last Name

Full Name of Co./ or University (No Abbreviations)

Department

Street Address \_\_\_\_\_

City

State

Zip Code

Country

AUTHOR (1) \_\_\_\_\_

Initial  
First name

Initial  
Middle Name

Last Name

Full Name of Co./ or University (No Abbreviations)

Department

Street Address \_\_\_\_\_

City

State

Zip Code

Country

Phone Number ( ) \_\_\_\_\_

PAPER TITLE \_\_\_\_\_

**Additional Authors (Please List Separately)**

NAME \_\_\_\_\_

NAME \_\_\_\_\_

NAME \_\_\_\_\_

I have read the above and hereby agree that \_\_\_\_\_

Name of author attending

will be attending the Winter Annual Conference and will advance register and pay the appropriate fees.

Submitted by  
minwampla93

Date

**WINTER ANNUAL MEETING  
TECHNICAL SESSION**

**M&P 1337  
4/92**

To assure proper program listing of TECHNICAL SESSIONS and to facilitate the program, forward all of the following information to the ASME, Attention Meetings Manager. Prepare in duplicate, retain copy and forward original to above address. USE SEPARATE SHEET FOR EACH TECHNICAL SESSION.

DAY ASSIGNED \_\_\_\_\_ DATE ASSIGNED \_\_\_\_\_ TIME ASSIGNED \_\_\_\_\_

TECHNICAL SESSION NO. \_\_\_\_\_ EXPECTED ATTENDANCE \_\_\_\_\_

SPONSORED BY \_\_\_\_\_ COMMITTEE

of the \_\_\_\_\_ DIVISION

List Joint Sponsors (Other ASME Divisions, Other Societies) \_\_\_\_\_

List Other ASME Divisions which might have an interest in this session \_\_\_\_\_

If this session is part of a Joint Symposium, list the Symposium title \_\_\_\_\_

Other Sessions in the Symposium, if known by number or title: \_\_\_\_\_

Highlight Topic?

Yes [ ]

No [ ]

SUBMITTED BY \_\_\_\_\_ Date \_\_\_\_\_ Phone No. (\_\_\_\_\_) \_\_\_\_\_  
Area Code

TYPE OF SESSION (circle one)

1) Individual Paper

2) Panel Discussion

3) Symposium Volume on

4) Open Forum

SESSION TITLE: \_\_\_\_\_

CHAIRMAN: \_\_\_\_\_

(Initial) First Name

(Initial) Middle Name

(Initial) Last Name

Full Name of Company/ University (NO ABBREV.)

Department

City \_\_\_\_\_ State (postal Abbrev.) \_\_\_\_\_ Phone No. (\_\_\_\_\_) \_\_\_\_\_  
Area Code

VICE CHAIRMAN:

(Initial) First Name

(Initial) Middle Name

(Initial) Last Name

Full Name of Company/ or University (NO ABBREV.)

Department

City \_\_\_\_\_ State (postal Abbrev.) \_\_\_\_\_ Phone No. (\_\_\_\_\_) \_\_\_\_\_  
Area Code







**ADDRESSES**

**THIS SHEET WILL BE OPTICALLY SCANNED. YOU MAY USE AN ADDITIONAL SHEET IF NEEDED.**

Please provide complete mailing addresses for Chairman, Vice Chairman, and all Authors.

**Note: We cannot send conference information without complete addresses.**

- Do not cut and paste.
- All material must be typed and aligned.

If you prefer you may submit requested information on a disc using Word Perfect 5.1 as an alternative.

Information should be in the following format and can be typed on a separate sheet.

**CHAIRMAN**

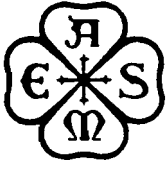
Name:  
Affiliation:  
Dept:  
Address:  
City, State, Zip:

**VICE CHAIRMAN**

Name:  
Affiliation:  
Dept:  
Address:  
City, State, Zip:

**ALL AUTHORS**

Name:  
Affiliation:  
Dept:  
Address:  
City, State, Zip:



# The American Society of Mechanical Engineers

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Dear

It is the intent of the ASME Publication Committee to present and publish technical papers of high quality. To achieve this end, thorough and critical reviews are being requested from you and others who are competent and knowledgeable.

The Papers Review Committee requests your assistance in evaluating the enclosed manuscript. Your opinions will be held in confidence and your efforts will contribute greatly toward maintaining the high quality required of ASME Technical Division papers. If you cannot review this paper by the date indicated on page 3, please return it to me immediately.

Papers Review Chairman

## THE REVIEW PROCESS

Prior to presentation all papers for national ASME meetings and division conferences should be reviewed by competent specialists selected by the program-making agencies. The purpose of review is to determine whether a paper is acceptable for publication, needs revision or should be rejected. Recommendations must be supported by specific and critical comments. Reviewing is a confidential process involving only the reviewer program-making agency, and the editorial department.

Papers recommended for publication in the ASME TRANSACTIONS JOURNALS must be of high quality and have permanent interest value.

Papers recommended for publication in MECHANICAL ENGINEERING must also be of high quality. To be considered for selection as feature articles, papers should be general in character and appeal to a wide cross-section of ASME membership.

Papers recommended for PAMPHLET publication should be of high quality and of current technical interest. They are indexed and available through the Engineering Societies library.

Transactions quality papers that are difficult to present orally may be published in the TRANSACTIONS without presentation.

If rejection is recommended, keep in mind that you should set forth reasons in a manner which you would want them documented had you written the paper and rejection was contemplated.

## REVIEWING TECHNICAL PAPERS

Reviewing technical papers is an intellectual process that includes both subjective and objective elements. The reviewer must be objective in the sense of eliminating any personal bias he may have toward the author or the subject matter. At the same time the reviewer must evaluate the paper in terms of his own experience in and knowledge of a specialized technical field. This involves more than checking a list of possible impressions. For the reviewer will almost always have some reactions that cannot be anticipated in a formal review form.

This Paper Reviews form has been designed to stimulate thought so that the reviewer can evaluate the merits of the paper and fit his evaluation into recommendations conforming with ASME practices of technical paper presentation and publication.

## DEFINITIONS RELATING TO PUBLICATION

**Prior publication** refers to reproduction and distribution of a paper in a manner such that it has been made available to the engineering profession and can be obtained in the normal process of a literature search.

An **acceptable technical paper** is one that is technically sound, free from personalities and bias (especially of a commercial nature), one in which the author supplies information never before published in a form readily available to the public or adds a new concept or development to existing technical knowledge. The definition should be construed to include comprehensive reviews to past and present engineering practice.

**Unacceptable technical papers** are those having an obvious sales approach to technical problems, those based upon fallacious or dubious engineering analysis, and those whose approach is superficially descriptive of widely accepted engineering practice.

A **review paper** is one in which an author surveys a specific subject or technical area and brings together relevant published information in such a manner that the reader may readily become familiar with the state of the art at the time the review was prepared. Alternately, such a paper may present information from unfamiliar fields of science and from other engineering specialities. A review must relate itself through bibliographical references to pertinent technical literature.

**Originality** is a measure of the creativity or inventiveness of the author. That which has never before been accomplished is obviously original. In the review process, however, originality must be interpreted not only in the sense of a new physical creation, but must include such items as new concepts, techniques, or methods. It describes the work of one whose creativity has given rise to a new concept; it is applicable to the analyst who through the generation of new analytical techniques or through an unusual application of classical techniques, obtains solutions to engineering problems: it describes the inventiveness of an experimentalist in his design, construction, and use of novel and unique equipment to obtain data not previously available. Originality then, is an attribute of the author's work that is earned by his specific contribution to his field. Originality is a standard by which the author's work will be known. The measure of originality of the reported work will be determined by the reviewer and will be based upon what is known of past and current developments in his field.

The **significance of the reported work** may be difficult to appraise. What is considered to be of little significance today, may be very significant in future years. As we read a manuscript, however either consciously or unconsciously we do measure the significance of the material. This evaluation, either subtle or planned, is made in the light of what we know about the subject matter. It is normal to ask the questions, "Why was this work done?" and "What is the significance of the work as it relates to a particular technical field?". The reviewer is held to be an expert in his field and it is his responsibility to make a subjective evaluation of the importance or worth of the reported work. He must judge, to the best of his ability, the merit or value of another's contribution.

The **completeness of the reported work** refers to the one-ness or wholeness of the work. In this usage, the reported work should be marked by a unity and continuity of parts and should show an interdependence between these parts. As an example, an experimental program would be marked by a concept or phenomenon that was to be investigated, the formulation of an experiment, the design, build-up and check-out of experimental equipment, the running of the test, the gathering and interpretation of data, and the establishment of conclusions. Each of these parts has a completeness of its own and yet there is an interdependence between them and no part can be missing without destroying to a certain extent the integrity of the entire work. The reported work should exhibit a level of accomplishment that comes from thoughtful and scholarly efforts by the author. Completeness is not a concern about the content of the text; it is a rating of the author's ability to formulate and pursue a technical program at a professional level.

**Acknowledgment of the work of others by references** is to be expected in a well prepared technical paper. Such a recognition is not merely a courtesy, it is a valued content showing how the current work is related to work already accomplished. The references should be both adequate in number and accurate in content. Such a documentation shows the author's familiarity with the work of others and also serves as an aid to the reader who may desire to learn more of the subject the author is discussing. It is obviously not necessary or appropriate to reference all known works, but a judicious choice of pertinent papers should be given.

The **organization of the manuscript** is extremely important if the reader is to understand the work of the author. Ideas are most effectively communicated when there is a carefully planned and logical structure in the manuscript. *The booklet, MS-4, "An ASME Paper," provides specific criteria on the organization of a paper.* Some of these items are outlined briefly below:

<b>Title:</b>	Brief, descriptive
<b>Abstract:</b>	Clear indication of object, scope and results.
<b>Body of Paper:</b>	Logical organization; purpose, description of problem, means of solution, results, and conclusions.
<b>Symbols:</b>	Recommended symbols used; unusual symbols adequately defined. SI units are required.
<b>Bibliography:</b>	Footnotes if only four or five references; otherwise listed at end of paper.
<b>Illustrations:</b>	Clear black and white glossy prints, preferably 8 x 10 inches, of all line drawings, graphs, and photographs. Graphs should be free of all lines and lettering that are not essential and coordinate rulings should be limited in number for the sake of clarity. Figure number and author's name on the back of each sheet. A separate sheet of captions is required.
<b>Length:</b>	Should not exceed 6000 words (6 printed pages in a Journal) or equivalent.
<b>Style:</b>	The paper should be well written, conform to recognized standards of literary style, and be readily understandable to engineers in the field of interest of the paper.

**Clarity in writing, tables, graphs, and illustrations** cannot be overemphasized. A technical article is written to convey ideas to the reader and this end will only be achieved when the author uses the right choice of words, effective sentence structure, correct spelling and punctuation, and paragraphing. The author must also show accuracy and skill in the use of formulae, graphs, and diagrams since these exist to complement the written text. Specific information on how to prepare graphs and diagrams and on the use of mathematics in the text is given in the ASME publication MS-4, "An ASME Paper." For the review process, the author must furnish accurate and legible copies of the final art work that is to be used in his manuscript. The reviewer cannot be expected to look at a penciled sketch and guess what the author had in mind for the final figure. Also, the reviewer should not be expected to evaluate a paper where glossy prints have been copied with significant loss of detail. It is to the author's credit that he submit all tables, graphs and illustrations in a form that can be easily interpreted by the reviewer.

#### DEFINITIONS OF QUALITY RATINGS

The quality rating scale encompasses a range of evaluations from "poor" to "honors" quality.

There are very few technical papers whose characteristics will merit the rating of **honors quality**. Even fewer papers will warrant such a rating over their entire profile. Such a paper would be comparable to those that are awarded ASME national honors. They will be recognized on the basis of outstanding writing quality, a high degree of originality, and they will constitute an unusual contribution to the science of engineering.

The rating of **good** indicates very acceptable levels of accomplishment. A paper with profile components rated at this level would be presentable at an ASME meeting and meet the requirements for publication in an ASME journal.

**Acceptable** and **marginal** quality will be considered from a subjective viewpoint since each reviewer will have his own concept as to what constitutes acceptability. Reviewers should, however, be able to evaluate a paper or its profile in a realistic way in terms of generally accepted standards. The basis of the evaluation must be the reviewer's own professional experience and his knowledge of the technical literature. A rating of **marginal** is below the standards of acceptability for a *Transactions* Journal and appropriate comments should be made to assist the author in revising his manuscript.

Papers with ratings of **poor** encompass defects previously mentioned in the definition of unacceptable technical papers. Such papers will include excessive commercialism, fallacious analysis or repetitive description of conventional engineering practices.

# PAPER REVIEW EVALUATION SHEET

Exhibit VC-6 (Cont.)

An ASME paper should be: Clear, concise, complete, and original, with assumptions plainly identified, data and computation results presented with their uncertainty, with precise logic, with relevance to practice described, and with actual accomplishments of the work plainly stated and honestly appraised.

Paper No. \_\_\_\_\_ Reviewer \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

Author(s) \_\_\_\_\_

Submitted for \_\_\_\_\_ Meeting Date \_\_\_\_\_

Please complete review by:  
\_\_\_\_\_

Please return this manuscript immediately if you cannot complete the review by the indicated date.

## PAPER PROFILE

Place a check in the boxes which, in your opinion, best describe the following features of the manuscript.

	* Poor	* Marginal	Acceptable	Good	* Honor
Originality of the Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engineering Relevance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scientific Relevance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Completeness of the Reported Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acknowledgement of the Work of Others by References	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organization of the Manuscript	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity in Writing, Tables, Graphs & Illustrations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In your opinion, is the technical treatment plausible and free of technical errors?	Yes	No
Have you checked the equations?	<input type="checkbox"/>	<input type="checkbox"/>
Are you aware of prior publication or presentation of this work?	<input type="checkbox"/>	<input type="checkbox"/>
Is the manuscript free of commercialism?	<input type="checkbox"/>	<input type="checkbox"/>
Is the paper too long?*	<input type="checkbox"/>	<input type="checkbox"/>

## YOUR RECOMMENDATION

- For publication as a: (Check only one place)
- \_\_\_\_\_ 6000 word paper in Trans. ASME/Journal
  - \_\_\_\_\_ 1500 word Tech. Brief in Trans. ASME/Journal
  - \_\_\_\_\_ feature article in Mechanical Engineering (broad and current interest to the profession)
  - \_\_\_\_\_ In pamphlet form
  - \_\_\_\_\_ In Bound Volume

- This paper is: (check only one place)
- \_\_\_\_\_ honors quality\*
  - \_\_\_\_\_ acceptable
  - \_\_\_\_\_ acceptable with minor revisions\*
  - \_\_\_\_\_ acceptable with major revisions\* (review required after revision)
  - \_\_\_\_\_ NOT ACCEPTABLE

\*please justify on reverse side

Return Review to:

Name \_\_\_\_\_ Reviewer's Signature \_\_\_\_\_

Address \_\_\_\_\_ Date \_\_\_\_\_

Zip \_\_\_\_\_

Phone \_\_\_\_\_

**To assist the author in revising his manuscript, please separate your remarks into two clearly identified sections.**

- (1) Those suggestions which, in your opinion, would improve the quality of the manuscript but are not essential for publication, and
- (2) Changes which in your judgement should be made before publication

Remarks that are not clearly identified will be assumed to fall into the first category.

**SUGGESTED DISCUSSERS**

(List names and addresses of potential discussers. The reviewer is encouraged to include his name.)

## **D. Technical Sessions at Meetings**

Technical sessions at meetings take several forms, as follows:

### **1. Regular Sessions**

A typical session consists of at least four papers. The discussion phase is of great importance. To insure good discussions, it is recommended that the copies of the originals or the preprints of the papers should be sent to competent and reliable discussers as soon as possible before the meeting by the Session Chair. Sessions can have generic themes, or consist of general topics.

### **2. Symposia**

Symposia consisting of several sessions devoted to closely related topics are regularly held. Presentation is normally brief and discussion full. Some presentations result in full technical papers and some in brief notes. Bound volumes of symposium papers can be prepared if appropriate.

The symposium is a useful device for establishing a forum on new and/or difficult fields in which the state-of-the-art can be brought out earlier than if the normal process of awaiting sporadic papers is followed. Whenever possible, pertinent discussions of symposia papers should be published.

### **3. Panel Discussions**

Panel discussions are a useful means of promoting an interchange of information on current areas of work which are not ready for publication. Usually a short abstract of the material to be discussed is submitted to the Session Chair twenty-four hours prior to the presentation.

### **4. Forums**

Forums are a useful means of promoting an interchange of information on current areas of work which are not ready for archival publication. Usually a short summary of the material to be discussed is included in a bound volume.

### **5. Workshops**

Workshop sessions consist of activities such as presentations, panel discussions, audience interactions, and collaborative work by the attendees. Workshops are interactive sessions which transfer technology to the participants.

## VI. HONORS & AWARDS

### A. Introduction

This section describes the honors and awards available to the Fluids Engineering Division and provides a guide for the processing of honors nominations. Additional information on those awards which are, at the same time, Society Awards is given in the ASME Honors Manual MS-71.

### B. Awards of the Fluids Engineering Division

The Fluids Engineering Division has two literature awards and an outstanding contribution award to honor worthy fluid mechanics engineers. The Lewis F. Moody Award and the Robert T. Knapp Award were established in 1958 to recognize outstanding papers. The Fluid Machinery Design Award was established in 1979 to honor excellence in the design of fluid machinery

These awards are normally presented at the Fluids Engineering Division Banquet or luncheon held during the Winter Annual Meeting of the Society but might be presented at the Division meeting instead. Recipients will be nominated by the FED Honors Committee and approved by the FED Executive Committee.

In addition to these Division Awards, there are two other awards that originate within the Division but are now Society Awards as well. One is the Freeman Scholar Program established in 1970 to provide funds for a respected fluids engineer to write a review on a topic of his particular expertise. The other is the Fluids Engineering Award established in 1968, becoming a Society Award in 1978, to honor outstanding contributions to fluids engineering. Both of these awards will be discussed in Section VI.C.

A Student Paper Award was established by the Fluids Engineering Division in 1989. It honors the best student paper specializing in fluids engineering and recognizes the technical, writing, and presentation skills.

The Division Awards and their nominating procedures are described in detail below.

#### 1. Lewis F. Moody and Robert T. Knapp Awards

##### (a) Description and Qualifications

The Lewis F. Moody Award and Robert T. Knapp Award are both normally granted annually (but if no worthy paper is found, no award is granted in that particular year) for outstanding original papers presented to the Society under the auspices of the Division. The Moody Award honors papers useful to the practice of fluids engineering; the Knapp Award honors papers resulting from analytical or laboratory research. For both awards, the paper must be original and current, having been presented to the Society within the two calendar years prior to the year of the award. Joint authorship is permissible. It is not mandatory that the authors be members of ASME for the Knapp Award.

One of the two awarded papers will be chosen to be the Divisions's nominee for the Society's Melville Medal (see section VI.C), subject to the condition that at least one of the co-authors is a corporate member of ASME (Fellow, Member or Associate Member).

(b) **Nomination and Selection Procedures**

Nominations will be made through the Division Honors Chair to the Division Honors and Awards Committee who will decide upon the recipient by majority vote, with the executive Committee's concurrence with the final choice. Nominations may be submitted informally by Technical Session Organizers, *Journal of Fluids Engineering* Editors, or individual members.

(c) **Form of Award**

The award will be a certificate; in the case of joint authorship, duplicate awards will be given.

2. **Fluid Machinery Design Award**

(a) **Description and Qualifications**

This award is to be presented not more than once every two years. It honors excellence in the design of machinery involving significant fluid mechanics principles, which benefits mankind as exemplified by product use within the past decade.

The criteria for the Award are:

1. **Fluid machine:** The design must be such that fluid mechanics is a significant factor in its operation.
2. **Usefulness:** The design must have as its objective benefits such as increased performance or improved living conditions.
3. **Period:** Contemporary designs which entered service prior to date of nomination for the award are applicable.
4. **Excellence:** The design must represent an improvement in the state-of-the-art. Originality and/or patentability are desirable.

Any persons who contributed significantly to the excellence of the design, regardless of their title, are eligible for this award.

(b) **Nomination and Selection Procedures**

The Fluids Engineering Honors & Awards Committee solicits nominations from all ASME members via the FED Newsletter and requests to all FED Technical Committees and Coordinating Groups. Nominations are reviewed by the FED Honors Committee, who make the selection, with the concurrence of the FED Executive Committee. Declarations of design

Post-it® Fax Note	7671	Date	2/9	# of pages ▶	1
To	DR JIM LIBURDY	From	TOM MORRIS		
Co./Dept.	OSU	Co.	SWRI		
Phone #	541-737-7017	Phone #	210-522-2355		
Fax #	541-737-2600	Fax #	210-522-2369		

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3. Student Paper Award

(a) Description and Qualifications

This award is to be given every year during the Fluids Engineering Division Summer Meeting. It honors the best student paper in the FED through participation by students specializing in fluids engineering and to recognize the technical, writing, and presentation skills of students.

Undergraduate and Masters level students at colleges and universities in the United States will be eligible. The candidates cannot have been semifinalists or finalists in previous years. The contest will be restricted to those Undergraduate or Masters level students scheduled to receive their degree in the calendar year in which the contest is held. An eligible paper must pertain to the field of fluids engineering and must be authored by an eligible student or team of eligible students.

(b) Nomination and Selection Procedures

The contest will be held annually at the FED Summer Meeting. Announcements will be sent in early Fall in the year before the contest will be held. Students will be invited to submit a written paper on their work. Submissions must be received before January 15 and will be judged on the basis of their contribution to the field of fluids engineering, originality, quality of presentation, and completeness. The papers must be written solely by the students. Three papers will be selected and identified as "National FED Student Honor Papers." Each of the semifinalists (or team of semifinalists) will be awarded a certificate bearing their name(s), the name of their advisor, and their institutions.

The authors of the three papers will be invited to give oral presentations at a special session at the FED Summer Meeting. An award of \$300 will be given to each author (or representative of a team of authors) to help defray costs to attend the Summer Meeting. It is assumed that the student's institution will assume the remaining costs.

The judges will select the "Best National FED Student Paper" based on the quality of the written and oral presentation.

(c) Form of Award

A certificate will be awarded to each author (or team) at the Fluids Engineering Luncheon. This certificate will also include the name of the author's advisor, and institution. A prize of \$500 will be presented to the winning author (or team representative).

### C. Society Awards Available to the Fluids Engineering Division

#### 1. List of Awards

The Society honors and awards available to Division are shown below. Qualifications and procedures are explained fully in ASME manual MS-71.

Name of Honor	Qualifications	Frequency of Award
<b>(a) Awards Specifically Tied to Fluids Engineering or Fluid Mechanics</b>		
Fluids Engineering Award	Outstanding contributions to the fluids engineering profession through research, practice, and or teaching over a period of years	Annually
Freeman Scholarship	Person with considerable experience in some area of fluids engineering	Each even-numbered year
Spirit of St. Louis	Meritorious service in the advancement of aeronautics and astronautics	one annually, if warranted
<b>(b) General Awards</b>		
ASME Medal	Eminently distinguished engineering achievement	One annually, if warranted
Honorary Member	Distinctive accomplishment in engineering science through a lifetime of service	Not more than five annually
Holley Medal	Unique act of genius of great and timely public benefit	One annually, if warranted
<b>(c) General Awards Tied to Years of Professional Experience</b>		
Pi Tau Sigma Gold Medal	Outstanding achievement within 10 years after graduation	One annually, if warranted
Gustus L. Larson Memorial Award	Outstanding achievement within 10-20 or more years after graduation	One annually, if warranted
Charles R. Richards Memorial Award	Outstanding achievement within 20 or more years after graduation	One annually, if warranted
<b>(d) Literature Awards</b>		
Worcester Reed Warner Medal	Outstanding contributions to permanent engineering literature	Annually; book paper, or treatise must be at least 5 years old

Name of Honor	Qualifications	Frequency of Award
Melville Prize Medal	Best current original paper on mechanical engineering subject presented for discussions and publication. At least one coauthor must be a corporate member of ASME	Annually; may have received previous Division award
Alfred Noble Prize (joint with ASCE, AIME, IEEE, WSE)	Technical Paper of exceptional merit. Author must be a member of any grade of one of the sponsoring societies	One annually, under 31 years of age; single authorship
Henry Hess Award	Best paper. All authors must be members of ASME	One annually, under 31 years of age

Except for the Melville Medal, an individual will receive only one honor in recognition of the same achievement. The receipt of one ASME honor will not bar the recipient from another ASME honor provided it is for different accomplishments. The age of an author can be obtained by writing to the Director of Technical Groups at ASME Headquarters.

## 2. Details of Particular Fluids Engineering Awards and Honors

### (a) ASME Fluid Engineering Award

#### **Achievement Recognized**

The award will be made to one whose contributions to the engineering profession, especially to fluids engineering, through research, practice and/or teaching, have been outstanding over a period of years. Standards for selection of individuals to receive the award will be set by the examples of those previously chosen. The Award was established in 1968 and became a Society Award in 1978.

#### **Nominations Committee**

The ASME Fluids Engineering Award will be administered by the Fluids Engineering Award Committee of the Fluids Engineering Division.

#### **Nomination and Selection Procedures**

No Special nomination form is required for this award.

Any nomination received at ASME headquarters will be forwarded to the Fluids Engineering Award Committee for consideration. The Award Committee may review these nominations at any time subject to the requirement that a written report is submitted at each Winter Annual Meeting to the FED Honors Committee, giving the status of the Award Committee's

deliberations and presenting the suggested awardee's name. Upon an unanimous or 5:1 vote of the Award Committee and concurrence of the FED Honors Committee and of the Executive Committee, a recommendation will be made to the Society Committee on Honors for action on behalf of the Council. Recommendations received on or before March 1 will be acted upon by the Society Committee on Honors at its May meeting; recommendations received after March 1, but before October 1 will be considered at the Winter Annual Meeting.

Presentation of the award occurs at the President's Luncheon at the WAM.

#### **Award Schedule**

The award need not be made on a regular basis, but only when the Award Committee deems it appropriate to recognize an individual for outstanding contributions (but not more often than yearly).

#### **Form of Award**

The award will be in the form of a certificate engrossed with a citation appropriate to the achievements of the individual recipient.

The award will carry no monetary reward. Funding for the certificate will be provided from the Fluids Engineering Award Fund.

#### **Review of Award**

A review of all details of the ASME Fluids Engineering Award—including name, purpose and attainment to the recognized—may be made at a time deemed appropriate by the Council, the Society Committee on Honors, or the Fluids Engineering Division.

### **(b) The Freeman Scholar Program**

#### **Achievement Required**

The Freeman Scholar Program is an activity of the Fluids Engineering Division designed to advance the science and art of fluids engineering. It is supported by the ASME Freeman Fund established in 1926 by John R. Freeman, noted Hydraulic Engineer and Scholar, Honorary Member and Twenty-fourth president of ASME.

In each odd-numbered year, a person of high capability in some area of fluid engineering will be selected to make major review of a topic in state-of-the-topic, and suggest key research needs of the future. After a suitable review the results will be presented at the next even-year Winter Annual Meeting under the auspices of the Fluids Engineering Division and published in the *Journal of Fluids Engineering*.

## **Nomination and Selection Procedures**

The Program is administered by the Freeman Scholar Standing Committee. Three applications for the scholarship should be sent to the Standing Committee before January 15 of each even-numbered year. Four copies of the application are needed; one should go to each member of the Standing Committee and one to the ASME Committee on Honors (345 East 47th Street, New York, N.Y., 10017). The application will state the applicant's qualifications for undertaking the major study in the selected field, with at least two supporting recommendations from persons qualified to judge his technical capabilities in the proposed review area. The application will state the basis for believing that a summary of the state-of-the-art on the problem posed will make a significant and timely contribution to current or future real problems in fluids-engineering practice. It will also describe the ideas to be considered and some of the technology to be reviewed.

The Scholar will be designated by March 1 of each odd-numbered year and the work is to be completed by the WAM of the following (even) year. The presentation will be made at that year's Winter Annual Meeting.

The recipient may be from industry, government, education, or private professional practice. He need not be a member of ASME.

### **Form of Award**

The award will be in a form of a certificate, accompanied by an honorarium. The Honorarium for preparing the review and producing a manuscript in form for publications is currently \$7,500. There will be an additional allowance to cover the cost of travel to the Winter Annual Meeting at which the review will be presented.

The Scholar will be available, as far as personal commitments permit, for presentation of his lecture at sites of fluids engineering activity in industry, government, or education that so request. In each case, the inviting institution will be expected to bear all expenses and to provide a reasonable honorarium where appropriate.

### **(c) Melville Medal**

The Melville Medal is the highest ASME honor for the best current original paper, not published elsewhere, which has been presented before ASME or approved for publication by ASME during the two calendar years preceding the year of the award. The paper may have more than one author but one of the authors will be an ASME corporate member (Fellow, Member, or Associate Member).

The medal of gold plated bronze is accompanied by an engrossed certificate and a total honorarium of \$1000.

First awarded in 1927, the Melville Medal is by the bequest in 1914 of Admiral George S. Melville, Honorary Member and Eighteenth President of the Society.

The Melville Medal may be awarded for a paper that has been selected for some other best paper award in the Society. Thus, one of the papers receiving Knapp or Moody Award will be chosen to be the automatic nominee for the Melville Medal from the Fluids Engineering Division, subject to the condition that at least one of the coauthors is a corporate member of ASME. The nomination form for this award (Exhibit IV-3) has to be submitted to the Society Committee on Honors before March 1 to be acted on by that Committee at its May meeting.

**(d) Henry Hess and Alfred Noble Awards**

Both of these awards are literature awards created specifically to honor authors of below 31 years of age.

**Henry Hess Award**

The Award is given for an original technical paper, submitted to the Society for presentation and publication during the calendar year prior to the year of award; by a member who has not passed the 31st birthday at the time the paper was submitted to the Society. Joint authorship is permissible provided all authors meet the requirements. The paper will be specifically recommended for the Award by a review committee or qualified individual.

The Award consists of an honorarium of \$250, an engrossed certificated and an expense supplement to the presentation meeting.

The Award was established as the Junior Award in 1914 by Henry Hess, Member and Vice President of the Society. In 1964, the name was changed to the Henry Hess Award.

**Alfred Noble Award**

Joint award of ASME, ASCE, AIME, IEEE, and WSE, similar in spirit to the Henry Hess Award. One difference is that only single authorship is considered. The major qualifications are that the author is a member of any grade of any of the above organizations, and that the paper was accepted for publication by any of these societies. The author must not have passed the 31st birthday at the time of submitting the paper for publication.

Both Hess and Noble awards nominations will be considered for papers which received that year's Knapp or Moody Awards (or for runner-ups). This should be done at the same time that the Melville Award nomination is being considered.

**D. Fellow Grade Membership of ASME**

The membership grade of Fellow, although technically considered by the Society to be a grade of membership one step beyond that of member, is a membership grade of distinction and carries with it recognition by the Society for eminence in the profession. The recipient must have been active in engineering for 10 years, must have had 10 years of continuous corporate membership and been responsible for significant engineering achievement. Graduation from an engineering school of accepted standing will be considered equivalent to four years of active practice.

A proposal for promotion to Fellow must be initiated by a Fellow or a Member of ASME and supported by at least four additional sponsors, two of whom must be Fellows or Members of ASME. Sponsors who are not Fellows or Members of ASME must have an acceptable understanding of the Society criteria, a thorough knowledge of the candidate's qualifications, and a sound basis for judgement. It is important that all aspects of the nominating process take place with utmost confidentiality and that the nominee never be directly asked for supporting information. For more details on the nomination procedures see Exhibit VI-7.

#### **E. Division Honors and Awards Committee**

This is a committee whose function is to administer and/or coordinate all honors and awards that are available to the Fluids Engineering Division. In 1990, the Executive Committee combined the former Honors and Fluids Engineering Award Committees into a single Honors and Awards Committee. The Committee has five elected members, consisting of three Honors Representatives from the individual Technical Committees of the Division and two Honors Representatives from the individual Coordinating Groups of the Division. These Committee members are elected by their respective Technical Committee to serve for two years, and have prime responsibility for the Knapp, Moody, and Fluid Machinery Design Awards.

The recommended procedure for each technical committee is to have the outgoing Chair of the Technical Committee automatically become the Honors Representative. The committee further includes six Members or Fellows, each appointed to serve a term of three years, with the terms staggered so that the terms expire June 15 each year. No individual in this group may serve more than two consecutive three-year terms.

These members are appointed by the Society Committee on Honors upon recommendation of the Fluids Engineering Division Executive Committee, and have primary responsibility for administering the ASME Fluids Engineering Award.

In March of each year, prior to the May meeting of the Society Committee on Honors, the Executive Committee of the Division will submit its recommendations for Appointment of these six Committee members for terms beginning in June.

The Chair of the Committee is appointed by and serves at the pleasure of the Executive Committee for a three-year term. The Chair may serve additional three-year terms at the pleasure of the Executive Committee.

The Committee is charged with the following tasks:

- (1) To process nominations for Knapp and Moody Awards and select the award-winning papers (with concurrence with the Executive Committee).
- (2) To process nominations for the Fluid Machinery Design Award, and select the awardee, with concurrence of the Executive Committee.
- (3) To process nominations for the Fluids Engineering Award, and select the awardee, with concurrence of the Executive Committee.

- (4) To process nominations for other Society Awards, including the Dedicated Service Award.
- (5) To initiate, and actively encourage others to initiate, nomination for promotion to the Fellow Grade of ASME.
- (6) To coordinate presentations of honors and awards.
- (7) To coordinate presentation and preparation of Certificates of Service to outgoing Technical and Executive Committee Officers.

The committee will meet annually at the Winter Annual Meeting and at the Spring Conference, and will present the results of its deliberations to the Executive Committee offices at the same meeting.

Procedural details are given in Section VI.B, C, and D, and Exhibits VI.1 to 11.

## **F. Specialized Awards Committees**

### **1. Freeman Scholar Committee**

The Freeman Scholar Program is administered by a Standing Committee of three, with 6-year terms of appointment so arranged that the term of one member expires at the end of each even-numbered Society year (about June 15). The members of the Committee are nominated by the FED Honors Committee with the cooperation of, and concurrence of, the Executive Committee of the Fluids Engineering Division. They are formally appointed by the Society's Committee on Honors.

The Committee will communicate the results of its deliberations to the FED Executive Committee, for its concurrence.

### **2. Committee on the FED Student Paper Award**

The Committee will consist of four members, a representative from each technical committee plus a committee chair. The committee members will be the chair, vice chair, publicity members, and the new member. The duties of each member of the committee will be:

**Chair**—overseeing operation of the committee, collecting the papers, reviewing the papers, tallying the scores, and corresponding with the students.

**Vice-Chair**—working with chair, reviewing papers, corresponding with ASME Headquarters for distribution of prize money and making certificates, informing the FED Newsletter Editor of results of competition.

**Publicity member**—putting announcements in JFE and ASME Magazine, sending out letters and announcements to universities, reviewing papers.

**New member**—reviewing papers, becoming familiar with operation of committee.

The chair will retire after completing his/her duties at the Summer Meeting. A new member will be chosen at the Summer Meeting by the appropriate technical committee. The vice chair will become chair, the publicity member will become vice chair, and the previous "new member" will become the publicity member. Before the WAM, the Student Papers Committee Chair will inform the Chair of the FED as to which committee needs to select a member to begin service after the FED Summer Meeting.

#### **G. Various Exhibits Relating to Honors and Awards**

- VI.1 Fluid Machinery Design Award**
- VI.2 Robert T. Knapp Award**
- VI.3 Lewis F. Moody Award**
- VI.4 Freeman Scholar Award and Melville Medal**
- VI.5 Dedicated Service Award**
- VI.6 List of Award Recipients**
- VI.7 ASME Fellow Nomination Proposal**
- VI.8 Proposal Form for Fluids Engineering Award**
- VI.9 Proposal Form for Dedicated Service Award  
(Must be signed by Head, Basic Engineering Group)**
- VI.10 Certificates of Recognition Schedule**
- VI.11 Certificate Request Forms**

Date Established: 1980

Achievement Recognized: Excellence in the design of machinery involving significant fluid mechanics principles, which benefits mankind as exemplified by product use within the past decade.

Limitations: The criteria for the Award are:

1. Fluid machine: The design must be such that fluid mechanics is a significant factor in its operation.
2. Usefulness: The design must have as its objective benefits such as increased performance or improved living conditions.
3. Period: Contemporary designs which entered service prior to date of nomination for the award are applicable.
4. Excellence: The design must represent an improvement in the state-of-the-art. originality and/or patentability are desirable.

Form of Award: Certificate

Frequency of Presentation: Biennial

Administrator of the Award: Fluids Engineering Division

Level of Award: Divisional

Recipients Selected by: Fluids Engineering Division Honors Committee.

Selection Process:

The Fluids Engineering Honors & Awards Committee solicits nominations from all ASME members via the FED Newsletter and requests to all FED Technical Committees and Coordinating Groups. Nominations are reviewed by the FED Honors Committee, who make the selection, with the concurrence of the FED Executive Committee. Declarations of design excellence, utility and suitability for the award must be provided by supporting letters from several experienced users or designers.

Funding Availability: Fluids Engineering Division Custodian Account

Past Award Recipients: 1981 Warren G. Whippen

1991 Paul Cooper

## ROBERT T. KNAPP AWARD

Date Established: 1958

Achievement Recognized: Outstanding original paper resulting directly from analytical or laboratory research.

Limitations: Papers must be presented to the Society under the auspices of the Fluids Engineering Division within two calendar years prior to the year of the award. Author(s) need not be ASME members.

Form of Award: Certificate

Frequency of Presentation: Annually

Administrator of the Award: Fluids Engineering Division

Level of Award: Divisional

Recipients Selected by: Fluids Engineering Division Honors Committee.

Selection Process: Fluids Engineering Division Honors Committee solicits nominations from all ASME members. Each nominated paper goes through a ~~closed~~ peer honors review. The best candidates are discussed at a once-a-year meeting and the best (or none) is selected for the award.

Funding Availability: Fluids Engineering Division Custodian Account

Past Award Recipients:

- 1980 C. Brennen
- 1981 O. M. Griffin
- 1985 R. L. Street and J. R. Koseff
- 1991 R.S. Meyer, M.L. Billet, and J.W. Holl
- 1992 M.A. Leschziner

## LEWIS F. MOODY AWARD

Date Established: 1958

Achievement Recognized: Outstanding original paper useful to the practice of mechanical engineering.

Limitations: Paper must be presented to the Society under the auspices of the Division within two calendar years prior to the year of the award. Author <sup>One</sup> must be ASME member.

Form of Award: Certificate

Frequency of Presentation: Annually

Administrator of the Award: Fluids Engineering Division

Level of Award: Divisional

Recipients Selected by: Fluids Engineering Division Honors Committee.

Selection Process: Fluids Engineering Division Honors Committee solicits nominations from all ASME members. Each nominated paper goes through a peer honors review. The best candidates are discussed at a once-a-year meeting and the best (or none) is selected for the award.

Funding Availability: Fluids Engineering Division Custodian Account

Past Award Recipients: 1982 F. J. Hatfield, D. C. Wiggert and R. S. Otwell  
 1984 L. J. Leggat and N. C. Sponagle  
 1991 R.H. Page and R. Kiel  
 1992 R. Dong, S. Chu, and J. Katz

## FREEMAN SCHOLAR AWARD

The Freeman Scholar Award Program is conducted biennially in even-numbered years.

A person of wide experience in fluids engineering is selected as the Freeman Scholar. He/she is expected to review a coherent topic in his/her specialty including a comprehensive statement of the state-of-the-art and to suggest key future research needs. The results will be presented at the Winter Annual Meeting and published in the ASME Journal of Fluids Engineering. The recipient may be from industry, government, education or private professional practice. He need not be an ASME Member.

The Freeman Scholar Program is supported by the ASME

Freeman Fund established in 1926 by John R. Freeman, noted Hydraulic Engineer and Scholar, Honorary Member and Twenty-fourth President of ASME. Mr. Freeman suggested a flexible program for utilization of the funds. In early years it supported fellowships for the study of hydraulic laboratory practice in Europe. later it supported publication of important hydraulic research data, and more recently it was granted to support research programs in hydraulics and fluid mechanics. The current Freeman Scholar Program in fluids engineering represents a timely usage of the Fund and is consistent with the intentions of the donor.

## FREEMAN SCHOLARS

1972 Jack W. Hoyt	1976 William J. McCroskey	1982 Simon Ostrach	1988 Turgut Sarpkaya
Ronald F. Probstain	1978 Benjamin Gebhart	1984 A.K.M. Fazle Hussain	1990 Budugur Lakshminarayana
1974 Jack E. Cermak	1980 Edward M. Greitzer	1986 John B. Heywood	1992 William A. Sirignano

## MELVILLE MEDAL

The Melville Medal is the highest ASME honor for the best current original paper (not published elsewhere) which has been published by ASME during the two calendar years immediately preceding the year of award. The paper may have more than one author but one of the authors shall be an ASME corporate member (Fellow, Member, or Associate Member). The paper shall be specifically recommended for the medal by a review committee or qualified individual.

The Melville Medal may be awarded for a paper that has been

selected for some other best paper award in the Society. Thus, papers selected for special awards (Blackall, Prime Movers, Gas Turbine, or Rail Transportation) or for best paper awards of professional Divisions, Sections, or other ASME bodies, may be considered for the Melville Medal if specifically recommended by the committee responsible for the award.

First awarded in 1927, the Melville Medal is by the bequest in 1914 of Admiral George W. Melville, Honorary Member and Eighteenth President of the Society.

## MELVILLE MEDALISTS

1927 Leon P. Alford	1952 Nell P. Bailey	1975 David M. Sanborn	Sanjoy Banerjee
1929 Joseph W. Roe	1953 Jefferson Falkner	A.V. Turchina	1984 Michael F. Blair
1930 Herman Diederichs	1954 Edmund Sylvester	Ward O. Winer	1985 Lung-Wen Tsai
William Pomeroy	1955 Robert T. Knapp	1976 Bernard J. Hamrock	Alexander P. Morgan
1931 Arthur Grunert	1958 Thomas P. Goodman	Duncan Dowson	1986 Robert W. Bjorge
1932 Alexey Stepanoff	1959 Stephen J. Kline	Eugene F. Fichter	Peter Griffith
1933 William Caldwell	1960 William G. Steltz	Kenneth H. Hunt	1987 Dennis L. Siebers
1935 Oscar R. Wikander	1961 Otto Erich Balje	1978 D.E. Negrelli	Robert J. Moffat
1936 H.A.S. Howarth	1962 T.P. Goodman	J.R. Lloyd	Richard G. Schwind
1937 Alfred J. Buchi	1963 J.S. Ausman	J.L. Noyotny	1988 Theodore L. Bergman
1938 Alphonse Lipetz	1964 J.K. Jakobsen	1979 Thomas J.R. Hughes	Frank P. Incropera
1939 Lester Goldsmith	1965 W.A. Van Der Sluys	W.K. Liu	Raymond Viskanta
1940 Carl A. W. Brandt	1967 Bernard Roth	1980 Ravi Chandran	1989 David C. Wisler
1941 Roger V. Terry	1968 Yian-Nian Chen	John C. Chen	Randall C. Bauer
1942 Kenneth Sallsbury	1969 Leon R. Glicksman	Fred W. Staub	Theodore H. Okilshi
1944 Ernest Robinson	1970 J. William Holl	1981 Kyung-Suk Kim	1990 Cheng Dong
1945 William J. King	A.L. Kornhauser	Rodney J. Clifton	Richard Skalak
1946 Troels Warming	1971 Thomas Slot	1982 Van C. Mow	Kuo-LI Paul Sung
1947 Raymond Martinelli	1972 H.W. O'Connor	Steve C. Kuei	Geert W. Schmid-
1948 Reginald Gilimor	A.S. Weinstein	W. Michael Lai	Schoenbein
1950 Samuel J. Loring	1974 V.H. Arakerl	Cecil G. Armstrong	Shu Chien
1951 Clayton Barnard	Allan J. Acosta	1983 Albert M.C. Chan	

*omit other awards - as we are not eligible unless under 30*

# DISTINGUISHED SERVICE AWARD

## DEDICATED SERVICE AWARD

In 1983, the ASME Board of Governors approved the establishment of the Dedicated Service Award. Its purpose is to honor unusual dedicated voluntary service to the Society marked by outstanding performance, demonstrated effective leadership, prolonged and committed service, devotion, enthusiasm and faithfulness.

The award may be presented to selected individuals who have a

minimum service to the Society of at least ten years in one or more of the following areas: Sections/Regions/Member Affairs; Codes and Standards; Technical Affairs; Public Affairs; Education; Committees reporting to the Board of Governors; and The ASME Auxiliary, Inc. No more than 51 awards will be presented annually.

### DEDICATED SERVICE AWARD RECIPIENTS

1984 William P. Adkins, Jr.  
Robert A. Bennett  
Arthur E. Bergles  
Thomas R. Curran  
Norman R. Deming  
Walton Forstall  
Erwin Fried  
George F. Gayer  
Edward F. Gerwin  
Robert E. Hall  
Richard S. Hartenberg  
Herbert H. Hodgeman  
Stephen Juhasz  
Helen Keyes  
Kenneth T. Knight  
Hendrik B. Koning  
Edward C. Malhoit  
Emil L. Martinec  
Charles M. Merrick  
Jay F. Nagori  
Phillip A. Nicovich  
David H.C. Pai  
Harry C. Perrine  
Huberto R. Platz  
Charles E. Prewitt  
Fred R. Rehm  
Warren Schultheis  
Clifford E. Seglem  
Phillip S. Sizer  
Ben C. Sparks  
William J. Stuber  
Thomas C. Tang  
Walter W. von Nimitz  
Joseph P. Van Overveen  
Don R. Wilson

1985 Edlow S. Bance  
F. Wendell Beichley  
David G. Blaine

Paul W. Braisted  
C.T. Carley, Jr.  
William H. Coleman  
R. Carson Daizell  
Earl V. Fisher  
Henry B. Garrett, Jr.  
William S. Gibbons, Jr.  
Ida Mae Harman  
J. William Holl  
L. Eugene Hulbert  
Barry I. Hyman  
Donald R. Jenkins  
Mickey M. Livingston  
Richard W. Miller  
J. Hamilton Palmer  
James D. Schell  
Norman G. Schreiner  
Larry P. Van Dyke  
Henry B. Wallace  
James D. Woodburn  
Robert A. Woodward  
Sumio Yukawa

1986 John W. Ahlen  
Walter G. Canham  
James C. Chastain III  
John B. Dicks  
Lowell L. Elder  
Oscar J. Fisher  
Richard A. Fitz  
Jean Forstall  
Robert B. Gaither  
Phillip M. Gerhart  
Teddy C. Heil  
Robert N. Hubby  
S. Peter Kezlos  
Donald W. Kitchin, Jr.  
Reid P. McNally, Jr.  
Robert H. Page  
Vjekoslav Pavelic

Michael J. Rabins  
Herbert H. Richardson  
Robert J. E. Roberts  
Charles C. Space  
James W. Stacey  
Edward V. Trunk  
Hillar Unt  
Charles O. Vetzly  
Branimir F. Von Turkovich  
Remco P. Waszink  
Donald N. Zwiep

1987 William F. Anderson  
George Browne  
David S. Campbell  
Clyde A. Cobb  
Marjorie M. Diederich  
Ben G. Elliot  
George E. Fratcher  
Virginia Freberg  
Bobby L. Green  
Ernest H. Hanhart  
James Bernard Jones  
Conrad M. Ladd  
Joseph A. Langstein  
John C. Lindholm  
Robert E. Mates  
Robert E. Nickell  
Frederick J. Pocock  
Christian E.G. Prziembel  
William E. Reaser  
Allen F. Rhodes  
George Rudinger  
Marvin P. Schwartz  
Stephen Sigurdson  
Maurice E. Taylor  
Keith B. Thayer  
T. Paul Torda  
Richard S. Touma  
Erskine Vandegriff

George Wiedersum  
Edwin C. Younghouse

1988 Robert B. Abernathy  
Harry Awiszio  
Benton F. Baugh  
Irma S. Bennett  
Ralph S. Chabot  
Samuel L. Collier  
Leroy S. Fletcher  
Howard Gage  
Donald S. Griffin  
Robert J. Hazellrigg  
Ray C. Hudson  
George A. Jacobson  
William J. Jaffe  
Duane P. Jordan  
David J. Kettler  
James W. Locke  
John L. Mangan  
Gerald F. Maruska  
John A. Mayer  
Theodore S. McKosky  
David W. Moody, Jr.  
Robert P. Morris  
Albert S. Morton  
William W. Nugent  
Arthur S. Rathburn, Jr.  
James B. Saxon  
Albertus E. Schmidlin  
Terry E. Shoup  
Hugo Stockman  
John J. Stolzenhafer  
George L. Thuring  
Gerald M. Tolson  
William J. Warren  
James R. Welty  
Donald F. Wilcock

### DEDICATED SERVICE AWARD RECIPIENTS

1989 Ozer A. Arnas  
Dale S. Baird  
Sidney A. Bensen  
Mead Bradner  
Richard J. Dohrmann  
Robert A. Ellison  
Maurice J. Feldman  
Robert W. Fox  
E. Nick Friesen  
S. Frederic Guggenheim  
William O. Hartsaw  
Richard W. Hoffmann  
John E. Janssen  
James R. Jones  
Ross L. Kastor  
Kun-Chieh Lee  
Phillip J. Legendre

William G. McLean  
John W. McNeas  
Robert E. Metcalf, Jr.  
Walter R. Mikesell  
John T. Pope  
Arnold E. Pristernik  
Karl N. Reid, Jr.  
Stephen B. Robel  
K. Keith Roe  
Stephen R. Schermerhorn  
Helene Sherwood  
Leighton E. Sissom  
Jerry D. Stachiw  
Tom Stott  
Helmut E. Weber  
Burton D. Ziels

1990 Herbert S. Arnold, Jr.

Dennis A. Armstrong  
Norman A. Berg  
Charles B. Boyer  
James O. Brown  
Kenneth Christianson  
Robert C. Dean, Jr.  
Wilford L. Garvin  
Edward J. Goetz, Jr.  
Donald R. Haworth  
Joseph W. Hibbard  
Charles J. Hurst  
Robert G. Jeffers  
Frank Kreith  
Sundaram Krishnamurthy  
Paul E. McKim  
Gilbert C. Millman  
A. Alan Moghissi

John R. Parker  
Richard J. Peppin  
Victor D. Petershack  
Gerhard Reethof  
Karl N. Reid  
Arnold J. Rothstein  
Roy Sahlstrom  
Peter D. Smallidge  
All Slereg  
David A. Spera  
Ruth Vokoun  
J. Tai Webb  
Helmut E. Weber  
Eugene P. Weinert  
John W. Wesner  
David J. Wiebe  
Frank M. White

AWARD - RECIPIENTS

ROBERT T. KNAPP AWARD

LEWIS F. MOODY AWARD

- 1967 W. Rosenmann
- 1968 P. G. Hill
- 1969 J. W. Holl
- A. J. Kornhauser
- 1971 P. N. Shankar
- 1972 G. Heskestad
- 1973 V. H. Arakeri
- A. J. Acosta
- 1974 J. P. Johnston
- 1975 O. Furuya
- 1979 T. Morel
- 1980 C. Brennen
- 1981 O. M. Griffin
- 1985 R. L. Street and J.R. Koseff
- 1991 R.S. Meyer, M.L. Billet, and J.W. Holl
- 1992 M.A. Leschziner
- 1993 F.E. Mc Caughen and H. Bedir
- 1993 G.L. Chahine & R. Duraiswami
- 1994 A. Roache
- 1995 N. Mangiavecchi
- R. Gundlapalli
- R. Akhavan

- 1967 R. E. Devine
- 1968 L. R. Glicksman
- 1969 D. N. Wormley
- H. H. Richardson
- 1970 G. B. Wallis
- 1971 H. Ito
- K. Nanbu
- 1972 F. M. White
- G. H. Christoph
- 1974 R. G. Cunningham
- R. J. Dopkin
- 1982 F. J. Hatfield, D. C. Wiggert and R. S. Otwell
- 1984 L.J. Leggat and N.C. Sponagle
- 1991 R.H. Page and R. Kiel
- 1992 R. Dong, S. Chu, and J. Kat.
- 1993 C. Atkinson & H. K. Kytömaa
- 1994 F.J. Obregon, GE Klinging, & M.L. Dibble

FLUIDS ENGINEERING AWARD RECIPIENTS

AS DIVISION AWARD

1995 A. Demuren & R. Wilson

- 1968 G. F. Wislicenus
- 1972 H. W. Emmons
- 1974 S. J. Kline

AS ASME AWARD

- 1979 Robert C. Dean, Jr.
- 1981 Ascher H. Shapiro
- 1983 George Rudinger
- 1984 Hans W. Liepmann
- 1985 Apollo M.O. Smith
- 1986 Milton S. Plesset
- 1987 Mark V. Morkovin
- 1988 Allan J. Acosta
- 1989 William C. Reynolds
- 1990 Turgut Sarpkaya

- 1991 Frank M. White
- 1992 Christopher E. Brennen

- 1993 Roger E.A. Arndt
- 1994 Graham B Wallis

1995 Clayton Crowe

FLUID MACHINERY DESIGN AWARD

- 1981 Warren G. Whippen
- 1991 Paul Cooper
- 1993 Widen Tabakoff



VI-7

PLEASE TYPE OR PRINT ALL INFORMATION

Exhibit VI-7  
MD-1b

Date \_\_\_\_\_

Name: _____	Year Elected to Grade of Member _____
Current Position Title _____	Year of First Corporate Membership _____
Company _____	Date of Birth _____
Address _____	
_____	
_____	

# PROPOSAL FOR FELLOW

### QUALIFICATION FOR FELLOW GRADE

(Excerpted from ASME Constitution and By-Laws)

B3.1.1. A Fellow, a membership grade of distinction, of the Society shall have attained the grade of Member, have had not less than ten (10) years of active practice and ten (10) years of continuous corporate membership in ASME, and been responsible for significant engineering achievement.

B3.1.2. A proposal for promotion to Fellow must be initiated by a Fellow or a Member of ASME and supported by at least four additional sponsors, two of whom must be Fellows or Members of ASME. Sponsors who are not Fellows or Members of ASME must have an acceptable understanding of the Society's criteria, a thorough knowledge of the candidate's qualifications and a sound basis for judgement.

**ASME MEMBER  
PROCESSING DEPARTMENT  
345 East 47th Street/MS 5E  
New York, NY 10017  
(212) 705-7129**

### FOR OFFICE USE ONLY

MEMBER # \_\_\_\_\_  
BIRTH DATE \_\_\_\_\_  
T/D \_\_\_\_\_  
SECT # \_\_\_\_\_  
GRADE \_\_\_\_\_  
ELCT YR \_\_\_\_\_  
YRS PD \_\_\_\_\_

### Candidate's Field of Expertise

- Industry & Practice
- Education & Research
- Both     Other \_\_\_\_\_

A letter from each sponsor\*, containing the following information, must be attached.  
Basis of sponsor's knowledge of candidate's qualifications. Specific information about the candidate's attainments related to the Fellow grade criteria listed on page 4 of this form.

### SPONSORS

- Name \_\_\_\_\_ ASME Grade \_\_\_\_\_  
Address \_\_\_\_\_
- Name \_\_\_\_\_ ASME Grade \_\_\_\_\_  
Address \_\_\_\_\_
- Name \_\_\_\_\_ ASME Grade \_\_\_\_\_  
Address \_\_\_\_\_
- Name \_\_\_\_\_ ASME Grade \_\_\_\_\_  
Address \_\_\_\_\_
- Name \_\_\_\_\_ ASME Grade \_\_\_\_\_  
Address \_\_\_\_\_

INITIATED BY: \_\_\_\_\_

(If other than one of above five sponsors, indicate the following:)

Address \_\_\_\_\_  
\_\_\_\_\_  
Telephone \_\_\_\_\_

\*NOTE—Sponsors should be as widely distributed as possible preferably not more than one from any one organization or community. If this is impractical, please address a note to the Admissions Committee, giving the reasons for the choice of sponsors.

PROFESSIONAL RECORD OF \_\_\_\_\_

**GIVE IN SEQUENCE AND IN COMPLETE DETAIL**

**Brief but specific description of outstanding engineering work to which the candidate has contributed an important—conception of a project—its execution—management—extent of responsible charge in development of the design, construction, new process or important research.**

Date of  
each Position  
From To

Mo. Yr. Mo. Yr.

**INFORMATION REGARDING EACH POSITION NEED NOT BE CONFINED TO ONE SPACE. A SUPPLEMENTARY SHEET MAY BE APPENDED IF THIS PAGE IS INADEQUATE**

ADDITIONAL PROFESSIONAL DATAEngineering College or University \_\_\_\_\_  
Degree      Date      SubjectAdditional Education and Degrees \_\_\_\_\_  
Schools, Subjects, DatesIndustry & Practice Oriented Candidates

Project Management — See Attachment\* \_\_\_\_\_  
 Industrial Leadership & Innovation — See Attachment\* \_\_\_\_\_  
 Development and Design — See Attachment\* \_\_\_\_\_  
 Codes and Standards — See Attachment\* \_\_\_\_\_  
 Publications, Speeches, Seminars Conducted — See Attachment\* \_\_\_\_\_

Education & Research Oriented Candidates

Educational Leadership — See Attachment\* \_\_\_\_\_  
 Technical Publications — See Attachment\* \_\_\_\_\_  
 Research — See Attachment\* \_\_\_\_\_

All Candidates

Expertise in Consulting — See Attachment\* \_\_\_\_\_  
 Inventions and Patents — See Attachment\* \_\_\_\_\_  
 Contributions to ASME — See Attachment\* \_\_\_\_\_  
 Contributions to the Engineering Professions—See Attachment\* \_\_\_\_\_  
 Public Service Activities — See Attachment\* \_\_\_\_\_

\*Each Attachment should be numbered or lettered for easy reference.

Licensed or Registered Engineer (This Information for ASME Only) \_\_\_\_\_

Brief description of candidate's outstanding accomplishments for publicity purposes — 100 words or less

## GUIDE TO CRITERIA FOR ELECTION TO FELLOW GRADE

The major criteria used by the Board of Governors in the evaluation of exceptional engineering attainments and contributions to the engineering profession are listed below.

No candidate can be expected to have attainments in all categories and the weight given to the contributions will vary widely with their importance. In every case quality is considered more important than quantity. The sponsors' letters should provide information on those items on which the sponsor has knowledge of the candidate's achievements.

<u>Industry &amp; Practice Oriented Candidates</u>		
<b>Project Management</b> Size and range of projects Achievements of goals Technical leadership shown Ability to formulate new ideas into projects Recognition of potential of an idea	<b>Industrial Leadership and Innovation</b> Technical and economic success Range of responsibility Results obtained Innovative solutions to Industrial Problems  <b>Development and Design</b> Significance of results Applications Degree of Personal contribution	<b>Codes and Standards</b> Leadership Expertise Impact of Personal contributions  <b>Publications, Speeches, Seminars Conducted</b> Professional Groups Technical Groups Public Groups

<u>Education &amp; Research Oriented Candidates</u>		
<b>Education Leadership</b> Range of responsibility Results obtained Technical Reports Post-formal education Professional Development	<b>Research</b> Significance of results Technical content Degree of Personal contribution	<b>Technical Publications</b> Degree of personal responsibility (sole author, co-author, contributor) Depth and breadth Type of journal Books - author Books - co-author Impact of publication

### GUIDE TO THE INITIATOR IN COMPLETION OF THE FELLOW PROPOSAL PACKET — CHECK LIST

#### A. SPONSORS—(page 1 of Form)

- Are at least 3 of the 5-6 peers involved in initiation and sponsorship Fellows or Members of ASME?
- Is no more than one sponsor from the same institution?
- If more than 5 sponsors are named, are names, addresses and ASME Grade of Membership appended to the front of the Fellow Proposal Form?
- Where exceptional engineering contributions are named, corresponding sponsors should support each area of achievement, e.g., If achievement in industry: is sponsor support in industry? If achievement in education, is sponsor support from the same area? (Achievement in both industry and education must have corresponding sponsors of both areas.)

#### B. PROFESSIONAL RECORD—(page 2 of Form)

- Does the Professional Record emphasize outstanding engineering achievements rather than merely list positions and titles held?
- Is a supplementary Professional Record needed to assure that the candidate's achievements are thoroughly presented?
- Does the Professional Record cover achievements up to the present date?
- Is the extent of the candidate's involvement specifically presented: e.g., in conception, execution, management, development, etc.?

#### C. ADDITIONAL PROFESSIONAL DATA—(page 3 of Form)

- Have all requests for information been either fully supplied or if not applicable, reasonable explanation given?
- Although complete listings of publications and books are usually preferred, has proper emphasis been given to those publications for which the candidate holds sole or primary credit?
- If any publications or books were instrumental in the advancement of technology, has the publication's(s') importance been declared?
- It is not necessary to attach complete individual patent presentations, but is a complete listing of titles (subjects), serial numbers and dates included?
- As most engineers eligible for Fellow nomination have specialized in a particular area(s) of technical expertise, an explanation should be given if no such specialty is named.
- Contributions to ASME/Engineering professions and public service activities should be listed on separate attachments.

#### D. LETTERS OF SUPPORT FROM SPONSORS

- Do letters specifically support information given on and/or appended to the Fellow Proposal Form?
- Have sponsors been selected because they are truly aware of the candidate's engineering achievements or primarily because they lend an impressive title or name to the proposal?
- Although personal life and non-engineering professional accomplishments of the candidate are not discounted, has care been taken that the letters primarily address and support outstanding engineering achievements of the candidate?
- Do the letters reflect generalities and oratorical comments which imply much but prove little?
- Have you included your own sponsor letter?

#### E. GUIDE TO CRITERIA FOR ELECTION TO FELLOW GRADE—(page 4 of Form)

- Have you read and considered all the categories in the listed criteria as they relate to the attainments of the candidate?
- In categories where the candidate has rendered exceptional attainments and contributions, have both the fellow proposal form and sponsors letters corroborated this with full and factual support?

#### F. OVERALL FELLOW PROPOSAL PACKET

- Deleting names and implied prestigious institutions, does the proposal stand on its own?
- Is it typed?



To: The Nominator(s)

From: The ASME Committee on Honors

The honors bestowed by the Society on its members are an important and valuable method of showing appreciation for outstanding contributions made toward increasing technical knowledge, improving understanding, or achieving noteworthy engineering application. The effort by the nominator in documenting the nominee's attainments particular to the award is therefore extremely important. It is through your efforts that members are brought to the attention of the Society for consideration for the various awards. The Committee understands and appreciates the amount of work required and is deeply grateful to you for your service to the Society and the mechanical engineering profession.

The attached form describes the information required for submitting nominations for the achievement and literature awards of the Society. While preparing the nomination package, please remember that the judges of your nominee(s) base their decisions on the facts which you supply. Therefore, please be sure to substantiate the appropriate items.

You will note that Pages 2 and 3 must be completed for the achievement awards, and Pages 2 and 4 for the literature awards. The following list indicates the appropriate category:

#### ACHIEVEMENT AWARDS

ASME Medal  
Per Bruel Gold Medal for Noise  
Control and Acoustics  
Codes and Standards Medal  
William T. Ennor Manufacturing  
Technology Award  
Fluids Engineering Award  
Heat Transfer Memorial Award  
Mayo D. Hersey Award  
Holley Medal  
Soichiro Honda Medal  
Honorary Membership  
Internal Combustion Engine Award  
James N. Landis Medal  
Bernard F. Langer Nuclear Codes  
& Standards Award  
H. R. Lissner Award  
Machine Design Award  
Nadai Award  
Rufus Oldenburger Medal  
Performance Test Codes Medal

James Harry Potter Gold Medal  
Pressure Vessel & Piping Award  
Ralph Coats Roe Medal  
Safety Codes & Standards Medal  
R. Tom Sawyer Award  
Spirit of St. Louis Medal  
J. Hall Taylor Medal  
Timoshenko Medal  
Worcester Reed Warner Medal  
George Westinghouse Medals  
Henry R. Worthington Medal

#### LITERATURE AWARDS

Blackall Machine Tool & Gage Award  
Gas Turbine Award  
Henry Hess Award  
Melville Medal  
Burt L. Newkirk Award  
Prime Movers Committee Award  
Rail Transportation Award

The following awards have special nomination requirements:

Edwin F. Church Medal  
Dedicated Service Award  
Freeman Scholar Award  
Gustus L. Larson Memorial Award  
Charles T. Main Award

Old Guard Prizes  
Faculty Advisor Award  
Pi Tau Sigma Gold Medal  
Charles Russ Richards Memorial Award  
Ben C. Sparks Medal  
Arthur L. Williston Medal

Please contact the ASME Honors Department at 212-705-7735 for the appropriate nomination forms.

NOMINATION FOR ASME NATIONAL AWARDS

1. NAME OF HONOR OR AWARD \_\_\_\_\_

2. DATES: Submitted \_\_\_\_\_ Received \_\_\_\_\_  
(To be filled in by ASME)

3. FULL NAME OF NOMINEE OR AUTHOR \_\_\_\_\_

ASME Membership Grade of Nominee/Author \_\_\_\_\_ Date of Birth \_\_\_\_\_

Nominee's/Author's Current Position \_\_\_\_\_

Nominee's/Author's Address  
(Indicate whether home or business) \_\_\_\_\_

Nominee's/Author's Citizenship \_\_\_\_\_

4. CITATION/TITLE (35-40 word summary of nominee's qualifications. Nomination for a literature award should include title of paper.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. NOMINATORS (Names, ASME committee connections, professional acquaintanceships)

SPONSOR: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6. REFERENCES (Names and addresses of the five individuals acquainted with nominee's qualifications and requirements of the award who have written the attached letters. Please be advised that the Committee will not consider more than five reference letters.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*NOTE: For achievement awards, please continue on Page 3, for literature awards, please continue on Page 4.*

## ACHIEVEMENT AWARDS

Items 7-10 should be typed (double-spaced) on separate pages and submitted with this cover sheet.

7. QUALIFICATIONS: Give complete statements of the specific ways in which the nominee meets the requirements for the honor. Be sure to support all claims made on the individual's accomplishments.
  
8. PUBLICATIONS: List up to 15 in order of significance and comment on the most important up to a maximum of 5. Please cite those publications which specifically support the nominee's achievements and establish a claim to the honor for which the individual is nominated. If there are no publications, please so indicate.
  
9. U.S. AND FOREIGN PATENTS: List no more than 15 in order of significance and comment on the most important up to a maximum of 5. As with the publications, please cite those patents which specifically support the nominee's achievements and establish a claim to the honor for which the individual is nominated. In the event that the nominee holds no patents, please so indicate.
  
10. BRIEF BIOGRAPHY: Give birth date and place, citizenship, education, positions held, honors, ASME activities, and participation in other engineering societies. In listing positions held, include directorships of civic activities and industrial corporations. For a nominee having many honors, those honors should be included that support the achievements for which the individual is being nominated.





212-705-7722  
FAX 212-705-7674  
TWX 710-581-5267

ASME DEDICATED SERVICE AWARD

345 East 47th Street  
New York, NY 10017-2392

1. a) Date of submission 15 November, 1991  
 b) Date of receipt \_\_\_\_\_ (To be filled in by ASME)
2. FULL NAME OF NOMINEE: William B. Morgan Member Grade Fellow  
Nominee's current position Head, Ship Hydromechanics Department  
Nominee's address David Taylor Research Center  
Bethesda, MD 20084
3. CITATION: 35-40 word summary of nominee's qualifications  

Dr. Morgan has provided outstanding leadership to the Fluids Engineering Division as Chairman, Multiphase Flow Committee, and Chairman, Executive Committee, and continues as a member of the Conferences Committee, Board of Communications. His technical contributions as Symposia organizer are equally impressive.
4. SPONSOR(S): Name and address of individual(s) suggesting nomination, and ASME activity(ies) in association with the nominee  
Executive Committee, Fluids Engineering Division. (By J.W. Hoyt, Honors & Awards Chair, FED. Mechanical Engineering Dept., San Diego State University, San Diego, CA 92182.)
5. REFERENCES: Sources for 3 attached letters. (Names and address of the 3 individuals acquainted with the nominee's qualifications and requirements of the award who have written the attached reference letters.)  
Clayton T. Crowe, Washington State University, Pullman, WA 99164-2920  
Thomas Morel, Ricardo NA, 645 Blackhawk Dr., Westmont, IL 60559-1115  
Warren F. Wade, FluiDesign, Inc. 28675 Hidden Valley Dr., Orange Village, OH 44022
6. SERVICE AREA(S): Be explicit with types of service and sequence of years (i.e., 1979-1989)  
Multiphase Flow Committee, FED (Secretary, Vice-Chair, Chair) 1971-7  
Executive Committee, FED 1978-83; Chairman 1981-82  
Conferences Committee, Bd. of Communications- at present
7. OTHER AWARDS RECEIVED FROM ASME DATE

8. SIGNATURE OF DESIGNATED ASME NOMINATOR AND SERVICE AREA DATE

9. ANTICIPATED DATE OF PRESENTATION: \_\_\_\_\_  
(NOTE: Prior to establishing a date, eight weeks must be allowed for engraving the plaque and engrossing the certificate.)

10. SERVICE AREA STAFF REVIEW: Name \_\_\_\_\_ Date \_\_\_\_\_

11. HONORS STAFF REVIEW: Initials \_\_\_\_\_ Date \_\_\_\_\_

12. DATE AWARD SENT FOR PRESENTATION: \_\_\_\_\_ (To be filled in by ASME)

\*\*\*\*\*  
ADDITIONAL INFORMATION CONCERNING THE ASME DEDICATED SERVICE AWARD

Purpose and Criteria for Award

The purpose of the ASME DEDICATED SERVICE AWARD is to honor unusual dedicated voluntary service to the Society marked by outstanding performance, demonstrated effective leadership, prolonged and committed service, devotion, enthusiasm, and faithfulness.

Who Qualifies for the Award

The ASME DEDICATED SERVICE AWARD may be presented to selected individuals who meet the above criteria and who have a minimum service to the Society of at least ten years in one or more of the following service areas:

- Sections, Regions and Member Affairs
- Codes and Standards
- Education
- Public Affairs
- Engineering (includes all Technical Divisions plus Communications and Research)
- Board of Governors (includes President, Immediate Past-President, Members-at-Large, and members of Committees reporting to the Board)
- The ASME Auxiliary, Inc.

NOTE: Other service areas such as ASME Representatives to other organizations, ASME Representatives to Joint Award Boards, etc., should be processed through the service area above that they are representing (for example, ASME Representative to the American Society for Engineering Education through Chairman, Council on Education)

Restrictions of Award

- No person shall receive more than one ASME DEDICATED SERVICE AWARD.
- Honorary Members are not eligible.
- Members who have not received 1980 Centennial Medallions will be given preference.
- Individuals responsible for selecting a candidate for the Dedicated Service Award are not eligible to receive an award during that time.

NOMINATIONS MUST BE RECEIVED BY THE ASME HONORS ADMINISTRATOR NO LATER THAN DECEMBER 1

ASME FLUIDS ENGINEERING DIVISION

CERTIFICATES OF RECOGNITION

From time to time, certificates of service or recognition are presented to outgoing officers of the Technical or Operating Committees of the Division. It is the responsibility of the Honors Chairman to identify those who should receive certificates and transmit the necessary information to headquarters in order that the certificates are presented in a timely manner. The table below suggests standard timing for presentation of certificates.

Certificate for Term Award Date

	<u>CERTIFICATE FOR</u>	<u>TERM</u>	<u>AWARD DATE</u>
1.	(Outgoing) Chairman <del>even</del> of each of the FED Technical Committees	Two years preceding June 30 of year of award.	Spring Meeting, <del>even</del> years.
2.	(Outgoing) Chairman of the FED Executive Committee (EC)	On EC for the four years preceding June 30 of year of award; Chairman for final year.	Spring Meeting each year.
3.	(Outgoing) Senior of the FED Executive Committee	One year preceding June 30 of year of award	Spring Meeting each year.
4.	(Outgoing) Technical Professional Development, Honors, and Government Relations Repre- sentatives	Must be checked with recipient (Awardee may have served more than one year.)	Nearest Meeting to departure of representative. Generally, Spring Conference.
6.	Knapp and Moody Award Recipients	N.A.	Spring Meeting of year award is made (if possible.)

The JFE Technical Editor obtains certificates for his outgoing Associate Editors and presents them at Winter Annual Meetings.

## CERTIFICATE REQUEST FORM

**MINIMUM REQUIRED LEAD TIME FOR CERTIFICATE PREPARATION IS 1-2 WEEKS**1. Check certificate you are requesting.

- Board of Governors Certificate of Appreciation \*  
 General Purpose/Specialized Division Certificate of Appreciation  
 Style

\*With all applicable signatures

## Certificate to Include:

- Leatherette Cover - \$11.00  
 Certificate mounted on Wooden Plaque under Plexiglass - \$11.00  
 Beveled Edge Glass Frame with Black Matting - \$32.00

(If order is placed for special cover or mounting, signed Custodian Account Withdrawal Form must accompany this form.)

Mr. Erwin Weinberg, Technical Affairs, ASME Headquarters will supply funding documents.

2. Who is to receive this certificate? Please indicate:

- Full name with correct spelling
- Professional designation such as Ph.D or P.E.
- Title within ASME such as Division Chairman or Session Chairman
- Wording and dates to appear on certificate

---

DR. THOMAS MOREL

---

Member, Executive Committee

---

Fluids Engineering Division                      1986-1991

---

3. When do you need this certificate? Please include:

- Date
- Conference or meeting to be presented

---

Approx. 1 June, 1991, for presentation at FED Conf., 23-27 June,

---

4. Who is to present the certificate or to whom should we send the certificate?

J. W. Hoyt, FED Honors Chairman

---

c/o Dept. of Mechanical Engineering, San Diego State University,

---

San Diego, California, 92182

---

5. Your name and phone number.

J. W. Hoyt (619) 594-4491 or  
(619) 483-1320

---

**Please Return To:** ASME, Technical Affairs/MS 5A, 345 East 47th Street, New York, New York 10017.

## CERTIFICATE REQUEST FORM

MINIMUM REQUIRED LEAD TIME FOR CERTIFICATE PREPARATION IS 1-2 WEEKS1. Check certificate you are requesting.

- Board of Governors Certificate of Appreciation  
 General Purpose/Specialized Division Certificate of Appreciation  
 Style D, as shown on attached sheet

## Certificate to Include:

- Leatherette Cover - \$11.00  
 Certificate mounted on Wooden Plaque under Plexiglass - \$11.00  
 Beveled Edge Glass Frame with Black Matting - \$32.00

(If order is placed for special cover or mounting, signed Custodian Account Withdrawal Form must accompany this form.)

Raj Machanda, ASME Staff, will supply funding documents

2. Who is to receive this certificate? Please indicate:

- Full name with correct spelling
- Professional designation such as Ph.D or P.E.
- Title within ASME such as Division Chairman or Session Chairman
- Wording and dates to appear on certificate

PAUL COOPER, Ph.D.

3. When do you need this certificate? Please include:

- Date
- Conference or meeting to be presented

Approx. 1 June, for presentation at FED Conf. 21-24 June, 1992

4. Who is to present the certificate or to whom should we send the certificate?

J.W. Hoyt, FED Honors & Awards Chairman  
 c/o Dept. of Mechanical Engineering, San Diego State University  
 San Diego, CA 92182

5. Your name and phone number.

J.W. Hoyt (619) 594-4491 or  
 (619) 483-1320

Please Return To: ASME, Technical Affairs/MS 5A, 345 East 47th Street, New York, New York 10017.

FORM D-1

Exhibit VI-11 (cont.)

Style D

W/GLASS FRAME

(ASME, etc)

The Fluids Engineering Division

Presents The

1991 FLUID MACHINERY DESIGN AWARD

TO

PAUL COOPER, Ph.D.

for

Excellence in the design of machinery involving significant fluid mechanics principles, which benefits mankind as exemplified by product use within the past decade.



W/RIBBONS

---

Warren F. Wade

Chairman, Executive Committee

## VII. PROFESSIONAL DEVELOPMENT

### A. Introduction

This section describes the duties of the Professional Development for the Fluids Engineering Division. The formation of a Professional Development Committee is at the discretion of the Executive Committee of the Fluids Engineering Division. Additional information on professional development within the Society as a whole can be found in the ASME Professional Development Manual, MS-65.

### B. Professional Development Committee

#### 1. Duties of the Committee

The function of this committee is to promote professional development and continuing education for the engineering profession in areas of interest to the Fluids Engineering Division. The Committee has the following major responsibilities:

- a. Identifying needs and organizing short-sources of interest to the Division membership and others sharing the same technical interests at the Winter Annual Meeting and the FED Spring Conference, and other appropriate ASME technical conferences.
- b. Recognition and identification of the professional development needs of the Division membership and others sharing the same technical interests.
- c. Utilization of the resources of the Division to help satisfy the professional development needs of ASME.
- d. Other duties as assigned by the FED Executive Committee.

#### 2. Membership of the Committee

The Committee has six members, consisting of the Chair, plus three representatives of the individual Technical Committees, and two members of the individual Coordinating Groups of the Division. The Chair of the Committee is appointed by, and serves at the pleasure of, the Executive Committee for a two-year term. The Chair can serve additional two-year terms at the pleasure of the Executive Committee. The Committee members are appointed by their respective Technical Committees to serve for two years.

The Committee will meet as required to carry out its functions but at a minimum of once a year. The Chair will report the Committee's activities to the FED Executive Committee at the Winter Annual Meeting or the Spring Conference, or both, as appropriate.

**APPENDIX I**  
**BYLAWS**  
**FLUIDS ENGINEERING DIVISION**  
**ASME**

**A.I.1**

## **OBJECTIVES**

- (1) To constitute, in the field of fluids engineering, a Professional Division of the American Society of Mechanical Engineers, in accordance with the Society's Constitution, Bylaws, and Rules.
- (2) To promote the art and science of mechanical engineering in fluids engineering in accordance with the following statement of scope:

The scope of interest of the Fluids Engineering Division embraces the broad field of experimental, analytical, and computational fluid mechanics, including, but not limited to, the steady and unsteady phenomena and natural laws of fluids; the exchange of energy, forces, and momentum between fluids and machines; the motion of fluids in closed and open conduits; and the effects of the physical properties of fluids upon flow characteristics. It includes the science of fluid properties, flow measurements, multiphase flows, and the generation of design and analytical procedures for descriptive and predictive purposes. The term "fluid", as used herein, includes liquids, compressible fluids, and multiphase flows. Of particular interest are the design and performance of fluid machinery and fluid handling devices used for pumping, power generation, surge control, cavitation control and transmission of power by fluid means. Heat transfer, mass transfer, thermodynamics and combustion as related to fluid mechanics problems are also in the scope of interest of the Division as well as computational fluid dynamics.

- (3) To stimulate and encourage research and development, and to provide a forum for summarizing and publishing reliable data and results of engineering importance pertaining to subjects within the Division's scope of activities.
- (4) To encourage the interchange of ideas among engineers and technologists by:
  - (a) Encouraging the preparation and publication of papers on technical developments;
  - (b) Organizing programs in which papers are presented and discussed, and in which all members of the Society may meet on an equal basis to exchange experience and technical data; and
  - (c) Co-operating with other Professional Divisions, groups and committees within the Society, and with other societies with respect to standardization, research, preparation of papers, meetings and special service, and to the avoidance of duplication of effort and conflicts.
- (5) To direct attention to outstanding engineering achievement in the field of fluids engineering with recommendations and suggestions as to suitable recognition for such achievement.
- (6) To provide that the activities of the Division will be directed by members of the Society who have attained prominence and prestige in the field and who have shown, by activity within the Division, the necessary ability and willingness to discharge such responsibilities.
- (7) To encourage interaction among ASME, universities, industries, and government laboratories in such a way as to promote educational programs for the attainment of increased proficiency and competence.

## ACTIVITIES

The Division will, when desirable, organize and/or sponsor and conduct one or more sessions at National Meetings of the Society.

The Division will normally organize an annual Division Summer Meeting subject to the approval of the Board on Communications.

The Division will, when appropriate, participate in joint sessions with other Divisions or Committees at meetings of the Society, when such joint sessions are mutually desired by the participating Division or Committees.

Subject to the approval of the Basic Engineering Technical Group the Division will participate in joint sessions with other organizations when such is of benefit to the Division, to the Society and to the Profession.

Standing and special committees will be maintained for the collection and review of new information, organization of programs, and for the preparation of reports and digests.

The Division will provide for submission of papers, reports, and data of permanent value or exceptional quality and interest for publication by the Society or by other suitable channels. The *Journal of Fluids Engineering* has been established for this purpose.

## ORGANIZATION

The Fluids Engineering Division will be organized under the Constitution, Bylaws, and Rules of the Society, and, in case of conflict between Division and Society Bylaws and Rules, those of the Society will govern.

## EXECUTIVE COMMITTEE

### Organization and Rules of Conduct

The Executive Committee is responsible for managing the affairs of the Division and providing an interface with the Society at-large. Plans are coordinated by the Executive Committee with guidance offered by an advisory board comprised of past officers of the division with industrial, academic, and government input.

The Executive Committee will consist of five (5) members selected from the membership of the Society as follows:

Prior to January first of each year the Executive Committee of the Division will nominate to the Basic Engineering Technical Group a new member to the Executive Committee. The Executive Committee will determine the method of selecting this individual. The term of office will be for five (5) years. The Executive Committee of the Division will be organized as follows: First year - Member, second year - Secretary, Third year - Program Representative, fourth year - Chair and fifth year - Senior Member.

The term of one (1) member of the Executive Committee will expire on June 30 (Senior Member of the Executive Committee).

In case of resignation, vacancy by reason of incapacity or decease, vacancies will be filled by appointment by the Executive Committee, subject to approval of the President of the Society.

The Secretary of the Division, will report the proceedings of the Division to the Secretary of the Society for notice in the publications. The Secretary will perform the duties of secretary of the Division under the direction of the Division Chair and the Executive Committee.

There will be at least one (1) meeting and preferably two of the Executive Committee in each year. Meetings of the Executive Committee may be called by the Chair at such places and times as the Chair may deem advisable and will be called if requested by at least two other members of the Executive Committee.

Three members of the Executive Committee will constitute a quorum, but at least two of these members must be actually present and not represented by proxy.

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

All officers of technical, advisory, and other committees, and liaison representatives or other assisting personnel are to be elected or appointed in a manner approved by the Executive Committee. A schedule for Elections and Appointments is given in Table I.

### **Responsibilities and Powers**

The Executive Committee will be responsible for the promotion of the interest and activities of the Division, broadly as outlined under "Objectives" and "Activities." In particular the Executive Committee will be responsible for the following functions which it will perform or will appoint committees to perform.

### **Program Planning**

The Executive Committee will provide for the planning and organization of meetings of the Division and for cooperating with other Divisions in the planning and organizing of joint sessions and joint conferences, and for the securing of papers for presentation at Division meetings.

### **Paper and Publication Review**

The Executive Committee will provide for the review of all papers, reports, etc., submitted to the Division in a manner that will insure the maintenance of quality consistent with Society standards. The Executive Committee will nominate the Technical Editor of the *Journal of Fluids Engineering* and will oversee all aspects of Journal publication. The procedure for the Election/Selection of Associate Editors is given in Table 2.

## **Nominations and Honors**

The Executive Committee will provide for the preparation and maintenance of lists of suitable candidates for various Division and Society offices or committees as may be required or requested under Society rules.

The Executive Committee will provide for annual preparation a list of nomination with supporting data for recipients of any Division or Society awards from which the Executive Committee will approve nominations for any Division award, or will make recommendations, to the Society Committee on Honors Society award.

## **Membership Development**

The Executive Committee will cooperate in the endeavor to bring into the Society persons interested in the work of the Division.

## **Technical Development**

The Executive Committee will provide for the organization and promotion of specialized technical interests and activities within the Division. To assist with these responsibilities, the Executive Committee will establish appropriate Technical Committees and Coordinating Groups. The Chair of these Committees/Groups will serve for two-year terms. The operation and activities of individual Technical Committees will be conducted in accordance with Operating Procedures developed by each Committee and approved by the Executive Committee.

## **Other Activities**

When desirable the Executive Committee may provide for the pursuit or support of other specialized activities consistent with the objectives of the Division and the Society.

To assist in carrying out the preceding responsibilities, the Executive Committee may make the following types of appointments:

### **Liaison Representatives**

Members of the Society appointed to provide liaison with other Divisions, Boards, or Committees of the Society or with other organizations.

### **Division Associates**

Nonmembers of the Society appointed to cooperate in the work of the Division and to attend committee meetings without the right to vote.

### **Sponsors**

Individuals appointed to foster activities in particular branches or phases of the Division's field of interest.

Table 1

Elections and appointments Calendar

Office and Type (E/A)		Nominating Committee Appointed	Hold Elections	Take Office	Appoint Office	Take Office	Comment
TC/CG Ch and VC	E	FEDSM	WAM	July 1	n/a	n/a	Even Year Terms
Honors (TC/CG)	E	FEDSM	WAM	July 1	n/a	n/a	Even Year Terms
FE Award	A	n/a	n/a	n/a	3 Yrs	July 1	Rotate each year - 2 members
EC Member	E	Standing	WAM	July 1	n/a	n/a	Each Year
Assoc. Editor	E	Standing	WAM/ FEDSM	n/a	as per TE-JFE	WAM	3 Yr Term
Prof Dev TC/CG/EC	A	n/a	n/a	n/a	FEDSM	July 1	2 Yr Term
Freeman Scholar	A	n/a	n/a	n/a	WAM	July 1	6 Yr Term, every 2 Yrs.
Student Paper	A	n/a	n/a	n/a	FEDSM	July 1	Rotates thru TC each yr. 4 Yr Terms
TE-JFE	A	n/a	n/a	n/a	WAM	July 1	5 Yr Term
Liaison Represent.	A	n/a	n/a	n/a	FEDSM	July 1	2 Yr Term Even Years
Adv. Bd. Chair	A	n/a	n/a	n/a	FEDSM	July 1	3 Yr Term
Newsletter Editor	A	n/a	n/a	n/a	FEDSM	July 1	5 Yr Term
Gov. Relations	A	n/a	n/a	n/a	FEDSM	July 1	2 Yr Term
Member/Assoc. Member	E	Standing	WAM/ FEDSM	when elected	n/a	n/a	membership committee

A = Appointed; E = Elected

**Table 2**  
**Election/Selection of Associate Editors**

**A. General Scenario:**

Technical Editor has been appointed by FED Executive Committee;  
Associate Editor positions have been established and filled by appropriate appointments;  
Technical Committees and Coordinating Groups have established Nominating Committees.

**B. Election/Selection Procedure:**

1. On a regular basis, the Technical Editor advises TC/CG Chair of current roster of Associate Editors and anticipated needs for new Associate Editors in the future, including the number of associate editors required and their general area of expertise.
2. Nominating Committee regularly solicits qualified persons who agree to serve as Associate Editors if elected/selected, with special emphasis on candidates qualified to fill anticipated current needs as outlined by the Technical Editor. Nominations are obtained by various methods, such as: nominations from the Technical Editor, nominations from committee members or other knowledgeable persons, nominations from the floor at committee meetings, direct contact by the Nominating Committee, or direct applications from interested persons.
3. After due deliberation, review of credentials, and confirming the interest of potential nominees, the Nominating Committee selects a slate of persons at each regular meeting of their committee (if necessary to replenish the pool) for placement into a pool of candidates from which future Associate Editors will be selected. A candidate can remain in the pool no more than two years, but may be returned to the pool as many times as the committee chooses. The Nominating Committee can act between committee meetings if necessary.
4. Names and credentials of persons selected by the committee at each regular meeting are forwarded to the Executive Committee as part of the report of the chair of the committee. The Executive Committee will not accept reports from a committee if fewer than two persons are in the active pool of candidates from the committee. The Executive Committee will forward the names and credentials of newly-selected persons to the Technical Editor. The Technical Editor will maintain an overall list of persons selected into the Associate Editor pool and will provide updated copies of this list to each committee chair and the Secretary of the Executive Committee within one month after new additions are made to the pool.
5. When the Technical Editor wishes to fill a regularly scheduled vacancy or an unanticipated vacancy, the Technical Editor will notify the Executive Committee of his/her impending need, provide a short list of persons selected from the pool who are being considered as candidates, and seek the approval of the Executive Committee to negotiate with candidates on the short list.
6. After the Technical Editor has selected the to-be-appointed Associate Editor, the name of the candidate and the required nominating forms will be forwarded to the Chair of the Executive Committee for signature and transmittal to the Board on Communications, which will ultimately approve the nomination and confirm the new Associate Editor.

The Executive Committee may appoint other committees or individuals to assist in carrying out the preceding responsibilities or to otherwise assist, advise, and counsel.

Any committees appointed by the Executive Committee, other than the standing Technical Committees and Coordinating Groups, will consist of a Chair and other members appointed for terms to be set by the Executive Committee at the time of appointment. All committee members and all other appointees will be eligible for reappointment.

#### **DUTIES**

The duties of officers and Committee Chair are described in the Professional Division Manual, MS-11.

#### **AMENDMENTS**

These Bylaws may be amended by a four-fifths (4/5) majority vote of the Executive Committee of the Division. Amendments will be subject to the approval of the Basic Engineering Technical Group.

## **APPENDIX II**

### **OPERATING PROCEDURES OF THE TECHNICAL COMMITTEES AND COORDINATING GROUPS**

1. Fluid Applications and Systems Technical Committee
2. Fluid Mechanics Technical Committee
3. Multiphase Flow Technical Committee
4. Coordinating Group on Fluid Measurements
5. Coordinating Group on Computational Fluid Dynamics

# **OPERATING PROCEDURES OF THE FLUID APPLICATIONS AND SYSTEMS TECHNICAL COMMITTEE**

## **1. INTRODUCTION**

The Fluid Applications and Systems Technical Committee (FASTC) is the committee of the Fluids Engineering Division (FED) which addresses ASME activities involving fluid mechanics systems and applications of fluid mechanics technology. These activities may include fluid machinery and components, fluid transients and structural interactions, and industrial and environmental applications of fluid mechanics technology.

Thus, there are subcommittees organized with FASTC to focus on these specific activities. The subcommittees may be redefined as the need arises based on developments in the fluid applications and systems field.

This operating procedure defines the objectives, membership, duties of the elected officers, responsibilities of the appointed officers, nominating committee and meetings of the FASTC.

## **2. OBJECTIVES**

The objectives of the Fluid Applications and Systems Technical Committee are to constitute the professional committee of the Fluids Engineering Division in accordance with the Division constitution, By-laws, and Rules, in the field of fluid applications and systems. Specifically the objectives are to:

- o serve as a forum for presentation and publication of new research, technology and design information in the field of fluid applications and systems;
- o organize workshops, symposia, forums, short courses, and other educational meetings and curricula on topics as indicated by needs of engineers in the field;
- o encourage and promote interchange of information between researchers and the designers and users of fluids engineering technology;
- o promulgate the highest possible technical standards in the practice of fluids engineering;
- o survey the needs of the profession in fluids applications and systems and to disseminate the results of such surveys to pertinent government bodies, the profession, and the public;
- o disseminate information regarding the meaning and value of fluids engineering applications and systems to the news media and the public;
- o recognize and reward outstanding contributions to the field of fluid applications and systems;

These objectives may be accomplished through technical paper sessions, symposia, forums, panel discussions, and special workshops at the annual ASME Winter Annual Meeting (WAM) and Fluids Engineering Division meetings, publication of professional papers and surveys in the Journal of Fluids Engineering, and ASME symposia volumes, and publicity releases to appropriate departments in the engineering colleges, government agencies, research institutes, industrial firms and the public. Similar activities are engaged in jointly with other Committees of the Division and other Divisions of the Society.

### 3. MEMBERSHIP

The committee membership is composed of ASME members with special interests in the technical area of fluid mechanics applications and systems and a willingness to work on programs and activities of the committee. Criteria for FASTC membership are:

- o shall be willing to review manuscripts for possible presentation and/or publication;
- o ability and willingness to attend a reasonable number of the twice-yearly meetings of the FASTC;
- o interest in active participation of committee responsibilities; such as organization of future symposia, and acceptance to elected and appointed positions within the committee.

### 4. ELECTED OFFICERS

The FASTC has both elected officers and appointed officers. There are three elected officers: chair, vice-chair, and honors representative. A nominating committee shall submit names of candidates for election as needed, following the guidelines outlined in a separate section below.

The duties of the elected officers are defined below.

#### Chair

The chair will be responsible for chairing the committee meetings, organizing the technical programs of the committee, and coordinating the committee's activities with the FED Executive Committee and with ASME headquarters. The term of office shall run for approximately two years from the first of July to the last day in June of even numbered years. However, the outgoing Chair shall retain responsibility of the programs and recommendations of papers for all technical meetings to be held in the calendar year during which his or her office expires.

#### Vice-Chair

The term of office of the vice-chair and chair shall coincide. The vice-chair shall act as a recording secretary at the committee meetings, prepare minutes for distribution to committee members and newsletter items for the FED NEWS, and shall act for the Chair in his or her absence.

#### Honors Representative

The honors representative serves for a term of two years coinciding with the term of the incoming chair of FASTC. The honors representative shall represent the committee on the FED Honors Committee. The honors representative shall be responsible for soliciting, reviewing, selecting, and nominating, on an annual basis, outstanding papers sponsored by the FASTC. He or she shall also present the nominated papers sponsored by the FASTC at the WAM for consideration for the division's technical paper Moody and Knapp awards. The honors representative shall also represent the committee in other honors proceedings such as the FED award, ASME Fellowship, etc., as the need arises, or opportunity occurs.

## 5. APPOINTED OFFICERS

The appointed officers are those appointed by the chair of the FASTC. They include, but are not limited to, program subcommittee chairs, liaison representatives, an executive subcommittee, and others as may be required.

### Program Subcommittee Chairs

The program subcommittee chairs are charged with the responsibility of developing recurring and special interest symposia and forums within the technical scope of the FASTC at meetings sponsored by the FED. The subcommittee chairs will provide assistance to committee members in the areas of program planning and the development of Calls for Papers for approval at committee meetings. The program subcommittees will provide leadership in identifying technical program themes and individuals who will assume the responsibility for organizing programs in these topic. Other responsibilities of the program subcommittees may be defined as needed from time to time.

The program subcommittee chairs are encouraged to work closely with the chair and with each other throughout the year. It is desirable that many of the program planning activities should be completed before the FASTC meetings. Program subcommittee recommendations will be presented and approved at FASTC meetings.

### Liaison Representatives

There may be several representatives to other committees of the Fluids Engineering Division, such as the Fluid Mechanics Committee, the Multi-Phase Flow Committee, the Coordinating Group for Fluid Measurements, and the Coordinating Group for Computational Fluid Dynamics, and others that may be formed by the Executive Committee. The duties of a liaison representative are to provide the FASTC with up-to-date information about the program plans and activities of the other committees.

### Ad-Hoc Committee

An Ad-Hoc Committee may be appointed by the chair of the FASTC to deal with items that require action before the next scheduled meeting.

## 6. NOMINATING COMMITTEE AND ELECTIONS

A nominating committee for the elected officers will consist of the outgoing chair and two of the three most recent past chairs. However, if past chairs are unable to serve on the nominating committee, the chair may appoint alternates with experience in FASTC activities. The nominating committee shall nominate at least one candidate for each of the elected offices. These nominations, with the consent of the nominees and the concurrence of the FED Executive Committee, will be presented for election at a regular committee meeting to be held at the ASME Winter Annual Meeting in odd numbered years. This is approximately six months before the terms of the outgoing officers expire.

## 7. MEETINGS

The FASTC will meet at the ASME Winter Annual Meeting and at the FED Summer Meeting. The committee meetings will arranged by the committee chair in consultation with the FED Executive Committee. The committee meetings will be open to all interested people.

The business of the committee will be conducted at the committee meetings. Decisions can be made at the committee meetings, having a quorum, by simple majority vote. The executive subcommittee will act on behalf of the entire committee in special circumstances that require action before the next regular committee meeting.

**Quorum**

One third of the committee membership or ten members, whichever is the lesser number, shall constitute a quorum.

**Time and Place of the Meeting**

The time and place of all of the meetings of the FASTC shall be announced by the FED Executive Committee. Notices of all meetings shall be mailed to the members of the committee two to four weeks before the meeting date.

**8. AMENDMENTS**

These operating procedures may be amended by a four-fifths (4/5) majority vote of the members present at a FASTC meeting, subject to the approval of the FED Executive Committee.

# **OPERATING PROCEDURE OF THE FLUID MECHANICS TECHNICAL COMMITTEE**

## **1. INTRODUCTION**

The **Fluid Mechanics Technical Committee (FMTC)** is the committee of the Fluids Engineering Division (FED) which addresses the fundamental fluid mechanics activities of ASME. These activities may include turbulent and shear flows, unsteady flows, aerodynamics and hydrodynamics, and unconventional or emerging topics. Thus, there are subcommittees organized within FMTC to focus on these specific activities. The subcommittees may be redefined as the need arises based on developments in the fundamental fluid mechanics field.

This operating procedure defines the objectives, organization and membership, duties of the elected officers, responsibilities of the appointed officers, nominating committee, and meetings of the FMTC.

## **2. OBJECTIVES**

The objectives of the Fluid Mechanics Technical Committee are to constitute the professional committee of the Fluids Engineering Division in accordance with the Division Constitution, Bylaws and Rules, in the field of fundamental fluid mechanics, for example, turbulent and shear flows, unsteady flows, aerodynamics and hydrodynamics, and unconventional or emerging topics. More specifically, the objectives are to:

- serve as a forum for presentation and publication of new research, technology, and design information in the field of fundamental fluid mechanics;
- organize workshops, symposia, and short courses on topics indicated by those in the field;
- encourage and promote interchange of information between researchers and practitioners;
- promulgate the highest possible technical standards in the practice of fluids engineering;
- disseminate information regarding the meaning and value of fluid mechanics to the public, perhaps via the news media;
- recognize and reward outstanding contributions to the field of fundamental fluid mechanics.

These objectives may be accomplished through technical paper sessions, symposia, forums, panel discussions, and special workshops at the Winter Annual Meeting of ASME and Fluids Engineering Division meetings, as well as other means as appropriate to satisfy a given need. Activities with other divisions of ASME or outside of the society are encouraged to foster interdisciplinary interchange of ideas on a wide scale.

## **3. ORGANIZATION AND MEMBERSHIP**

The committee membership is composed of ASME members with special interests in the fundamental fluid mechanics area and a willingness to work on programs and activities of the committee. A Membership Committee shall have the responsibility of maintaining a record of the members and reviewing the credentials of those interested in serving on the committee.

Those interested in becoming active in FMTC should submit their names and credentials to the Membership Committee either directly or by way of any member for consideration. The Membership Committee shall review the credentials and recommend those meeting the criteria to the full committee for final approval. In addition to the committee as a whole, FMTC shall also have a Planning Board composed of the officers listed below. Criteria for FMTC committee membership are also given below.

#### A. Planning Board

The Planning Board shall consist of the Chair, Vice-Chair, Honors Representative, Membership Chair, Subcommittee Chairs, Coordinator of the JFE Associate Editor Nominating Committee, Professional Development Representative, and Liaison Representatives. The duties of these officers are defined in the following sections.

#### B. Criteria for FMTC Committee Membership:

- membership in ASME;
- willingness to review manuscripts for possible presentation and/or publication;
- ability and commitment to attend at least one FMTC business meeting every two years;
- interest in active participation in committee responsibilities.

### 4. ELECTED OFFICERS

The FMTC has both elected officers and appointed officers. There are three elected officers: chair, vice-chair, and honors representative. A nominating committee shall submit names of candidates for election as needed, following the guidelines outlined in a separate section below.

The duties of the elected officers will now be defined.

#### Chair

The chair will be responsible for chairing the committee meetings, organizing the technical programs of the committee, and coordinating the committee activities with the FED Executive Committee and with ASME Headquarters. The term of office shall run for approximately two years from the first of July to the last day in June of even numbered years. However, the outgoing chair shall retain responsibility for the programs and recommendations of papers for all technical meetings to be held in the calendar year during which his/her term expires.

#### Vice-Chair and Secretary

The term of office of the vice-chair and chair shall coincide. The vice-chair shall act as a recording secretary at the committee meetings, prepare minutes for distribution to committee members, and prepare committee newsletter items to go to the FED NEWS.

#### Honors Representative

The honors representative serves for a term of two years coinciding with the term of the incoming chair of FMTC. The honors representative shall represent the committee on the FED Honors Committee. He/she shall be responsible for soliciting, reviewing, selecting, and nominating, on an annual basis, outstanding papers sponsored by the FMTC. He/she shall also present the nominated papers sponsored by the FMTC at the WAM for consideration for the

division's technical paper Moody and Knapp awards. The honors representative shall also represent the committee in other honors proceedings such as the FED award, ASME Fellowship, etc., as the need arises, or opportunity occurs.

## **5. APPOINTED OFFICERS**

The appointed officers are those appointed by the chair of FMTC. They include, but are not limited to, the following: Coordinator of the JFE Associate Editor Nominating Committee, Professional Development Representative, Liaison Representatives, Membership Chair, Subcommittee Chairs, and others as may be required.

### **Coordinator of the JFE Associate Editor Nominating Committee**

The coordinator of this FMTC committee shall assist the chair of FMTC in providing the JFE editor with candidates for associate editor as defined by the "Procedure for Selection of Associate Editors to the JFE," Appendix A.

### **Professional Development Representative**

The professional development representative shall be the committee's representative to the FED's Professional Development Committee and will perform the functions defined by ASME for this office.

### **Liaison Representatives**

There may be several representatives to sister committees such as the Coordinating Group for Fluid Measurements or to committees outside of the division such as Heat Transfer or Applied Mechanics or even outside of ASME, for example, to AIAA. The duties of these representatives are to provide FMTC with up-to-date liaison information and insight into activities within these organizations so that the function of the FMTC may be timely and useful to the members of the technical community as a whole.

### **Membership Chair**

This officer shall maintain an updated list of committee members, using the criteria described in the membership section above. He/she shall review candidates for membership to the committee and recommend them for consideration by the full committee for vote at the two meetings held annually.

### **Subcommittee Chairs**

The subcommittee chairs are charged with the responsibility of developing recurring or special interest symposia/forums within the scope of the subcommittee at sponsored FED meetings. The number and scope of responsibilities of the subcommittees will be intentionally left broad so that these topics may be defined as needed from time to time. These chairs are encouraged to work closely with each other and the FMTC chair so that much of this planning may be done before the actual FMTC meetings take place. The final approval of the subcommittee recommendations will be subject to the approval of the whole committee.

### **Executive Subcommittee**

The Executive Subcommittee is a subcommittee appointed by the chair of FMTC as the need arises for items that cannot be held until the next scheduled meeting.

## **6. NOMINATING COMMITTEE AND ELECTIONS**

A Nominating Committee for the elected officers shall consist of the outgoing chair and two of the three most recent past chairs. The committee shall nominate at least one candidate for each of the elected offices. The nominees will not be previously elected officers. These nominations, with the consent of the nominees and the concurrence of the FED Executive Committee, will be presented for election at a regular committee meeting to be held at WAM in odd numbered years. This is approximately six months before the terms of the outgoing officers expire.

## **7. MEETINGS**

The FMTC will meet at the WAM and at the Fluids Engineering Division Summer Meeting. The committee meetings will be set up by the committee chair in consultation with the FED Executive Committee and will be open to all interested parties.

The business of the committee will be conducted at the committee meetings. Decisions can be made at the committee meetings, having a quorum, by a simple majority vote. The executive subcommittee will act on behalf of the entire committee in those special situations that cannot be held until the next regular meeting of the entire committee.

### **Quorum**

One-third of the committee membership or ten members, whichever is the lesser number, shall constitute a quorum.

### **Time and Place of the Meeting**

The time and place of all of the meetings of the committee shall be the responsibility of the committee chair and notices of all meetings shall be mailed to the members of the committee at least six weeks in advance of the meetings.

## **OPERATING PROCEDURE OF THE MULTIPHASE FLOW TECHNICAL COMMITTEE**

The following defines the operating procedure and the duties of Committee Officers of the Multiphase Flow Technical Committee (MFTC), which is a technical committee of the Fluids Engineering Division of the American Society of Mechanical Engineers.

### **1. FUNCTION AND RESPONSIBILITY**

The objective of the Committee is to promote understanding and communication in the field of multiphase flow via sponsorship of technical papers and sessions at society meetings and division conferences, as well as by interaction with other professional societies. This function includes review for papers offered for publication and presentation, and encouragement of researchers in the field to prepare and submit such summaries of their findings. In addition to sessions of formal papers for Journal publication, the Committee shall also promote and sponsor symposia, forums and other special modes of information transfer as it finds necessary. The results not reported in the Journal may be reported in other specialized publications. As the nature and occasion prescribes, such sessions, symposia and forums will be jointly sponsored with other appropriate committees of the division or with other divisions of the Society, as well as occasionally with other societies. The scope, or field, of subject matter under the cognizance of the MFTC encompasses all aspect of multiphase or multi-component flows in which at least one the phases or components is a fluid.

### **2. OPERATING PROCEDURES**

The work of the MFTC is effected through its regularly elected officers and such additional personnel as they need to call upon. The officers are generally a Chairman, Vice Chairman, Associate Technical Editors (three or six), and a

Honors Representative, a Professional Development Representative, a member to serve on the Coordinating Group on Fluid Measurement, and a member to serve on the Coordinating Group on Computational Fluid Dynamics. Their duties and responsibilities are detailed in the following section. The Chairman is ultimately responsible to the Division Executive Committee for the activities and operation of the Committee. Other temporary Committee personnel are the chairman and vice-chairman of sessions sponsored by the Committee and the editors-organizers of special forums or symposia. Except for the Associate Technical Editor(s) the officers are replaced biannually via election generally at a Committee meeting. The new officers take over on July 1. All officers must be ratified by the FED Executive Committee.

In order to promote the diversity of interests of the membership, the committee will have three subcommittees, dealing with: (i) liquid-gas flows, (ii) liquid-solids flows, and (iii) gas-solids flows. The Chairman in consultation with the Vice-Chairman will appoint chairs of these subcommittees for a term which will coincide with that of the Chairman of the MFTC.

The Committee will meet at the WAM and at the Spring FED Conference. The Committee meetings will be set by the Committee Chairman, in consultation with the FED Executive Committee, and will be open to all interest people.

### **3. MEMBERSHIP**

Membership on the Committee is open to personnel interested and active in the field. Preferably, they should be members of the Society, but exceptions may be made. In considering suggested or volunteered members, account shall be taken of the candidates' continuing activity in the multiphase flow area. Similarly, members who are no longer active in contributing to the work of the Committee shall be dropped from membership. A measure of lack of interest or activity is non-attendance at Committee meetings or sponsored sessions for several years. Assistance in the reviewing process for papers is considered affirmative interest.

#### **4.1 ELECTED OFFICERS**

The Chairman of the Committee is responsible for its active fulfillment of its function. He is assisted by the other officers, directly via the performance of their duties and

indirectly via consultation. Specific duties of the several Committee Officers are detailed below.

### **Chairman**

As chief of operations for the Committee, the Chairman is responsible for the work of the other officers which he checks at appropriate intervals from their reports to him or via direct inquiry. His specific duties involve chairing the committee meetings, responsibility for Committee-sponsored sessions, for interaction with the Executive Committee of the Division, for meetings of the Committee and communication with its members, and for assignments of personnel to special tasks. The Chairman take care of the arrangement for all sessions sponsored by the Committee. This involves the following actions: (i) Requests numbers of sessions for a given meeting or conference from the corresponding member of the Executive Committee at proper time and keeps him informed of changes in such needs as they develop. This planning is based in information obtained from the Associate Editor and other session organizers. (ii) Formalizes sessions for a given meeting or conference and advises the corresponding EC member in this regard. He should also ascertain that these papers have been sent in the proper form to the ASME Headquarters for printing in connection with the meeting. Session Chairman and Vice Chairman are to be enlisted for each session. (iii) After meetings, he should evaluate the success of the technical sessions sponsored by the Committee, and thank the Session Chairman and Vice Chairman for their efforts.

To report on his committee's operations and obtain suggestions for its activities, the Chairman shall attend appropriate meetings of the division EC at Society meetings and Division conferences. In case of inability to make such a scheduled meeting, he shall see that the Vice Chairman is available, notified and attends.

The chairman shall appoint or enlist Committee members to be responsible for special projects, such as symposia, forums, etc. Initial planning for such projects will be under the Chairman', aegis. Later work shall be periodically checked by him.

It is also the chairman's specific responsibility to see that newsworthy items are submitted for the Divisions Newsletter in order that Committee activities and projects are made known to the members of the Division.

### **Vice-Chairman**

The term of office of the Chairman and Vice-Chairman shall coincide. The Vice-Chairman shall perform duties as shall be delegated to him by the Chairman, and in the latter's absence or temporary disability shall perform the Chairman's duties. He shall act as a recording secretary at the committee meetings, and prepare agenda and minutes for distribution to committee members.

### **Honor Representative**

The Honors representative serves for a term of two years coinciding with the term of office of the incoming Committee Chairman. The Honors Representative shall present the Committee on the FED Honors Committee. He shall be responsible for soliciting, reviewing, selecting and nomination, on an annual basis, outstanding papers sponsored by the Multiphase Flow Technical Committee. He shall also present the nominated papers to the FED Honors Committee at the WAM for consideration for the Division's Moody and Knapp Awards. The Honors Representative shall also be responsible for representing the Multiphase Flow Committee in other honors proceeding, such as the FED Awards, ASME Fellows, etc. , as the need or opportunity occurs. It is the primary responsibility of this officer to see that appropriate nominations for honors awards are made for committee sponsored papers. Generally, it is hoped that one paper can be nominated for each Division award each year. In addition, the Honors Representative is to review the status of Committee membership or other associates in regard to the Society Fellows status. When the need is apparent, he shall prepare and submit appropriate nominations. Decision to proceed in this matter should be reviewed with the Chairman.

Operation in the matter of honors involve the following items. All papers presented at meetings sponsored by the Multiphase Flow Committee are to be reviewed in terms of reviewers' ratings and discussors' comments, whether oral at the session, or in writing afterwards. Information on the audience response, oral discussions, etc., at the time of presentation of the paper is best collected in persons. Should he be unable to attend a Committee-sponsored session, the Honors Representative should ask someone on the committee to collect this information for him. In addition, he may ask the session Chairman and Vice Chairman for this assessment of the most meritorious paper.

In any case, an honors assessment of each paper given at the Annual Meeting and Division Conference is to be made taking all evidence into account. The implications of this assessment are to be reviewed with the Committee Chairman to decide on honors nominations. There are to be prepared and submitted in proper form to the Division Honors Chairman in time for his deadline. Copies of the nominations with any additional relevant information are to be furnished to the Committee Chairman at this time. A justification presentation before the Division Honors Committee is also to be prepared and presented. The Honors Representative also should review nominations made that previous year to see whether they should be revised and resubmitted under the two-year rule. In turning over his job to his successor, the Honors Representative shall furnish copies of recent nominations, instructions from Division Honors Chairman, and other relevant information.

#### **4.2 APPOINTED OFFICERS**

The appointed officers are those appointed by the Chairman of MFTC.

##### **MFTC Associate Technical Editors of the Journal of Fluids Engineering (JFE)**

The MFTC Nominating Committee provides the JFE editor with candidates for Associate Technical Editors, according to the FED "Procedures for Selection of Associate Editors to the JFE".

The effective processing of papers submitted for the JFE is the responsibility of the Associate Technical Editor(s). Papers offered for presentation and publication consideration and generally received through the Technical Editor of the JFE. Regardless of how these are received, it is the Associate Editors duty to see that they are conscientiously handled, that the author or authors be kept informed of various stages of the progress of their paper and that the Committee Chairman is kept aware of their status.

An Associate Editor's operations involve the following actions (The Associate Technical Editor may make arrangements with the Executive Secretary of the Journal of Fluids Engineering to handle some of these actions routinely. However, the Associate Technical Editor has the responsibility for these actions to the Committee):

- On receipt of a paper manuscript, he shall acknowledge this and indicate that the review process is starting. An ASME publication form is to be submitted for completion by the author.

- One copy of the manuscript with necessary review forms is to be sent to each of three reviewers. Suitable choice of reviewers for a given paper is a matter for the good judgment of the Associate Editor.

- After an appropriate wait, say a month, reviews who have not responded are to be remained via a letter or telephone call.

- On receipt of three reviews (two if there is good agreement) of a manuscript, the Associate Editor shall survey them, reach a tentative decision and contact the author with indication of the nature of the review comments and suggestions as to what should be done about the paper. If he deems appropriate, the Associate Editor may nominate himself as reviewer for a paper.

- For papers needing considerable review, the Associate Editor or one of the reviewers may become directly involved in the revision. This sometimes happens in the case of papers for abroad. When a paper, having been appreciably revised, is again received, it is referred back to the same reviewers for a final (hopefully) check.

- On the basis of the reviewers comments on the forms submitted, recommend to the Technical Editor of JFE the publication status of the manuscript.

- Inform author of decision on presentation and recommendation on publication (item 8). If it is to be published, submit paper with a filled out form (M&P 1258) and copies of the review forms. This includes giving indication of meeting at which paper it to be presented (see next item). Appropriate copies of this correspondence are to be sent to the Committee Chairman for his information.

- In consultation with the Chairman or session organizers, recommend at which meetings (and sessions possible) a paper is to be presented.

- Send one copy of manuscript to Committee Chairman (or session chairman for use in developing discussion of paper at time of its presentation.

- Send one set of review forms on each paper accepted to Honors Chairman for his use.

- Periodically report to Chairman on status of papers in review or recently reviewed.

At the end of their tour of duty, the Associate Editor(s) shall furnish their successors with a list of active reviewers and their area of specialization. To effect a smooth transition in papers review, they shall also furnish the more recent correspondence, particularly for papers under review, but also for some of the earlier papers.

#### **Subcommittee Chairs**

The Chairman in consultation with the Vice-Chairman will appoint the subcommittee chairs for a term of two years. The responsibilities of a subcommittee chair are: (1) inform the committee about the status of the area they represent, including information on the programs of other divisions and other societies, (2) maintain a list of members in the respective area in order to assist the technical editors and symposium organizers in the review process, (3) maintain and add new topics to the list of future symposia, and (4) assist the new symposium and forum organizers.

#### **Professional Development Representative**

The Professional Development Representative shall be the Committee's representative on the FED Professional Development Committee.

#### **Other Officers**

Two representatives to the Coordinating Groups in Fluid Measurements and Computational Fluid Dynamics shall be appointed by the Chairman for a term of office of two years corresponding with the term in office of the Committee Chairman.

### **5. NOMINATING COMMITTEE**

For Chairman, Vice Chairman, Honors Representative and Associate Technical Editor(s), the Nominating Committee should consist of the outgoing Chairman and two of the last

the three preceding Chairmen. The committee shall nominate one candidate to the offices of Chairman, Vice Chairman and Honors Representative. The nominees need not be previously elected officers. These nominations with the consent of the nominees and the concurrence of the FED Executive Committee, will be presented for election at a regular committee meeting to be held at the Winter Annual Meeting on odd-numbered years. This is approximately six months before the terms of the outgoing officers expires.

**BY-LAWS AND OPERATING PROCEDURES  
FOR THE  
COORDINATING GROUP FOR FLUID MEASUREMENTS**

**November 1993**

**INTRODUCTION**

Modern fluids engineering embraces a complex spectrum of problems from the relatively simple case of isothermal, incompressible, single phase flow to multi-component three phase flow with heat and mass transfer. Experimental data is required in all of these applications to verify new theories, to certify the performance of fluid machinery, or to obtain fundamental information on processes to guide and validate the development of analytical and numerical models.

Two major problems face the experimentalist. First, instrumentation is required which is suited to the measurement to be obtained. Often, this task involves the development of new instruments or the reevaluation of an accepted technique when applied to a new measurement problem. Second, the data must be properly analyzed and interpreted in the context of measurement uncertainty, including bias and precision errors. The validity of the measurement and the confidence interval of the data must be established for proper application of the experimental results.

The Fluids Engineering Division has established a policy of requiring statements of experimental uncertainty to accompany any data reported in the *Journal of Fluids Engineering* and in papers presented at technical meetings. The importance of knowing and reporting experimental uncertainties is readily accepted; the means to determine the uncertainty interval is often a point of dispute. Many engineers are themselves uncertain as to the means by which an uncertainty interval is to be established. These problems in the analysis of experimental data, coupled with the technical uncertainties in the performance of both new and old instrumentation systems, prompted the Fluids Engineering Division to focus on fluid measurements as a major area for program activity.

**OBJECTIVES**

The objectives of the Coordinating Group for Fluid Measurements (CGFM) are to foster technical and professional development activities in the area of fluid measurements in both laboratory and field situations. The focus of these activities is on the continual improvement of the art and science of fluid measurements that are directly relevant to the practicing fluids engineer. Areas of emphasis include, but are not limited to:

1. The interaction between fluid measurements and the development of the art and the science of engineering in a particular area of specialization.
2. The development and evaluation of different instrumentation techniques for

applications to a wide range of fluids engineering problems.

3. The acquisition and processing of experimental data, with emphasis on the increased use of computer-related methods.
4. The treatment of experimental uncertainties in reported data and the proper design of experiments to obtain useful data, and;
5. Updating the membership on the latest developments in fluid measurements through programs at technical meetings and other technology transfer activities.

The primary means for the CGFM to fulfill its role is through planning and participating in symposia and special sessions on fluid measurements. Participation by members of the group in related activities with other organizations is encouraged to promote cross-fertilization of ideas and encourage the technical community at large to improve methods of obtaining and reporting experimental data.

## **PROGRAM ACTIVITIES**

The subject of fluid measurements is generic to all three Technical Committees of the Fluids Engineering Division (FED). Therefore, the membership of CGFM will consist of persons from each of the Technical Committees who have different specializations and interests in the broad area of fluids engineering.

### **Jointly Sponsored Programs**

The CGFM requests each Technical Committee to allot a portion of each symposium program to the subject of fluid measurements, even for topics which may be distinctly analytical or computational in nature. The role of the CGFM in this type of symposium activity will be to foster the development of fluid measurements as a means to advance the state-of-the-art in the subject area. Therefore, it is more realistic for CGFM to support, rather than sponsor symposium programs of this nature. Symposium proposals will be developed by the members of the various Technical Committees, in conjunction with members of CGFM who will be responsible for the fluid measurements aspects of the symposium. It is necessary that the Technical Committees sponsor symposia which are dedicated to specialized areas of interest in order that these programs have a broad focus and a large enough pool of participants and paper contributors to ensure a successful program.

### **Programs Sponsored Solely by CGFM**

The CGFM will solely sponsor programs if they are of a special nature or are of a sufficiently broad scope in the area of fluid (or experimental) measurements to ensure success. Continued activity is contemplated in the area of experimental uncertainty and experiment design, instrumentation techniques, data acquisition and processing, and technology transfer through appropriate publications based on sponsored programs, short courses, and other tutorial

information. In all of these activities, cooperation with other committees within or without the FED is considered essential.

## **ORGANIZATION**

Although the CGFM is accorded a similar status as the three Technical Committees of the Fluids Engineering Division, the organizational structure of CGFM is purposely limited to be less complete compared to the Technical Committees. The main method of fulfilling the role of CGFM is through liaison relationships with the Technical Committees and other organizations. Ideas related to fluid measurements are taken by the group members to the Technical Committees for incorporation into their respective activities. Ideas are brought from the Technical Committees to the CGFM for purposes of organizing programs of sufficient scope and interest to attract persons with different specializations to participate.

Member interest in the work of CGFM may be more of an ad-hoc nature which depends upon a particular program rather than a permanent, continuing interest as is characteristic of the Technical Committees which focus on specialized areas. For these reasons, the CGFM chooses to forego a complex structure in order to be responsive to the wide interests in fluid measurements.

The organization of the CGFM includes the following officers and members; Chair, Vice-Chair, Honors Chair, Associate Editor, Professional Development Representative, Liaison Representatives, and Members. The appointments of the officers are for a period of two years starting on 1 July of the year of appointment and extending to 30 June of the final year. A description of these positions and associated duties is given below.

### **Chair**

The chair shall conduct the meetings of the CGFM, prepare the agenda for such meetings, and report to the Executive Committee on the activities of the CGFM. The chairperson will also transmit information related to professional development activities to appropriate representatives of the Technical Committees or the Division Representative. On other matters of interest to the CGFM, the chairperson may take action him/herself or may assign responsibility to other members of the group. The chairperson shall be elected by the membership for a two year term of office starting in July of the even numbered years. The chairperson can not succeed him/herself for consecutive terms. The chairperson shall be responsible for completing the program paper work for the calendar year in which his/her term expires.

### **Vice-Chair**

The vice-chair shall be responsible for taking minutes at meetings and preparing minutes for distribution to the membership. The vice-chair shall maintain an up-to-date list of members, including complete mailing and telephone information, and the interests of members with respect to paper reviews and symposium/forum organization activities. The vice-chair shall act for the chairperson related to the activities of the CGFM. The terms of the chairperson and vice-

chairperson shall coincide.

### **Associate Editor**

The associate editor will serve on the Editorial Board of the *Journal of Fluids Engineering* and will administer reviews on papers primarily in the area of fluid measurements as assigned by the Technical Editor. The procedure for selection of the Associate Editor is determined by the FED Executive Committee.

### **Honors Representative**

The honors representative shall represent the CGFM on the FED Honors and Awards Committee and shall be responsible for soliciting, reviewing, selecting, and nominating, on an annual basis, outstanding papers in the area of fluid measurements. He/she shall also present the nominated papers to the FED Honors and Awards Committee at the WAM for consideration for the Division's Moody and Knapp awards and represent the CGFM in other honors proceedings such as the FED Award, ASME Fellows, and other activities as the need or opportunity arises. The honors representative will have the responsibility for completing the honors work for the calendar year in which his/her term of office expires.

The honors representative shall be appointed by the chairperson for a two year term of office coinciding with that of the chairperson. In order to ensure continuity for honors activity, it is recommended that the outgoing chairperson be appointed as honors representative for a term of office immediately following his/her term as chairperson.

### **Professional Development Representative**

The professional development representative shall be the representative to the FED's professional development committee and perform the function defined by the ASME for this office.

### **Liaison Representative**

The chairperson of each Technical Committee of the FED shall appoint two persons as liaison representative between the CGFM and their respective committees. One representative shall be research-oriented and the other representative shall be applications-oriented. Liaison representatives are also solicited from (or to) other organizations with interests in fluid measurements. (CGFM will reciprocate with other organizations via similar appointments by the chairperson as required). Therefore, the number of liaison representatives will vary depending upon the number of ties established with other organizations. The function of the liaison representative is to report to the Technical Committees on the programs of the CGFM and promote the goals of CGFM in improving the fluid measurements aspects of FED programs. Their duties are to attend each meeting of the CGFM to report on the programs of their parent Committees. No special voting privileges or other status is accorded liaison representatives aside from the liaison responsibilities cited above. The representatives shall be appointed by the respective Technical Committee chairpersons to two years of office which coincide with the term of the chairperson. Liaison representatives may succeed themselves, but rotation of

appointments is desirable.

## **Membership**

The committee membership is composed of ASME members with special interests in the fluid measurements area and a willingness to work on programs and activities of the Committee. A Membership Committee shall have the responsibility of maintaining a record of the members and reviewing the credentials of those interested in serving on the Committee. Those interested in becoming active in CGFM should submit their names and credentials to the Membership Committee either directly or by way of any member for consideration. The Membership Committee shall review the credentials and recommend those meeting the criteria to the full committee for final approval. There are two levels of membership, the associate and member. The criteria for associate member and member are:

### **Associate Member:**

- shall be willing to review manuscripts for possible presentation and/or publication, and
- may participate in other committee functions and activities as they wish.

### **Member:**

- membership in the ASME;
- ability and willingness to attend a reasonable number of the twice-yearly meeting of CGFM; and
- interest in active participation of committee responsibilities.

## **Nominating Committee**

The chairperson shall appoint a Nominating Committee consisting of the outgoing chairperson, the immediate past chairperson and one senior member of the CGFM, each of whom have no present interest in being nominated for office. This Committee shall be charged with nominating at least one and no more than two persons for the positions of chairperson and vice-chairperson of the CGFM. Nominations shall be made with the consent of the nominees.

The Nominating Committee shall make its report on a timely basis to be included in the mailed agenda for the Winter Annual Meeting in odd numbered years, at which meeting the election shall be held. Nominations will also be accepted from the floor before the election. Persons nominated from the floor must indicate their willingness to serve if elected and meet the same concurrence requirements as persons recommended by the Nominating Committee. Election of officers shall be by a (closed) majority vote of members present; in case a majority vote is not achieved on the first ballot, a deciding ballot shall be taken with the top two nominees as candidates.

## **Procedure for Selection of Associate Editors**

The Technical Editor, after conferring with the Committee Chair and the Executive Committee, will set the number of Associate Editors to be selected from each committee, and the technical areas to be covered by each; these will change with time, depending on the number of papers expected in the current areas of committee technical interest. The normal term of office for an Associate Editor will be three years; two years to send papers out for review, followed by one year of review closure. For any Associate Editor, the Technical Editor may add a single year to this term, or may add an additional three-year term, with the concurrence of the Associate Editor and the Technical Committee. The Technical Editor will submit a list of current Associate Editors, with their terms of office and technical specialties, to each Committee Chair at least once a year, so that the Committee can anticipate future requirements for Associate Editors.

Any member of the Committee, the Technical Editor, or any person desiring to serve as Associate Editor may submit one or more names to the Nominating Committee for consideration. The Nominating Committee will obtain credentials and an expression of interest and commitment from each candidate, and will then formulate an approved list of names for a pool. Criteria for selection will include professional experience (industrial, academic, or government), published papers and patents (with preference for prior publication in the JFE), recognition by peers, active membership in FED, available time and financial support and willingness to serve. The pool of candidates must contain specialists in each area of technical interest to the Committee, as agreed with the Technical Editor. The Nominating Committee shall contact all potential Associate Editors in the pool annually to assess their continued interest in obtaining the position. At each regular meeting of the Committee, the Nominating Committee shall recommend new candidates to be added to the pool for election by the membership. Persons in the pool must be elected every two years if they have not been selected as Associate Editors.

At least six months prior to the expiration of a current Associate Editor's term of office, the Technical Editor will contact the appropriate Committee Chair, to discuss the technical areas to be covered and the approved candidates in the pool. The Technical Editor shall then select the new Associate Editor from the pool. If the pool contains no suitable candidates, the Nominating Committee shall act in a timely manner to secure at least two (2) nominees.

## MEETINGS

The CGFM shall meet during the ASME Winter Annual Meeting and the Fluids Engineering Division Summer Meeting each year. In order to accomplish the liaison mission of the CGFM, the meetings will be held on the evening before the beginning of the main FED program activity so that the liaison representatives will have the opportunity to report to their respective committees. Following this guideline, meetings will typically occur on Sunday evenings at 8:00pm before the start of a meeting beginning on Monday, or Tuesday evenings when the FED portion of the WAM begins on Wednesday. Other meetings may be scheduled as needed.

The Executive Committee may appoint other committees or individuals to assist in carrying out the preceding responsibilities or to otherwise assist, and counsel.

Any committees appointed by the Executive Committee, other than the standing Technical Committees, shall consist of a chair and other members appointed for terms to be set by the Executive Committee at the time of appointment. All committee members and all other appointees shall be eligible for reappointment.

### **DUTIES**

The duties of officers and committee chairs are described in the Professional Divisions Manual, MS-11.

### **AMENDMENTS**

These By-Laws may be amended by a four-fifths (4/5) majority vote of the Executive Committee of the Division. Amendments shall be subject to the approval of the Basic Engineering Technical Group.

# **OPERATING PROCEDURE OF THE COORDINATING GROUP ON COMPUTATIONAL FLUID DYNAMICS**

## **1. INTRODUCTION**

The **Coordinating Group on Computational Fluid Dynamics (CGCFD)** is the committee of the **Fluids Engineering Division (FED)** which addresses the topical area of and activities in numerical and computational fluid mechanics of ASME. The topical area is numerical methods and computational techniques as applied to fluid mechanics and related physical phenomena. Activities may include quantification of numerical uncertainty, advanced numerical methods, new computational paradigms, turbulence simulation, and fundamental and applied applications. Thus, there are subcommittees organized within CGCFD to focus on these activities. These subcommittees may be redefined as the need arises, based on new developments or trends within the field of computational science.

This operating procedure defines the objectives, organization and membership, duties of the elected officers, responsibilities of the appointed officers, nominating committee, and meetings of the CGCFD.

## **2. OBJECTIVES**

The objectives of the **Coordinating Group on Computational Fluid Dynamics** are to constitute the professional committee of the **Fluids Engineering Division** in accordance with the **Division Constitution, Bylaws and Rules**, in the field of computational fluid mechanics. Specifically, the CGCFD is to serve as a focus for ASME in the areas of computational fluid dynamics applications, developments in numerical methods, algorithm development, computational paradigms, assessment of numerical uncertainty, code validation and verification, and formulation of mathematical models for physical processes. The role of the CGCFD is to provide assistance and coordination in the field of computational fluid mechanics to the other technical committees of the **Fluids Engineering Division** and to ASME in the general. Specifically, the objectives are to:

- serve as a forum for presentation and publication of new research, technology, and application in the field of computational fluid dynamics;
- organize workshops, symposia, and short courses on topics indicated by those in the field;
- encourage and promote interchange of information between researchers, developers, and practitioners;
- promulgate the highest possible technical standards in the practice of computational fluid mechanics;

- disseminate accurate information regarding the meaning and value of computational fluid dynamics to the public;
- recognize and reward outstanding contributions to the field of computational fluid mechanics and ASME;
- establish guidelines and procedures for the assessment of the accuracy of numerical predictions;
- identify benchmark solutions and data to fluid flow problems for the purpose of validation, verification, and assessment of computational methods and codes.

These objectives may be accomplished through technical paper sessions, symposia, forums, panel discussions, and special workshops conducted at the Winter Annual Meeting of ASME and Fluids Engineering Division meetings, as well as other means as appropriate to satisfy a given need. Activities with other divisions of ASME or outside of the society are encouraged to foster interdisciplinary interchange of ideas on a wide scale.

### **3. ORGANIZATION AND MEMBERSHIP**

The committee membership is composed of ASME members with special interests in the field of computational fluid mechanics and a willingness to work on programs and activities of the committee. A Membership Committee shall have the responsibility of maintaining a record of the members. Those interested in becoming active in the CGCFD may submit their names to the Membership Committee either directly or by way of any member. In addition to the committee as a whole, CGCFD shall also have a Planning Board composed of the officers listed below. Criteria for CGCFD committee membership are also given below.

#### **A. Planning Board**

The Planning Board shall consist of the Chair, Vice-Chair, Honors Representative, Membership Chair, Subcommittee Chairs, Coordinator of the JFE Associate Editor Nominating Committee, Professional Development Representative, and Liaison Representatives. The duties of the officers are defined in the following sections.

#### **B. Criteria for CGCFD Committee Membership:**

- membership in ASME;
- willingness to review manuscripts for possible presentation and/or publication;
- ability and commitment to attend at least one CGCFD business meeting every two years;
- interest in active participation in committee responsibilities.

#### **4. ELECTED OFFICERS**

The CGCFD has both elected officers and appointed officers. There are three elected officers: chair, vice-chair, and honors representative. A nominating committee shall submit names of candidates for election as needed, following the guidelines outlined in a separate section below.

The duties of the elected officers will now be defined.

##### **Chair**

The chair will be responsible for chairing the committee meetings, organizing the technical programs of the committee, and coordinating the committee activities with the FED Executive Committee and with ASME Headquarters. The term of office shall run for approximately two years from the first of July to the last day in June of even numbered years. However, the outgoing chair shall retain responsibility for the programs and recommendations of papers for all technical meetings to be held in the calendar year during which their term expires.

##### **Vice-Chair and Secretary**

The term of office of the vice-chair and chair shall coincide. The vice-chair shall act as a recording secretary at the committee meetings, prepare minutes for distribution to committee members, and prepare committee newsletter items to go to the FED NEWS.

##### **Honors Representative**

The honors representative serves for a term of two years coinciding with the term of the incoming chair of CGCFD. The honors representative shall represent the committee on the FED Honors Committee. They shall be responsible for soliciting, reviewing, selecting, and nominating, on an annual basis, outstanding papers sponsored by the CGCFD. They shall also present the nominated papers sponsored by the CGCFD at the WAM for consideration for the division's technical paper Moody and Knapp awards. The honors representative shall also represent the committee in other honors proceedings such as the FED award, ASME Fellowship, and other awards as the need arises.

#### **5. APPOINTED OFFICERS**

The appointed officers are those appointed by the chair of the CGCFD. They include, but are not limited to, the following: Professional Development Representative, Liaison Representatives, Membership Chair, Subcommittee Chairs, and others as may be required.

### Professional Development Representative

The professional development representative shall be the committee's representative to the FED's Professional Development Committee and will perform the functions defined by ASME for this office.

### Liaison Representatives

There may be several representatives to sister committees with in the Fluid Engineering Division, to committees in other Divisions of ASME, and to organizations outside of ASME. The duties of these representatives are to provide CGCFD with up-to-date information and insight into the activities with in these committees or organizations, such that the function of the CGCFD may be timely and useful to the members of the technical community as a whole.

### Membership Chair

The officers shall maintain an updated list of committee members, using the criteria described in the membership section above.

### Subcommittee Chairs

The subcommittee chairs are charged with the responsibility of developing recurring or special interest symposia and forums with in the scope of the subcommittee at sponsored FED meetings. The number and scope of responsibilities of the subcommittees will be intentionally left broad so that their topical areas may be defined as needed. These chairs are encouraged to work closely with each other and with the CGCFD chair so that much of the planning may be performed before the actual CGCFD meetings. The final approval of the subcommittee recommendations will be subject to the approval of the entire committee.

## **6. NOMINATING COMMITTEE AND ELECTIONS**

A Nominating Committee for the elected officers shall consist of the outgoing chair and two of the three most recent past chairs. The committee shall nominate at least one candidate for each of the elected offices. The nominees will not be previously elected officers. These nominations, with the consent of the nominees and the concurrence of the FED Executive Committee, will be presented for election at a regular committee meeting to be held at WAM in odd numbered years. This is approximately six months before the terms of the outgoing officers expire.

## **7. MEETINGS**

The CGCFD will meet at the WAM and the Fluids Engineering Division Summer Meeting. The committee meetings will be set up by the committee chair in consultation with the FED Executive Committee and will be open to all interested parties.

The business of the committee will be conducted at the committee meetings. Decisions can be made at the committee meetings, having a quorum, by a simple majority vote. The chair, vice-chair, and honors chair may act on behalf of the entire committee in those special situations that cannot be held until the next regular meeting of the entire committee.

### **Quorum**

One-third of the committee membership or ten members, whichever is the lesser number, shall constitute a quorum.

### **Time and Place of the Meeting**

The time and place of all meetings of the committee shall be the responsibility of the committee chair and notices of all meetings shall be mailed to the members of the committee at least two weeks in advance of the meetings.