



INTERNAL
COMBUSTION ENGINE
DIVISION

Internal Combustion Engine (ICE) Division

Operation Guide

**ASME ICE Division Executive Committee
October 2023**

REVISION HISTORY

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ICE DIVISION OPERATION GUIDE

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1. PREFACE

1.1 AUTHORITY

This Division Operation Guide is supplemental and subordinate to the Constitution, Bylaws, and Policies of the American Society of Mechanical Engineers (ASME), hereafter referred to interchangeably as the Society, as well as the Technical and Engineering Communities (TEC) Sector Operation Guide. In the case of conflict between the ASME Internal Combustion Engine (ICE) Division Operation Guide and Society or TEC Sector policy, those of the Society and TEC Sector shall govern. This document shall be reviewed regularly by Division leadership and ASME staff to ensure alignment with TEC Sector and Society policy.

1.2 PURPOSE OF THE OPERATION GUIDE

This Division Operation Guide is intended to supplement Society By-Laws, Policies and Guides, and provide a uniform framework in defining the structure, responsibilities, and operations of the Technical Division. It is not the intent of this Operation Guide to duplicate all the information already contained in ASME reference documents, but to serve as a guide in conducting ICE Division affairs. Within this Guide is a description of the Division, its organizing structure, member roles and responsibilities, processes and procedures, committee succession plan, finances, rules on voting, and other operating details.

Members of the Division are encouraged to become familiar with this document, and Division leadership should be thoroughly familiar with this and other Society documents which contain pertinent information concerning the requirements and operation of a technical division. Society documents are accessible via the ICE Division page on asme.org, and if needed, the Division Secretary can assist members in accessing these documents.

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2. DIVISION IDENTITY

2.1 DIVISION NAME

This group shall be known as the Internal Combustion Engine (ICE) Division of the American Society of Mechanical Engineers (ASME) (or the ASME Internal Combustion Engine Division, the ASME ICE Division, the Internal Combustion Engine Division, the ICE Division, or ICED).

2.2 DIVISION SCOPE

The ASME Internal Combustion Engine Division deals with internal combustion power producing or energy transforming machines of the reciprocating piston type and their auxiliaries. This includes the design, construction, application, fueling, and operation of engine systems, as well as the emissions controls and carbon management of such systems. Relevant topics of interest can be categorized into the technical tracks described in Section 3.4 of this guide.

Subject matter that overlaps with the scope of other divisions, both within and outside the Society, should be used as an opportunity to undertake joint activities and to broaden the membership of the Division. Efforts must be made to prevent such overlap from becoming a point of conflict.

2.3 DIVISION MISSION STATEMENT

Recognize and promote advancements in the art, science, and practice of engineering in the field of internal combustion engine systems. The Division provides an inclusive forum for the documentation, worldwide dissemination, and recognition of technical achievements and diverse ideas related to internal combustion engine systems, for the benefit of humanity.

2.4 SUMMARY OF DIVISION ACTIVITIES

Division activities are intended to achieve the mission objectives described in section 2.3. The premier Division activity is an annual technical conference that is typically held in the fall. This conference is generally referred to as the ICE Forward, or ICEF, conference. It was previously called the Fall Technical Conference (FTC) and the Internal Combustion Engines Fall Conference (ICEF). Technical papers presented at the conference are published as ASME ICEF conference proceedings, but first must undergo a rigorous peer review process administered by Division volunteers. Papers of the highest quality are provided the option to be published in an ASME journal. The ICE Forward Conference features keynote speakers, invited lectures, and expert panels to present and discuss leading topics of interest and future directions for the field of IC engine systems. The conference typically takes place at a city with proximity to a host organization. The host organization typically provides guided technical tours of their facilities to conference attendees.

Outstanding contributions by individuals toward Division objectives are recognized by the ICE Division with a peer nominated Honors and Awards system. Activities also include technical webinars and other Society approved activities described in this Operation Guide or identified in the future.

3. DIVISION ORGANIZATION, ROLES, AND RESPONSIBILITIES

3.1 DIVISION STRUCTURE OVERVIEW

The ICE Division is a Technical Division of the Technical and Engineering Communities (TEC) Sector of ASME. An organizational chart of the ICE Division is given in Figure 1. In general, the Division consists of a collaborative community of individuals interested in the field of internal combustion engines and who share goals outlined in the Division’s mission objectives. The Division is managed by an Executive Committee (EC) of volunteers responsible for planning, promoting, and overseeing Division activities. To this end, the EC has established administrative and technical committees to help conduct Division activities. The group of Distinguished Associates consists of volunteer Division members who serve on Division committees or otherwise actively contribute toward achieving Division Objectives.

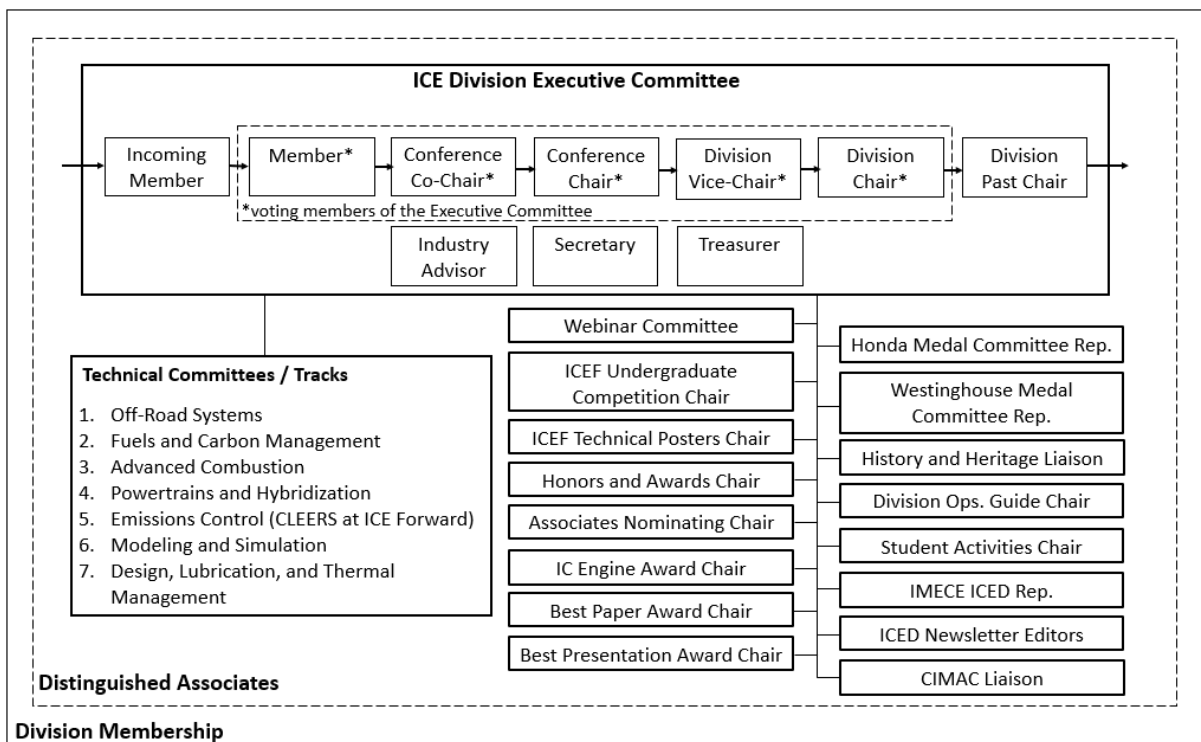


FIGURE 1: ORGANIZATION CHART OF THE ASME INTERNAL COMBUSTION ENGINE DIVISION

3.2 EXECUTIVE COMMITTEE

The ICE Division EC shall consist of five voting members and a non-voting Incoming Member. Also included as non-voting members of the EC are the Division Past Chair, Division Secretary, Treasurer, Industry Advisor, and any other Ad-Hoc Officers deemed appropriate by the EC.

Each year, the EC shall elect an Incoming Member of the EC. These candidates are usually Distinguished Associates who have a track-record of excellent service to the ICE Division and its mission. The EC shall seek to achieve a composition of members that represent a global and diverse balance of backgrounds from industry, academia, and government. Efforts should be placed on reflecting the diversity, equity, and inclusion policies of ASME. The ICE Division EC maintains a running list of potential EC candidates. Each year the EC reviews the list of candidates during the Winter Annual Meeting (WAM), and a

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potential nominee is identified. The Division Chair is tasked with discussing the roles and responsibilities of an incoming member with the nominee. If the nominee agrees to abide by the expectations of serving as a member of the ICE Division EC, and an indication of commitment in the form of an acceptance letter from the nominee is provided as well as a letter from the nominee's management signifying their support of the decision, a vote is solicited to induct the nominee into the ICE Division EC. Typically, the election takes place during an EC meeting prior to February 15 of each year, and the elected Incoming Member shall take office at the Summer Annual Meeting (SAM), thus beginning a seven year rotation through the Executive Committee. The annual progression of roles is as follows: 1. Incoming Member, 2. Member, 3. Conference Co-Chair, 4. Conference Chair, 5. Division Vice Chair, 6. Division Chair, 7. Division Past Chair.

The Incoming Member serves as a nonvoting member of the EC for the first year in office. During this year, the Incoming Member should attend the TEC Newly Elected Leaders Conference (NExT), formerly the Group Leader Development Conference (GLDC), along with the incoming Division Chair, in the spring, prior to assuming voting responsibilities. This is an ASME function typically held in March of each year for the training and leadership development of division Executive Committee members. ASME best practices and new programs/policies are shared and/or rolled out at these conferences. The two EC members who attended TEC NExT should report back to the entire EC.

EC member voting duties shall begin at the close of the SAM one year after their election, and the term of a voting member shall be five years. The voting term of one member of the EC shall expire at the close of each SAM, and, in general, this member will be the Division Chair.

The Conference Chair and Co-Chair are largely responsible for the planning and execution of the ICEF technical conference, with the Conference Chair being the primary organizer and the Conference Co-Chair providing assistance to the Chair and serving as an alternate for conference related tasks.

There shall be at least three (3) meetings and preferably more of the Executive Committee each year. A Winter Annual Meeting (WAM), a Summer Annual Meeting (SAM), and a Fall Meeting to coincide with the ICEF technical conference, are typically held in-person. In addition, more frequent meetings are recommended to be held virtually for the purposes of keeping up with conference planning and other Division activity. Meetings of the Executive Committee may be called by the Division Chair at such places and times as they may deem advisable and shall be called if requested by at least two members of the EC. In addition to EC members, an ASME Staff Liaison shall be present the ASME TEC Operations Manager shall be present at all meetings.

In the absence of the Division Chair, the next most senior EC member shall preside. The most recent past Division Chair traditionally attends EC meetings on an ex-officio basis to provide continuity and counsel. The past Chair is not eligible to vote on EC matters.

In the event a member of the EC should become non-responsive, non-performing, or resign, the Division Chair should first attempt to address the issue with the member, attempting to determine the reason for their lack of participation and whether the issue can be resolved. If the member is unable or unwilling to fulfill their responsibilities or does not respond to multiple contact attempts over a three-month period, the member may be removed by an EC majority vote and a replacement member may be nominated and affirmed via the process described above for incoming members. The EC would then need to decide how best to cover the responsibilities of the removed member while maintaining continuity. In general, this includes the replacement member being inducted into the EC as an incoming member without voting responsibilities and the EC progression of roles for remaining members would be modified accordingly to best accommodate the needs of the Division.

The Division Strategic Planning (DSP) meeting is key to the success of the Division. During the winter annual meeting, the DSP meeting is recommended and should be led by the Past Division Chair and the previous year's Past Division Chair. The EC together with the Past Division Chair and previous Past Division Chair is responsible for DSP. Selection of topics should be prepared before the meeting and

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discussed with action items. In the event the Past Chair is unable to lead the meeting, the Division Chair may lead the DSP meeting.

All actions of the Executive Committee shall be determined by a majority vote of the EC voting members. Three EC voting members shall constitute a quorum.

3.3 DIVISION TREASURER

The Division Treasurer shall perform the duties normal to their office of administering the Division's custodial and operating funds in accordance with Society policy, TEC Operation Guide, and under the direction of the Division Chair and Executive Committee. The Division Treasurer shall be an EC-appointed ex-officio member of the Executive Committee and have served on the EC in the past, but without a vote. There is no term limit for this position. Prior to or upon vacancy of this office, the Division Chair may poll exiting EC members for interest in this position. Once identified, a willing nominee is affirmed by the EC by majority vote.

In addition to maintaining the Division custodial and operating accounts, the Division Treasurer shall brief the EC periodically on the financial health of the Division as well as provide forward projections and counsel. Such counsel should include options for cost cutting and growth opportunities. The Division Treasurer shall also provide the financial health information for associates meetings every year. Society and Sector-level requirements of this office may be found in ASME's Policies, Constitution and By-Laws, as well as the TEC Sector Operation Guide.

3.4 DIVISION SECRETARY

The Division Secretary shall, under direction of the Division Chair and Executive Committee, record the proceedings of the Executive Committee meetings, associates meeting, etc. for distribution to the Executive Committee and the Associates. The Division Secretary shall be an EC-appointed ex-officio member of the Executive Committee and have served on the EC in the past, but without a vote. There is no term limit for this position. Prior to or upon vacancy of this office, the Division Chair may poll exiting EC members for interest in this position. Once identified, a willing nominee is affirmed by EC majority vote.

3.5 INDUSTRY ADVISOR

The responsibility of the Industry Advisor is to facilitate communication and collaboration, and to ensure the EC is aware of and responsive to the needs and concerns of Division members. The position shall be filled by a current Associate employed within industry. The role is also to support 'special initiatives' as deemed appropriate by the EC, including but not limited to the following: leading the Diversity, Equity and Inclusion (DEI) efforts, contributing to social media efforts, webinar series, and the like. Here, the responsibility is more of support, but the specific task is fluid based on immediate needs of the EC. The term is three years with a maximum one term renewal. Prior to or upon vacancy of this office, the EC may poll qualified Associates for interest in this position. Once identified, a willing nominee must be affirmed by EC majority vote.

3.6 DISTINGUISHED ASSOCIATES

Division members can be elevated to become a Distinguished Associate of the ICE Division. A Distinguished Associate is an ASME member who takes an active role in accomplishing Division Objectives and participates in Division activity, including technical programs. Distinguished Associates

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have the responsibility to enhance the Division's operations in the execution of its mission to disseminate and expand state-of-the-art engine technology to ASME members, to those in the Engineering profession, and to industry. Gaining and retaining "Distinguished Associate" member status requires contribution toward Division objectives, as determined by the EC, by taking an active role in Division activity and having an active ASME membership. Any Division Member can be nominated by another member, or themselves, to serve as a Distinguished Associate. Nominations shall be submitted in writing to the Nominating Chair at any time and should include a statement citing specific verifiable evidence the nominee satisfies the above criteria. The Nominating Chair shall report nominees to the EC, and the EC must review credentials and approve by vote each Distinguished Associate. ASME membership may be verified by the ASME staff liaison upon EC request. In the event an Associate no longer fulfills the above requirements needed to retain status of Distinguished Associate, the EC may elect to remove the Associate with majority vote after reviewing their recent contribution to achieving Division objectives. Gaining this status is accompanied with a personal notification from the Division Chair as well as being recognized as a Distinguished Associate within Division documentation (newsletters etc.) and events (conference awards and honors ceremonies).

3.7 ADMINISTRATIVE COMMITTEES AND REPRESENTATIVES

The EC shall appoint volunteers to standing committees necessary for the conduct of the Division's activities. Typically, members of the Executive Committee and/or Distinguished Associates shall be appointed. Appointment length can vary, but appointments are generally for a minimum period of one (1) year or until a successor has been appointed. The EC has established the following administrative committees and representatives to help achieve Division objectives:

3.7.1. HONORS AND AWARDS CHAIR

This committee is responsible for giving out awards at all levels, including Society-level and Division-level. They will ensure sufficient qualified nominations are submitted, the nominations are judged fairly, and the most qualified nominees are awarded. The ICE Division Awards Chair is expected to be a champion for Division and Society Level awards. The goal of this position is to increase participation in the awards process within the Division and ensure that deserving members are appropriately awarded. The Awards Chair Role is a three-year term with one renewable term (eligible for a six-year term). The selection of the Awards Chair is to be determined by the ICE Division Executive Committee. They must be an ASME Member and ICE Division Associate. Responsibilities of the Awards Chair are as follows:

- Maintain a list of awards with nominations deadlines, details of the awards, when/where they are presented, and requirements of awards (recommendation letters/deadlines/ASME membership requirements etc.). The list shall be separate Division Level and ASME Society Level awards. The following is a guideline of potential awards to be tracked (awards shall be added/removed as appropriate):
 - Society Level Awards
 - Internal Combustion Engine Award
 - Soichiro Honda Medal Award
 - George Westinghouse Medal
 - Dedicated Service Award
 - ASME Fellow

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- Division Level Awards
 - Engine Impact Award
 - Meritorious Service Award
- Conference Level Awards
 - Best Paper Presentation Award
 - Best Paper Award
- Awareness: General awareness of upcoming awards nomination deadlines is a key aspect of the role of the Awards Chair. Reminders of deadlines and nomination deadlines shall be sent to Division Members approximately two months before the deadlines. The method for distribution of the reminders will be coordinated with the Executive Committee/ASME Staff to meet guidelines on email etc.
- Nominations: The Awards Chair is expected to be an award champion and encourage/solicit nominations from Division members for the awards. The Awards Chair can nominate individuals for awards but is not required to do so.
- Fellow Nominations: The Awards Chair is also responsible for encouraging/championing ASME Fellow Nominations of Division Members. They are not required to nominate members as Fellow (although they are free to do so).
- The Awards Chair shall inform the conference chair on the ICE Award/Best Paper Award/Best Presentation Awards to be sure that they are presented at the Awards Banquet.
- Report Outs: A report out on status is to be done at each Executive Committee Meeting (Winter Annual Meeting/Summer Annual Meeting/Fall Meeting).

3.7.2. BEST PAPER AWARD CHAIR

This chair is responsible for selecting the best paper from the conference (s) organized by the ICE division. The chair is selected by the EC with a three-year term. The committee chair can select one or two other associates to assist. The best paper for the conference is selected from the best papers from each track. The track chairs each nominate a best paper from their track for this award. The committee chair is expected to reach out to the track chairs for this information one week after the ICEF Conference. The committee then conducts an independent review of the best papers from the track to decide on the best paper from the conference. The committee chair communicates this information to the conference and division chairs. Since ICEF 2019, we have been recognizing the best paper from each track with a certificate, in addition to recognizing best paper for the conference with a plaque.

3.7.3. BEST PAPER PRESENTATION AWARD CHAIR

The EC will elect a Best Paper Presentation Award Chair. The role of this person is to manage the audience evaluation ratings of technical paper presentations delivered at the conference(s) organized by the ICE Division, and ultimately nominating a winner of the Best Presentation Award, and Best Student Presentation Award, based on the audience evaluation. The chair communicates the statistical summary of ratings and resulting nomination to the EC at or before the next quarterly EC meeting to follow a conference. For the ICE Forward Conference, this is typically the WAM. The chair is selected by the EC with a three-year term.

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Managing the audience evaluation typically involves preparing evaluation rating forms for each technical session, ensuring the forms are distributed to the audience, filled out by audience, collected at the conclusion of the session, tallied, and analyzed to determine the best nominee.

3.7.4. IC ENGINE AWARD COMMITTEE

The ICE Award Committee includes six members recommended to the Honors and Awards Chair by the ICE Division and confirmed by the EC. Committee members serve a three-year term, commencing and ending at the close of the Winter Annual Meeting. Members may not serve more than two consecutive three-year terms. Terms will be staggered for continuity, so that no more than two members' terms will expire at the same time. The ICE Award Committee Chair coordinates the process and communicates with ASME's honors and awards department once the selection has been finalized. Nomination deadline is Feb 1st.

<https://www.asme.org/about-asme/honors-awards/achievement-awards/internal-combustion-engine-award>

3.7.5. ICED REPRESENTATIVES FOR SOCIETY LEVEL AWARDS AND JOURNALS

The ICE division also provides representatives to the Soichiro Honda Award Committee and the George Westinghouse Award Committee. These committees are responsible for reviewing nominations and selecting recipients of these Society level awards. An ICE Division representative for each committee is nominated by the Honors and Awards Chair, and approved by the EC. This is a three-year term with the option of one renewal.

The Division also provides names for associate editors for Journal of Engineering for Gas Turbine and Power Journal of Energy Resource Technology, and ASME Open Journal of Engineering.

The division secretary maintains a list of ICE division representatives in these committees and their terms.

3.7.6. SECTOR ASSEMBLY OF DIVISIONS COMMITTEE REPRESENTATIVE

The Division Chair attends the TEC Sector Assembly of Divisions as a representative of the ICE Division. The alternate shall be the next most senior Executive Committee member.

3.7.7. DIVISION OPERATION GUIDE CHAIR

It is recommended that the EC reviews the operations guide annually. The EC-appointed Division Operation Guide Chair is responsible for maintaining the Guide as directed by the EC. This Chair may advise the EC on conflicts or shortcomings found within the Guide and brief the EC on potential modifications to refine the Guide. This is a one-year term. It is recommended this Chair be a member of the EC, and preferably in the second or third year serving in the EC, with the intention of each EC member serving as the Division Operation Guide Chair early in their rotation through the EC. Any modification to the Division Operation Guide must be approved by the EC.

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3.7.8. DIVISION NEWSLETTER EDITORS

The Division newsletter editors are appointed by the EC and are responsible for organizing the Division newsletter, with the goal of publishing a newsletter twice per year. There is no term limit for this position. Successors shall be selected as needed by the EC. The editors shall communicate with the EC as needed to gather pertinent information to include in the newsletter. Draft newsletters shall be reviewed by the EC prior to publication.

3.7.9. ICE DIVISION UNDERGRADUATE STUDENT RESEARCH COMPETITION CHAIR

The Division sponsors an undergraduate paper presentation competition in which two competitors are selected to present at the ICEF conference. Each of the two winners receives transportation expenses paid up to \$1500 and complimentary full conference registration. Participants can also submit their work as a poster if they do not win the contest. The Undergraduate Competition Chair is responsible for soliciting participants, promoting the event, and judging the entries. There is no term limit for this position, and successors shall be selected as needed by the EC.

3.7.10. ICEF TECHNICAL POSTERS CHAIR

Included at each ICEF conference is a poster session open to all. The posters are judged by the EC and an award is presented to the best poster based on technical merit. The Technical Poster Chair is responsible for soliciting participants, promoting the event, organizing the poster session at the ICEF conference, and determining the winner based on judgement input from the EC. There is no term limit for this position, and successors shall be selected as needed by the EC.

3.7.11. CIMAC LIAISON

ASME ICE Division is a member of the CIMAC US National Member Association (NMA). The EC-appointed CIMAC Liaison represents the Division within the NMA and reports a summary of CIMAC activity and opportunities for collaboration to the EC. Additional roles and responsibilities for this office are currently being developed at the time of this Operations Guide release and will be made available in upcoming revisions. This is a 3-year term, with a single 3-year renewal.

As a member of the US NMA, ICED Associates are entitled to CIMAC documents and working groups. These can be accessed via the CIMAC website. To gain access, follow the "Contact" link in the CIMAC website and request a password as an ASME ICED Associate.

3.7.12 WEBINAR COMMITTEE FOR ICE DIVISION WEBINAR SERIES: THE FUTURE OF THE INTERNAL COMBUSTION ENGINE

To help achieve Division objectives, a series of technical webinars is organized by the Webinar Committee. The EC-appointed Webinar Committee Chair may recruit other Associates to assist. This committee is responsible for soliciting speakers, working with ASME to organize the webinar events, and helping promote the events. There is no term limit for this position, and successors shall be selected by the EC as needed.

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3.7.13. HISTORY AND HERITAGE LIAISON

For over 100 years, the ICE Division has been advancing the state of the art of internal combustion engines by bringing together experts from academia, national labs, and industry. To help preserve this rich heritage, the EC may appoint an interested Associate to serve as the History and Heritage Liaison for the Division. This individual shall promote the awareness of ICE Division history to Division members. This may be done by providing periodic presentations at Division events, writing relevant articles for the newsletter, or by other means. This position has no term limit. The EC may select a successor if needed.

3.7.14. IMECE REPRESENTATIVE

This ICE Division representative is selected by the EC and serves a three-year term with one renewal option. This representative coordinates collaboration between the ICE Division and IMECE conference events.

3.8 TECHNICAL COMMITTEES

The EC has established technical committees to help carry out Division objectives. A technical committee shall be led by a Chair that is an active Division member and approved by the EC. The Chair's technical background should be aligned with the committee they are representing. The Technical Committee Chair shall recruit a Co-Chair to assist with committee duties. The chair may also recruit other Division members to assist in achieving technical committee objectives. Each committee shall strive for well-balanced representation from several fields of interest such as equipment users, manufacturers, academia, consultants, and government. Efforts should be placed on reflecting the diversity, equity, and inclusion policies of ASME. The Division encourages student participation in Technical Committee activities.

Annual ICE Division technical program paper and presentation submissions are categorized into different Technical Tracks, each of which is organized by its respective Technical Committee. Roles of the Technical Committees are reviewed annually. Objectives of the technical committees are:

- To promote the art and science of internal combustion engines within the scope of the technical committee
- To encourage and foster research and development and publish reliable data of engineering importance pertaining to subjects within the committee's scope.
- To direct attention to outstanding engineering achievements within the scope of the committee, with recommendations and suggestions as to the suitable recognition for such achievements.

To achieve assigned objectives, the technical committees will undertake appropriate activities including:

- Encourage the preparation, review, and presentation of papers and books on significant technical developments.
- Work with the Executive Committee as needed to develop and organize technical programs, meetings, and conferences in which papers are presented and discussed in which all attendees may meet on an equal basis to exchange experience and technical data. To this end, annual ICE Division technical program paper and presentation submissions are categorized into different Technical Tracks, each of which is organized by its respective Technical Committee.
- Cooperate with other technical divisions, groups, and committees within this and other societies with respect to the need for and preparation of codes, standards, and research, and

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in the preparation of papers, meetings, and special services, and to the avoidance of conflicts and duplication of efforts.

- Recommend and submit books, papers, reports, and data of permanent value or exceptional quality for publication by the Society or other means.
- Provide nominations for honors and awards as applicable within the committee scope of activity and technical subject.
- Promote the Division's Strategic Plan.

The Chair of the Technical Committee has the overall responsibility for the activities of the technical committee. Co-Chairs of Technical Committees act for the Chair at their direction or in their absence, and assist the Chair as directed. Tasks include but not limited to:

- Establish meeting agenda, call to order, and preside at all meetings of the committee.
- Make appointments to membership in the committee.
- Make assignments among committee members to carry out committee activities, especially those associated with technical sessions, panels, and conferences.
- Solicit papers and track their progress through the peer-review process.
- Identify track co-chair and session organizers to be involved in their respective track.
- Distribute technical draft papers into various sessions.
- Delegate authority to session organizer to find at least 3 independent reviews for each paper submitted in the track.
- Co-ordinate paper review process with Track co-chair and session organizer so that deadlines are achieved.
- Ensure all applicable forms are completed and submitted.
- Assist the conference chair with preparing technical program. In particular, provide names of session chairs at the conference in the event a session organizer is unable to attend the conference.
- Attend the conference and assume responsibility of coordinating the Track at the conference with session chairs.
- Conduct Technical Committee Meeting for their respective technical Track.
- Provide minutes of Technical Committee meeting to conference chair who will share with ICE Division EC. Such meeting minutes are to be archived alongside EC meeting minutes and should be accessible via the Division Secretary or ASME staff.

The following subsections list and describe the scope of each Technical Track/Committee of the ICE Division.

3.8.1. OFF-ROAD SYSTEMS

This track includes technical papers and presentations focused on off-road engines and engine systems. Contributions addressing industry relevant topics in rail, marine, small off-road vehicles, agriculture, compressor stations, power generation, and mining, among others are welcomed. Topics of interest include, but are not limited to:

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- Implementation of advanced ignition systems, novel combustion systems and diagnostics, emissions control, and other relevant technologies as applied to off-road engines.
- Prototype testing results and real-world demonstrations of off-road engine systems.

3.8.2. FUELS AND CARBON MANAGEMENT

This track includes technical papers and presentations with emphasis on fuel utilization and fuel impacts on engines as well as carbon management of engine systems. Topics of interest include, but are not limited to:

- Sustainable fuel utilization in engines, including e-fuels, synthetic fuels, biofuels, and conventional and non-conventional petroleum fuels used in novel configurations.
- Carbon management of engine systems including carbon capture and storage, low carbon fuels, and onboard conversion of exhaust carbon dioxide to other products with lower impact on global climate.
- Life cycle analyses of fuels and engine systems, including well-to-wheels, tank-to-wheels, and cradle-to-grave analyses.

3.8.3. ADVANCED COMBUSTION

This track includes technical papers and presentations focused on advanced combustion concepts and strategies for engines at all scales and for all applications. Papers addressing fundamental concepts and experiments in (but not limited to) the following areas are welcome:

- Fundamental aspects of IC engines, including engine thermodynamics, extreme compression, experimental engine fluid dynamics, etc.
- Novel/advanced combustion concepts including HCCI, LTC, RCCI/dual fuel, GCI, etc.
- Combustion, fluid flow, and spray diagnostics, including in-cylinder laser-based and optical diagnostics, pressure-based methods, etc.
- Experimental investigations of reacting and non-reacting fuel sprays, fundamental liquid breakup and atomization, spray diagnostics development, droplet phenomena and combustion, and novel fuel injection strategies.

3.8.4. POWERTRAINS AND HYBRIDIZATION

This track includes technical papers and presentations in the areas of internal combustion engines used in advanced powertrain configurations and electrification/hybridization strategies. Topics of interest include, but are not limited to:

- Modeling and diagnostics for control systems including combustion modeling, sub-system modeling, hardware in the loop (HiL) models, sensor signal processing, and onboard modeling for diagnostics.
- Innovative testing equipment and methods including HiL applications, rapid control prototyping, and design of novel test rigs.
- Novel control strategies and calibration methods including advanced control and transient calibration methodologies.

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- New engine sensing methodologies for diagnostics and research applications including new sensors, new applications of existing sensors, and sensors for production engines.
- Engine sub-systems including new actuators and/or sensors used as part of auxiliary systems.
- Powertrain electrification including engines operating within hybrid powertrains, engine design, development, and control for hybrid applications.

3.8.5. EMISSIONS CONTROLS (*CLEERS at ICE Forward)

This track includes technical papers and presentations focused on emissions control technologies. Topics of interest include, but are not limited to:

- Development, evaluation, and simulation of new emissions control catalyst materials and system architectures
- Thermal management technologies and strategies
- Emissions control system durability
- Effects of alternative fuels on engine emissions and emissions control system performance
- Reductant (urea or fuel) delivery: spray modeling, decomposition processes, deposit formation
- Drive cycle/real-world emissions

*CLEERS: Cross-Cut Lean Exhaust Emissions Reductions Simulations

3.8.6. MODELING AND SIMULATION

This track invites technical papers and presentations focused on advancing numerical modeling and simulation of internal combustion engines across various dimensions. Topics of interest include (but not limited to) new developments and novel concepts related to:

- Two-phase and reacting flow modeling
- Turbulence modeling
- Spray modeling
- Chemical kinetics
- Machine learning
- System-level modeling related to engines

3.8.7. DESIGN, LUBRICATION, AND THERMAL MANAGEMENT

This track includes technical papers and presentations focused on engine design, mechanical development and thermal management of engines and subsystems. Topics of interest include but are not limited to:

- Base engine mechanical systems including valvetrain, power cylinder, fuel system and turbomachinery.
- Thermal management of engine cooling and lubrication systems.

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3.9 SPECIAL COMMITTEES

Committees other than those previously mentioned may be appointed by the Executive Committee as needed to achieve Division Objectives. The scope of activity and method of proposed operation of such special committees shall be outlined by the EC at the time the committee is appointed.

3.10 DIVISION OVERSIGHT

The ASME Board of Governors assigns the overall oversight of the Division to the TEC Council. Such oversight includes the approval of the formation and revision of the Division's scope, ensuring the Division operates within Society and TEC Sector policy as well as this Operation Guide, providing a forum for appeals of disapproved Division activity proposals, and consolidation or dissolution of divisions if deemed necessary by the TEC Council. The ICE Division Executive Committee is responsible for reporting Division health metrics to the TEC Council periodically as required by Society and Sector policy. Information regarding the health metrics and reporting interval requirements can be found in the TEC Sector Operation Guide, found on the ASME website.

3.11 DIVISION LOGOS

The Division icon is as follows:



The division logo is as follows:



The division wordmark is as follows:

