ASME Japan Yearbook 2014

CONTENTS

1 Introduction
   • First word
   • From the ASME President
   • From the ASME Japan Section Chair
   • About ASME Japan Section

2 ASME Japan Board Members
   • Board Members for 2012-2014 & 2014-2016

3 Events conducted by ASME Japan 2013-July~2014-June
   • The 5th Presentation Contest by Students and Young Engineers in English Language 2013
   • Announcement of the 6th Presentation Contest 2014
   • The 4th Short Course on English Presentation: “Effective Technical Presentation” 2013
   • Announcement of the 5th Short Course on English Presentation 2014
   • The 2nd “MONOZUKURI” Workshop
   • Design Engineering Workshop 2013(DEWS) collaboration with JSME/KSME
   • Annual Meeting 2014, on June 20-2014

4 ASME Japan Newsletter
   • Newsletter September 2013
   • Newsletter July 2012

5 Regarding ASME Codes and Standards
   • About ASME
   • An introduction to Codes and Standards
   • What are performance test codes

6 Learning from wisdom of senior Mechanical Engineers - an interview

7 ASME Member Benefits
   • ASME Student and Professional Member Benefits-at-a-Glance
   • Membership Levels

8 How to become a member of ASME Japan Section?

9 The ASME Japan Section Website
   • community.asme.org/japan_section
   • www.asmejp.org

Material on the Introduction page is selected from “ELEVATORS, ESCALATORS AND MOVING WALKWAYS”, by Jim Coaker, Coaker & Company, PC
1 Introduction

How many times in the past week have you ridden in an elevator, on an escalator, or on a moving walk? These actions are so routine in everyday life that they happen automatically and are too numerous to recall. Behind each mechanism is a web of machinery, power sources, control systems, and redundant safeguards in both design and operation that delivers safe vertical [and horizontal] transportation without incident.

ASME elevator and escalator standards (A17 series), consisting of safety codes for elevators and escalators (including a code that covers existing installation requirements), Inspectors’ Manuals, and Guidelines covering evacuation and electrical equipment requirements, is one of the largest areas covered by the Society’s codes and standards program. Elevator ridership in the United States is conservatively estimated at more than 200 billion passenger rides per year[1], a figure that makes it easy to appreciate the critical role that codes and standards play in public safety.

Even if the end result is invisible — a normal convenience in everyday life functioning without incident — underlying complexities of system application present stimulation and challenge to the engineering mind. Some professionals spend their careers in this industry.

[1] What is this figure in the case of Japan? Can we expect almost the same or even more than 200 billion passenger rides per year?
By establishing a new tradition, ASME Japan Section is publishing its first yearbook, “Yearbook 2014”. The intent is to have an annual review to reflect upon achievements and future goals of section, and to list all the events that ASME Japan Section had during the past year, while attempting to distribute fundamental information about ASME and Japan section of the society. Publishing articles by this yearbook attempts to explore different facets of ASME standards and certifications and are the main objective of the section’s yearbook publication.

Another important goal that yearbook tries to accomplish, is to provide information and encourage industry engineers and academia in Japan, while also recruiting new membership for ASME and encouraging attendance for Japan Section’s gatherings and activities.

Yearbook 2014 committee attempts to make one more step toward making harmony with ASME’s goals by publishing the first issue of the ASME Japan Section Yearbook, staying on track for:

“ASME helps the global engineering community to develop solutions to real world challenges facing all people and our planet”

and:

“To serve our diverse global communities by advancing, disseminating, and applying engineering knowledge for improving the quality of life and communicating the excitement of engineering”

as those are mentioned as parts of ASME’s Vision and Mission.

The Yearbook committee is hoping by publishing Yearbooks, they can assist in promoting the society to a wider target audience by providing additional information for members benefit, supplying information on how to become a member of ASME and joining Japan Section of the society by highlighting the benefits of membership.

The committee made a mission of planning to continue this yearbook, for the benefits of members, and we would appreciate if you tell us what you would like to see in the pages of the next issue (email to: japan@asmejp.org or aivazi@asme.org). Please feel free to send us your thoughts and suggestions.

This Yearbook is dedicated to ASME Japan members and those who are re-inventing themselves. I would like to think of it as a scrapbook of a group of people bound by their common profession.

I would like to express my special thanks to all who contributed to this issue of the Yearbook, and wish to thank in particular to Mr Christopher Tooze, for his valuable advice and proof-reading of the final draft of the current yearbook, Dr Koichi Ohtomi, Japan Section Chair, and Dr Kenji Oyamada, Japan Section Vice-Chair, for their contributions and support for the completion of Yearbook2014.

Rasoul Aivazi, Dr. of Eng.
ASME Japan Yearbook Chairman
November 2014
From the ASME President

After a decade or more of calls for new directions in engineering education, change is happening on several fronts. Overall, ASME sees progress in the numbers of students entering engineering programs.

According to the American Society for Engineering Education’s (ASEE) By the Numbers for 2012-2013, enrollment continues at record highs for ME undergraduate students, marking 10 years of continuous enrollment growth. Not only can we say that mechanical engineering is the largest undergraduate engineering discipline in North America, but also that it includes, for the past few years, the largest number of undergraduate women studying engineering. The challenge is in making this growth count after graduation.

Generally, ASME’s core interest and influence in engineering education infrastructure is through its major role in ABET accreditation. ABET accredits over 3,300 programs at more than 680 colleges and universities in 24 countries, essentially affecting the core experience of countless undergraduates.

ASME invests in this foundation for quality assurance so that graduates are as practice-ready as possible. ABET criteria essentially define what makes a mechanical engineer (or related professional) and, with ASME, ABET makes a continuous assessment of accredited ME and MET degree programs on a 6-year cycle. Furthermore, ABET provides external examination to also ensure adequate physical and human resourcing of ME programs at colleges and universities. Leadership by ABET and, through it, by ASME has led to global recognition of professional quality standards for the preparation of students in the disciplines of applied science, computing, engineering, and engineering technology.

For the Fall 2014 accreditation cycle, nearly 25 percent of the undergraduate ME degree programs being evaluated by ASME/ABET program evaluators are outside the United States, including Bahrain, Chile, Egypt, India, Jordan, Lebanon, Mexico, Qatar, Saudi Arabia and the United Arab Emirates. In real numbers, this is 21 out of 85 ME degree program accreditation visits for Fall 2014 — more than double the number of international accreditation visits the year before.

These measures of success point to the potential for real change, where a consensus can begin to form to ensure the quality of engineering education for a 21st century profession. What this change looks like comes to ASME from its Vision 2030 recommendations, namely: richer practice-based engineering experiences for students, a new balance of faculty research and practice skills within a program, increased curricular flexibility, and greater innovation and creativity.
For the past 6 years, concerns by the NCEES (National Council of Examiners for Engineering and Surveying) had led to a modification of its “model law” to require a Master’s degree or equivalent (MOE) in formal engineering education, an addition beyond an ABET-accredited Bachelor of Science degree, plus FE and PE examinations and four years of supervised industry practice, to begin the licensed practice of engineering. In August, however, NCEES decided to remove the MOE requirement from the model law and to maintain the Bachelor’s degree as the first professional degree in engineering. While ASME agrees with NCEES in its commitment to improving education standards to better prepare engineers to enter the profession, we stood with other peer organizations on keeping these changes relevant to the assurance of public safety in the context of ABET accreditation and the significant infrastructure of industry codes and standards.

Above all, engineers are lifelong learners, well beyond the first years of study. Individually, engineers must be on a sharp and constant learning curve to stay relevant in a competitive knowledge-based society, a fact backed by the ASME Summit on the Future of Mechanical Engineering (2008). A quick look at drivers for change also supports the kind of educational opportunities ASME accommodates. For example, an OECD (Organization for Economic Cooperation and Development) policy brief identifies lifelong-learning needs through a survey of national responses from 15 countries: to adapt to fast-changing knowledge economies, to understand that no one-size-fits-all, to provide equity of access to learning, to increase flexibility and responsiveness, to present qualifications transparently by reducing complexity, and to link education to work.

These values paint a picture of challenges we are addressing when discussing the future of mechanical engineering education. Restructuring educational systems will require collaborative initiatives that come from the kind of community building that ASME supports, whether through conferences, committee work or virtual conversations. My thanks extend to all the volunteers who have worked so diligently to achieve such good progress so far.

The quality and evolution of engineering education has immense power to transform our profession and how we shape the future. The time and effort we invest will make a difference in enhancing our ability to solve major challenges to improve the quality of life around the world.

J. Robert Sims
ASME President
September 2014
From ASME Japan Section Chair

I would like to extend my congratulation to the Japan Section Yearbook2014 Committee, for publishing the first Yearbook for the ASME Japan section.

As the role of Japan Section, Japan is one of the main manufacturing regions in the world, and a center for innovation and creativities. Japanese products have become well known in every part of the world, from North America to Europe, to Africa and beyond, and ASME has an important role to play in maintaining international standards and contributing to continued presence of Japanese products in the international sphere. ASME as a well established organization has been conducting to create Codes and Standards for more than 130 years, since its establishment.

ASME Japan section members are continuing to contribute for discussing new developments in regulation and creation of new standards or introducing revisions.

Japan Section has started conducting individual programs for Promoting and strengthening communication skills of young engineers in Japan to be prepared for an international environment, hoping to provide more effective tools for younger researches, engineers, and businesses, in global communications for better conducting their international researches, engineering projects, and various collaboration on and joint ventures.

From year 2013, we have started to have JSME joint meetings and the benefits of these to expand members’ human network to create exchange of knowledge and information, learn new things from another professional society.

My vision for ASME Japan Section is good governing the society, accessibilities to the members, and continue to be open to new ideas.

To develop financial resources to increase activities of the section is of the new challenges that ASME Japan would be facing in coming years.

Koichi Ohtomi, Dr. of Eng,
ASME Japan Section, Chair
ASME Japan Yearbook Chief Editor
About ASME Japan Section

ASME Japan Section is the Japanese branch of ASME International, and was established in 1986. It was established to promote technical and professional development of ASME members residing in or visiting the Japan section area, through meetings and other forms of communication, by encouraging members to prepare or discuss papers, through practicing local engineering issues, and through close coordination with the ASME International.

ASME Japan Section is operated by Section’s Board Members, which consists of Section Chair and Vice Chairs. The Board Member committee’s aim is to elevate personal acquaintance and a spirit of cooperation among mechanical engineers, provide opportunities for cooperation with other local engineering societies in matters of common interest, and assist in furthering the purposes of ASME Japan Section.

Today, ASME Japan Section has some 753 members, which consists of 26 fellow members, 55 affiliate members, 39 life members, and one honorary member. Some of these members of ASME Japan Section are involved in the committees for establishment and revisions of Codes and Standards and of ASME organization, such as PVP standard committee.

Annually, ASME Japan section conducts a Presentation Contest for Students and Young Engineers in English Language, a short course of Effective Technical Presentation, Monozukuri Workshop, JSME/KSME/ASME-Japan joint Design Workshop, having a presentation session in JSME annual conference, printing periodical Newsletter for section, and by the current issue of Yearbook 2014, starting the first number of annual Yearbook of ASME Japan Section.

ASME Japan making its efforts to continue education and updating of Mechanical Engineering society and ASME Japan section members. ASME Japan section is welcoming engineers, researchers, students, university educators and professors, to join and become new members of ASME organization and a contributing part of ASME Japan Section. Meanwhile, the current members of ASME Japan Section are encouraged to continue membershipment, and now that ASME Japan is open to new ideas, and looking forwards to hearing from you, please inform us what services, short courses, carrier supports, continuing educational materials you are expecting from your beloved society and section, ASME Japan Section.

Please feel free to send us your thoughts and suggestions, email to: japan@asmejp.org

For more information regarding ASME Japan section, please visit official websites of the section at: https://community.asme.org/japan_section/default.aspx and at: www.asmejp.org

For more information on ASME membership and Japan Section membership please refer to sections 7 and 8 of the current Yearbook2014.
2 ASME Japan Section Board Members

Board members of section consist of the chair and vice-chairs. The board members are assigned for every 2 years, starting from July 1st. Followings are ASME Japan Section Board Members for 2012 to 2014, and for 2014 to 2016.

Board Members for July 2012 - June 2014

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koichi OHTOMI</td>
<td>Chair</td>
</tr>
<tr>
<td>Kenji OYAMADA</td>
<td>Secretary, Formulation of Section Rule</td>
</tr>
<tr>
<td>Masaru ISHIZUKA</td>
<td>Immediate Past Chair , Academia Liaison</td>
</tr>
<tr>
<td>Makoto SATO</td>
<td>Past Chair, Treasurer and External Affairs</td>
</tr>
<tr>
<td>Masahiro TAKEI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Rasoul AIVAZI</td>
<td>Vice Chair, Webmaster and Presentation Seminar</td>
</tr>
<tr>
<td>Hirotake NAKAI</td>
<td>Vice Chair, Assistant Treasurer</td>
</tr>
<tr>
<td>Kazuki INABA</td>
<td>Vice Chair, News Letter Editor</td>
</tr>
<tr>
<td>Yasumasa SUZUKI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Hiromichi OBARA</td>
<td>Vice Chair, Student Contest</td>
</tr>
<tr>
<td>Keisuke HORIUCHI</td>
<td>Auditor</td>
</tr>
</tbody>
</table>
# Board Members for July 2014 - June 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koichi OHTOMI</td>
<td>Chair</td>
</tr>
<tr>
<td>Kenji OYAMADA</td>
<td>Secretary, Formulation of Section Rule</td>
</tr>
<tr>
<td>Masaru ISHIZUKA</td>
<td>Immediate Past Chair, Academia Liaison</td>
</tr>
<tr>
<td>Makoto SATO</td>
<td>Past Chair, Treasurer and External Affairs</td>
</tr>
<tr>
<td>Masahiro TAKEI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Rasoul AIVAZI</td>
<td>Vice Chair, Webmaster and Presentation Seminar</td>
</tr>
<tr>
<td>Hirotake NAKAI</td>
<td>Vice Chair, Treasurer</td>
</tr>
<tr>
<td>Kazuki INABA</td>
<td>Vice Chair, News Letter Editor</td>
</tr>
<tr>
<td>Yasumasa SUZUKI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Hiromichi OBARA</td>
<td>Vice Chair, Assistant Secretary</td>
</tr>
<tr>
<td>Keisuke HORIUCHI</td>
<td>Vice Chair, News Letter Editor</td>
</tr>
<tr>
<td>Tsuyoshi KOGA</td>
<td>Vice Chair, Webmaster</td>
</tr>
<tr>
<td>Yutaka NOMAGUCHI</td>
<td>Auditor</td>
</tr>
</tbody>
</table>
3 Events conducted by ASME Japan in 2013-2014

In this section of ASME Japan Yearbook, all events conducted by ASME Japan in 2013-July to 2014-June are reviewed and briefly explained.

AGENDA

4. Membership & Related Issues
5. Invited Talk;
   “Collaboration in Group Ideation:
   Case Study in Japan and in France”
   By Céline Mougenot, PhD
   – Associate Professor, Design Lab, Department of
     Mechanical Sciences and Engineering
     Tokyo Institute of Technology

ANNUAL MEETING
Tokyo, June 20, 2014
Akihabara Dai Bldg., 12F (Tokyo Metropolitan University,
Akihabara satellite campus)
Activity Report in 2013–14

1. 5th ASME English Presentation Competition for Japanese Students and Young Engineers
2. 4th English Presentation Seminar for Students and Young Engineers
3. 2nd “MONOZUKURI” Workshop
4. Design Engineering Workshop 2013 with JSME
5. Financial Report

5th ASME English Presentation Competition for Japanese Students and Young Engineers

August 23rd, 2013 at Nihon University

Plenary Lecture
Prof. Wataru NAKAYAMA
(ThermTech International)
“Heat in Computers: How did, do, and will we manage it?”

5 students and 2 young engineers attended.
5th ASME English Presentation Competition for Japanese Students and Young Engineers (cont’d)

Program:
13:00–13:05 Opening by Prof. Masaru ISHIZUKA
13:05–13:55 Plenary Lecture by Prof. Wataru NAKAYAMA ThermTech International
14:00–17:35 Presentation by Students
   ——25 minutes including 15 minute presentation
   and 10 minute discussion——
17:35 – 17:40 Closing by Prof. Kazuki INABA

*All participants were awarded with a certificate and the best presentation was selected and awarded to Daiji KONDO, Toyama Prefectural University.
4th Short Course on English Presentation
Effective Technical Presentations

A course designed for developing presentation skills of engineering students, engineers, and researchers

August 24th, 2013 at Nihon University

Lecturer
Dr. Rasoul AIVAZI

18 participants

4th Short Course on English Presentation (cont’d)

Time Split of Course:
10:00–10:55 Planning presentation slides
11:00–12:00 Delivering presentation
13:00–13:55 Improving presentation skills
14:00–15:30 Sample presentations: Attendees discussed and commented over the presentations.
15:35–15:45 Hints on handling Q/A after Presentation
15:45–16:00 Avoiding common errors while delivering a presentation
16:00–16:30 Regarding ASME Japan/ ASME membership
Sample Presentations:
Different Presenters from Different Nations/Backgrounds
4th Short Course on English Presentation (cont’d)

- Presenters/Attendees from more than 10 Univ / Company

2nd “MONOZUKURI” Workshop

September 20th, 2013 at Toyama Prefectural University

23 participants

(13 presenters and 10 students)
## Program:

1. “Mechanical Engineering Education based on 1DCAE Concept”  
   Dr. Ohtomi (Toshiba Corp.)
2. “Experimental Validation of One-Step FEM Analysis of Slab Stretching”  
   Dr. Aivazi (Chiyoda Corp.)
3. “Self–healing of damages in fiber reinforced polymers”  
   Dr. Sanada (Toyama Pref. Univ.)
4. “Transplantation Engineering for Liver Disease”  
   Dr. Obara (Tokyo Metro. Univ.)
5. “Fundamental study on green resist materials of extreme ultraviolet”  
   Dr. Takei (Toyama Pref. Univ.)
   Dr. Oyamada (KHK)
7. “Fatigue Strength of Through Hole in Printed Circuit Board”  
   Dr. Kinoshita (Toyama Pref. Univ.)
8. “Wall Shear Stress Measurement by Using Oil Film Interferometry”  
   Dr. Suzuki (Nihon Univ.)
9. “New thermodynamic property measurements in higher ranges of temperatures and pressures for the working fluids of geothermal power plants”  
   Mr. Mochizuki and Dr. Miyamoto (Toyama Pref. Univ.)
    Dr. Horiuchi (Hitachi, Ltd.)
11. “Estimation of Temperature Distribution in Power Si MOSFET”  
    Ms. Kibushi and Dr. Hatakeyama (Toyama Pref. Univ.)
12. “Open CAE: present situation and practical use”  
    Dr. Nakagawa (Toyama Pref. Univ.)
13. “Visualization measurement of multiphase flow by process tomography”  
    Dr. Takei (Chiba Univ.)
Design Engineering Workshop 2013
November 28–30, 2013
Kitakyushu International Conference Center
64 participants
Organized by JSME, Co-organized by ASME Japan

“Design & Monozukuri” organized by ASME Japan

1. MONOZUKURI by 1DCAE Koichi Ohtomi
2. Effects of Mechanical and Thermal Properties of Materials on Psychophysical and Affective Judgment Kazuaki Inaba, Junki Kajihara, Céline Mougenot
3. Design Research Directions beyond the Maker Movement Shinsuke Kondou, Hitoshi Komoto, Toshitake Tateno, Shinichi Fukushige
8. Forging Process, Simulation, and Optimization Rasoul Alivaz
Design Engineering Workshop 2013 (cont’ d)

Activity Plans in 2014–15

1. 6th ASME English Presentation Competition for Japanese Students and Young Engineers (Aug.29, 2014 in Tokyo)
2. 5th English Presentation Seminar for Students and Young Engineers (Aug.30, 2014 in Tokyo)
3. 3rd “MONOZUKURI workshop” sponsored by ASME Japan Section – Toyama Prefectural University (Schedule is TBD.)
4. Workshop of “MONOZUKURI by 1DCAE” organized by ASME Japan Section – JSME DSD at JSME Annual Meeting (Sep.12, 2014 in Tokyo)
Board Members for 2014–2016

Koichi OHTOMI (Chair)
Kenji OYAMADA (Secretary)
Masaru ISHIZUKA (Past Chair, Academia Liaison)
Makoto SATO (Past Chair, Treasurer and External Affairs)
Masahiro TAKEI (Vice Chair, Supporting Student Contest)
Rasoul AIVAZI (Vice Chair, Webmaster and Presentation Seminar)
Hirotake NAKAI (Vice Chair, Treasurer)
Kazuki INABA (Vice Chair, News Letter Editor)
Hiromichi OBARA (Vice Chair, Assistant Secretary)
Keisuke HORTUCHI (Vice Chair, News Letter Editor)
Tsuyoshi KOGA (Vice Chair, Webmaster)

Auditor for 2014–2016
Yutaka NOMAGUCHI

Membership as of March, 2014

Global View

<table>
<thead>
<tr>
<th>District</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. &amp; others</td>
<td>78,066</td>
</tr>
<tr>
<td>ASIA &amp; PACIFIC RIM</td>
<td>4,323</td>
</tr>
<tr>
<td>EUROPE</td>
<td>3,412</td>
</tr>
<tr>
<td>LATIN AMERICA &amp; CARIB.</td>
<td>2,745</td>
</tr>
<tr>
<td>MIDDLE EAST &amp; AFRICA</td>
<td>1,400</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
<td>86,534</td>
</tr>
</tbody>
</table>

daas
An Important Message from the ASME President

Dear Colleagues,

This is a critical yet exciting juncture for ASME as we look forward to where we want to go over the next decade and beyond. ASME means many things for many people, depending on where and how you connect with our Society. There are thousands of activities, all of which are important to those who engage in them. As a diverse Society, we must also, however, contend with limited volunteer and staff resources, as well as the funds required to maintain and excel at so many initiatives.

Many of you will wonder what this means to you and the unit in which you participate. First, we want to assure you that none of the Sections, Divisions, Institutes, or Affinity Groups are being dissolved. They will retain their name and committees.

Sincerely,

Madiha Kotb, President, 2013 –2014
For the Board of Governors ASME

Invited Talk;

"Collaboration in Group Ideation: Case Study in Japan and in France"

By Céline Mougenot, PhD
- Associate Professor, Design Lab, Dpt of Mechanical Sciences and Engineering Tokyo Institute of Technology)
ASME Japan periodically issues Newsletters, and makes those accessible via ASME Japan website. Following is a snapshot of Newsletter page on ASME Japan website, and following that, as samples, two Newsletters are attached here.
Contents
1. The 5th Presentation Contest by Students and Young Engineers in English Language

2. The 4th Short Course on English Presentation

1. The 5th Presentation Contest by Students and Young Engineers in English Language (August 23rd, 2013 at Nihon University)

Purpose: The ASME JPN is pleased to host this contest as its pillar educational endeavor. Needless to say, the competence in presenting technical reports in English language is crucial for engineers of present and future generations to advance their careers in increasingly globalized environment. Considerable efforts have been waged to strengthen English language capability of Japanese engineering students and engineers. However, little efforts have been made with a focus on the presentation skill, and such targeted educational programs have rarely been undertaken by professional societies in Japan. The ASME JAPAN decided to launch a program which is designed to provide students and engineers in mechanical engineering with opportunities to experience public presentation and evaluation by senior members of the society. The presentation contest was established in 2009 and the 5th contest was organized by inviting selected students from several universities who were going to talk at the international conferences in the immediate future.

Executive Committee Members:
Masahiro TAKEI (Chair), Kenji OYAMADA (Secretary), Masaru ISHIZUKA, Koichi OHTOMI, Makoto SATO, Rasoul AIVAZI, Hirotake NAKAI, Yasumasa SUZUKI, Hiromichi OBARA, Keisuke HORIUCHI, Kazuaki INABA

Program:
13:00—13:05 1. Opening
Prof. Ishizuka (former ASME-JAPAN Section Chair)

13:05—13:55 2. Plenary Lecture  Heat in Computers: How did, do, and will we manage it?
Prof. Wataru Nakayama  Therm Tech International

Chairperson: Dr. Hatakeyama

14:00 - 14:25 3. Estimation method of temperature distribution and energy saving technology of air conditioner in data center
Kentaro SANO  Hitachi, Ltd
14:25 – 14:50  4. The Characteristics of the Aeolian tone Radiated from Tapered Circular Cylinder  
Yuichiro WATANABE  Tokyo Denki University

Kanato ORIMO  Chiba University

Break (15 min.)

Chairperson: Dr. Horiuchi

Daiji KONDO  Toyama Prefectural University

Dai IMAI  Toyama Prefectural University

16:20 – 16:45  8. Shear-induced structure and turbulent drag reduction in surfactant solutions  
Yuki KOBAYASHI  Tokyo Metropolitan University

16:45 - 17:10  9. Transient of wave propagation around a large particle in a pipe filled with water  
Tatsuro HORI  Tokyo Institute of Technology

17:10 –17:15  10. Closing  Prof. Inaba

17:15 - Buffett Party

The contest was well organized by chairpersons, and was satisfactorily completed. The total number of participants was eighteen, including presenters. As for the plenary lecture, a substantial lecture was given by Prof. Nakayama, and many questions and answers were exchanged during the contest. All participants were awarded with a certificate and the best presentation was selected and awarded to Daiji KONDO, Toyama Prefectural University.
2. The 4th Short Course on English Presentation
(August 24th, 2013 at Nihon University)

Effective Technical Presentations
A course designed for developing presentation skills of engineering students, engineers, and researchers

Purpose: As an engineer or technical professional, one is often called upon to make technical presentations. These include presentations made during meetings, briefings, reports, sharing of research findings, or those made during education and training courses. The purpose of this course is to provide some guidelines in order to plan, prepare, and deliver effective and efficient technical presentations in English.

The short course on English presentation, entitled “Effective Technical Presentation” is a course designed to develop presentation techniques, with the aim of offering hints on technical presentation skills. This course takes learners systematically through the key communication and language skills needed to make clear, well-organized short and concise presentations, and enables them to embark to develop these skills in realistic ways.

The course covers topics such as: (1) Planning and creating presentation slides, (2) Body language and how to keep audience’s attention, (3) Describing trends, charts, and graphs, and (4) Avoiding common mistakes and errors in English while delivering a presentation.

Lecturer: Dr. Rasoul AIVAZI
Language of Course: English

Time Split of Course:
10:00 – 10:55  Planning presentation slides
11:00 – 12:00  Delivering presentation
13:00 – 13:55  Improving presentation skills
14:00 – 15:30  Sample presentations: Attendees discussed and commented over the presentations.
15:35 – 15:45  Hints on handling Q/A after Presentation
15:45 – 16:00  Avoiding common errors while delivering a presentation
16:00 – 16:30  Regarding ASME Japan/ ASME membership
The 4th short course on English presentation ended in success. This year’s lecture was followed from the last year’s version. (The sample presentations by attendees were introduced.) The total number of participants was eighteen. All lectures went smoothly as scheduled without any trouble and were very fruitful and deeply impressed everybody.

Edited by Kazuaki Inaba, September, 2013
Contents

1. ASME Japan Section’s Annual Meeting 2012, on June 29

   Annual meeting 2012 of section was held on June 29, at Akihabara Satellite Campus, Tokyo Metropolitan Univ. The meeting was included a keynote lecture by Dr. Ohtomi, next Chair of ASME Japan.

1.1 Annual Reports by Board Members

   - Membership
   - Activity Report
     - 3rd English Presentation Competition
     - 2nd English Presentation Short
     - Attendance at LTC2012
     - Financial Report

1.2 Activity Plan 2012-13

   - 4th English Presentation Competition
   - 3rd English Presentation Short
   - ASME-Japan and Toyama Prefectural University Joint MONOZUKURI Workshop

1.3 Board Members for 2012-2014

1.4 Keynote Lecture: “Design Innovation by 1-D CAE"

2. ASME Japan Section’s upcoming events:

2.1 The 4th Presentation Contest by Students and Young Engineers in English Language
     Aug. 31, 2012 at Nihon University

2.2 A Short Course on English Presentation:
     “Effective Technical Presentation”
     Sep. 1st, 2012 at Nihon University
1. Annual meeting 2012

ASME Japan Section’s annual meeting 2012 held on June 29, 2012 at the Tokyo Metropolitan University, Akihabara satellite campus. The annual meeting started at 17:10 and lasted till 20:00. Meeting was followed by a casual gathering.

Annual meeting 2012 of section was conducted by Makoto Sato, Past Chair ASME Japan Section, Masahiro Takei, Hiromichi Obara and Yasumasa Suzuki, Vice Chairs of ASME Japan Section. The annual meeting was included a keynote lecture, has addressed by Dr. Ohtomi from Toshiba Corp.

1.1 Annual Reports by Board Members

(a) ASME Membership

Japan Section is in ASIA & Pasific Rim, that is the 2nd rank of members on the globe. In ASIA & Pasific Rim, Japan owns the 2nd rank of ASME membership, as of May 2012. (Table.1)

Table 1. ASME members, as a global view, and Section wisely (by June 2012)

(b) Activity Report in July 2011- Jun 2012

(b.1) 3rd English Presentation Competition

3rd ASME English Presentation Competition for Japanese Students and Young Engineers
September 2nd, 2011
Plenary Lecture
Prof. Wataru NAKAYAMA
ThermalTech International
Non-Dimensional Numbers in Fluid and Thermal Sciences: Where Do They Come From and Why Do We Need Them?
(b.2) 2nd English Presentation Short

Short Course on English Presentation
Effective Technical Presentations

A course designed for developing presentation skills of engineering students, engineers, and researchers

Presenter: Dr. Rasoul Aivazi

Date: September 3rd 2011
Place: Nihon University
Surugadai Campus
Building No.5, 2nd Floor, Meeting Room#524
8-14 Kanda Surugadai 1-Chome Chiyoda-ku Tokyo
(b.3) Attendance at LTC2012

2012 Leadership Training Conference (LTC)
Location: New Orleans, LA
Date: March 1 – 4, 2012

“If you can only attend one leadership conference during the year, make this the one…and reward yourself with valuable information enhancing your professional and volunteer leadership skills.”

The LTC provides ASME’s volunteers with leadership training, essential information for key unit and committee members and networking opportunities with peers.

Professor Y. Suzuki attended LTC2012 from ASME-Japan.

(b.4) Financial Report

Financial Report for the expenses for the year 2011-2012 was explained in some details to members.
1.2 Activity Plan 2012-13

The below activities are planned as a part of ASME Japan Section activities for the coming ASME fiscal year, for year 2012 to 2013.

(a) 4th English Presentation Competition
(b) 3rd English Presentation Short
(c) ASME-Japan and Toyama Prefectural University Joint MONOZUKUR Workshop

1.3 Board Members for 2012-2014

For conducting the planned activities, Dr. Koichi OHTOMI was selected as next ASME Japan Chair, and according to the below

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koichi OHTOMI</td>
<td>Chair</td>
</tr>
<tr>
<td>Kenji OYAMADA</td>
<td>Secretary, Formulation of Section Rule</td>
</tr>
<tr>
<td>Masaru ISHIZUKA</td>
<td>Immediate Past Chair, Academia Liaison</td>
</tr>
<tr>
<td>Makoto SATO</td>
<td>Past Chair, Treasurer and External Affairs</td>
</tr>
<tr>
<td>Wataru NAKAYAMA</td>
<td>Vice Chair, Technical Advisor and Supporting Chair in General</td>
</tr>
<tr>
<td>Masaaki TAKEI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Rasoul AVAZI</td>
<td>Vice Chair, Webmaster and Presentation Seminar</td>
</tr>
<tr>
<td>Hirotake NAKAI</td>
<td>Vice Chair, Assistant Treasurer</td>
</tr>
<tr>
<td>Kazuaki INABA</td>
<td>Vice Chair, News Letter Editor</td>
</tr>
<tr>
<td>Yasumasa SUZUKI</td>
<td>Vice Chair, Supporting Student Contest</td>
</tr>
<tr>
<td>Hiromichi OHARA</td>
<td>Vice Chair, Student Contest</td>
</tr>
<tr>
<td>Koosuke HORIUCHI</td>
<td>Auditor</td>
</tr>
</tbody>
</table>

1.4 Keynote Lecture

“Design Innovation by 1D CAE”

By Dr. Koichi OHTOMI

As innovation of "MONODUKURI" by CAE(Computer Aided Engineering), there was announcement about a process of the present state "MONODUKURI" and a flow of the future "MONODUKURI" by the introduction of 1D-CAE.

The change of the design information dimension tends to depend on the three-dimensional model with the environmental change of the design process. However, it is detailed design.

Photo 3. Dr. Koichi OHTOMI, presenting a Keynote Lecture at ASME Japan Annual meeting 2012.
The publisher points out that I may not see “a whole appropriate design” in consideration of a concept and a function to make a structure.

1D (dimension) -CAE does not understand the structure, but can see the function. It is a design of upper reaches and knows the whole of the product, and the whole of the system will be, so to speak, good for vanity, upbringing of the engineer again, too.

Before 2, 30 years, the production of the product took time and performed modeling and a survey. However, the engineer’s idea might be being made conventional by the speedup at the manufacture cycle now. Therefore the speaker is advocating “1D-CAE” as a innovation of “MONODUKURI” brought from these of making to visible of the entire system and the engineer education etc.

As the future of “1D-CAE ,”
- As ”construction of the structure which present CAD/CAE can utilize more effectively, I grasp the whole system by a way of thinking of 1D-CAE"
- As “MONODUKURI” and upbringing means of the young engineer, we should push forward with 1D-CAE in expectation.

Moreover, as the Japanese MONODUKURI of the future
- Systematization, construction, and promotion for the realities understanding of Japanese "MONODUKURI" and "MONODUKURI" technological research
- Inflection of ASME JAPAN
- We sent out the Japanese “MONODUKURI” to the world, Introduction to Japan of the whole world “MONODUKURI”

The above-mentioned items are the problem which now confronts us.
2. **ASME Japan Section’s upcoming events:**

2.1 **The 4th Presentation Contest by Students and Young Engineers in English Language**: Aug. 31, 2012

This is the annual Presentation Contest 2012, Hosted by the American Society of Mechanical Engineers, Japan Section. This annual Short Course would be held at Nihon University. Access ways to the Venue are as followings:

- By JR Chuo-Soubu Line get off at “Ochanomizu” station, walk three minutes to the venue.
- By Tokyo Metro, Chiyoda Line, get off at “Shin-Ochanomizu” station, walk three minutes to the venue.

For more information on this Annual Contest 2012, please refer to page 8 of this Newsletter, or visit the section website at: [http://sections.asme.org/japan/](http://sections.asme.org/japan/)

2.2 **A Short Course on English Presentation**:


This annual Short Course would be held at Nihon University. The course covers topics such as: Planning and creating presentation slides, Body language and how to keep audience’s attention, Describing trends, charts, and graphs, Avoiding common mistakes and errors in English while delivering a presentation.

For more information on this Annual Contest 2012, please refer to page 9 of this Newsletter, or visit the section website at: [http://sections.asme.org/japan/](http://sections.asme.org/japan/)

For the updated upcoming events of ASME Japan, please visit the section website at: [sections.asme.org/japan](http://sections.asme.org/japan)
Call for papers:
The 4th Presentation Contest by Students and Young Engineers in English Language
Hosted by the American Society of Mechanical Engineers, Japan Section (ASME Japan)

Access: By JR Chuo-Souh Line get off at “Ochanomizu” station, walk three minutes to the venue.
By Tokyo Metro, Chiyoda Line, get off at “Shin-Ochanomizu” station, walk three minutes to the venue.

Purpose: The ASME JAPAN is pleased to host this contest as its pillar educational endeavor. Needless to say, the competence in presenting technical reports in English language is crucial for engineers of present and future generations to advance their careers in increasingly globalized environment. Considerable efforts have been waged to strengthen English language capability of Japanese engineering students and engineers. However, little efforts have been made with a focus on the presentation skill, and such targeted educational programs have rarely been undertaken by professional societies. The ASME JAPAN decided to launch a program which is designed to provide students and engineers in mechanical engineering with opportunities to experience public presentation and evaluation by senior members of the society.

Organizing committee members:
Masahiro TAKEI (Chair), Kenji OYAMA (Secretary), Masaru ISHIZUKA, Koichi OHTOMI, Makoto SATO, Rasoul AIVAZI, Hirotake NAKAI, Kazuaki INABA, Yasumasa SUZUKI, Hiromichi OBARA, Wataru NAKAYAMA

Plenary Lecture:
Prof. Wataru NAKAYAMA (ThermTech International)
“Boiling Heat Transfer in Tea Kettles and Nuclear Reactors: Physics, People, and History”

Registration Fee:
None
Banquet fee:
3,000yen (General)
1,500yen (Student)

Only 12 speakers will be accepted for presentation, and 20 seats are reserved for audience. Please apply immediately according to the following instruction.

How to apply for speakers:
Please send the following information via e-mail: the title of your speech, your name, e-mail address, institution/company name, telephone number, banquet participation (Y/N). The e-mail destination: takei-secret@chiba-u.jp. Deadline for speakers: August 02, 2011

How to apply for attendance:
Please send the following message and data via e-mail: “I will attend ASME-Japan Presentation Contest by Students and Young Engineers in English Language, 2012”, your name, e-mail address, institution/company name, telephone number, banquet participation (Y/N). The e-mail destination: takei-secret@chiba-u.jp. Deadline for attendance: August 20, 2011

The above information is welcome to Professor Masahiro TAKEI, Graduate School of Engineering, Chiba University, Tel:...
Effective Technical Presentation

Venue: Nihon University, Surugadai Campus
Address: Building No.5, 2nd floor, Conference Room 524,
8-14 Kanda Surugadai 1-Chome Chiyoda-ku Tokyo
http://www.cst.nihon-u.ac.jp/campus/index.html

ACCESS:
- by JR Chuo-Soubu Line get off at Ochanomizu station.
- by Tokyo Metro, Chiyoda Line, get off at Shin-Ochanomizu station.

The VENUE is five minutes walk from either station.

English MAP: http://www.cst.nihon-u.ac.jp/intl/about/surugadai.html
Japanese MAP: http://www.cst.nihon-u.ac.jp/information/surugadai.html

Registration Fee:
- 2000 yen
- 1000 yen (Students)
- None (ASME members)
- Participants are limited to 20 applicants
- Application Deadline: Aug. 27, 2012

Application:
For registration, please contact Rasoul Aivazi at
email: rasoul.aivazi@ykh.chiyoda.co.jp

and send the following message and information via e-mail to him:

Application to attend the Effective Technical Presentation Short Course
I would like to attend the Short Course on English Presentation, Sep. 1st, 2012 at Nihon University, Surugadai Campus.

Name (First_name FAMILY_NAME):
E-mail address:
Institution/Company name:
Telephone number:
5 Regarding ASME Codes and Standards

The articles in this section of ASME Japan Yearbook, explore different facets of ASME Standards and Certification. ASME Standards and Certification plays an important role in ensuring the safety of the public and in the standardization of things as common as nuts and bolts. We have selected the articles to draw your attention to some important aspects of your professional life and future in the mechanical or related engineering field.

ASME Japan Yearbook will bring here in each yearbook some selected articles about ASME Codes and Standards. For this section, we selected, and sometimes revised, material from ASME.org. We have found articles provided by Task Group on ASME Codes and Standards for Mechanical and Other Engineering Students[1] in ASME.org are very comprehensive and concise, and used some of their articles to bring in these publications to ASME Japan Yearbook readers’ attention.

The articles that we have selected to start with, (but not limited to), to bring here are as per following order, that will appear in this and upcoming issues of Yearbooks:

• WHAT ARE PERFORMANCE TEST CODES?
• A LOOK AT THE ASME BOILER AND PRESSUREVESSEL CODE (BPVC)
• COMMUNICATING MECHANICAL ENGINEERING REQUIREMENTS CONSISTENTLY:ASME Y14.5, DIMENSIONING AND TOLERANCING
• ASME B30 SAFETY STANDARD FOR CABLEWAYS, CRANES, DERRICKS, HOISTS, JACKS AND SLINGS – CRANES AND RIGGING IN EVERYDAY LIFE
• HOW PLUMBING STANDARDS CONTINUE TO PROTECT CIVILIZATION

We hope that you find this collection of articles interesting and informative, and that it provides you with a new window into the field of ASME Standards and Certification. Please let us know what you think at: japan@asmejp.org.

[1] Task Group on ASME Codes and Standards for Mechanical and Other Engineering Students consists of:
- Kenneth Balkey, P.E., Consulting Engineer, Westinghouse Electric Company
- Domenic A. Canonico, Ph.D., Canonico & Associates
- Angel Luis Guzman, Project Engineer, ASME
- Pamela F. Nelson, Professor, UNAM
- Mark Webster, P.E., Vice President Engineering, Pfloow Industries, Inc.
- Steven Weinman, Director, Standardization and Testing, ASME
About ASME

ASME, the American Society of Mechanical Engineers, is a not-for-profit membership organization that enables collaboration, knowledge sharing, career enrichment, and skills development across all engineering disciplines. Founded in 1880 by a small group of leading industrialists, ASME has grown through the decades to include more than 120,000 members in over 140 countries around the globe. The membership includes a wide diversity of technical disciplines who represent all facets of the technical communities.

ASME’s diverse members range from college students and early-career engineers to project managers, corporate executives, researchers, and academic leaders. ASME serves this wide-ranging technical community through quality programs in continuing education, training and professional development, standards and certification, research, conferences and publications, government relations, and other forms of outreach.

Many engineers join ASME for career enrichment, lifelong learning, and the opportunity to network with professionals of like-minded interests. Others become active in local sections or in ASME’s administrative structure of boards and committees, providing leadership and expertise to the Society and the profession at large.

The governance of the Society is the responsibility of member-elected governors, who volunteer their vast knowledge and expertise to the organization. The board of governors and other volunteer leaders of ASME work in collaboration with a professional staff to shape the Society’s programs and strategies and make them available to engineers throughout the world. ASME administers its programs through offices and institutes in the United States, Belgium, China and India and through various committees and groups, to ensure that the myriad technical interests of its members and the global engineering community are met.

ASME strategically aligns its programs and initiatives to focus on three main organizational priorities — energy, engineering workforce development, and global impact — in an effort to provide relevant knowledge-based resources to the broad spectrum of ASME members and constituents.

In energy, ASME is serving as an essential energy technology resource and leading advocate for balanced energy policies. In engineering workforce development, ASME fosters a broader, competent, vibrant and more diverse engineering workforce, with improved retention in both the profession and ASME over all career stages.

Many engineers join ASME for career enrichment, lifelong learning, and the opportunity to network with professionals of like-minded interests. Others become active in local sections or in ASME’s administrative structure of boards and committees, providing leadership and expertise to the Society and the profession at large.
And in the area of global impact, ASME is committed to delivering locally relevant engineering resources to advance public safety and quality of life around the world.

Among many examples of the Society’s growing outreach in the global arena is Engineering for Change (E4C). E4C is a dynamic community of engineers, technologists, social scientists, NGOs, local governments, and community advocates whose mission is to improve people’s lives in communities around the world. E4C features an open, innovative, and user-friendly online platform that facilitates collaboration and knowledge exchange for the development of appropriate solutions to issues such as sanitation, access to clean water, energy, transportation, food, education, and housing.
An Introduction to ASME Codes and Standards

a. Why are there codes and standards?

The Industrial Revolution profoundly changed the way people lived by introducing machinery that transformed daily life. Farm implements no longer had to be made by hand — they could be manufactured. Affordable manufactured goods of all kinds — textiles, dishware, reading material — have transformed home life. A coal-burning furnace and boiler could heat water in the home.

Transportation began to move at unimaginable speeds, far exceeding that of a horse. Slowly, handmade items were being replaced with manufactured items; human strength and horsepower were being replaced by machinery driven by steam power - steam engines, boilers.

The most serious problem facing 19th century engineers was exploding boilers. Heating water to produce steam and converting that steam into energy to power machinery revolutionized the production of goods. To build up pressure, steam must be contained in some type of vessel, but uncontrolled, pressurized steam can burst a vessel even if it’s made of steel. For want of reliably tested materials, secure fittings, and proper valves, boilers of every description, on land and at sea, were exploding with terrifying regularity. (They would continue to do so into the 20th century.) Although engineers could take pride in America’s strides in technology, they could not ignore the 50,000 dead and two million injured annually by such accidents. Thus, mechanical engineers in the 1880s began seeking reliable methods for testing steam boilers.

Lack of interchangeability was also becoming a problem. A consumer could not buy a bolt in California and use it on a nut acquired in New Jersey because the threading did not match. Therefore, the farm implement, shotgun, or pipe was rendered useless, unreliable, or dangerous. When

The American Society of Mechanical Engineers (ASME) was founded in 1880, discussion began immediately on establishing standards; it focused on shop drawing symbols, pulleys, line shafting, machine screws, key seats, and drawing boards. At its annual meeting in 1883, a committee on standards and gages was created, and a paper was presented urging the adoption of a set of rules for conducting boiler tests that could be accepted as a standard code of practice by engineers. The paper emphasized the prevailing lack of uniformity in which “every engineer who performs a boiler test makes a rule for himself, which may be varied from time to time to suit the convenience or interests of the party for whom the test is made.”[1]

The result was the formation of a committee to study the subject of a uniform test code. In 1884 a test code for boilers was published; it was ASME’s first standard. (Establishing a universally accepted construction standard would still take many years.) Shortly thereafter, the Society decided that pipes and pipe threads should also be standardized. The composition of this standards committee was “men
representative of pipe manufacturers and pipe users, with perhaps one representative of sprinkling systems and certainly one of the manufacturers of taps and dies.”[2] This balanced approach to committee composition became the norm for subsequent ASME standards committees.


b. What is a standard?

A set of technical definitions, instructions, rules, guidelines, or characteristics set forth to provide consistent and comparable results, including:

- Items manufactured uniformly, providing for interchangeability
- Tests and analyses conducted reliably, minimizing the uncertainty of the results
- Facilities designed and constructed for safe operation

By custom, some standards are called codes.

Standards, not having the force of law, are considered voluntary and serve as guidelines. ASME publishes standards and certifies users of standards to ensure that they are capable of manufacturing products that meet those standards.

It also provides stamps that certified manufacturers affix onto their products to indicate that a product was manufactured according to the particular standard. ASME cannot, however, force any manufacturer, inspector, or installer to follow ASME standards. Their use is voluntary.

Why then are standards effective? The 1991 Annual Report of the American Society for Testing and Materials (ASTM) said it best: “Standards are the vehicle of communication for producers and users. They serve as a common language, defining quality and establishing safety criteria. Costs are lower if procedures are standardized; training is also simplified. And consumers accept products more readily when they can be judged on intrinsic merit.” A standard may also be incorporated into a business contract.
c. What is the involvement of ASME in codes and standards today?

Since its creation in 1880, ASME and many other standards-developing organizations have worked to produce standards through a voluntary consensus process as the need increased. In addition to developing standards, ASME provides conformity assessment processes for use in industry. These help ensure that manufacturers comply with equipment specifications and that personnel are properly trained in specialized equipment operation.

ASME, American Society for Testing and Material (ASTM), Institute of Electrical and Electronics Engineers (IEEE), and the Society of Automotive Engineers (SAE) are four of the more than 200 volunteer organizations in the United States that follow the procedures accredited by the American National Standards Institute (ANSI) for the development of standards. These procedures must reflect openness, transparency, balance of interest, and due process.

ASME is one of the oldest and most respected standards-developing organizations in the world. It produces approximately 600 codes and standards covering many technical areas, such as boiler components, elevators, bioprocess equipment, pressure piping, cranes, hand tools, fasteners, machine tools, and verification and validation in computational modeling and simulation.

In general, ASME standards provide guidelines, procedures, and recommended practices for designing, operating, maintaining, and testing equipment and systems.

Codes, like the ASME Boiler and Pressure Vessel Code and A17.1 Safety Code for Elevators and Escalators, are linked with the interest of public safety and carry the force of law. More than 100,000 copies of the Boiler and Pressure Vessel Code are in use in 100 countries around the world, with translations in a number of languages.

d. How does ASME produce codes and standards?

Contributors to the Society’s codes and standards development process are mostly engineers who volunteer their valuable technical knowledge, resources, and expertise. Designers, constructors, manufacturers, inspectors, owners/operators, academia, consultants and representatives of regulatory agencies also participate on codes and standards committees. These committees continually revise and update codes and standards to reflect changes in procedures and technology.

Reflecting the Society’s global strategy, ASME Standards and Certification promotes its activity in many international markets. ASME Standards and Certification collaborates with industry groups and governments from Mexico and South Korea to India and China. Through workshops, seminars, and other types of information exchange, ASME works to foster an understanding of the codes and standards process and to increase awareness of its programs and publications.

ASME’s Council on Standards and Certification oversees six standards developing supervisory boards and four advisory boards, which manage more than 100 committees and more than 4700 volunteer members (see figure on next page). The supervisory boards are responsible for pressure technology, nuclear installations, safety codes, standardization & testing, conformity assessment, and new...
development. The advisory boards deal with strategic initiatives, energy and environmental, hearings and appeals, and council operations.

ASME Standards Technology, LLC was established in August 2004 as a separate not-for-profit organization, with the mission of providing ASME’s codes and standards committees with the technical basis necessary to develop new codes and standards for emerging technologies. ASME ST-LLC applies its core competencies of project management and administration to identify and conduct research projects that bridge gaps between technology development and standards development. Projects typically involve technology that has advanced beyond proof of concept and requires a focused evaluation to synthesize the knowledge gained from basic research and convert it into new code rules. ASME ST-LLC will typically depend on extensive basic research and development programs that have been performed by national, international, and university labs. The data, observations, and final reports from these research projects are reviewed for relevance as the technical basis for new code rules. The ultimate adoption of relevant consensus standards for emerging technologies helps overcome barriers to commercialization by establishing public confidence, permitting rapid and transportable workforce development, removing impediments to business, and enabling global trade.
e. Standard Committee and Process

Standards committees are composed of engineers and other interested parties with knowledge and expertise in a particular field. They represent users, manufacturers, consultants, academia, testing laboratories, and government regulatory agencies. The committee maintains a balance of members among the various interest classifications so that no one group dominates.

Committee volunteers agree to adhere to the ASME Policy on Conflict of Interest and the Engineer’s Code of Ethics. Committee meetings must be open to the public, and procedures are used to govern deliberations and voting. All comments on technical documents during the approval process must be considered. Any individual may appeal any action or inaction of a committee relating to membership, or a code or standard promulgated by the committee.

Content is approved through consensus voting as defined by ANSI. Discussions are conducted at standards committee meetings, and votes are submitted online at ASME C&S Connect (http://cstools.asme.org). ASME developed C&S Connect, a web-based tool that allows volunteers from around the world to participate on ASME committees and provides a robust communication and process management solution for both proposal and balloting phases.

More than one vote may be necessary to resolve negative comments. If an individual member feels that due process was not observed, appeals may be made to the standards committee, supervisory board, and finally, to the Board on Hearings and Appeals.

Once consensus is reached, the proposed standard in draft form is submitted to a public review online. During the public review period, anyone may submit comments, to which the committee must respond. The draft is also submitted for approval to the supervisory board and to ANSI. When all comments and considerations have been satisfactorily addressed, the document is approved as an American National Standard and published by ASME. But the work does not end there; codes and standards are living documents that are constantly being updated, revised, and reissued to reflect new developments and technical advances.
What are Performance Test Codes?

ASME Performance Test Codes (PTC) provide rules and procedures for planning, preparing, executing, and reporting performance tests. A performance test is an engineering evaluation; its results indicate how well the equipment performs its functions.

Performance test codes originated as “Power Test Codes” and emphasized energy-conversion equipment. The first ASME code was Rules for Conducting Boiler Tests, published in 1884. Today, nearly 45 PTCs are available; they cover individual components (e.g., steam generators, turbines, compressors, heat exchangers), systems (e.g., flue gas desulfurization, fuel cells), and complete plants (cogeneration plants). In addition to equipment codes, supplements on instruments and apparatus cover measurement systems (e.g., temperature, pressure, flow) and analytical techniques (uncertainty analysis) common to most PTC codes.

For more than a century, ASME PTC tests have provided results with the highest level of accuracy, based on current engineering knowledge and practices, and taking into account the costs of the tests and the value of the information obtained. All ASME codes are developed using input from a range of parties, who may be interested in the code and/or in the associated equipment or process. Codes have the force of a legal document when cited in contracts, as they frequently are, for determining the method by which equipment performs as guaranteed.

PTCs are used by equipment owners, equipment suppliers, and test engineers. ASME PTCs protect users from poorly performing products and enable suppliers to compete fairly by offering reliable products.
from poorly performing products and enable suppliers to compete fairly by offering reliable products. Performance test codes provide a “level playing field” for both manufacturers and users of the equipment or systems. Purchase specifications are greatly strengthened by citing the results of PTC tests. When buying new equipment, purchasers may specify that the equipment guarantee will be based on the results of a specific ASME PTC test.

Design engineers consult PTC documents to ensure that proper instrument connections will be available. Test engineers install the required instrumentation and use the code’s procedures and calculation methods to conduct tests on the new equipment. Representatives of all parties to the test ensure that the test methods are in compliance with the code. Finally, the test results are compared to the performance criteria.

Sometimes manufacturers and suppliers want to determine the exact performance of their equipment to understand the design margins or the effects of manufacturing tolerances on performance. In this case, code tests are conducted outside of any performance guarantees. To ensure that ASME PTCs best serve global industries, existing and additional products and services are always being evaluated. As the preeminent provider of standardized methods for performance testing, monitoring, and analysis of energy conversion and industrial processes, systems, and equipment, ASME continues to develop and add new codes.

In recent years PTC committees have started working on emerging technologies earlier (i.e., prior to full commercialization). Some of these areas are:

- Fuel Cell Power Systems
- Integrated Gasification Combined Cycle
- Combustion Turbine Inlet Air Conditioning Equipment
- Concentrating Solar Power Plants
- Overall Plant Performance with Carbon Capture

By having a reliable, repeatable performance test code available earlier, we are helping to facilitate the commercialization of these emerging technologies.

[ This part of the article, from page (previous) to page (current) is by Philip M. Gerhart, Ph.D., P.E., University of Evansville, and Samuel J. Korellis, P.E., EPRI ]

**ASME PTCs: Ensuring Accuracy, Precision, and Reliability. Instilling Confidence**

Both manufacturers and users of the equipment or systems to the test can reference the particular test code, confident with the knowledge that it represents the highest level of accuracy based on current engineering knowledge, taking into account test costs and the value of information obtained from testing. Precision and reliability of test results must also underlie all considerations in the
development of an ASME PTC, consistent with economic considerations as judged appropriate by each
technical committee under the jurisdiction of the ASME Board on Standardization and Testing.
An up-to-date list of the PTCs are categorized under seven titles as following:

### ASME PTCs on Power Production

<table>
<thead>
<tr>
<th>PTC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTC 6 :</td>
<td>Steam Turbines</td>
</tr>
<tr>
<td>PTC 6S :</td>
<td>Procedures for Routine Performance Test of Steam Turbines</td>
</tr>
<tr>
<td>PTC 6.2 :</td>
<td>Steam Turbines in Combined Cycles</td>
</tr>
<tr>
<td>PTC 17 :</td>
<td>Reciprocating Internal Combustion Engines</td>
</tr>
<tr>
<td>PTC 18 :</td>
<td>Hydraulic Turbines and Pump Turbines</td>
</tr>
<tr>
<td>PTC 22 :</td>
<td>Gas Turbines</td>
</tr>
<tr>
<td>PTC 29 :</td>
<td>Speed-Governing Systems for Hydraulic Turbine Generator Units</td>
</tr>
<tr>
<td>PTC 42 :</td>
<td>Wind Turbines</td>
</tr>
<tr>
<td>PTC 46 :</td>
<td>Overall Plant Performance</td>
</tr>
<tr>
<td>PTC 48 :</td>
<td>Overall Plant Performance with Carbon Capture (under development)</td>
</tr>
<tr>
<td>PTC 50 :</td>
<td>Fuel Cell Power Systems Performance</td>
</tr>
<tr>
<td>PTC 52 :</td>
<td>Performance Test Code for Concentrating Solar Power Plants (under development)</td>
</tr>
<tr>
<td>PTC 55 :</td>
<td>Gas Turbine Aircraft Engines</td>
</tr>
<tr>
<td>PTC 70 :</td>
<td>Ramp Rates</td>
</tr>
<tr>
<td>POM 101 :</td>
<td>Performance Related Outage Inspections</td>
</tr>
<tr>
<td>POM 102 :</td>
<td>Operating Walkdowns of Power Plants (under development)</td>
</tr>
<tr>
<td>PTC PM :</td>
<td>Performance Monitoring Guidelines for Power Plants</td>
</tr>
</tbody>
</table>

### ASME PTCs on Combustion and Heat Transfer

<table>
<thead>
<tr>
<th>PTC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTC 4 :</td>
<td>Fired Steam Generators</td>
</tr>
<tr>
<td>PTC 4.2 :</td>
<td>Coal Pulverizers</td>
</tr>
<tr>
<td>PTC 4.3 :</td>
<td>Air Heaters</td>
</tr>
<tr>
<td>PTC 4.4 :</td>
<td>Gas Turbine Heat Recovery Steam Generators</td>
</tr>
<tr>
<td>PTC 12.1 :</td>
<td>Closed Feedwater Heaters</td>
</tr>
<tr>
<td>PTC 12.2 :</td>
<td>Steam Surface Condensers</td>
</tr>
<tr>
<td>PTC 12.4 :</td>
<td>Moisture Separator Reheaters</td>
</tr>
<tr>
<td>PTC 12.5 :</td>
<td>Single Phase Heat Exchangers</td>
</tr>
<tr>
<td>PTC 23 :</td>
<td>Atmospheric Water Cooling Equipment</td>
</tr>
<tr>
<td>PTC 30 :</td>
<td>Air-Cooled Heat Exchangers</td>
</tr>
<tr>
<td>PTC 30.1 :</td>
<td>Air Cooled Steam Condensers</td>
</tr>
<tr>
<td>PTC 34 :</td>
<td>Waste Combustors with Energy Recovery</td>
</tr>
<tr>
<td>PTC 51 :</td>
<td>Gas Turbine Compressor Inlet Air Conditioning Equipment</td>
</tr>
</tbody>
</table>
### ASME PTCs on Fluid Handling

- **PTC 8.2**: Centrifugal Pumps
- **PTC 10**: Compressors and Exhausters
- **PTC 11**: Fans
- **PTC 12.3**: Deaerators
- **PTC 13**: Blowers (under development)
- **PTC 19.11**: Steam and Water Sampling, Conditioning, and Analysis in the Power Cycle
- **PTC 19.23**: Guidance Manual for Model Testing
- **PTC 24**: Ejectors
- **PTC 25**: Pressure Relief Devices
- **PTC 31**: High Purity Water Treatment Systems
- **PTC 39**: Steam Traps

### ASME PTCs on Emissions

- **PTC 19.10**: Flue and Exhaust Gas Analysis
- **PTC 21**: Particulate Matter Collection Equipment
- **PTC 28**: Determining the Properties of Fine Particulate Matter
- **PTC 40**: Flue Gas Desulfurization Units

### ASME General Document on Analytical Techniques

- **PTC 19.1**: Test Uncertainty

### ASME General Documents on Measurement of Process Parameters and Associated Phenomena

- **PTC 19.2**: Pressure Measurement
- **PTC 19.3**: Temperature Measurement
- **PTC 19.5**: Flow Measurement
- **PTC 19.6**: Electrical Power Measurement (under development)
- **PTC 19.7**: Measurement of Shaft Power
- **PTC 19.22**: Data Acquisition Systems
- **PTC 36**: Measurement of Industrial Sound
- **B133.6**: Gas Turbine Installation Sound Emissions

### ASME General Documents on Guiding Information

- **PTC 1**: General Instructions
- **PTC 2**: Definitions and Values
- **PTC 19.3 TW**: Thermowells
Over 100 Years of ASME PTCs: Ensuring State-of-the-Art Quality for State-of-the-Art Technology

In 1884, the ASME published “Rules for Conducting Boiler Tests.” On April 13, 1909, the Power Test Committee was chartered by the Council of ASME to “revise the present testing codes of the Society relating to boilers, pumping engines, locomotives, steam engines, internal combustion engines ... etc.” In 1915, the “Rules for Conducting Performance Test of Power Plant Apparatus” was published. Over the years numerous test codes and supplements have been published. Some have been revised and others withdrawn as new technological advances have necessitated the issuance of state-of-the-art test codes. Today, some three dozen test codes are available for testing power plant equipment, such as fired steam generators, steam turbines and gas turbines as well as testing fuel cells and combined cycle gasification plants. It is Society policy to review each standard every five years to determine whether a revision is necessary.

ASME Performance Test Codes (PTCs) provide uniform rules and procedures for the planning, preparation, execution, and reporting of performance test results. They provide protocols for establishing testing parameters and methods of measurement. They provide mathematical examples on computing the test results and statistical methods to determine the quality of the tests by calculating the test uncertainty.
Learning from wisdom of Senior Mechanical Engineers

- an interview

Young Japanese Engineers have a lot to learn from experienced Engineers who worked and did their best to create advanced industry in Japan. Some experienced Japanese Engineers were innovators, especially when Japanese industries were trying to adopt and sell their product to international markets. To do this, adjusting the factory-acceptance and performances tests of machineries to international standards was an important issue.

For example, the application of ASME codes on Machinery Manufacturers to Japanese industry.

Mr. Norikazu Shigeta, a Mechanical Engineer, conducted applications and made computer codes for ASME-PTC10 on Compressor Tests. For benefit of younger engineers, aiming to learn from the experience that he has obtained in Rotating Machinery Engineering, it was a pleasure to have an interview with such a distinguished practitioner in the field.

Mr. Norikazu Shigeta graduated from the University of Tokyo with a Mechanical Engineering degree in 1966. He joined the Ebara Corporation at that time, and now is a Senior Quality Control and Inspection Engineer for International Projects at the Chiyoda Corporation.

ASME Japan Yearbook: Would you please introduce yourself, and explain about your engineering background, university and work-experience, to the readers of ASME-Japan Yearbook readers.

Mr. Norikazu Shigeta: After graduating from the University of Tokyo, I worked with the Ebara Corporation. Most of my work was at Sodegaura Plant. In 1975, I joined the Sodegaura Plant Construction Team for planning and construction of a test facility and establishing work procedures for multistage turbo-compressors in compliance with ASME PTC-10. A computerized data collection and calculation system was used.

ASME Japan Yearbook: We understood you did distinguished work by applying the “ASME PTC-10”. How do you feel when you remember that time?
Mr. Norikazu Shigeta: It was challenging work. Members worked long hours every day. But I also found satisfaction in working at the leading edge of the field at the time. We developed most of the software, but the equation of the state of gases was introduced by our Compressor licensor Elliott.

ASME Japan Yearbook: How did you feel on the morning of the day you were successful in Coding of ASME PTC-10 to Ebara-Elliott Compressors?

Mr. Norikazu Shigeta: We were proud of our new system, which received praise from many customers.

ASME Japan Yearbook: ASME Japan Yearbook is trying to encourage Japanese mechanical engineers, especially young ones. Do you have some for us in this regard?

Mr. Norikazu Shigeta: Nowadays, computerized performance test systems are in wide use in many compressor manufacturers. As a natural result, you can do test work without knowing the fundamental theory of PTC 10. However, I still recommend for engineers to understand the fundamental concept of PTC 10 testing. It will help you when discussing performance problems you may have at the factory or in the field, as well as limitations in the accuracy of the test.

ASME Japan Yearbook: If you have some additional points you would like to mention, we are interested to hear from you.

Mr. Norikazu Shigeta: The central point of PTC 10 is to maintain the same volume ratio between the test and actual operations at the corresponding flow point. This requirement comes from the precondition of maintaining similar velocity triangles between tests and actual practice, both at the inlet point and the discharge point. This is a simple theory.

Other requirements are of secondary importance.

ASME Japan Yearbook: We appreciate your time and thank you very much for attending this interview.

Mr. Norikazu Shigeta: Thank you.

After all Bugs are fixed, and the Software Code and Simulation was tested in a complete success, in a very early morning, Mr Shigeta and his colleagues are cheerful for the successful task they did. (Mr. Norikazu Shigeta, Center)
ASME Member Benefits

Build skills, make connections and engineer your future. Join ASME's on-campus activities to build your skills, attend special events to network with professional engineers, and access hundreds of valuable resources to jumpstart your career!

As an ASME member, you can take advantage of extensive professional and student benefits, most of which are available at no additional cost or at a substantial discount.

Networking, skill-building and access to the best minds in engineering, even before you're out of school.

ASME is a worldwide organization with over 130,000 members, including over 20,000 student members in more than 150 countries.

As an ASME student member, you gain skills and practical experience outside the classroom. Connect with professional engineers in your area of interest; get access to hundreds of key resources that will open doors when you start your professional career.

Most benefits are available online, so you can access information when you need it, anytime and anywhere. Here are some examples:

- Take advantage of networking opportunities while learning about exciting new techniques and trends.
- Gain free access to educational tools specifically designed for students.
- Communicate and collaborate with fellow ASME members in your area and in your field of interest.
- Find essential content and interesting titles – from ASME Codes to heat transfer problems. You can also receive discounts as a member on your purchases.
ASME Student and Professional Member Benefits-at-a-Glance:

(A) Student Member Benefits-at-a-Glance

- ASME SmartBrief daily summaries of essential engineering news
- ASME WorkSmart with over 100 volumes, many with interactive tables & digitized graphs
- ME magazine subscription
- Connect with engineering professionals and participate in as many as 8 interest groups
- Job board including jobs and internships
- e-Mentoring
- Invitations to local student section meetings, events and activities
- Networking in-person and online
- Online member directory of mechanical engineers
- Student competitions
- Email alias @asme.org
- Group insurance at great rates
- Financial aid and scholarship opportunities
- ASME Japan Section membership, if your contact address is in Japan

(B) Professional Member Benefits-at-a-Glance

- ASME SmartBrief daily summaries of essential engineering news
- ASME WorkSmart with over 100 volumes, many with interactive tables & digitized graphs
- ME magazine subscription
- Connect with engineering professionals and participate in as many as 8 interest groups
- Job board with exclusive opportunities
- e-Mentoring (find a mentor or be a mentor)
- Access to affinity groups
- Invitations to local meetings, events and activities
- Email alias @asme.org
- Networking in-person and online
- Online member directory of mechanical engineers
- Group insurance at great rates
• Bank of America Credit Card
• ASME Japan Section membership, if your contact address is in Japan

Membership Levels

ASME has five grades of membership tailored to suit the needs of engineers at all stages of their careers.

Honorary Member
A rank of membership awarded for eminent distinguished engineering achievement and selected by the ASME International Committee on Honors.

Fellow
A Fellow is a member who has attained a grade of distinction. At the time of advancement, a Fellow must be a corporate-level member of the Society, shall have been responsible for significant engineering achievements, and shall have no less than 10 years of active practice and 10 years of continuous corporate membership in ASME.

Member
Members have either eight years of experience in the profession or attainment of a degree in an engineering curriculum.

If a potential member graduates from an unapproved engineering curriculum, he or she will be given appropriate credit toward the eight-year requirement.

Student Member
A student regularly enrolled in approved engineering or engineering technology curriculum at the undergraduate or graduate level.

Affiliate
An affiliate is member who is not an engineer, but is involved, either professionally or personally, with the profession.

To learn more about ASME membership, visit:
WWW.ASME.ORG → About ASME → Membership

To learn how to join ASME, visit:
WWW.ASME.ORG → Membership → Join ASME
8 How to become ASME Japan Section member?

If you become a member of ASME and your contact address with ASME membership is in Japan, then you are a member of ASME international (www.asme.org), and automatically a member of ASME Japan Section (www.asmejp.org).

When you are a member of ASME Japan Section, your email address is included in ASME Japan Section mailing list, and you would be invited to general events and annual gathering of ASME Japan Section.

To learn more about ASME membership, visit:
WWW.ASME.ORG → About ASME → Membership

To learn how to join ASME and ASME Japan Section, visit:
WWW.ASME.ORG → Membership → Join ASME.
Invitation for Registration:

A Short Course on Effective Technical Presentation

Venue: Nihon University, Surugadai Campus
Building No.5, 2nd Floor, # 524
8-14 Kanda Surugadai, 1-Chome, Chiyoda-ku Tokyo
http://www.cst.nihon-u.ac.jp/campus

Date: August 30, 2014

A Short Course on Effective Technical Presentation

by the American Society of Mechanical Engineers, Japan Section (ASME Japan)

You are invited to attend the “Effective Technical Presentation” to be held at Nihon University on Saturday, August 30, 2014 from 10:00 to 17:00.

As an engineer or technical professional, one is often called upon to make technical presentations. These include presentations made during meetings, briefings, sharing of research findings, or those made during education and training courses. The purpose of this course is to provide guidelines in order to plan, prepare, and deliver effective and efficient technical presentations in English.

Effective Technical Presentations

The short course on English presentation, entitled “Effective Technical Presentation” is a course designed to develop presentation techniques, with the aim of offering hints for technical presentation skills.

This course is designed to provide information which systematically takes learners through the key communication and language skills required to make clear, well-organized short and concise presentations, and enables them to develop these skills in realistic ways.
Welcome to ASME Japan Section

ASME is founded in 1880 as the American Society of Mechanical Engineers. Today's ASME promotes the art, science & practice of mechanical & multidisciplinary engineering and allied sciences around the globe. ASME Japan Section is a Japanese branch of ASME and established in 1986.

Upcoming Events of ASME Japan Section:

- **The 6th Presentation Contest by Students and Young Engineers in English Language**
  
  13:00 ~ 18:30
  
  **Venue:** Nihon University, Surugadai Campus, Building No.5, 2nd Floor, # 524
  8-14 Kanda Surugadai, 1-Chome, Chiyoda-ku Tokyo
  
  http://www.cst.nihon-u.ac.jp/campus
  
  **Date:** August 29, 2014
  
  **Access:**
  - by JR Chuo-Soubu Line get off at Ochanomizu station, walk three minutes to the venue.
  - by Tokyo Metro, Chiyoda Line, get off at Shin-Ochanomizu station, walk three minutes to the venue.
  
  For details see: https://community.asme.org/japan_section/ go to "News&Updates"

- **A Short Course on English Presentation: “Effective Technical Presentation”**
  
  10:00 ~ 17:00
  
  **Venue:** Nihon University, Surugadai Campus, Building No.5, 2nd Floor, # 524
  8-14 Kanda Surugadai, 1-Chome, Chiyoda-ku Tokyo
  
  **Date:** August 30, 2014
  
  For details see: https://community.asme.org/japan_section/ go to "News&Updates"

Events of ASME Japan Section – 2014:

1. **Annual Meeting 2014, June 20**

2. **the 6th Presentation Contest 2014, Aug 29 (Fri 13:00-17:00)**

3. **the 5th Presentation Short-course 2014, Aug 30 (Sat 10:00-17:00)**

4. **JSME-ASME Japan collaboration workshop 2014, Sep 8 (Mon 10:00-12:00)**

5. **the 3rd "MONOZUKURI" Workshop 2014, Sep 26 (Fri 13:00-17:00)**