ASME International

Three Park Avenue, New York, NY 10016-5990

NON-PROFIT ORG.
U.S. POSTAGE
PAID
American Society
of
Mechanical
Engineers

INTERNAL COMBUSTION ENGINE DIVISION NEWSLETTER

http://www.asme.org/divisions/ice/

Tony Siegel, Editor *Summer 2002*

Chair's Message

Steven G. Fritz

If you are reading this, you are probably one of the 4,400 members of ASME International who have selected the Internal Combustion Engine Division (ICED) as one of your areas of interest among the 38 ASME technical divisions. A seven member Executive Committee (all volunteers from within the Society) manages our Division activities and each one has dedicated a considerable part of his career to the Division. I am honored to be your Chairman for the 2002-2003 year.

Another group of dedicated volunteers that keeps the Division running is the Board of Associates, which presently numbers 120. These Associates are active Division members that serve in both technical and administrative capacities for planning our technical conferences and conducting the Division activities. These active Division members have invested personal and professional time and effort in the Division activities. I invite the other 4,000-plus of you to consider how your interest in the ICED can expand to both further your own professional development, and in turn strengthen the overall ICED.

"What's in it for me?" This is the basic question that must be answered by each of us, especially in these hectic times of corporate mergers, budget restrictions, and

(continued on page 2)

New Orleans to be Site of Fall 2002 Conference

The 2002 Fall Technical Conference will be co-hosted by the University of New Orleans and Avondale Shipyard and will be held at the Radisson Hotel in New Orleans, LA, on September 8-11. The Radisson Hotel is located at 1500 Canal Street and borders the famous French Quarter, which is within easy walking distance (4 blocks) from the hotel. A complimentary hotel shuttle service is also available to world-famous attractions within the French Quarter, including Bourbon Street, the historic French Market, the Imax Theater, Aquarium of the Americas and Harrah's Casino.

The conference will include an exceptionally strong technical program addressing key issues spanning the range from fundamental research to practical in-use applications. Examples of topics include combustion, noise and vibration, engine-fuel interactions, in-cylinder emission control and flow processes, exhaust after-treatment, alternative fuels, engine cooling, lubrication, fuel injection and ignition systems, engine design, control and monitoring, engine simulation and diagnostics, advanced engine concepts, component dynamics, wear, and materials.

The technical program will begin on Monday morning with a special keynote presentation, "Heavy-Duty Diesel Emissions: Fifty Years: 1960-2010," by David F. Merrion, Executive Vice President-Engineering (retired), Detroit Diesel Corp. A

(continued on page 2)

Marine Exhaust Emission Controls - An Update

It is now over 4 years since the adoption of the IMO's MARPOL Annex VI[1] which represents the first coordinated international approach to limiting emissions to the atmosphere from ships. Included within these controls are exhaust emission regulations addressing nitrogen oxides (NO_X) and sulphur oxides (SO_X). So, what progress has been made toward achieving those objectives?

The first area of interest must, of course, be that of entry into force of those controls. For Annex VI this requires ratification by at least fifteen Flag States responsible for 50% or more of the world's gross merchant tonnage. While the current list of such signatories[2], with some 16% of world tonnage, so far may appear unsatisfactory, moves are well advanced within many Administrations (US and the various EU members, for example) to enact these requirements. Indeed it is necessary that such actions are underway now, since once the ratification threshold has been reached, there is only a 1 year preparation period after which the requirements of Annex VI will be binding on all signatories to the MARPOL Convention itself, not just those signing Annex VI. The individual Flag State Administrations will need to be able to issue the relevant certification (an IAPP Certificate[3], which will be mandatory for ships in international trade) to those ships under their control entering into service after that date and also to commence a

(continued on page 4)

Chair's Message

(continued from page 1)

downsizing. Engineers sometimes feel like they are becoming a commodity, and need to initiate their own professional and career development. Participation in the ICED activities provides many opportunities for development: authoring technical papers; reviewing papers; presenting papers; attending our technical conferences; and participating in panel discussions alongside other industry experts, often with diverse views on a subject. Awards from ASME recognize outstanding and technically innovative work and benefit both the individual and their employer. Our technical conferences, held twice each year, are the core of our Division activities. We encourage international participation to foster technical interaction from all parts of the world. Strong technical programs are the primary draw and the Associates work hard to develop technical programs with a good mix of OEMs, their suppliers, end users, academic, and government participation. In simple terms, the conferences must have "A Lifetime of Learning" theme, and pass the test of "will my customers be there?"

As we look to our Division's future, there are exciting additions to our conventional conference venues. Our Fall 2002 conference in New Orleans will have a very strong technical program, and features a CIMAC session on Fuel Injection for Large Marine Engines. In the spring of 2003, we will have our first overseas conference in Salzburg, Austria, hosted by the Austrian Marine Equipment Manufacturers Association. The Fall 2003 event will be a joint conference with the ASME Rail Transportation Division in Erie, PA, hosted by GE Transportation Systems. In the spring of 2004, the ICED will sponsor a track of sessions at the CIMAC conference in Kyoto, Japan.

New opportunities for the ICED may develop as the ASME Council of Engineering (COE) considers a major reorganization in the ASME technical division structure. Currently the ICED is one of four Divisions in the Energy Conversion Group (ECG), with the Nuclear Division, the Fuels and Combustion Technology Division, and the Power Division. Mr. Rich Laudenat is the ASME ECG Vice-President, and has a key role in briefing the Divisions on the reorganization process. Examination by the COE began in January 2001 when the Board of Governors (BOG) established a task force to critique the ability of the council and its organizational units to meet several BOG-mandated objectives: to become more fluid, open and responsive; and to establish a visible process that will seek out and include those within ASME who are involved in new technologies. This reorganization will evolve during the next three years. During the next year "on my watch", I anticipate that the current "vision" will translate into preliminary proposals, and I will try to keep the Division members informed on any proposed reorganizing. Please contact me if you have any suggestions for the ECB structure, or if you would like to directly participate in the process.

To keep COE volunteers informed about the activities of the Implementation Task Force, the content of the ITF Web page has been expanded to include not only the history of the task force, but information about who the task force members are, plans to affect changes within COE, and some tools that will help volunteers navigate the changes. To find out more about the ITF, visit www.asme.org/coe/itf

Steven G. Fritz

ASME's Energy Committee Contributes Expertise to Policy Makers in Washington

Some ASME members may be unaware that the ASME Council on Engineering (COE) has a Special Committee on Energy. The Committee seeks representatives from all 8 energy-related Divisions within COE, including the Internal Combustion Engine Division (ICED).

Every year, the Energy Committee submits testimony to the House and Senate Appropriations Subcommittees that provide funding for DOE programs. The testimonies contain the Energy Committee's views on a wide variety of energy programs ranging from energy supply (nuclear, coal, natural gas, renewables) to science programs, to energy conservation measures.

This year, the Committee also provided statements on comprehensive energy legislation making its way through the legislative process. The House (in 2001) and the Senate this year each passed comprehensive energy legislation containing provisions of interest to the ICED members. The two bills are now in a House-Senate Conference Committee, which will try to negotiate away the significant differences between the two bills and come up with a final product that the President will sign.

Major provisions of interest to ICED contained in the energy bills include:

Increasing Fuel Economy for Automobiles

Efforts to increase the Corporate Average Fuel Economy (CAFÉ) standard for passenger cars and light trucks have basically gone nowhere in Congress for several years. This year was not much different. The House-passed energy bill contains a rather weak provision requiring the administration to implement rules that would result in savings of at least 5 billion gallons of oil between 2004 and 2010, and authorizes the National Academy of Sciences to study the effects of imposing tougher standards after 2010.

The original Senate bill would have mandated an increase in the CAFÉ standard for

(continued on page 12)

Fall 2002 Conference

(continued from page 1)

special session hosted by the CIMAC organization will also be conducted on Monday entitled "Common Rail Fuel Injection For Marine Applications."

In addition to the technical program, a variety of social events are planned. On Sunday evening, the conference will kick off with a cocktail party featuring complimentary hors d'oeuvres in typical Cajun style and a cash bar. On Monday evening conference participants will be free to explore the many unsurpassed restaurants in the area boasting Cajun hospitality and cuisine, and to experience the New Orleans nightlife, known for its variety. Maps to restaurants and entertainment information will be made available. As is customary, Tuesday evening's focus will be the annual Honors and Awards Banquet. A sit down dinner will be held at the Radisson Hotel featuring a "Pontchartrain" menu followed by the presentation of honors and awards and a special guest speaker.

While the technical program is underway on Monday, the spouses and guests of conference attendees can enjoy a wonderful excursion by land and water to see the City's most interesting and historic sites. This is a "can't miss" river and city combination tour. The combo tour begins in the morning with a narrated coach tour of the most fascinating neighborhoods and landmarks, including the French Quarter, Jackson Square, the Cabildo, St. Louis Cemetery, the "City of the Dead", Lake Pontchartrain, Tulane and Loyola Universities, the Superdome and much more.

Then step off the coach to enjoy some free time strolling downtown and the New Orleans Riverfront. The tour continues with a Mississippi River cruise aboard the paddle wheeler "Creole Queen." You'll be entertained by the live narration noting landmarks and historic points of interest along the Mississippi as told by the Creole Queen's Captain. The cruise stops at the Chalmette Battlefield, the site of Andrew Jackson's victorious Battle of New Orleans -- the last major conflict of the War of 1812.

On Wednesday morning, September 11, conference attendees and spouses/friends will tour the famous Avondale Shipyard where large Navy and oceangoing ships, powered by large bore internal combustion engine, are constructed. The tour will include a look into the capabilities of the University of New Orleans, School of Naval Architecture on the shipyard site.

The 2002 Fall Conference is guaranteed to be fulfilling on all fronts: technical, social, entertainment and culinary. For more details, please go to the ASME-ICE website: http://www.asme.org/divisions/ice/.

Greg Gutoski

Ted Stewart Wins Chafee Environmental Excellence Award

Ted E. Stewart

Ted E. Stewart, an ICED Associate and a mechanical systems engineer with CSX Transportation in Jacksonville, received the John H. Chafee Environmental Award from the Association of American Railroads during a luncheon in the U.S. Capitol on April 18, 2002. Mr. Stewart also received a congratulatory letter from President George W. Bush in which the President wrote: "Dynamic and talented individuals who strive for excellence in their endeavors reflect the true spirit of America."

The award was presented by Senator Lincoln Chafee of Rhode Island and is named after the Senator's late father, who as a leading environmentalist understood and promoted the environmental advantages of rail transportation. Jim Connaughton, chairman of the President's Council on Environmental Quality, presented the letter from the President.

CSX Corp. Chairman and CEO John W. Snow also attended the luncheon honoring Stewart. "Ted's environmental leadership within CSX and the rail industry is widely acknowledged," Snow said. "We are proud of Ted and his achievements, which will benefit CSX, the rail industry and our environment."

Edward R. Hamberger, President and CEO of the Association of American Railroads noted that the late Senator Chafee was both a committed environmentalist and a strong believer in railroads. "I think he would have been very impressed by the environmental achievements of the railroaders who were nominated for this award," said Hamberger. A total of seven people were nominated for the award by major railroads in the U.S. and Canada.

Stewart led the development of new locomotive technology that reduces both fuel use and air pollution. The new technology is called an Auxiliary Power Unit (APU) and is used on locomotives to reduce idling time. Use of the APU reduces emissions of nitrogen oxide by 91 percent, hydrocarbons by 94 percent, carbon monoxide by 96 percent and particulate matter by 84 percent. At the same time, diesel fuel use is reduced by more than 80 percent.

Stewart worked directly with the EPA to have the system certified as a locomotive emissions reduction kit. He recently represented CSX at a ceremony where the railroad was recognized for developing the APU technology. It is estimated that the installation of the APU technology on all CSX locomotives will ultimately reduce fuel use by 25 to 35 million gallons annually, saving between $20 and $30 million a year. Other railroadsare also looking at the technology.

From the CSX press release

Past Chair's Message

It has been my honor to serve as your division chair for the past year and I look forward to the upcoming year as one that will offer our division new opportunities to fulfill our mission, to better serve our members, and to have a positive impact on our respective professions. The past year has been marked with successes for our division, but will also be memorable for the events of September 11th. I have been most appreciative of your support for the division, particularly during this memorable year. We are fortunate as a division to have an exceptional Executive Committee to provide guidance as we move into a new year. Our incoming chairman, Steve Fritz, has been a strong leader in the division and has an excellent vision for moving the division forward. As a division member, I will look forward to working with Steve and the Executive Committee this year.

Our fall 2001 conference was hosted by Argonne National Laboratory in Chicago, Illinois just a few weeks following the September 11th events. The conference was remarkably well attended for the time and provided an excellent venue for our members to share their technical expertise as well as enjoy several outings in Chicago. The spring 2002 conference was hosted by Fairbanks-Morse Engine Division in Rockford, Illinois and also included a full schedule of technical paper presentations, special speakers and social events. For both of these meetings, I am appreciative of the dedication of the hosts, authors, organizers and chairpersons that led to these successful conferences and to you for your attendance and participation.

In closing, as I stated in my incoming statement to you last year, *my charge to you is to be active in the division, to participate in our annual conferences (as an author or just attendee), and to involve someone new in our division by encouraging them to join the division, by inviting them to one of our technical conferences, or by getting them to be an author of a technical paper for one of our conferences.* Again, thank you for allowing me to serve as your chair this past year and join me in continuing to support our division this year.

Stuart Bell

Merrion to give 2002 Honda Lecture

David F. Merrion

The title of David Merrion's lecture is **Heavy Duty Diesel Engine Emissions: Fifty Years-1960 to 2010**. He will speak from personal experience on his topic during the ICED Fall Technical Conference in New Orleans, LA, September 9-11, 2002.

David F. Merrion started with Detroit Diesel Engine Division of General Motors in 1954 as a co-op student. By 1959, he had earned a BS in Mechanical Engineering from GM Institute and received a Masters in Mechanical Engineering from MIT.

Following graduation, David had assignments in Product Engineering and Advanced R & D. During this period, he developed the Detroit Diesel multi-fuel engine, discovered the cause of hydrocarbons and odor in diesel exhaust, and was part of the Detroit Diesel 8.2L engine design team. In 1988 he became Executive Vice President-Engineering for Detroit Diesel Corporation.

An SAE Fellow and a member of ASME, Merrion is also advisor to the University of California - Riverside. He is past president of the Engine Manufacturers Association and a past member of the U.S. Federal Fleet Conversion Task Force, the U.S. Alternative-Fuels Council, and the EPA Mobile Source Technical Advisory Council. He participated in the National Academy of Science review of the Partnership for New Generation Vehicle (PNGV) research program.

In 1986, ASME established the Soichiro Honda Lecture to recognize achievement and significant contribution in the field of personal transportation. Merrion joins a host of eminent past Lecturers including: Hehnut List, AVL; Prof. Phillip Myers, University of Wisconsin; Dr. Horst Hardenburg, Daimler Benz; Prof. John B. Heywood, MIT, Karl J. Springer, SWRI; Charles E. Amann, KAB Engineering; Dr. Roberta Nichols, Ford; Dr. Henry Newhall, Chevron Chemical; Franz Pischinger, FEV; Prof. Gary Borman, University of Wisconsin; Prof. Hiroyousi Hiroyasu, University of Hiroshima; Dr. Thomas Asmus, Daimler Chrysler; Prof Ghazi A. Karim, University of Calgary; and Dr. Patrick Flynn, Cummins Engine Co.

Karl Springer

Marine Exhaust Emission Controls – An Update

(continued from page 1)

program for the certification of all existing ships, to be completed within three years.

In terms of implementation of the requirements of Annex VI, those relating to diesel engine NO_X emissions are both the most involved, in terms of detail and complexity, and also those which have a timescale and implementation process which is largely independent of the progress of ratification, and for those very reasons is already far advanced. Briefly, the NO_X controls will apply to diesel engines (except those used only for emergency purposes) above 130 kW either installed on ships which are built (keel laid) on or after 1 January 2000 or those engines subject to 'major conversion', as defined, on or after 1 January 2000, including those installed on ships built prior to that date. These controls limit the duty-cycle-weighted NO_X emission value under reference conditions to between 9.8 and 17.0 g/kWh, depending on engine rated speed (2000 rpm and above and below 130 rpm respectively[4]).

Due to the extreme difficulty, if not near impossibility, of attaining the required emission test conditions once an engine has been installed and a ship has entered service, marine engine builders have, over the last three years, been ensuring that those engines which will fall within the scope of the NO_X controls are certified at the construction stage. IMO appreciated the need for such certification prior to the entry into force of the Annex and consequently urged Administrations to issue interim Statements of Compliance to such engines which could, post entry into force, be exchanged for EIAPP Certificates[5]. This completely new engine certification process, with which ABS - acting as a Recognized Organisation - has been heavily involved, covers the whole range of marine engine types and sizes (bores up to 980 mm and engine powers in excess of 80,000 kW) and is now firmly established. Consequently, engines have been, and are being, delivered in a NO_X compliant condition well in advance of the eventual entry into force date.

The key aspect of a NO_X certified engine is that it has a Technical File approved by the Administration of the Flag State of the ship onto which the engine is installed. The scope of that Technical File is defined by the regulations: it identifies the engine, permitted rating and duty; relevant restrictions; and, most importantly, the survey regime to be applied to demonstrate that the engine is retained in a compliant condition over its service life. To date, the Parameter Check method of survey has been the only option applied. This method depends on retaining the engine's NO_X critical components[6] and settings as defined in the Technical File rather than undertaking in-service emission measurements. For this method to function, the NO_X critical components need to be appropriately marked (usually by some form of engine builder-applied code number) in order that they can be verified as necessary.

However, it is equally important that a NO_X certified engine be installed as approved, for example, in terms of duty cycle, rating and such aspects as type of charge air cooling system. An engine approved for direct sea water cooling of the charge air would not necessarily be compliant if installed with a fresh water cooling system. Consequently, a number of ship-owners, before taking over newly-constructed ships, are now requiring an initial survey to be completed in order to ensure that the engines, typically one main propulsion and three alternator driving engines, are installed in accordance with their certification. While this survey has no standing in relation to the Initial Survey which will eventually be required for all ships in order to obtain the IAPP Certificate, it does ensure that the owner, who thereafter is responsible for maintaining that certification, takes over a compliant engine system.

As to SO_X controls, while in practice these are primarily operational matters, there are important considerations which ship-owners are now addressing which will facilitate future compliance. Annex VI introduces two levels of the SO_X emission controls which will apply to all marine combustion machinery; diesel engines, boilers and gas turbines. At the first level there is a 4.5% sulphur cap to all marine fuel oils which will apply without exception. At the second level there are IMO recognized SO_X Emission Control Areas (SECA) on the basis of the proven sensitivity of those sea and adjacent land areas to acid deposition. The Baltic Sea was so identified from the outset and subsequently the North Sea was also so designated; other areas could be expected to follow. Although exhaust gas scrubbing would be one option for operating within a SECA, and such equipment is currently under development, it is expected that compliance will generally be achieved by use of a 1.5% maximum sulphur content fuel oil. Such fuels may either be low sulphur residual fuel oil (from low sulphur crude stock or blended to specification) or gas oil grade products, it being for the ship-owner to decide as to which option is to be adopted in each case based on the various influencing factors. However, what is clear is that for ships which intend to operate both within and outside SECAs, there will be a need for fuel supply systems (and also in some cases engine lubrication systems) which can be readily changed over to use fuels corresponding to the two sulphur limits, since such changeovers must be fully completed before entry into a SECA, and not changed back until after leaving such an area. Therefore, prudent ship-owners are looking to the modifications necessary to fuel storage, transfer and supply systems which can be made at next scheduled dockings in order to have that work done with the minimum of inconvenience.

A final aspect is the work being undertaken within IMO itself. Within Annex VI as adopted are references to a number of Guidelines intended to assist Administrations in the application of the requirements. The first of these Guidelines was finalized by IMO in March 2002 and covers the sampling procedures to be used for fuel oils supplied for use by ships. This requirement is to support both the fuel oil sulphur limits inherent in the SO_X controls and also an additional requirement within the Annex which prohibits the addition to marine fuel oils of harmful or toxic substances. Currently, through the work of a Correspondence Group, attention is focusing on the Guidelines for the Direct Monitoring option as a means of demonstrating in-service compliance.

This article provides a summary of progress so far at the international level. From a regional perspective, the publication on 30 April 2002 of the US EPA's Notice of Proposed Rule Making for Category 3 (over 30 litre per cylinder) marine engines represents a significant step. However, the final form that those requirements will take and their resulting impact on ships and ship operations in US waters is yet to be seen.

Notes:

1. International Maritime Organization (IMO), International Convention for the Prevention of Pollution from Ships 1973 as amended by the Protocol of 1978 (MARPOL 73/78), Annex VI 'Regulations for the Prevention of Air Pollution from Ships'.
2. May 2002; Norway, Sweden, Singapore, Bahamas, Malawi and, most recently, Marshall Islands.
3. International Air Pollution Prevention Certificate, required for ships, 400 gross tonnage and above, engaged in international trade. Administrations are to make separate arrangements for ships under that tonnage to demonstrate compliance.
4. For intermediate speeds the limit is given by 45/n0.2, n = engine rated speed (rpm).
5. Engine International Air Pollution Prevention Certificate.
6. Typically the engine's fuel and charge/scavenge air system and those forming the combustion chamber.

A.A. Wright, Senior Engineering Specialist, American Bureau of Shipping. For further information on marine exhaust emission controls contact: ABS London - Engineering Services (email: abs-eur@eagle.org; fax +44 20 7377 0062)

Uzkan Becomes ASME Fellow

Dr. Teoman Uzkan, Staff Research Scientist at GM Electromotive Division has recently been elected to the grade of ASME Fellow in recognition of his outstanding professional accomplishments in mechanical engineering. He has had a distinguished engineering career that has spanned over 35 years with General Electric, the Turkish Navy, Bogazici University, International Harvester and General Motors Electromotive Division. He has made lasting contributions to the mechanical engineering profession by introducing modern analytical techniques to support new product development, by pioneering the use of the right combination of analysis, small scale testing and full size testing to improve design and reduce costs, and through his patents.

Dr. Uzkan is widely recognized as an authority on a wide variety of diesel engine topics, including combustion processes, air breathing, turbo-charging, fuel injection, and cooling systems. He has published several papers on a new method to assess the effectiveness of the scavenging process that has been incorporated in a number of engine simulation codes. His work has played an invaluable role in critical design decisions concerning the EMD 710 and H class of engines, including the development of a coal-slurry burning two-cycle diesel engine and an all-new four-cycle diesel engine. His work has also proven the feasibility of new concepts for engine cooling and aftercooling for emissions compliance. Dr Uzkan's impressive work has formed the foundation for all EMD locomotive-cooling systems built and/or proposed to be built for the period 1992-2001. Through his work, new and advanced cooling system design methodologies have been developed and several patents have been awarded.

Teoman has generously contributed his time to a broad range of service and education activities within the engineering community. He has been serving as ambassador to link academic, industrial and government groups together. He has taught at Stanford University for two years, at the Turkish Naval Academy for three years, and at the Bogazici University of Istanbul for four years. He has been enthusiastically introducing, mentoring, advising and supporting engine researchers at Universities and National Laboratories to participate in new technology development that would ensure the relevance of academic and government research.

Dr. Uzkan has truly made numerous lasting contributions to the Internal Combustion engine Division of ASME in his over twenty years of membership. On the technical end, he has published 9 papers, organized more than 25 sessions for the ASME Internal Combustion Engine (ICE) Division and the Fluid Mechanics Division, and was Technical Chairman for four ASME-ICE Divisional Conferences. On the administrative end, he has been a Member of the Awards Committee of the ICE Division for 4 years (1990-1994), a member of the Executive Committee of the ICE Division for 7 years (1995-2001), and Chairman of the Internal Combustion Engine Division during 1999-2000. He was the founder and Chairperson for the "Most Valuable Technical Contribution to ICE Industry Award" committee for 2 years (1999-2001). He also served as ASME-ICE Divisional Representative to the CIMAC Diesel Technical Committee for 6 years, and as a member of the government relations committee of the ICE Division for 4 years.

In summary, Dr. Teoman Uzkan richly deserves his election to the ASME Fellow grade for his distinguished contributions to the advancement of engine technology, the ASME community and the mechanical engineering profession. Dr. Uzkan will be formally recognized at the Fall 2002 ICE Technical Conference to be held in New Orleans.

Dennis Assanis

ICED seeks ASME Energy Committee Rep

The Internal Combustion Engine Division has the right to have a voting member on the ASME Energy Committee. This position has not been filled for many years. The Energy Committee is very active with reviewing DOE budgets, evaluating and offering comment on proposed DOE and EPA actions. Other topics may include CAFE standards, PNGV, and Freedom Car.

Most business is conducted by teleconference. The frequency of the activity varies, and may increase when new budgets are under debate.

The primary function of the Energy Committee is to coordinate and focus the attention on Mechanical Engineering activities related to energy. Its interests may cut across a number of Technical Divisions and include many of the interests of those Divisions. The Committee is not normally a programming activity. The Energy Committee reports to the Council of Engineering.

If anyone is interested in more information, please contact James Vogt, ICED Government Relations Chair, email: jvogt@ricardo-us.com

James Vogt

ASME-ICED and CIMAC Grow Closer

Editor's Note: The following is a reprint of the May 13, 2002 report sent to CIMAC by the ICED which serves as the official USA representative to CIMAC.

Markus Heseding
Secretary General
CIMAC Central Secretariat
c/o VDMA e. V.
Lyoner Strasse 18
60528 Frankfurt, Germany

Dear Markus,

I apologize for not being able to attend the CIMAC meeting on May 15 in Athens. On behalf of the ASME-ICE Society acting as the USA NMA, I offer the following report summarizing recent activity.

- ASME Headquarters has implemented a system of communicating CIMAC activities by sending out broadcast e-mails to its ICE related members (~2800). The purpose is to expand the level of communication so CIMAC events are announced to a wider audience.

- Other USA companies related to the engine industry that are not on the current ASME-ICE member distribution list will be contacted and asked to join CIMAC and participate in CIMAC activities.

- ASME-ICE is conducting a CIMAC session titled "Common Rail Fuel Injection for Marine Applications" at its Fall Technical Conference September 8-11, 2002, in New Orleans, USA.

- The ASME-ICE 2003 Spring Technical Conference will be held in Salzburg, Austria, May 11-14, 2003; the first conference to be held outside the USA. This will allow easier and greater participation by CIMAC members.

- ASME-ICE has a proposal before the CIMAC Board to participate in and conduct a track of sessions at the 2004 CIMAC Congress in Kyoto, Japan in lieu of holding its normal spring technical congress.

Please feel free to contact me, or Secretary John Bendo, if you have any questions.

Best regards,

Greg Gutoski
Chairman of CIMAC U.S. Natl. Committee

Railways Get New Locomotive Exhaust Emission Regs

In October 2001 the International Union of Railways (UIC) Commission "Technique and Research" approved the new Leaflet 624 covering locomotive exhaust emission levels. These regulations effectively cover all railway engines operating outside of North America, where EPA exhaust emission regulations are in effect in the US, and Canada is essentially following the US regulations. UIC 624 came into force on 1 January 2002 as a mandatory leaflet for all UIC member railways. That means every diesel traction engine designed for new locomotives or railcars or even as a replacement engine has to undergo the emission testing procedure described by the leaflet.

The approval procedure normally requires that the engine manufacturer contact their "national" railway and ask it to support its request for emission testing. This "Organising Railway" officially forwards the request to one of the "Recognised Bodies" mentioned in the leaflet to organise the emission testing procedure. The emission test usually takes place at the manufacturers premises audited jointly by a representative of the Recognised Body and the Organising Railway.

The admissible limits are shown in Table 1.

The UIC 624 test procedure starts with a preliminary meeting between Organising Railway, Recognised Body and the Engine Manufacturer to discuss the details of the test and to inspect test cell and measuring equipment to verify it's conformity against the specifications of ISO 8178. The test procedure consists of the verification of the characteristic curves of the engine, the curves of fuel consumption, the thermal balance and the determination of the pollutant emissions against ISO 8178-4 cycle F. Depending on the engine's size and performance and the availability of measuring equipment the whole procedure takes between two and four days.

Based on the test results, and additional supporting information to be provided by the Engine Manufacturer and the Organising Railway, the Recognised Body creates the test report and translates it into the other two languages (every emission certification report has to be produced in UIC's three official languages English, German and French) before it is transmitted to the UIC body in charge for engine certification. Within a month after it's submission UIC takes a decision on the test report and informs Engine Manufacturer, Organising Railway and Recognised Body on that decision.

European engine manufacturers usually chose their National Railway to act as the "Organising Railway" as for a full UIC approval procedure against Leaflet 623, and now 624.

For US engine manufacturers, sometimes the Transportation Technology Center (TTCI) of the Association of American Railroads (AAR) acts as the "Organising Railway," but in case the engine is designed for the European market, a European railway could be the Organising Railway.

Since the leaflet came in force on 1 January 2002, one US and one European manufacturer have undergone the 624 procedure, although this does not reveal the whole dimension of certification.

To avoid double testing, emission measuring remains part of the approval procedure against UIC Leaflet 623. That means performing a test against the non-mandatory 623 Leaflet still includes the emission testing against Leaflet 624. Taking this into account all UIC approved engines so far are within the 1997 emission limits, but several engines have already passed the 2003 (UIC II) limits. It is expected that several manufacturers with UIC approved engines will try to renew their certification before the end of 2002.

In Europe, diesel traction provides a relatively small percentage of motive power compared to electric traction, and therefore the pollutant emissions caused by diesel locomotives and railcars are relatively minor. However, to maintain the railways reputation as an environmental friendly mode of transportation, it was important to demonstrate a similar drop in pollutant emission limits compared to its main competitor, road transportation. Due to the mandatory character of the new 624 Leaflet, it is anticipated that within a few years a significant part of the diesel fleet will be equipped with UIC 624 "emission-certified" engines.

Pollutant emission reduction of combustion engines will remain an important issue for all transport modes. It was agreed between engine manufacturers and railways to assure UIC II limits for five years. As engine development is not a matter of months but of years, technical discussions on the feasibility of the 2008 (UIC III) limits will start soon. Preliminary proposals for UIC III emission limits are listed in Table 2.

For additional questions concerning UIC emission certification, contact Hans Paukert, ERRI Project Manager for diesel engines. HPAUKERT@ERRI.NL

Hans Paukert

Table 2. Possible Future UIC III Standards

	Effective Date	NOx	HC	CO	PM
UIC III (g/kWh)	Jan 1, 2008	6.0	0.5	2.0	0.20

Table 1. Pollutant emission limits

Pollutant	Permissible level up to 31.12.2002 (g/kWh) UIC I	Permissible level from 01.01.2003 (g/kWh) UIC II	
Power range		P=560 kW	P>560 kW
CO	3	2.5	3
NO_x	12	6	n>1000 U/min 9.5 n=1000 U/min 9.9
HC	0.8	0.6	0.8
Bosch index(1)	1.6 (2,5)	-	-
Particulates	-	0.25	0.25(2)

(1) From an air throughput less than 1 kg/s the value increases linearly from 1.6 to 2.5

(2) For engines with a nominal power output greater than 2200 kW, a particulate emission of 0.5 g/kWh is acceptable, on an exceptional basis, until 31 December 2004. However, it is recommended that the limit value of 0.25 g/kWh be observed.
From 1 January 2005 a limit value of 0.25 g/kWh will be made mandatory for all engines.

Internal Combustion Engine Division Gets New Website

Have you seen the new Internal Combustion Engine Division (ICED) web site? It's loaded with all kinds of useful information for the IC engine professional. There are keynote and technical panel presentations, as well as award lectures from ICED conferences. There are links to articles, books, journals, courses, research reports, newsletters, information on IC engine engineering landmarks around the world, ASME position statements, upcoming events and much more. Visit the new ICED website: http://www.asme.org/divisions/ice/

Diesel - The Environmental Benchmark for Heavy-Duty Applications

Diesel emission control technology is advancing at a pace rarely seen in the transportation field. For example, this year it is expected that upwards of 300+ technical presentations or papers will be delivered on the topic. This presentation summarizes the key trends and studies that characterize the field from the last six months or so, and covers heavy-duty diesel regulations and current understanding of ultra-fine particulates, filters, NO_x control, and integrated NO_x and particulate control systems.

Driven by increasing evidence on the mortality and morbidity effects of components in diesel exhaust, and that diesel represents a significant portion of the NO_x and PM (particulate matter) inventories, regulators are tightening down significantly on heavy duty diesel emission standards. The trend started in 1998 with the Euro IV and Euro V (in effect 2005 and 2008) emission standards that were intended to force the use of advanced NO_x control and diesel particulate filters. Japan will have the tightest standards in the world (roughly equivalent to Euro V) in the 2005 to 2007 time frame. The US follows with the US2007 standards, which are nominally 35% tighter on PM and 30 to 90% tighter on NO_x (2007 to 2010 phase-in). To hit the regulations, filters and EGR (exhaust gas recirculation) will be used in Japan. SCR (selective catalytic reduction) or EGR plus filters (maybe simple oxidation catalysts instead of filters) will be used in Europe. In the US, 40 to 50% efficient NO_x (lean NO_x traps, LNT) plus 60 to 70% efficient filters will be needed in 2007, going to 80 to 90% efficient NO_x in 2010.

Ultra-fine particles are perhaps the most significant health hazard in diesel exhaust. Results from recent exhaust plume studies show significant concentrations (3000 to 100,000 particles per milliliter of air), depending on size and conditions. The effect of engine advancements and filters on ultra-fines is summarized for light-duty and heavy-duty vehicles.

Filters are an effective remediation technology for PM and ultra-fines, removing upwards of 80 to 95% of PM (by mass) and 99%+ of ultra-fines. Although filters have been available for more than 20 years, technical papers on feasibility, specifically regeneration strategies, emerged only 2 years ago. Years 2001 and 2002 saw advancements in filter technology. Recent studies on the effect of filter cell geometry, composition, and pore character are described, as well as secondary emissions and methods of ash removal.

Regarding NO_x control technologies, SCR has advanced 6X in performance from 1995 to 2000. Durability is well proven and control efficiencies upwards of 85 to 90% are being reported for emerging systems. Secondary emissions are now an area of focus, as well as urea (source for ammonia) distribution. LNTs are a relatively new technology, but perform similarly, in terms of size, efficiency, and fuel penalty, to SCR. The big uncertainty is the effect of sulfur and the impact that desulfation processes have on the material. Recent advances on materials and desulfation processes and impacts are summarized.

Putting NO_x and PM systems together typically results in synergies. For example, a catalyzed filter generates NO_2 from the NO, which significantly enhances the performance of the NO_x device (SCR or LNT). In the case of putting the LNT in the filter (one component), even greater synergies are reported.

In summary, compared to current commercial natural gas vehicles, growing evidence suggests that the clean diesel has lower toxin emissions, lower ozone forming compounds, and equivalent or lower greenhouse gas emissions, perhaps making the clean diesel a contender as a new environmental benchmark.

Steven Fritz- Summarizing the Keynote address given by Tim Johnson of Corning Incorporated at the 2002 ASME Spring ICE Conference, Rockford, IL. Tim can be reached at JohnsonTV@Corning.com.

2002 STC Tour at Fairbanks Morse

2002 STC Tour at Fairbanks Morse

2002 STC Tour at Fairbanks Morse

2002 STC Tour at Fairbanks Morse

New Associates Join ICED Organizers

The ICE Division runs smoothly due to the efforts of many individuals. The Executive Committee is perhaps the most visible group, but behind the scenes are over 120 "Associates" who help run the meetings, assist in getting speakers lined up, review the technical papers, and perform the other various functions needed to keep the division moving forward.

Since the last edition of this Newsletter was printed, the Executive Committee has approved the following six people as new members of the Board of Associates. Please congratulate:

Dr. Susumu Ariga - Inter-Tech Energy Progress, Inc., San Antonio, TX
Dr. Anatoli Borissov - Universal Compression, Inc., Houston, TX
Mr. John Hedrick - Southwest Research Institute, San Antonio, TX
Dr. Tariq Shamim - University of Michigan - Dearborn, Dearborn, MI
Dr. Ferdinand Trenc - University of Ljublijana - Ljublijana, Slovenia
Dr. Houshun Zhang - Detroit Diesel Corporation, Detroit, MI

Internal Combustion Engine Division—Founded in 1921

Executive Committee
2002 - 2003
Chair
Steven G. Fritz, PE
Principal Engineer
Southwest Research Institute
Ph. 210-522-3645 Fax 210-522-3950
sfritz@swri.org

Vice-Chair, Technical Programs
Dr. Victor W. Wong, PE
Manager-Sloan Automotive Laboratory
Massachusetts Inst. Of Technology
Ph. 617-253-5231 Fax 617-253-9453
vwong@mit.edu

Vice-Chair, Administration
Greg Gutoski
Vice-President, Engineering
Fairbanks Morse Engine
Ph. 608-364-8167 Fax 608-364-8233
greg.gutoski@goodrich.com

Assistant Vice-Chair, Tech. Programs
Neil X. Blythe
Manager, Engineering Design
Fairbanks Morse Engine
Ph. 608-364-8017 Fax 608-364-8233
neil.blythe@goodrich.com

Assistant Vice-Chair, Administration
Andrew J. Pope
Partner
A & A Enterprises
Ph. 814-757-8201 Fax 814-757-8201
apope@westpa.net

New Member, Technical
Dr. Kirby S. Chapman
Professor and Director
National Gas Machinery Lab.
Kansas State University
Ph. 785-532-2319 Fax 785-532-3744
chapman@ksu.edu

Secretary
James H. Garrett, PE
Garrett Technical Services
Ph. 210-493-7738 Fax 210-493-6203
jgarr8907@aol.com

Treasurer
Alan C. Anderson, MC 50175
Manager - V-903 Engineering
Cummins Inc
Ph. 812-377-2957 Fax 812-377-7808
alan.c.anderson@cummins.com

Past Chair
Dr. Stuart R. Bell
Dean of Engineering
Leamed Hall
University of Kansas
Ph. 785-864-3881

Executive Committee in Argonne

Technical Committees and Activities
Advanced Technology
Dr. Rameshwar P. Sharma
Associate Professor
Mechanical Engineering
Western Michigan University
Ph. 313-336-4953 Fax 313-336-7719

Applications and Operations
Edward P. Kelleher
Sales Manager
Dynalco Controls
Ph. 508-428-7774 Fax 508-428-7547
ekelleher@dynalco.com

Engine Design
(Open)

Environment
Malcolm Payne
President
Engine Systems Development Centre
Ph. 514-634-8916 Fax 514-634-3932
m.payne@ESDC.com

Fuels & Combustion
Dr. Chris Rutland
Associate Professor
Dept. of Mechanical Engineering
University of Wisconsin-Madison
Ph. 608-262-5853 Fax 608-262-6707
rutland@me.engr.wisc.edu

Instrumentation & Controls
Keith Brooks, PE
OEM Sales Manager
Altronic, Inc.
Ph. 330-545-9768 Fax 330-545-9005
kbrooks@altronic.com

International Technical Affairs
Karl J. Springer, PE
Ph. 210-493-7279
AnnKarl@stic.net

Lubrication & Friction
Dr. Dan E. Richardson, MC 50174
Technical Advisor
Cylinder System Development
Cummins Inc.
Ph. 812-377-4474
Dan.E.Richardson@cummins.com

Quality/Reliability
Joseph R. Barcroft, PE
Ph. 231-744-8183 Fax 231-744-8183
jrmjbar@attbi.com

Technical Awards Committee
Dr. Teoman Uzkan
Electro-Motive Division - GMC
Ph. 708-387-6991 Fax 708-387-3530
teoman.uzkan@gm.com

Associate Editor, Journal of Engineering for Gas Turbines & Power, and Journal of Engineering for Turbomachinery
Dr. Dennis N. Assanis
Dept. of Engineering/Applied Mechanics
University of Michigan
Ph.: 734-763-7880 Fax 734-764-4256
assanis@umich.edu

Administrative Committees and Activities
Group Operating Board Representative
Steven G. Fritz

Group Operating Board Alternate
Greg Gutoski

Newsletter
A. H. (Tony) Siegel
Regional Sales Manager
Dynalco Controls
Ph. 970-226-3795 Fax 970-226-3791
tsiegel@dynalco.com

ICE World Wide Web
Dr. Chris Rutland
Associate Professor
Dept. of Mechanical Engineering
University of Wisconsin-Madison
Ph. 608-262-5853 Fax 608-262-6707
rutland@me.engr.wisc.edu

Paper Presentation Rating
Walter R. Taber, Jr. PE
Ph. 713-782-3299 Fax 713-784-1910

CIMAC U.S. National Committee
Greg Gutoski, Chair
John Bendo, Secretary

Membership Development and Member Interests
Dr. Frank W. Aboujaoude
Special Projects Engineer
Fairbanks Morse Engine
Ph. 608-364-8197 Fax 608-364-8233

Nominating
Terry L. Ullman
Manager, Diesel Emissions Research Dept.
Southwest Research Institute
Ph. 210-522-2654 Fax 210-522-3950
tullman@swri.edu

Honors & Awards
Abnash C. Narula, PE
Manager of Engineering
Wm. W. Nugent & Co.
Ph. 847-674-7782 Fax 847-674-0379
a.narula@wwnugent.com

Meetings Coordinating
Greg Gutoski

Publicity
Joseph M. Kane
Vice President, Editor
Diesel & Gas Turbine Publications
Ph. 262-832-5000 Fax 262-832-5075
jkane@dieselpub.com

Operating Guide & By-Laws
Andrew J. Pope

Government Relations
James M. Vogt
Director, Business Development
Ricardo, Inc.
Ph. 630-789-0003x222 Fax 630-789-0127
jvogt@ricardo-us.com

Lectures
Karl J. Springer, PE
Ph. 210-493-7279
AnnKarl@stic.net

Internal Combustion Engine Award
Dr. Madan Goyal
Goyal Technical Services, Inc.
Ph. / Fax 319-277-1185
mgoyal@cfu.net

Honda Medal Committee Representative
David B. Field
Ph. 864-646-2496

Long Range Planning
Greg Gutoski

History and Heritage Liaison
Melvin J. Helmich
Technical Director
HELMA'RK
Ph. 740-397-5323 Fax 740-397-5323
MelHel74@hotmail.com

Staff
John Bendo
Engineering Programs Manager
ASME International, 22W3
Ph. 212-591-7055 Fax 212-591-7671
BendoJ@asme.org

Awards Presented at 2001 FTC

The following people were honored during the Awards Banquet held during the 2001 Fall Technical Conference at Argonne, IL

Ismail Celik
ICE Division
Meritorious Service Award

Paul R. Danyluk
ICE Division
Meritorious Service Award

Patrick F. Flynn
Recognition of Receiving the
Soichiro Honda Lecturer, 2001

Robert C. Stempel
Recognition of Receiving the
Soichiro Honda Lecturer, 2000

Peter K. Senecal
ICE Division
Speaker Award

E. Robert Fanick
ICE Division
Speaker Award

Terry L. Ullman
ASME Retiring
Chairman Certificate

Peter K. Senecal
ICE Division Most Valuable
Technical Contribution

Karl J. Springer
Richard S. Woodbury Award

Abnash C. Narula
ICE Division
Meritorious Service Award

Greg Gutoski
ICE Division
Meritorious Service Award

Koudai Yoshizawa
ICE Division Most Valuable
Technical Contribution

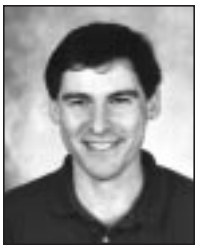
No Photo Available.

Chris Rutland
ICE Division
Citation

Gordon R. Pennock
Recognition of Receiving
Fellow Grade

The following members received Recognition of Receiving Fellow Grade, but their photos were unavailable:
Carl McClung & Bruce M. Chrisman

Chapman Joins Executive Committee



Kirby S. Chapman

Professor Kirby S. Chapman was recently selected by the ICED Executive Committee as its New Member - Technical. The Executive Committee chooses a New Member each year to join its ranks. The New Member then spends the next four years in various assignments before becoming Chair of the Division in his fifth year, and then Past Chair for a year before retiring from the Executive Committee. Chapman is a professor of mechanical engineering and director of the National Gas Machinery Laboratory at Kansas State University. He has been active in the ICED since 1990.

Kirby Chapman brings a strong engines-related background to the Executive Committee. His research focuses on modeling thermodynamic and fluid dynamic systems that enhance the operating efficiency and reduce the emissions from large-bore reciprocating engines used in the natural gas transmission industry.

Since joining K-State in 1991, Chapman has developed a strong history of leading large-scale projects such as the development of the Turbocharger Test and Research Facility. This open-looped turbocharger test cell is the only one in the United States with the capability to conduct research and testing activities on the large turbochargers used in the natural gas transmission, nuclear power, and marine industries. The test cell provides data to validate various computer models and allows turbocharger concepts and designs to be tested.

Kirby received his Ph.D. from Purdue University where he developed computational methods to analyze natural gas combustion in industrial direct-fired furnaces. That research, funded by the Gas Research Institute, involved numerical calculations to predict turbulent fluid velocities, temperatures, and the rate of nitrogen oxide formation in combustion systems as well as the effect of turbulence on combustion enhancement. His master's work at Michigan Technological University involved system modeling and optimization of heavy-duty diesel engines used in the trucking industry.

Professor Chapman has led numerous technical sessions at ICE technical conferences. Upon learning of his recent appointment he commented, "I am honored to be included with this group of highly respected professionals and eagerly anticipate working for the Division to help provide researchers a fertile environment in which to exchange ideas and conclusions for the continued advancement of IC engines."

Terrorists Can't Stop Fall 2001 Technical Conference

Argonne National Laboratory, one of the U.S. Department of Energy's multi-purpose Laboratories, served as host for the 2001 Fall Technical Conference from September 23-26, 2001. The conference was a success in more than the traditional sense. Scheduled within two weeks after the terrorist attack on our country, there was a fear that many speakers and attendees would cancel. However, the final registration and attendance numbers showed that fewer than five people canceled. Especially remarkable was the attendance of many overseas participants from as far away as India and Russia so soon after September 11.

The conference started with Chairman Bell requesting a moment of silence to pay our respects to the victims of the September 11 terrorist attacks. The technical program consisted of ten sessions in which 55 papers were presented. Judging from the comments made by many attendees, the topics covered in these technical sessions were very appropriate, timely and useful. Most of the sessions were lively and well attended and participants took an active part in discussions following the presentations. One of the conference highlights was the 2001 Soichiro Honda Lecture: "HOW CHEMISTRY CONTROLS ENGINE DESIGN" by Dr. Patrick F. Flynn. Dr. Flynn is the retired Vice President of Research, Cummins Engine Company. His presentation covered the fundamentals of diesel engine combustion, the role of Chemistry in pollutant formation and how it affects the mechanical design of the engine.

Many of the attendees participated in the Chicago Tour and Dinner outing on Monday evening. The organized bus tour covered many of the historic parts of the city with commentary by a professional tour guide. The following night the banquet and awards dinner included a lively presentation on the history of Argonne National Laboratory, starting from the days of Enrico Fermi. The conference ended with a tour of Argonne's engine test facilities, Tribology laboratories and the Advanced Photon Source.

Raj Sekar

2002 Spring Technical Conference in Rockford

Fairbanks Morse Engine hosted the 2002 Spring Technical Conference in Rockford, Illinois. The conference was held on April 14-17 at the Best Western Clock Tower Resort and Conference Center and was attended by approximately 100 people.

Dr. Timothy Johnson, Manager of Emerging Regulations and Technologies at Corning Environmental Technologies, delivered the Keynote Address, "Diesel - The Environmental Benchmark for Heavy-Duty Applications". The presentation featured state of the art diesel engine emissions control technologies which included emissions regulations and technology trends, developments in diesel ultra-fine particles, recent developments in filters, NOx control, and integrated systems. A synopsis of the Keynote presentation appears elsewhere in this Newsletter. A two-day technical program followed and featured 8 technical sessions, where over 30 papers were presented. The papers covered a wide range of topics including natural gas and alternative fuels, in-cylinder flows and sprays, catalytic reduction of emissions, ignition and combustion, operation and performance, and engine design.

An enjoyable program followed Monday night's dinner. "Magic Mike" performed a comedy act which included non-stop humor, mystery and audience involvement. Special thanks go to Carl McClung and Greg Gutoski for their good nature and participation in the entertainment program.

The conference concluded with a tour of the Fairbanks Morse Engine manufacturing facilities in Beloit, Wisconsin. After a brief introduction to Fairbanks Morse Engine and its product offerings (Opposed Piston, Alco, Pielstick, and MAN engines) the attendees saw many manufacturing operations as well as the Pielstick PC2.5, Opposed Piston, and Alco engines being made. The Opposed Piston and Alco engine cutaways drew the attention and curiosity of the attendees.

Frank Aboujaoude

Rockford Conference

2003 Spring Conference Set for Austria

The 2003 Spring Technical Conference will be hosted by the Austrian Marine Equipment Manufacturers (AMEM) organization and will be held in Salzburg, Austria on May 11 - 15; the first ASME-ICE conference ever held outside the U.S. borders. Salzburg is an historic city noted for its beautiful cathedrals, old town shopping area and riverway, ornate castles, fortresses, and baroque architecture. It is located on the southern border of Germany, only 1-1/2 to 2 hours from Munich, Vienna and Innsbruck, situated in the midst of the mighty Alps.

The conference site is the Hellbrunn Palace known for its world-famous aquatic gardens, mysterious grottos, spacious manicured parks, water-driven figurines and "trick" fountains, all built 400 years ago by the last prince-bishop of Salzburg. An assortment of 4 hotels located in the same downtown/old town area are available for accommodations, with a range of price and elegance, and from American to Authentic Austrian style. A shuttle/bus service will be available for transport from the hotels to the conference site at the Hellbrunn castle.

A fine technical program is assured through the host organization, AMEM, and with the assistance of many Austrian companies that are staunch supporters of ASME and CIMAC including AVL, Jenbacher, Geislinger, MIBA and Bosch. Papers will be presented covering topics related to all types of automotive, marine, locomotive, off-highway, and industrial engines and will address aspects of the design, development or application of compression-ignition (diesel) and spark-ignition reciprocating engines. Light-duty and heavy-duty engines, as well as large-bore I.C. engine systems for power generation and propulsion will be covered.

Anticipated technical sessions span the range from fundamental research to practical in-use applications. Topics will include combustion, noise and vibration, engine-fuel interactions, in-cylinder emission control and flow processes, exhaust after-treatment, alternative fuels, engine cooling, lubrication, fuel injection and ignition systems, engine design, control and monitoring, engine simulation and diagnostics, advanced engine concepts, component dynamics, wear, and materials.

A number of social events are planned. On Sunday evening, the conference will begin with a welcoming reception featuring complimentary hors D'oeuvres and a cash bar in the Orangery overlooking the gardens at the Hellbrunn Palace. Monday evening will feature a trip to the Salzburg fortress located on the highest point of the city overlooking the entirety of Salzburg. A classical music concert will be conducted for all within the fortress and leisurely walks around the mighty structures can be made. A reception is planned for Tuesday night at the Hellbrunn castle where cocktails and complimentary hors D'oeuvres featuring typical warm Austrian dishes will be served. This will be followed by an English-guided romantic night tour of the aquatic gardens and trick fountains.

Select spouses tours include a trip to Swarovski's Crystal World's by bus and a Sound of Music tour which tells the story of the Georg Von Trapp family and will take participants to the most picturesque part of Austria - the Salzkammergut.

Factory tours will be available on both Wednesday (full day) and Thursday (morning). Wednesday's tour will be of Jenbacher engine company combined with a bus tour and sightseeing walk at Innsbruck. An alternate Wednesday tour will be a visit to MIBA combined with a paddle steamer boat trip aboard the "Gisela" and a short walk through the city of Gmunden.

Thursday morning's factory tour options include a visit to Geislinger or Bosch, both famous suppliers of equipment for reciprocating engines.

The first-ever ASME-ICE conference to be held off the U.S. mainland is bound to be well attended and is guaranteed to be an all-around enjoyable experience. Don't miss it!

Greg Gutoski

CALL FOR PAPERS
Internal Combustion Engine Division of the ASME

2003 Spring Technical Conference
May 11 - 14, 2003 — Salzburg, Austria
Hosted by Austrian Marine Equipment Manufacturers

The 2003 Spring Technical Conference will be held in Salzburg, Austria from May 11 - 14, 2003 and hosted by the Austrian Marine Equipment Manufacturers.

Important Dates:

September 15, 2002	Offer of Paper, One Page abstract
November 15, 2002	Draft Manuscript Due for Review
January 21, 2003	Camera Ready Paper Due

2003 Fall Technical Conference
September 7 - 10, 2003 — Erie, Pennsylvania, USA
Hosted by General Electric Transportation Systems

The 2003 ASME-ICED Fall Technical Conference will be a joint conference with the Rail Transportation Division of ASME. It will be held in Erie, Pennsylvania, USA from September 7 - 10, 2003. The conference is being hosted by General Electric Transportation Systems and will include a tour of their manufacturing facilities.

Important Dates:

March 3, 2003	Offer of Paper, One Page Abstract
April 21, 2003	Draft Manuscript Due for Review
June 9, 2003	Camera Ready Paper Due

Papers are invited for publication and presentation on topics related to all types of automotive, marine, locomotive, off-highway, and industrial engines. Papers may address any aspect of the design, development or application of compression-ignition (diesel), spark ignition, rotary or reciprocating engines. Light-duty and heavy-duty engines as well as large-bore I.C. engine systems for power generation and transportation propulsion are welcome.

Anticipated technical sessions span the range from fundamental research to practical in-use applications. Examples of topics include, but are not limited to, combustion, noise and vibration, engine-fuel interactions, in-cylinder emission control and flow processes, exhaust after-treatment, alternative fuels, engine cooling, lubrication, fuel injection and ignition systems, engine design, control and monitoring, engine simulation and diagnostics, advanced engine concepts, component dynamics, wear, and materials.

All accepted papers will be published in the Conference Proceedings, which will be in bound volumes available at the conference, and papers will be considered for the Journal of Engineering for Gas Turbines and Power. Exceptional written papers and presentations will be considered for ASME IC Engine Division Conference awards. ASME review and publication policies will apply.

Please submit an abstract of the paper to the Technical Program Chairman and Proceedings Editor: Neil X. Blythe, Fairbanks Morse Engine Division, 701 White Avenue, Beloit, Wisconsin 53511, Phone: (608) 364-8017, Fax: (608) 364-8233, Email: neil.blythe@goodrich.com

So Why Bother at All?

The age-old question is always there, why be an active member of your professional society? Do you listen to the person who is not involved, who tells you there is no benefit… or do you listen to the person who is involved, who has first-hand experience as to the career-developing activities, the networking and the professional well-being available through active participation? Look at it another way… if you want to be a millionaire, do you take the poor person or the millionaire out to lunch? Some say, "Why bother? Let the millionaire buy his own lunch," and I say… "So stay poor!"

ASME International is geared towards many technical fields. If you are an active member, you will benefit your career by the experiences in which you will be involved. Whether the benefit is meeting other people and developing contacts, practicing speaking skills, performing training activities, developing budgets, assembling a strategic plan, or one of the multitude of other career-enhancing activities, they are all available. The common misconception among those individuals who have never been actively involved is that it does not provide them or their company a benefit. Is practicing speaking skills not a benefit to the company the next time you stand before the customer and present results? Does networking with other individuals that work in your area of expertise not help you the next time you have an issue to solve and need advice? Does staying on the top of technology transfer and staying in touch with other industries and critical developments in engineering not enhance your ability to contribute to your company? Certainly all these are benefits that help both your career and your company's success and it would be foolish to think otherwise.

Looking back over my years of active involvement in ASME, I can say that I have had opportunities for personal growth that never existed within the framework of my normal job. I can also say that the involvement has provided me with experiences and other opportunities that I would not otherwise have had. In addition, the mentoring and involvement with other engineers have helped me solve problems many, many times, when I've called upon colleagues across the country for technical advice. Those who have not been actively involved have not experienced this. So then, why do you insist upon listening to those who tell you why being an active member is not worth your time? And I say again… "So stay poor!"

The members of ASME International are very serious about living ASME's mission "to promote and enhance the technical competency and professional well-being of our members, and through quality programs and activities in mechanical engineering, better enable its practitioners to contribute to the well-being of humankind." They represent the best that the profession has to offer. Many times, early career engineers do not see the full benefit of active membership (notice I say "active" membership) and how improved their career and the profession will be as a result of what they do with ASME in the areas of education, technology transfer, codes and standards, conferences, publishing and public policy development - globally and locally. The work and the culture of ASME is a reflection of values and behaviors with which responsible, caring and successful professionals are proud to be associated. Bringing the good work of the Society to our communities requires a continuing influx of creative, talented, energetic volunteers. The value of the time spent makes a significant difference in the real issues that affect our communities, profession, industries, employers and careers. It's hard for me to understand why there are engineers who do not see the benefits of active participation in their professional society. Typically, these are the ones that are out of date in five years and do not keep up on the technology in their field. Too bad…. I guess to those I say, "Why bother? So stay poor!"

ASME International is working to bring the benefits of active membership and participation to as many engineers as possible. This helps us to expand the work of the Society and have a greater effect on our communities, our industries, our membership, and the technology growth of our world. Our goal is to carry out more continuing education programs, more technical lectures, and more events that will help further the capability of the engineering community. So ask yourself once again, "Do I want to be poor?" Get involved in this expansion and enhance your background, expand your experiences, build your career… don't be poor. I personally owe much of my career success to my membership in ASME International and to my participation in many of its programs. Whether you are an active member or a member who is not quite involved, if you think about it and you are honest with yourself, you must have similar goals as I to move your career forward, to further your involvement in technology, to build your own network of colleagues and friends, and be a greater contributor to both your employer and your community.

The Council on Member Affairs is prepared to help you. I and the other senior volunteer leaders, regional office and membership staff, and experienced former leaders are here to help you get this message out to other engineers… especially to students and those in the early stages in their careers who do not see the importance of active participation because they have not experienced it. Someone has to explain it to them. Call your regional office or the Membership Development Department (212.591.7742) and we will be glad to help you get this message out. We owe it to our colleagues to see that these opportunities are available to them. Don't be poor.

Dr. William T. Cousins, Senior Vice President, ASME Member Affairs

Energy Committee

(continued from page 2)

passenger cars from the current 27.5 miles-per-gallon to 36 mpg by the 2015 model year. The bill would have mandated an increase in the CAFÉ standard for light trucks (including SUVs) from the current 20.5 mpg to 36mpg in the same timeframe. By a surprisingly wide 62-38 margin, the provision was defeated on the Senate floor, and replaced by a provision giving the National Highway Traffic Safety Administration 15 months from date of enactment to propose tougher standards.

The COE Energy Committee has taken the position in the past that CAFÉ standards for government fleets should be increased, but has never taken an explicit position that fuel economy standards should be increased across the board.

Global Climate Change

The Senate bill contains provisions dealing with climate change; the House bill does not. The Senate bill would create a voluntary registry of greenhouse gas emissions, but would make the registry mandatory after five years if it accounts for less than 60 percent of known U.S. GHG emissions. The bill also would create a White House Office of Climate Policy and would require that office to submit to Congress within one year a strategy to stabilize U.S. GHG emissions. An Office of Climate Change Technology also would be created within the Department of Energy.

In its recent position statement to the Conference Committee, the Energy Committee stated, "The recent report of the Environmental Protection Agency regarding causes, effects, and possible remedies for global climate change is an excellent catalyst for the establishment of an office within DOE to manage the collection of information and evaluation of data on global climate change. We urge conferees to accede to the Senate language in this area.

In its earlier letter to Senator Jeff Bingaman (D-NM), Chairman of the Senate Energy and Natural Resources Committee, the Energy Committee stated, "With regard to the provisions in the bill related to global climate change, the Energy Committee is generally supportive of efforts to consolidate climate change activities within the Department of Energy. However, the Committee believes that mandates and incentives designed to reduce emissions from power plants, automobiles, and other sources should be subjected to rigorous cost-benefit analyses prior to implementation.

The strength of the COE Energy Committee is dependent upon its having access to expertise in a wide variety of energy areas. If you are interested in serving on the Energy Committee please contact James Vogt, ICED Government Relations Chair, email: jvogt@ricardo-us.com

Francis Dietz