

Ground Vehicle Standards Newsletter

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SAE International[™]

Creating harmonized standards solutions. Moving the on- and off-road vehicle industry forward.

New standard defines electric-vehicle charging coupler

SAE International has released a standard that provides a standard interface between plug-in hybrid and battery-electric vehicles, and electrical charging systems.

Standard J1772[™], "SAE Electric Vehicle Conductive Charge Coupler," spells out the general physical, electrical and performance requirements for the coupler, which consists of a connector and vehicle inlet. The purpose of the standard is to define a common electric-vehicle charging network, thereby reducing costs and increasing convenience for owners of electric vehicles.

"SAE International has long been at the forefront of standards development for the automotive industry. This important new standard continues that tradition," David L. Schutt, PhD, Chief Executive Officer of SAE International said. "I applaud the work of the industry leaders from around the world who developed this standard, helping to ensure that today's and tomorrow's vehicles are ready to meet the needs of the consumer and the marketplace, and helping to positively shape the future of transportation."

SAE International is a leading standards organization identified in the NIST Framework and Roadmap for Smart Grid Interoperability Standards for Interoperability Standards to Support Plug-In Electric Vehicles and as collaborators for Energy Storage Interconnection guidelines.

Gery Kissel is Chair of the SAE Hybrid Task Force. He explained that consistency and reliability are key goals of the new standard. "By standardizing, you're reducing costs and allowing everyone to use the same connector. All of the charging equipment you would pull up to in public would have identical connectors, so any vehicle could use one. It will be a consistent, reliable interface," Kissel said.

In the process of SAE J1772[™] development, a production tooled coupler has passed testing by Underwriters Laboratories for safety and durability.

SAE J1772[™] standard was developed by the **SAE Hybrid J1772 Task Force** in cooperation with major automotive OEMs and suppliers, charging equipment manufacturers, national labs, utility companies, universities and standards organizations from North America, Europe and Asia.

Learn more:

- The document was approved in January 2010 and can be purchased at www.sae.org/technical/standards/J1772_201001
- For information on SAE International's involvement in the Smart Grid visit www.sae.org/smartgrid
- Read more about this new standard at *Automotive Engineering International Online*: www.sae.org/mags/aei/7479
- SAE International to host vehicle battery summit in Shanghai. See page 1 of this newsletter



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J1772 specifies a five-pin connector for delivering 120 or 240 V. (General Motors)

Photo from Automotive Engineering International Online, 15-Jan-2010 12:09 GMT

New committee formed to create vehicle battery standards

From Automotive Engineering International Online, 18-Nov-2009 15:36 GMT

The continued development of advanced battery technologies will play a critical role as vehicle manufacturers increase the availability of hybrid-electric vehicles and amp up efforts to commercialize vehicles that rely largely or fully on the battery as a propulsion power source, according to SAE International. To help standardize development, SAE is forming a Vehicle Battery Standards Committee.

We, along with the Alliance of Automobile Manufacturers (Alliance) and the Association of International Automobile Manufacturers (AIAM), recognize the importance that batteries and battery technology play in the design and development of new vehicles," said David L. Schutt, Ph.D., Chief Executive Officer, SAE International. "SAE International has long been at the forefront of standards development, and we feel that this committee will fill a crucial need in the development of this technology."

The battery committee initially will focus on standardizing battery performance and safety, and it will ensure harmonization with other standards-development activities in the U.S. and around the world.

"AIAM members look forward to the opportunity to participate in the new SAE Vehicle Battery Standards Committee," said Michael J. Stanton, President and CEO of AIAM. "The work of this committee will be of great value to vehicle and battery manufacturers and, in particular, will help assure appropriate levels of safety are incorporated into battery systems for vehicle propulsion."

The **SAE Vehicle Battery Standards Committee** will report to the SAE Motor Vehicle Council, which is responsible for development of all passenger-car, light-duty-truck, and van standards within SAE International.

"The Alliance of Automobile Manufacturers fully supports the creation by SAE of a new Vehicle Battery Standards Committee," said the Alliance's Robert Strassburger, Vice President of Safety and Harmonization. "This is consistent with SAE's traditional role of drawing together leading industry experts to develop standards that help guide the auto industry with state-of-the-art design practices. Advanced battery technology is one of the most important technical issues being addressed by Alliance members today. SAE's involvement will complement Alliance members' actions already in place to develop electric vehicle technologies with a high level of safety."

Revised document defines vehicle dimensions facilitating comparisons within and across OEMs

SAE Recommended Practice J1100, issued by the **Human Accommodations and Design Devices Committee**, defines a set of measurements and standards procedures for motor vehicles. When applied consistently, it facilitates vehicle-to-vehicle comparisons within an OEM as well as provides a means to compare vehicle dimensions across OEM's. This revision harmonizes the procedures between SAE and the Global Car manufacturer's Information Exchange (GCIE), a consortium of OEM's that exchange dimensional information and original data.

With common definitions, vehicle manufacturers do not need to maintain one set of design dimensions for SAE reporting and a separate set for data exchange between manufacturers.

The dimensions in this practice can be applied to an actual vehicle or in a CAD system whether an OEM uses the original H-Point Machine (HPM) defined in SAE J826 or the newer second generation machine (HPM-II) defined in SAE J4002. Similarly, head contour clearances and outward visibility targets can be determined regardless of the revision level an OEM may require of SAE J941 and SAE J1052.

In 2009, foot controls and pedal spacing dimensions were expanded to include codes congruent with ISO3409. Dimensions used to evaluate the location of the foot controls relative to one another or relative to the driver were retained; however, the dimension codes were revised to reflect the component being measured.

SAE J1100 - Motor Vehicle Dimensions, published in November 2009, was sponsored by **Neil E. Mitchell**, General Motors Company.

SAE International to Host Vehicle Battery Summit in Shanghai

Scheduled for 1-3 September 2010, in Shanghai, China, SAE will host an international Summit that will bring together some of the world's most highly regarded engineers, scientists, and corporate decision makers from the battery, automotive, power storage and mining industries. Participants will present an assessment of current and future Li-ion battery systems capabilities and alternatives as well as their marketplace and supply chain implications.

The Summit is chaired by Dr. **Menahem Anderman**, President of *Advanced Automotive Batteries USA* and founder of *Total Battery Consulting, Inc.* Dr. Anderman a veteran battery consultant is known in the industry for organizing the annual Advanced Automotive Battery Conferences (AABC) and for publishing multi-client studies assessing advanced vehicle market and technology with emphasize on energy storage. Dr. Anderman is organizing an exceptional roster of more than twenty expert speakers representing some of the key international players in vehicle battery and related industries.

Designed for corporate-level engineering and business decision makers, the program highlights the emerging Chinese market but will also discuss technological advances and worldwide market growth, exploring their implications for the global marketplace and thereby providing the insight required for optimum business decision making. It will review battery manufacturing in China and elsewhere, battery reliability, safety, cost, performance, and standardization, among others.

The Summit will provide an exclusive opportunity to interact with corporate technology peers from the automotive OEM, the battery components and manufacturing industry, and the lithium mining industry. The event will include opportunities for corporate sponsorships and exhibits as well as technology related poster sessions.

The Summit is organized in cooperation with Advanced Automotive Batteries USA and the China Automotive Technology and Research Center (CATARC). It is co-sponsored by the Society of Automotive Engineers of China (SAE-China) and will be held at the Shanghai Marriott Hongqiao Hotel.

Visit <http://www.sae.org/events/battery> for more details as they become available.

SAE: A Global Partner in Standards Development

In addition to the maintenance and development of its family of technical standards, SAE International is also an active partner with other standards development organizations, government agencies, and regulatory bodies to support the newest, most robust, and comprehensive standards products for a changing global marketplace.

- US Department of Transportation
- Society of Automotive Engineers of Japan (JSAE)
- German Electrical and Electronic Manufacturers Association (ZVEI)
- US Federal Highway Administration
- China Automotive Technology & Research Center (CATARC)
- National Highway Traffic Safety Administration
- Korean Agency for Technology and Standards (KATS)
- US Department of Energy
- Japan Automobile Research Institute (JARI)
- US Environmental Protection Agency
- Brazilian National Standards Organization (ABNT)
- American National Standards Institute (ANSI)
- Automotive Electronics Council (AEC)
- International Organization for Standardization (ISO); US representative



New & Revised SAE Technical Standards (Nov 2009 – Jan 2010)

Council: Materials, Processes & Parts

Doc	Pub Date	Status	Title	Responsible Committee
J323	NOV09	Revised	Test Method for Determining Cold Cracking of Flexible Plastic Materials	Textile And Flexible Plastics
J855	NOV09	Revised	Test Method of Stretch and Set of Textiles and Plastics	Textile And Flexible Plastics
J441	NOV09	Revised	Cut Wire Shot	Surface Enhancement
J2597	JAN10	Issued	Computer Generated Shot Peening Saturation Curves	Surface Enhancement
J935	NOV09	Reaffirmed	High-Strength Carbon and Alloy Die Drawn Steels	Carbon And Alloy Steels
J403	DEC09	Revised	Chemical Compositions of SAE Carbon Steels	Carbon And Alloy Steels
J2816	DEC09	Issued	Guide for Reliability Analysis Using the Physics-of-Failure Process	Ground Vehicle Reliability
J515	JAN10	Revised	Specification for O-Ring Materials Used with Hydraulic Connectors	Hydraulic Tube Fittings

Council: Motor Vehicle

Doc	Pub Date	Status	Title	Responsible Committee
J850	NOV09	Revised	Fixed Rigid Barrier Collision Tests	Impact And Rollover Test Proced Stds
J2481	NOV09	Revised	Dynamic Simulation Sled Testing	Impact And Rollover Test Proced Stds
J1538	JAN10	Revised	Glossary of Automotive Inflatable Restraint Systems	Inflatable Restraints
J2802	JAN10	Issued	Blind Spot Monitoring System (BSMS): Operating Characteristics and User Interface	Safety And Human Factors Steering
J1100	NOV09	Revised	Motor Vehicle Dimensions	Human Accom And Design Devices Stds
J2540/2	NOV09	Revised	ITIS Phrase Lists (International Traveler Information Systems)	Advanced Traveler Information Systems
J2735	NOV09	Revised	Dedicated Short Range Communications (DSRC) Message Set Dictionary	Dedicated Short Range Communication Tech
J2402	JAN10	Revised	Road Vehicles - Symbols for Controls, Indicators, and Tell-tales	Controls And Displays Standards
J1474	DEC09	Revised	Heavy-Duty Nonmetallic Engine Cooling Fans--Material, Manufacturing and Test Considerations	Cooling Systems Standards
J216	JAN10	Revised	Motor Vehicle Glazing – Electrical Circuits	Glazing Materials Standards
J2261	JAN10	Revised	Stop Lamps and Front- and Rear-Turn Signal Lamps for Use on Motor Vehicles 2032 mm or More in Overall Width	Heavy Duty Lighting Standards
J2530	NOV09	Revised	Aftermarket Wheels—Passenger Cars and Light Truck—Performance Requirements and Test Procedures	Wheel Standards

J1982	JAN10	Revised	Nomenclature - Wheels for Passenger Cars, Light Trucks, and Multipurpose Vehicles	Wheel Standards
J649	JAN10	Revised	Automatic Transmission Functions – Terminology	Automatic Transmission Transaxle
J2275	JAN10	Revised	Internal Combustion Engines – Piston Ring-Grooves	Piston And Ring Standards
J2602-3	JAN10	Issued	File Structures for a Node Capability File (NCF)	Vehicle Architecture For Data Communications
J2716	JAN10	Revised	SENT - Single Edge Nibble Transmission for Automotive Applications	Vehicle Architecture For Data Communications
J1699/3	DEC09	Revised	Vehicle OBD II Compliance Test Cases	Vehicle E E System Diagnostic Standards
J551/17	JAN10	Revised	Vehicle Electromagnetic Immunity – Power Line Magnetic Fields	Electromagnetic Compatibility (EMC)
J2464	NOV09	Revised	Electric and Hybrid Electric Vehicle Rechargeable Energy Storage System (RESS) Safety and Abuse Testing	Vehicle Battery Standards
J1459	DEC09	Revised	V-Ribbed Belts and Pulleys	Belt Drive (Automotive)Systems

Council: Truck & Bus

Doc	Pub Date	Status	Title	Responsible Committee
J1911	NOV09	Revised	Test Procedure for Air Reservoir Capacity—Truck and Bus	Truck And Bus Brake Supply And Control Components
J1772	JAN10	Revised	SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler	Hybrid
J2191	JAN10	Revised	Recommended Practice for Identification Of Standardized Truck and Tractor Electrical Circuits	Truck And Bus Electrical Systems

Council: Specialized Vehicle & Equipment

Doc	Pub Date	Status	Title	Responsible Committee
J2120	NOV09	Reaffirmed	Personal Watercraft—Electrical Systems	Personal Watercraft
J755	DEC09	Revised	Marine Propeller-Shaft Ends and Hubs	Marine Technical Steering
J2656	JAN10	Revised	Fastener Part Standard – Hexagon Socket, Square Head, and Slotted Headless Set Screws - Inch Dimensioned	Ship Systems - Fasteners

Council: Construction, Agricultural & Off-Road Machinery

Doc	Pub Date	Status	Title	Responsible Committee
J817	DEC09	Reissued	Engineering Design Serviceability Guidelines—Construction and Industrial Machinery—Maintainability Index—Off-Road Work Machines	Machine Technical Steering
J2129	JAN10	Revised	Guidelines for Requests Received from Outside Sources for the CONAG Council to Originate or Review Technical Reports	Construction Agricultural And Off Road Machinery Council

Test results of low GWP refrigerant for mobile air-conditioning released

A Cooperative Research Program conducted through SAE International to investigate the safety and environmental performance of a new refrigerant for mobile air conditioning systems, announced in November 2009 the successful completion of its research. Based on these results, the sponsors of the SAE CRP1234 have concluded that HFO-1234yf can be used as the global replacement refrigerant in future mobile air conditioning systems. From the evaluation and test results it has been concluded that HFO-1234yf can be safely accommodated through established industry standards and practices for vehicle design, engineering, manufacturing, and service.

The report is the third SAE report to evaluate the new refrigerant. The recent two-year long global research program was to determine the safety and environmental characteristics of HFO-1234yf. These investigations have confirmed that HFO-1234yf is an environmentally friendly refrigerant suitable for use in direct expansion Mobile Air Conditioning (MAC) systems. HFO-1234yf is a non Ozone Depleting Substance with a Global Warming Potential (GWP) of 4. In comparison, the current refrigerant, R-134a, has a GWP of 1430.

As part of the studies the automotive industry conducted evaluations on a variety of vehicle applications. Additional testing and research was conducted at internationally recognized laboratories to verify worldwide acceptance for one common global replacement refrigerant. The vehicle OEMs evaluated the investigations conducted by Gradient LLC (USA), Exponent Engineering and Scientific Consulting (USA), Creative Thermal Solutions [CTS] (USA), Institut National de l'Environnement Industriel et des Risques [INERIS] (France), – Institut für Luft und Kältetechnik - Dresden [ILK- Dresden] (Germany), TNO (The Netherlands), Underwriters Laboratories (USA), WIL Research Laboratories (USA), Det Norske Veritas (Norway/Japan), Hamner Institutes for Health Sciences (USA) and Hughes Associates Inc. in USA.

The results from the CRP1234 programs that investigated the new refrigerant for use in mobile air conditioning systems (cars and light trucks) are available on-line at www.sae.org/standardsdev/tsb/cooperative/crp1234-3.pdf

Extensive testing supported by multimillion dollar (USA) funding and in-kind support for SAE CRP1234 projects has been provided by 15 vehicle OEMs (from China, France, Germany, India, Italy, Japan, Korea, Sweden, UK, and USA,) and 18 Tier one suppliers (from Asia, Europe, and USA).

An economical pathway for joint venture research: the Cooperative Research Program of SAE

Cooperative research ventures serve to bring more minds to the challenges and issues faced by industry. The result is a more robust project than each participating organization could complete independently. The pooling of financial resources also affords each participant more efficient use of their research budgets and eliminates duplication of efforts. Whether moving forward on the development of fuel cell standards...researching alternative refrigerants to HFC 134a...or developing a database of human body measurements to foster ergonomic designs, SAE's Cooperative Research Program can assist your company in its collaborative research needs.

To learn more contact Gary Pollak, Program Manager +1-724-772-7196; gary@sae.org



SAE recommended practice puts new shine on corrosion testing

Excerpted from Automotive Engineering International Online, 08-Sep-2009 16:29 GMT

A new SAE recommended practice (J2721 - Recommended Corrosion Test Methods for Commercial Vehicle Components) aims to improve the corrosion resistance of parts and assemblies used in medium- and heavy-duty trucks, trailers, and buses. The tests, with an emphasis on in-lab work, incorporate recurring conditions such as corrosive chemicals, drying, humidity, and abrasive exposure, as well as variations in the environment.

“Vehicle corrosion standards available today do not provide suitable coverage for new de-icing chemicals and application methods, nor do they adequately account for aggravating effects such as temperature extremes, abrasion, and mechanical stress,” said **Vern Caron, Chair of the SAE Truck and Bus Corrosion Committee**, which developed SAE J2721. “This standard was developed to address these issues and also to provide a methodology for evaluating laboratory results and correlating these results with field performance.”

Components at different locations on the vehicle require different tests, according to Caron, Director of Electronics for the ArvinMeritor Commercial Vehicle Systems group. “We needed to account for that, and this standard does.”

Caron and other industry corrosion-conscious engineers initially believed that a standard on brake corrosion was needed but upon further investigation saw that the corrosion problem on commercial vehicles was more widespread.

One of the decisions made by the committee was that components should be designed with corrosion resistance that will protect against worst-case environmental conditions. And so the lab tests provided for under the standard represent worst-case, if not necessarily real-world, conditions. Caron said the next phase of the committee's work will be to run sample corrosion coupons to “keep updating the correlation between what's going on in the field with the lab results.”

This recommended practice does not address the chemistry of corrosion or methods of corrosion prevention. For information in these areas, SAE J447 is one source.

Corrosion on commercial vehicles has been getting worse over the past five to 10 years, according to Caron, and for many reasons. One is greater restrictions on the use of certain chemicals effective for corrosion resistance, such as hexavalent chromium, and greater use of certain chemicals by road departments to keep roads clear of snow and ice, such as magnesium chloride. “Magnesium chloride sticks to vehicles more than sodium chloride does,” he said.

Another possible contributing factor to increased corrosion is that some component suppliers try to save costs by paring back on corrosion coatings with the idea that the OEM customer can coat the part. “Unfortunately, the material gets corroded on the shipping dock before the OEM gets a hold of it,” Caron said.

And, aside from actual causes of increased corrosion, there is the issue of heightened expectation of customers regarding corrosion. “People are simply expecting things to last longer,” said Caron. “If you go back 20 years, we didn't have brakes that could go to 500,000 miles. So, the perception is that corrosion is worse.”

Delivery options for SAE Technical Standards

- Handbook Supplements (HS) – Bound collections of technology related standards and reports offered at less than the collective price of the individual standards in the collection.
- JPaks - Online Standards Plans – A customizable subscription plan that lets you pay for just the documents you need and use, full text search capabilities and an alert page keep you aware of changes and updates.
- Standards on CD-ROM – An entire SAE standards library in a medium that is fast, easy to use and remains current throughout the year.
- Databases and customizable corporate solutions.

For detailed information, visit <http://www.sae.org/standards>

SAE standard serves as basis for on-highway motorcycle sound legislation

From SAE Update, November 2009

The American Motorcyclist Association (AMA) has developed model legislation for use by cities seeking a simple, consistent, and economical way to deal with sound complaints related to on-highway motorcycles within the larger context of excessive sound from all sources.

The model legislation offers an objective method for municipal jurisdictions to evaluate motorcycle sound through science-based measurement. It is based on SAE International's new J2825 standard, "Measurement of Exhaust Sound Pressure Levels of Stationary On-Highway Motorcycles." The AMA produced similar model legislation for off-highway motorcycles several years ago.

"Many cities and other jurisdictions already have excessive sound laws on the books, but when they get citizen complaints about loud motorcycles, they sometimes decide to single out the riding public with unfair or overly restrictive ordinances and laws," said Imre Szauter, AMA Government Affairs Manager. "We believe that motorcycles shouldn't be singled out, but should be regulated as part of a comprehensive sound management policy that also addresses cars, trucks, leaf blowers, generators, and other sources of excessive sound."

The J2825 standard, issued by SAE's **Motorcycle Technical Steering Committee** in May, is based on a comprehensive study of a wide variety of on-highway motorcycles. It establishes instrumentation, test site, test conditions, procedures, measurements, and sound level limits.

"Too many times, jurisdictions responding to citizen complaints about excessive motorcycle sound create laws that simply don't work in the real world," Szauter said. "They either set an unreasonable decibel limit, leave it up to a police officer to subjectively decide whether a bike is too noisy, or come up with another plan that is arbitrary or unworkable. Our model legislation is objective, workable, and fair."

The model legislation adopts the SAE J2825 standard for stationary on-highway motorcycle sound testing, specifies the type of sound meter to be used, and allows for each city to specify the penalties for violating the law. Szauter stressed, however, that the sound-testing procedures and decibel limits established in the SAE J2825 standard should remain unchanged to ensure that the law remains objective and fair.

Under the SAE J2825 standard, decibel limits range from 92 dBA at idle for all motorcycles, to up to 100 dBA at certain rpm for various motorcycles, depending on the type of engine.

In 2003, the AMA organized the National Summit on Motorcycle Sound to bring together riders and user organizations, representatives of the motorcycle manufacturers, the aftermarket industry, racing promoters, government agencies, law enforcement, and others to develop proposals regarding the increasingly controversial issue of excessive motorcycle sound. The creation of a new on-highway motorcycle sound measurement procedure was a top recommendation of the summit's Motorcycle Sound Working Group.

"The motorcycling community, local governments, and police officers have sought a practical sound field test for streetbikes for many years, and now it exists, thanks to a collaboration between the Motorcycle Industry Council and the SAE," Szauter said. "The next step is for jurisdictions struggling with motorcycle sound complaints to adopt fair and objective laws, and the AMA is providing the tool for them to do that."

Engineering Aids from SAE

SAE provides products that support testing procedures set forth in SAE standards, Recommended Practices, Information Reports, and other SAE documents including the **OSCAR H-Point Machine**, which is used in the design of seating and interior packages and in conjunction with SAE J 826 (rev. 1995), FMVSS regulations, and ISO standards—making it the required design and auditing tool for current production.

Also available is the newly designed **HPM II H-Point Machine**, which includes enhancements over the OSCAR H-Point machine for use in advance design applications.

Available at www.sae.org/servlets/otherProductList?PROD_TYP=EA



Gain a competitive advantage. Impact your bottom line. Invest in standards.

Standards. The workhorse documents that commonize practices, processes, and products throughout the ground vehicle industry are also paramount to the advancement of technology. Standards documents are more than the practices of today. They account for history and anticipate the future of technology, regulation, and business. The direct benefits of standards are simple in concept but extraordinary in their global impact toward ever-safer, cleaner, more efficient worldwide transportation.

Technical standards enable and enhance:

- consistent and clear expectations for product performance and reliability
- regulatory compliance
- consistent product quality
- compatibility and interoperability
- more efficient procurement

Standardization also:

- lowers trade barriers
- lowers purchasing costs
- decreases design time
- promotes innovation
- increases new technology speed to market

Because industry can rely on standards for globally harmonized solutions to common issues, individual companies can devote more time and resources to advance their proprietary technology. In this way, standards help foster competition, which advances the collective technology of industry and in turn, creates the need for new and revised standards. This has been the cycle for ground vehicle standards solutions.

And, at the heart of those solutions is SAE International, the recognized leader in mobility engineering for over 100 years. It plays the central role in developing North American automotive standards and a key role in bringing US documents to the global standards table, working hand-in-hand with the global community to advance industry.

While participation in the standards development process helps the advancement of the industry it can also contribute to the advancement of your company and personal career.

Corporate Benefits

- Input into the direction of the standards
- Competitive intelligence through advance knowledge of standard direction
- Advance warning of pending regulations and influence over the technical basis of the regulation
- Insight into the competitive environment
- Product liability protections
- Strong relationships with customers and suppliers
- Association with the leading society for advancing mobility technology

Individual Benefits

- Professional development from continuous working contact with peers
- Peer recognition for advancing your industry's sectors technologies
- Excellent networking and learning opportunities from product developers/users around the world
- Discover emerging technologies
- Contribute to the industry's body of technical knowledge

To learn more about SAE Technical Standards Development—and for a schedule of Technical Committee meetings—visit us on the web at www.sae.org/standardsdev

Become a better you. Volunteer for an SAE Standards Development Committee.

Volunteer recognition: Document Sponsors (Aug 2009 - Jan 2010)

The SAE Standards Development Program thanks its Document Sponsors. These individuals have served not only as active committee members but have dedicated their time and talent in guiding the development of standards documents from the preparation of all drafts through balloting and publication.

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Acknowledgement: 2009 Corporate Support

SAE International wishes to acknowledge those companies who contributed to the funding of the 2009 SAE Standards Development Program. Thank you for helping write the future of the ground vehicle industry.

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Applied Process Inc	International Truck & Engine Corporation
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SAE International™

For On- and Off-Road Harmonized Standards Solutions, All Roads Lead to SAE

Since 1905, SAE International has been providing the common engineering requirements for new mobility products, advanced technologies, and applications. It is uniquely positioned to provide innovative standards solutions to the global on- and off-road industries and their engineering challenges.

For automotive vehicles, SAE plays the central role in developing essential North American emissions and safety standards to meet some of the most stringent regulations in the world. Through ISO, it plays a key role in bringing standards for and from the United States market to the global table. As the center of expertise on Commercial Vehicle/ConAgg standards development, many of its standards are adopted by ANSI and ISO.

SAE offers a full suite of standards capabilities—committee management, consensus-based standards development, consortium administration, cooperative research, and database development—providing industry, companies, and individuals with extensive opportunities to participate, influence, grow, and prosper.

www.sae.org



Volunteer spotlight: **SAE Awards**

SAE/InterRegs Standards and Regulations Award for Young Engineers

This award annually recognizes a practicing engineer under the age of 40 who is involved in standards, regulations or conformity assessment systems which improved safety or reduced emissions in a ground vehicle mobility product. It was established by InterRegs and the SAE Foundation as a way to reward participation in standards and regulations by young engineers.

2010 Recipient **Praveen Anumolu**, Northrop Grumman Corp.

2009 Recipient **David L. Hung**, Visteon Corp.

Technical Standards Board Outstanding Contribution Award

This award recognizes individuals for outstanding service in the technical committee activities of the Society. This includes valuable contributions to the work of SAE technical committees, unusual leadership in the activities of an SAE technical committee, significant contributions as a representative of the Society to the accomplishments of technical committees of other organizations or of government agencies, and outstanding contributions to SAE technical committee work in the form of research, test methods and procedures, and/or development of standards. It is administered by the SAE Technical Standards Board.

2009 Recipients

Rhonda L. Brender, Delphi Corp., Motor Vehicle Council

Dr. Mark Costin, General Motors, Motor Vehicle Council

Gregory V. Gillham, Detroit Diesel Corp., Truck & Bus Council

Dewey Paul Szemenyei, Afton Chemical Corp., Fuels & Lubricants Council

James Szudy, Bendix Commercial Vehicle Systems LLC, Truck & Bus Council

Steve Blanchard, Caterpillar (retired), Construction Agricultural & Off-Road Machinery Council

Certificates of Appreciation

- from the Construction, Agricultural, & Off- Road Machinery Council to **Ron Crawford**, **Stan Lew**, and **Rick Weires** for their devoted work to the standards committees
- from the Truck & Bus Council to **Rich Kempf** for his devoted work to and past chairmanship of the standards committees

Standards Consortium Administration

With over a century of experience providing the common engineering requirements for new mobility vehicles, SAE can be a key component in developing any consortium-based activity, providing the expertise and worldwide technological and human resources to help you turn your vision into a successful operating reality.

Each client maintains its desired degree of autonomy, flexibility, and control. Client/project-tailored services include:

- A legal framework
- Fiscal oversight
- Policy and procedure development
- Publishing and distribution services
- Marketing and public relations activities

Standards Hot Spot located in the technology lounges at SAE 2010 World Congress



New to the SAE 2010 World Congress insert <http://www.sae.org/congress/> are the Technology Lounges, technology-focused lounges focusing on Safety and Testing; Powertrain Fuels and Lubricants, Emissions, and Environment; and Electronics, Integrated Design for Manufacturing, Materials, and Sustainability. Open to all attendees throughout the day, located near session rooms, and intended to create an informal gathering and networking space for those with common interests, the lounges will also house “Chats with the Experts” discussion groups and the “Standards Hot Spot.”

The Standards Hot Spot is where SAE standards committee members and prospective committee participants can meet informally with colleagues—SAE volunteers who create standards for the industry—and the SAE staff team who can help you learn more about Standards Technical Committees. Open April 13-15, Tuesday through Thursday from 7:30 a.m. to 5:30 p.m., the Standards Hot Spot Lounge will offer standards writing committees and guests refreshments, SAE materials, information, and staff support.

Approximately 60 SAE standards technical committees will meet during Congress (April 13-15, Cobo Center, Detroit MI, USA) including the **Motor Vehicle Council** which is made up of **Chassis, electrical, Powertrain, Vehicle engineering** and **Vehicle safety**, as well as **Materials** committees. Visit the www.sae.org/congress/ for a complete list of committee meetings that will take place during Congress week.

Call for volunteers

Experts in vehicle service, towing & collision repair sought

The **Service Development Steering committee** is seeking experts in service engineering, vehicle towing and collision repair to identify the need for and develop new Standards and Recommended Practices that will reduce the cost and difficulty of diagnosing, servicing, maintaining and repairing the new technologies emerging on light highway vehicles.

The Service Development Steering Committee is responsible for developing and maintaining SAE Standards, Recommended Practices, and Information Reports related to the maintenance and repair of current and future highway vehicles. The scope of our committee currently focuses on three areas: service, vehicle towing and collision repair.

Contact: Cindy Reese at cindyreese@sae.org

Candidates sought for cellular task force

The task force is seeking candidates to fill roles for members and liaison committees.

Participants will shape the development of standards for global testing procedures, environmental, operational specifications and best practices around the design, integration and installation of embedded modules in ground based vehicles.

“Members” will contribute to the work of the technical committee, vote on all technical report ballots in a timely manner, and maintain active participation on a respective technical committee. Membership on a technical committee requires chairman approval. “Liaisons” will provide coordination with parallel activities occurring in the government, other agencies and related SAE technical committees. Liaisons receive technical report ballots and may provide comments; however, their approval or disapproval is not tabulated in the approval requirements.

Contact: Committee Chairman, Allan Breitmayer at abreitmayer@sierrawireless.com

Continued on page 12

Those with bar-coding knowledge needed

J1877—Recommended Practice for Bar-Coded Vehicle Identification Number Label, issued by the VIN-WMI Technical committee, is in need of immediate review.

This SAE Recommended Practice describes the basic content requirements, bar-code specifications, and functional test specification of the vehicle identification number (VIN) label. On the vehicle, the VIN label is to be mounted in a readily accessible location bar-code scanning. This document specifies a permanent label for the standard vehicle identification number that can be automatically identified through a bar-coded format.

Contact: Micheline Brussow at mbrussow@sae.org

New active-safety committee formed

Under the direction of the SAE Motor Vehicle Council, a new group called the Active Safety Committee has been formed. It is responsible for developing and maintaining SAE standards, recommended practices, and information reports related to the design, operation, and evaluation of vehicular active safety systems features. The committee will cooperate, provide inputs, and be a liaison with committees from other councils and groups (i.e., International Standards Organization).

Contact: Nikki Ameredes at nameredes@sae.org

Assistance needed with revision of Hydraulic Committee documents

The **Hydraulics Committee** of the **Construction, Agriculture, and Off-Road Machinery (ConAg) Council** is looking for experts who can assist with the revision of the following documents:

J1117—Method of Measuring and Reporting the Pressure Differential-Flow Characteristics of a Hydraulic Fluid Power Valve

J1165—Reporting Cleanliness Levels of Hydraulic Fluids

J1176—External Leakage Classifications for Hydraulic Systems

J1227—Assessing Cleanliness of Hydraulic Fluid Power Components and Systems

J1235—Measuring and Reporting the Internal Leakage of a Hydraulic Fluid Power Valve

J1276—Standardized Fluid for Hydraulic Component Tests

J1277—Method for Assessing the Cleanliness Level of New Hydraulic Fluid

J1333—Hydraulic Cylinder Rod Corrosion Test

J1334—Hydraulic Cylinder Integrity Test

J1335—Hydraulic Cylinder No-Load Friction Test

J1336—Hydraulic Cylinder Leakage Test

J1374—Hydraulic Cylinder Rod Seal Endurance Test Procedure

J1447—Fire-Resistant Fluid Usage in Hydraulic Systems of Off-Road Work Machines

J1614—Wiring Distribution Systems for Construction, Agricultural, and Off-Road Work Machines

J214—Hydraulic Cylinder Test Procedure [Combined with J1334]

J744—Hydraulic Pump and Motor Mounting & Drive Dimensions

J745—Hydraulic Power Pump Test Procedure

J746—Hydraulic Motor Test Procedures

J747—Control Valve Test Procedure

J748—Hydraulic Directional Control Valves, 3000 Psi Maximum

J931—Hydraulic Power Circuit Filtration.

Contact: Cindy Reese at cindyreese@sae.org

What's new? Who's new?

Chairs and Vice Chairs

Mike Lyons, Chair – Truck and Bus Control and Communications Network Committee

Greg Kreczko, Chair – Truck and Bus Air Brake Tubing and Tube Fitting Committee

Ty Lasky, Vice Chair – Truck and Bus Event Data Recorder Committee

Bill Johnson, Chair – Operator Protection Advisory Group

Troy Bateman, Chair – Operator Protection – Braking Committee

Walt Ross, Chair – Operator Protection – Lighting Committee

Chassis Systems Group Task Force

Aftermarket Wheel Test Certification Conformance Task Force

Documents in progress

Truck and Bus Council

J1939-14 - Physical Layer, 500K bits/s – Truck and Bus

J2848-2 - Tire Pressure Systems - Maintenance Type for Medium and Heavy Duty Highway Vehicles

J2891 - Auxiliary Power Unit Electrical Interface Requirements for Class Eight Trucks

J2898 - Hydraulic Hybrid Vehicle Terminology

J2899 - Maximum Readjustment Strokes for Air Brake Actuators

J2902 - Air Disc Brake Actuator Test Procedure, Truck-Tractor, Bus and Trailer

J2910 - Design and Test of Hybrid Electric Trucks and Buses for Electrical Safety

J2917 - Occupant Restraint and Equipment Mounting Integrity – Frontal Impact System-Level Ambulance Patient Compartment

J2918 - Engine-Off Cab Heating and Air Conditioning Systems Test Procedure and Performance Requirements— Trucks with and Without Sleepers

J2932 – Air Disc Brake Actuator Test Requirements

Chassis Systems Group

J2879 - Automotive Hydraulic Brake System - Metric Hydraulic Tube Connections for Inverted Flares

J2909 – Light Vehicle Stopping Distance

J2923 - Brake Drag Measurement Test Procedure for Vehicles Below 4 540 kg GVWR

J2928 - Rotor/Drum Crack and Strength Dynamometer Test Procedure

J2933 - Verification of brake rotor modal frequencies

J3001 - Brake Shim Damping Procedure

J3002 - Dynamometer Low-Frequency Brake Noise Test Procedure

ConAg Council

J2895 - Requirements for LED “White” Lighting Assemblies Used on Construction and Industrial Machinery

Service Development Steering Committee

J2892 - Graphics-Based Service Documentation

Upcoming Standards Technical Committee Meetings

A current schedule can be found on the SAE website.

www.sae.org/standardsdev/



Ground Vehicle Standards Committees & Staff Contacts

Match your expertise with the many SAE Technical Standards Development Committees that are writing the common engineering requirements for the advancement of the ground vehicle industry.

Construction, Agricultural & Off-Road Machinery Council Common Tests Technical Steering Cmte Hydraulics Electrical Components Cold Weather Operations Human Factors Technical Advisory Grp Machine Controls – Operator Machine Displays and Symbols Operator Seating and Ride Operator Accommodation Machine Technical Steering Cmte Loaders, Crawlers, Scrapers & Attachments Sweeper, Cleaner & Machinery Industrial Equipment Forestry & Logging Equipment Excavators Roadbuilding Machinery Tire & Rim Trenching & Boring Operator Protection Tech Advisory Grp Personal Protection (General) Braking Lighting and Marking Protective Structures Sound Level Technical Steering Cmte Earth Moving Machinery Sound Level Back-up and Forward Warning Alarms	Specialized Vehicle & Equipment Council Personal Watercraft Small Engine & Powered Equip Snowmobile Special Purpose Vehicle Motorcycle Technical Steering Cmte Motorcycle Sound Marine Technical Steering Cmte Marine Engine Fuel Systems Marine Electrical Systems Trailer Gooseneck & Fifth Wheel Trailer Dynamics Conventional Towing to 20,000 lbs Trailer Terminology Ship Systems & Equip Steering Cmte Fluid Systems & Components Fasteners System Cleanliness and Filter	Motor Vehicle Council Chassis Systems Group Brake Forum Steering Cmte Brake Linings Standards Dynamometer Test Code Standards Road Test Procedures Standards Brake NVH Standards Highway Tire Forum Steering Cmte Vehicle Dynamics Standards Wheel Standards Hydraulic Brake Actuating Forum Advisory Grp Brake Fluids Standards Automotive Brake & Steering Hose Hydraulic Brake Components Power Steering Pump Noise Steering Cmte Powertrain Systems Group Air Cleaner Test Code Standards All Wheel Drivetrain Standards Automatic Transmission Friction Hydraulic Transmission Transaxle Clutch Standards CVT Transmissions Diesel Exhaust Aftertreatment Diesel Fuel Injection Equipment Drive Line Engine Power Test Code Filter Test Methods Fuel Systems Gasoline Fuel Injection Hybrid Battery Abuse Electric Motor Rating Communications Ignition Systems Lev II Filler Pipe Assembly Manual Transmission Transaxle Permeation Piston Ring Power Test Code Transmission Axle Driveline Electrical Systems Group Automotive Electronic Systems Reliability Circuit Protection & Switch Devices Electrical Distribution Systems Electromagnetic Compatibility (EMC) Electronic Design Automation Embedded Software Starter Motor Storage Battery Vehicle Architecture for Data Communications Vehicle E/E Systems Diagnostic Vehicle Electric Power Supply Vehicular Flat Panel Display Vehicle Event Data Interface Automotive Quality & Process Improvement Committee	Truck & Bus Council Advanced & Hybrid Powertrain Advisory Grp Alternative Fuels Axle Clutch, Transmission & Power Take-Off Engines Hybrid and Electric Vehicle Hybrid Electrified Accessories Hybrid Conn Network for Power Mgmt Hybrid Safety Hybrid Energy Storage Hydraulic Hybrids Body & Occupant Environment Advisory Grp Truck Crashworthiness Windshield Wipers & Climate Control Human Factors Electrical/Electronic Advisory Group Low Speed Communications Network Control and Communications Network Event Data Recorder Electrical Systems Brake and Stability Control Advisory Group Foundation Brake Brake Actuator Brake Systems Electronically Controlled Brake Systems Brake Supply and Control Hydraulic Brake Wheel Stability Control Systems Air Brake Tubing & Tube Fittings Total Vehicle Advisory Group Tire Pressure Management Systems Corrosion Vehicle Characterization Coupling & Interchangeability Noise, Vibration and Harshness (NVH) Aerodynamics/Fuel Economy Tire	Materials, Processes & Parts Council Automotive Corrosion & Prevention Acoustical Materials Fasteners Metals Technical Executive Steering Cmte Carbon & Alloy Steels Metals Test Procedures Automotive Iron & Steel Castings Sheet & Strip Steel Elev Top Prop of Ferrous Metals Automotive Adhesives & Sealants Plastics Spline B92 Spring Steering Cmte Coil Spring Leaf Spring Pneumatic Spring Torsion Bar Spring & Stabilizer Bars Textile & Flexible Plastics /FAI Vibration Control Fluid Connectors Steering Cmte C1 Hydraulic Tube Fittings C2 Hydraulic Hose & Hose Fittings C3 Training & Education C5 Metallic Tubing Cmte on Automotive Rubber Specs Non-Hydraulic Hose Hose/Clamp Performance & Compatibility Fatigue Design & Eval Advisory Group Surface Enhancement Material Properties Structural Analysis Fatigue Lifetime Predictions Road Load Data Acquisition Component Testing & Simulation Squeak and Icht Compatibility Task Force Ground Vehicle Reliability
Vehicle Engineering Systems Comfort & Convenience Adaptive Devices Advanced Traveler Information Systems Controls & Displays Cooling Systems Dedicated Short Range Communications Human Accommodations Design Devices Interior Climate Control Sound Signaling Advisory Group Speedometer & Odometer Volatile Organic Compounds Exterior and Performance Glazing Materials Light Duty Vehicle Performance & Economy Measurements Light Vehicle Exterior Sound Lighting Coordinating Advisory Group Heavy Duty Lighting Standards Road Illumination Devices Standards Signaling and Marking Devices Standards Test Methods and Equipment Standards Emergency Warning Lights and Devices Lighting Materials Standards International Lighting Advisory Group Lighting Standard Practices International Cooperation Road Vehicle Aerodynamics Tow Vehicle Trailer Rating WIN/WMI Winter Standards		Fuels & Lubricants Council Technical Committee 1 – Engine Lubrication Technical Committee 3 – Driveline & Chassis Lubrication Technical Committee 7 – Fuels Technical Committee 8 – Aviation Piston Fuels and Lubricants Industrial Lubricants	Contact Information: SAE International (248) 273-2455 www.sae.org	
Fuel Cells Standards Cmte Emissions Performance Interface Safety		Service Development Technical Steering Committee Service Collision Towability Graphics Based Service Info		
Automotive Quality & Process Improvement Committee				