

SAE International™

preparing mobility leadership
for the next 100 years



2004 Annual Report

leadership



SAE continues to

provide vital services

to its members and to corporations
within the mobility industry.

Executive Message



Chronologically, 2004 was the year that SAE closed out its first 100 years of service. But, it was really more of a beginning; a beginning that is full of promise and limitless potential.

2004 was a year of great accomplishments for SAE International. We are particularly proud of reaching our financial and membership goals and changing the governance process to better meet members' needs.

SAE continued to focus on the core competencies that make it a world-class, global organization: voluntary standards consensus and lifelong engineering education. Each major initiative in 2004 was undertaken to better prepare SAE for the future. 2005 is the 100th anniversary of SAE, and we believe that the organization is well-positioned to succeed in the next 100 years.

Financially, for the first time in recent years, SAE surpassed its revenue goal. Because of this outstanding showing, the SAE Board of Directors agreed to make a one-time contribution of \$1 million to the SAE Foundation to support its mission of nurturing students' enthusiasm for math and science.

SAE also surpassed its membership goal by more than 3,000, finishing the year with 89,106 members. This represents the highest membership figure ever for SAE and puts the Society on schedule to meet its goal of 100,000 members by 2010.

A key component to reaching our membership goals is recruiting and retaining younger members. In 2004, SAE began the Younger Members Initiative to better engage and prepare engineers under the age of 35. An important part of the initiative is Power Track, an innovative new program that offers tools and information to help members carve out the best career track possible. As a result of these efforts, younger member retention for 2004 exceeded target by more than 10 percent.

The implementation of new vice presidents in each of SAE's key mobility sectors was finalized when Mark Pflederer of Caterpillar was elected Vice President Commercial Vehicle. This appointment was in addition

to the already-existing positions of Richard Schaum, Vice President Automotive and Robert Spitzer, Vice President Aerospace. With three-year terms, these positions provide leadership and continuity of focus for each major sector.

And finally, in 2004 SAE continued planning for its 100th anniversary. Several activities and memorabilia designed to enhance the SAE brand visibility and increase revenues were developed. They include special banquets, sessions and celebrations at the 2005 SAE World Congress; a coffee table book, *The SAE Story: One Hundred Years of Mobility*; and a 100th Anniversary Reception at the Smithsonian Air and Space Museum in Washington, D.C. These are among the many products and events that will highlight our anniversary year.

As president and executive vice president, we have had the privilege to travel the world and represent SAE in many different nations. While the cultures and people we met were diverse, one constant was the favorable image that SAE enjoys. This is a testament to the skill and hard work of the people who make up SAE: its members, volunteers and employees.

Chronologically, 2004 was the year that SAE closed out its first 100 years of service. But it was really more of a beginning – a beginning that is full of promise and limitless potential. SAE is determined to continue its mission of advancing mobility engineering worldwide and to offer the most value possible to its members.

Sincerely,

A handwritten signature in black ink that reads "Duane Tiede".

Duane Tiede
2004 President

A handwritten signature in black ink that reads "Raymond A. Morris".

Raymond A. Morris
Executive Vice President and Chief Operating Officer

mobility



SAE Automotive Headquarters

offers executive-level meetings and
a growing professional development seminar program.

The automotive industry, with almost 60 million vehicles produced around the world each year, is under continuous pressure from consumers and government regulators to advance developments in passive and active safety systems, lower emissions standards, produce leading-edge product design, and explore new propulsion systems.



SAE's Key Mobility Sectors

The implementation of new vice presidents in each of SAE's key mobility sectors was finalized when Mark Pflederer of Caterpillar was elected Vice President Commercial Vehicle. This appointment was in addition to the already-existing positions of Richard Schaum, Vice President Automotive and Robert Spitzer, Vice President Aerospace. With three-year terms, these positions provide leadership and continuity of focus for each major sector.

Automotive

The SAE Automotive Business Initiative focused on gaining increased support for the SAE World Congress from global OEM and top-tier supplier executives. An Industry Leadership Coalition created to support this goal met throughout 2004 to develop methods of supporting and participating in the World Congress. Commitments to provide executive leadership for the 2005-2007 World Congresses were gained from General Motors, BMW Group and Toyota Motor Corp.

Other key areas of focus and progress included increased engagement of BMW, Toyota, Nissan, Honda and Hyundai in the target areas of corporate leadership, membership and participation on SAE committees.

Increased visibility and recognition for the SAE Automotive Headquarters in Troy, Mich., also was an area of emphasis. Successful efforts in this area led to more executive-level meetings and an expanded professional development seminar program.

The launch of the SAE Automotive Resources Institute (ARI) into the automotive industry has initially been accepted with a high degree of interest and enthusiasm. This matchmaking service of consultants and companies addresses short-term industry needs for experts from across multiple technical and business disciplines.

flight



If a profession is defined by its body of knowledge,
then **SAE** defines
the mobility profession.

To date, the U.S. Department of Defense has adopted more SAE standards than it has adopted from any other standards-developing organization.



Aerospace

Aerospace Standards continued to be the leading product for SAE's growing presence in the aerospace sector, publishing 538 new and revised standards, material specifications, recommended practices and information reports in 2004. The Aerospace Council, led by Chair Greg Saunders, implemented the first year of its strategic plan in 2004. The plan addresses three major areas: globalization, improved products and processes, and management and oversight.

SAE continues to be the secretariat for the International Aerospace Quality Group (IAQG), an organization that leads the world in the development of aerospace quality standards, including the highly successful 9100 series. The 9100 series calls for an online database of qualified, certification bodies and suppliers who produce products to the 9100 prescribed levels of quality. To accomplish this requirement, SAE created the OASIS database, which now has more than 2,500 companies listed as acceptable suppliers in aerospace.

Robert Spitzer, Aerospace Vice President, established a goal in 2004 to expand the reach of SAE Aerospace and touch more of the stakeholders and customers in this sector. Early in the year, Spitzer traveled to the Dallas/Fort Worth area to meet with industry leaders from companies such as Lockheed Martin, Bell Helicopter and Voght. In the fall, Spitzer met with the Airbus staff at the firm's Washington, D.C., office and later joined the Aerospace Council in Toulouse, France where the Council met at the Airbus facility.

power



SAE connects professionals

from the truck and bus, diesel engine, construction, and agricultural engineering sectors of the mobility industry.

More than 3,200 engineers and practitioners from around the globe went to the Commercial Vehicle Congress and Exhibition to learn about emissions, safety, electronics and branding.



Commercial Vehicle

Two significant events this year signaled the rebirth of SAE's engagement in the Commercial Vehicle sector, which encompasses trucks, buses, construction equipment and agricultural machinery.

In early fall, the third of the three SAE Vice Presidents was elected. Mark Pfleiderer, a Vice President at Caterpillar, was elected to serve as the inaugural Commercial Vehicle Vice President for a three-year term starting November 2004. He immediately started assessing the needs of SAE members and customers in this sector and developing plans to address those needs.

A new congress and exhibition was created for this sector in 2004 – the Commercial Vehicle Engineering Congress & Exhibition, which was held near Chicago's O'Hare International Airport. The event, with its large exhibit, comprehensive technical program and unique banquet, proved to be an exciting and valuable event for this industry. More than 3,200 engineers and practitioners from around the globe attended the congress to learn about emissions, safety, electronics and branding.

benchmark



SAE developed a number of **new standards**
in 2004 that **directly supported**
new aircraft programs.

“I cannot emphasize enough how important it is for manufacturers, airlines and suppliers to have internationally-recognized standards, not only to cut the cost of stocks, but also for common practices with their consequential effects on aviation safety enhancement.”

Alain Garcia, Executive Vice President of Engineering for Airbus



SAE Aerospace Standards

Benchmarking: As part of the Aerospace Council Strategic Plan, a benchmarking study was conducted of the major standards developing organizations that support the aerospace industry. The benchmarking study looked at four areas: Web sites, intellectual property policies, the document revision processes and project management and tracing. The results were analyzed and best-in-class characteristics were identified.

Rapid Amendment Process: The Aerospace Council extended a trial process on the development of amendment documents in 2004. Amendments allow for a rapid change to a document based upon an immediate procurement need that doesn't affect form, fit, function or interchangeability. SAE is the only industry-standards developer offering this process.

Standards Supporting New Aircraft Programs: SAE developed a number of new standards in 2004 that directly supported new aircraft programs such as the Boeing 787 and Airbus A380.

Council Meeting in Toulouse – For the first time the Aerospace Council met outside of North America, hosted by Airbus in Toulouse, France and addressed by Alain Garcia, Executive Vice President of Engineering, Airbus. In conjunction, an International Aerospace Standards Workshop was also conducted. Both events were important elements in support of the Council's strategic initiative on Globalization.

AS-4 Unmanned Systems: In 2004, the Aerospace Council approved the establishment of a new committee, AS-4 Unmanned Systems, under the Avionic Systems Division. AS-4 will develop standards related to communication and navigation for unmanned vehicle systems.

Works in Progress: In order to provide better metrics and process management for standards development, SAE implemented several tools for tracking and management of Works in Progress (WIP). This information allows committees to better manage their workload during the pre-draft document stage.

global

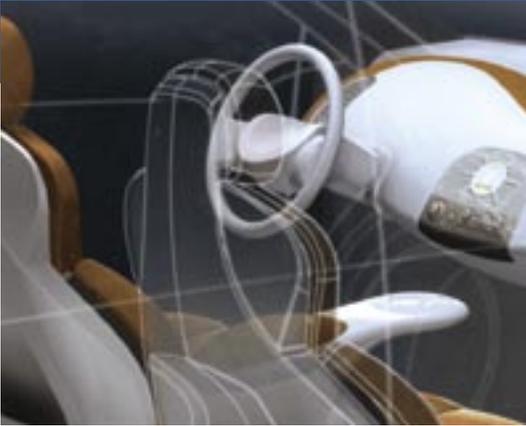


SAE's ground vehicle standards provide distinct,

measurable value

to the mobility industry.

The true international development of a single set of global ground vehicle standards is central in today's standards development program at SAE.



SAE Ground Vehicle Standards

Fuel Cell Vehicle Standards: SAE International was appointed by the U.S. Department of Energy (DOE) as the leading standards development organization (SDO) for automotive hydrogen fuel cell vehicle standards.

EMI and EMR Standards: The EMI and EMR Standards Committees released the 2004 edition of the Surface Vehicle Electromagnetic Compatibility (EMC) Standards Manual (HS3600).

LIN Devices: The Vehicle Architecture for Data Communications Standards Committee released J2602, LIN Network for Vehicle Applications. The standard improves the interoperability and interchangeability of LIN devices within a network by resolving those LIN 2.0 requirements that are ambiguous, conflicting or optional.

Wire Harnesses: The Wire Harness Covering Task Force published J2192, Performance Specification for Physical Protection of Wiring Harnesses to fill a much-needed request from the OE and supplier communities.

The **Cooperative Research and Standards Development** programs at SAE International developed and tested the appropriateness of standards prior to industry adoption. New projects include: emergency-vehicle lighting studies, vehicle exterior sound-level testing, high strain rate plastics testing, gage Reliability & Repeatability studies, otologic trauma studies, and IRCRP (Improved Refrigerant 134a Cooperative Research Project) systems performance and emissions as supported by the U.S. EPA.

Engine Power Test Code: The Engine Power Test Code Committee completed revisions to J1349, Engine Power Test Code-Spark Ignition and Compression Ignition-Net Power Rating, to accommodate the development of electronic controls that recognize the transient nature of automotive engine operation.

Tire Pressure Monitoring: The Tire Pressure Monitoring Systems Committee issued J2657, a recommended practice (RP) for tire pressure monitoring systems for light-duty highway vehicles.

opportunity



SAE serves as a **building block**
of our customers' technical knowledge base
and fulfills unexpressed needs.

Marketing, Sales and Customer Service are charged with maintaining a laser-like focus on the customer, paying attention to both the needs of members as well as those of the industry-at-large.



Marketing, Sales and Customer Service Centralized

In 2004, SAE's reinvigorated focus on understanding and engaging customers while anticipating their needs continued. SAE marketing, sales and customer service resources function in a customer relationship management (CRM) model. SAE's working definition for CRM is "a business philosophy that aligns its people, processes and technology around customer needs and builds a long-term relationship based on mutually received value."

Marketing, Sales and Customer Service are charged with maintaining a laser-like focus on the customer, paying attention to both the needs of members as well as those of the industry at large. CRM champions will lead a shift in the SAE corporate mindset to one that exemplifies the concept of delivering value consistently – and with one voice – in every customer interaction.

Marketing

Promotion: Direct mail continues to be the predominant way SAE reaches target markets. Refinement of this tool continued in 2004. Increased list management proficiency and data mining sophistication made possible more targeted and effective individual promotion campaigns. A complete redesign of SAE's Web site also provided increased reach for the organization's products and services.

Corporate Communications: The strategy was adjusted in 2004 with a staff reorganization that enabled SAE to more aggressively engage media and to provide them access to resources. The goal is to increase media coverage of SAE, our members and their contributions.

Awards and Scholarships: The visibility of these two important programs increased through creative promotions and public relations focus.

Brand: An initial branding study begun in 2004 will lead to a comprehensive strategic review and initiative in 2005.

focus



SAE's Customer Service

becomes the voice

of the engineering consumer.

The philosophy of SAE's Customer Service is to create opportunities for lifelong learning to our customers by providing technical knowledge resources and value-added information.



Corporate Sales

Corporate Sales began a reorganization that will transition the focus of the SAE Sales Team from product lines to key account management. An example of this new focus is the development of relationship managers for key customers among the New American Domestic.

In addition, Corporate Sales is working with Marketing and Customer Service on the development of sales tools, analysis of resource allocation and cross-functional engagement of customers and markets.

Customer Service

The philosophy of SAE Customer Service is to create opportunities for lifelong learning for customers by providing technical knowledge resources and value-added information.

Of the 178,826 customer contacts in 2004, Customer Service staff resolved approximately 97 percent of customer requests by using telephone, e-mail, postal options, fax and face-to-face contact. SAE builds customer loyalty by focusing on one customer at a time; it creates special opportunities for that customer by providing knowledgeable, professional and personal service.

By using customer feedback to capture unexpressed needs of individuals in a variety of mobility industries, Customer Service becomes the voice of the engineering consumer. The department also scrutinizes each process from the customer's viewpoint and shares pertinent information with company sectors that can work to satisfy customers' needs.

education



SAE is an **international resource**

for meeting the educational and training needs
of technical professionals around the world.

SAE is helping to develop a worldwide network of technically-informed, capable mobility practitioners in land, sea, air, space, government, industry, and education.



Professional Development

2004 was a record-breaking year for SAE's Professional Development. Eighty-eight percent of the scheduled seminars were completed, with all-time-high figures for average enrollment per seminar (13.45) and total enrollment (2,838). Overall revenue for seminars, telewebcasts, in-house seminars and e-learning products reached an all-time high of \$3,866,252.

In 2004, Professional Development introduced 16 new seminars, including a new race car setup course in partnership with the Panoz Racing School and the new Applied Vehicle Dynamics Seminar in partnership with BeaveRun Motorsports Complex. Both courses achieved full enrollment, and additional dates have been scheduled in 2005.

SAE held four seminars in China in 2004 with very positive response. Additional dates have been scheduled in Shanghai for 2005.

A record number of corporate in-house learning programs were offered in 2004; four new e-seminars were developed and launched; and three telewebcasts were developed and delivered. In addition, the department developed the Certified Automotive CAD Professional program.

community



A common bond for SAE members is

mobility technology,

the common home for these individuals is SAE.

At its core, SAE remains an individual-membership organization that serves engineers and others in the mobility industry.



Membership and Sections Activities

SAE closed the year with 89,106 members from more than 100 countries – a record. This figure includes professional and student members, and members of SAE’s affiliate societies in Great Britain, India and Brazil. The member retention rate for the year was 80 percent.

Members-Only Career Center

The SAE Career Center connects qualified SAE members with employers and recruiters in the mobility industry. Launched on September 30, 2004, the Career Center is an exclusive member benefit for professional and student members. SAE members can search and apply for jobs, post their resume, receive e-mail notification of new jobs, and access career tips and resources. It is part of the SAE Power Track program to help members accelerate their careers in mobility engineering.

At the end of December, more than 2,300 members had used the service with 360 members posting resumes. The site averages more than 20,000 total page views per month and about 40 different job postings.

Affiliates

SAE-UK, an affiliate society in the United Kingdom incorporating the Institute of Vehicle Engineers (IVehE), was established in 2004 to serve the professional and informational needs of UK-based mobility practitioners.

At the time of its creation, SAE-UK had more than 1,500 members. SAE International also has affiliate societies in Brazil and India.

solutions



SAE offers neutral forums for the

exchange of ideas,

showcasing the latest in technical innovations,
and addressing difficult problems.

“SAE has helped to broaden my knowledge of local and global industry issues and increased my creativity as an engineer. SAE provides for all of my professional needs.”

- Jason Wilkening

Sales Application Engineer, Freightliner



SAE Engineering Meetings and Symposia

SAE's Engineering Meetings and Symposia business unit conducted 30 events in 2004, attracting nearly 46,000 attendees and contributing 2,608 printed papers to the society's collection of lifelong learning resources. Under the umbrella focus areas of automotive, aerospace and commercial/heavy-duty, the events covered topics as diverse as hybrid vehicles, alternative refrigerants, emissions, air brakes, safety, aircraft batteries and thermal control for the International Space Station.

SAE 2004 World Congress: Under the leadership of the Ford Motor Co., representatives of a coalition of OEMs including General Motors, DaimlerChrysler, BMW AG and Toyota organized the SAE World Congress. The Congress kicked off the conference year in March, bringing more than 35,000 delegates from 70 countries to Detroit. The AVL Technology Theater was home to an Executive Management Conference that drew 75 senior-level automotive executives, and the Dana Technical Innovation Forum featured business panels on China, Poland and Austria, along with technical sessions on the Ford GT, Six Sigma and intelligent vehicles. The Congress generated more than 1,400 technical papers.

SAE Commercial Vehicle Engineering Congress: In 2004, the SAE Commercial Vehicle Engineering Congress and Exhibition in Chicago, brought together the truck, bus, construction and agricultural mobility communities for the first time at a single conference. The event leadership comprised representatives from each of the industries to ensure a balanced technical program and exhibit focusing on emissions, electronics, maintenance, body and chassis, safety and braking. The event drew more than 3,000 attendees and 150 exhibitors.

performance



SAE's engineering conferences

meet and exceed

the extremely high-value expectations
of the global mobility marketplace.

The engineering conferences and exhibitions of SAE International feature speaker rosters of the most knowledgeable and most influential technology professionals.



SAE Engineering Meetings and Symposia (cont.)

34th International Conference on Environmental Systems:

In July, SAE administered the 34th International Conference on Environmental Systems (ICES) in Colorado Springs, Colo. SAE partners with AIAA, AIChE, ASME and the ICES International Committee to organize this event, which focuses on the design, production and operation of environmental systems for vehicles intended for use in remote and hostile environments. In 2004, ICES contributed 297 written papers to the SAE literature and had its highest-ever attendance.

DoD Maintenance Symposium: The third SAE-administered DoD Maintenance Symposium took place in October in Houston. Highlights included a keynote address by James Roche, Secretary of the Air Force, and the Secretary of Defense Awards Banquet, which included presentation of the Phoenix Trophy, the DoD's highest award for maintenance. The event featured a 22,450-square-foot exhibit and nearly 1,100 attendees.

2004 SAE Motorsports Engineering Conference & Exhibition:

In December, SAE presented the motorsports industry's only high-performance technology event, the 2004 SAE Motorsports Engineering Conference & Exhibition, in Dearborn, Mich. Max Mosley, President of the FIA, the governing body for Formula 1 Racing, presented the keynote, and the presidents of motorsports' top five sanctioning bodies – FIA, IRL, NASCAR, SCCA and NHRA – comprised a business panel that addressed the conference theme, "Change for Relevance." More than 80 presentations and 39 exhibitors added to the value of the event.

During the year, Engineering Meetings staff teams addressed several issues identified in the 2003 J.D. Power customer satisfaction survey as opportunities for improvement. Teams investigated the current state of and recommended changes to the processes for technical paper acquisition; paper quality measurement and improvement; and event customer satisfaction data collection, automation and interpretation. Many enhancements have already been or soon will be implemented, and the teams will monitor their progress throughout 2005.

excellence



SAE magazines feature

futuristic perspectives

on critical-mobility technologies.

*SAE magazines reach more than 140,000 subscribers
in more than 100 countries.*



SAE Magazines

Automotive Engineering International continued its string of recent successes with another boost in share to nearly 60 percent of the advertising market in 2004. This compares with last-year's record 56 percent share and 53 percent the year before. *Aerospace Engineering* and *SAE Off-Highway Engineering* also increased market share in their respective segments.

After undergoing a redesign in 2003, *SAE Off-Highway Engineering* took home an award for publication excellence from APEX in 2004. It was one of nearly 5,500 entries and was cited in the most improved magazine or journal category.

Automotive Engineering International and other SAE magazines began publishing a series of articles in the fall in celebration of SAE's 100th anniversary in 2005. The articles have received very positive response from the marketplace. Top executives from the world's leading automotive, aerospace and off-highway companies are contributing the SAE 100 Future Look articles, which focus on the future of mobility industries and technologies. The articles that appear in SAE magazines throughout the year, along with others, will be published in a special SAE Centennial Issue of the SAE magazines in fall 2005.

milestones



SAE creates a foundation for the
future of technology.