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Tradition, transition, and transformation

As the sun sets on the first 100 years of SAE, we reflect on a proud and rich tradition of contribution to the transportation industry. Engineering accomplishments in the last century have been the enabler of progress, expanding our personal horizons on land, in the sky, and beyond. At the start of the century, four U.S. farmers could feed about 10 people. By the end, with the help of engineering innovation, a single farmer could feed more than 100. In the early 1900s, the average American traveled about 1200 mi (1900 km) in their lifetime, mostly on foot, and mostly within their own town. One hundred years later, the typical American adult travels more than 12,000 mi (19,000 km) by automobile alone in just one year. From early test rockets to sophisticated satellites, human exploration into space is perhaps the most amazing engineering feat of the 20th century. The development of spacecraft has thrilled the world, expanded our knowledge base, and improved our capabilities.

What a legacy the men and women of SAE—some of the most extraordinary inventors of the 20th century—have left for us. They created engineering marvels resulting in new products, technologies, and applications that no less than changed the course of society. This kind of quantum leap in engineering evolution comes from the discussion and sharing of science and technology—the very cornerstone of SAE's mission. Even as business and communication models change, the exchange and reciprocity of ideas opens the door for great things. We will continue to bring together experts from around the world

to share knowledge and present their latest developments, publish technical papers, gather the engineering community's best minds for collaboration and insight, establish the best practices and standards for all industry and government, and develop ongoing education forums for all engineers to improve their skills through classes and technical sessions. These are the traditional areas of SAE contributions that create a lasting foundation for our future.

As with any great milestone, 100 years is an occasion to celebrate. We should take the time to reflect on our accomplishments, and, perhaps more importantly, apply the collective learning and knowledge to the next 100 years. As we contemplate, plan, and devise what the next century will bring, SAE member Orville Wright made an early prediction that seems appropriate. "I cannot answer," he said, "except to assure you it will be spectacular."

As the sun rises on this next 100 years, we are welcomed with a new, global horizon with continuously expanding curiosities and conundrums. With each new daybreak comes evolving social, environmental, and business trends that reek not only of challenge, but opportunity.

With North American and European transportation growth reaching a plateau, sustainability of the industry turns to developing transportation in countries such as China, India, and others. China's automotive demand is approaching five million vehicles a year, and joint ventures and partnerships with technologically based Asia-Pacific corporations are the



order-of-the-day for product development and design. Increasing demand for vehicles begets increasing demand for highway construction and developing infrastructures. All of these developments open the door for SAE involvement—sharing and consulting on the engineering challenges for vehicle design and engineering, as well as off-highway transportation to support the massive construction efforts. China is not alone in its construction explosion; with industrial growth and expansion across the globe, SAE can provide the leadership and institutional memory to new members and their companies in all areas of mobility engineering.

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. This pressure to innovate is shared by both manufacturers and suppliers. As the longest-serving chief engineer in the history of **General Motors**, I now have the opportunity to view engineering from the supplier side of the business, and I can testify to the increased engineering responsibility of automotive suppliers, who now provide two-thirds of all innovation in vehicles today.

In the aerospace industry, we see the development of highly efficient propulsion systems as a dominating force as well. With the industry transitioning to

global businesses and global communications, the parameters of time and distance are shrinking rapidly and propulsion demands will increase. As a recognized leader in developing standards for the global aerospace industry, SAE will continue its role to support and lead our members' efforts.

As it was at the time SAE was first created, we are again in a time of transformation, on the cusp of engineering breakthroughs that will once again expand our personal horizons, shrinking the size of the world through transportation.

In his autobiography, Walter P. Chrysler said, "There is a joy in engineering that only poets are supposed to know." We may not be poets, but we are problem solvers, and there is magic, drama, and nobility in what we do. Engineers provide the adjectives in life—bigger, longer, higher, stronger, faster, further. What could be more poetic?

Ultimately, SAE must transform itself during the next century as businesses, governments, and communication methods transform with new technologies and demands. The future has never shone brighter for SAE and in its ability to contribute and serve society. Please join with me in our year of celebration, of the past, and the future.

