



*Harry F. Barn*

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1904-1990

By Robert A. Frosch

HARRY F. BARR, engineer, inventor, automotive industry leader, and vice-president of General Motors (GM) engineering staff, died on March 5, 1990, at the age of eighty-five.

Elected to the National Academy of Engineering in 1965, Mr. Barr was the first automotive engineer to receive this distinction. He was frequently regarded as "an engineer's engineer." He is known for his innovation, leadership, and contributions to automotive engineering, and for his service to several engineering societies during his forty-year professional career and into his retirement.

A native of Enid, Oklahoma, Mr. Barr was born on August 28, 1904. He studied mechanical engineering at the University of Missouri before enrolling at the University of Detroit in 1926, where he received a bachelor's degree in automotive engineering three years later.

Mr. Barr began his General Motors career in February 1929 as a laboratory technician for Cadillac Motor Car Division. His first assignment was in the development of the V-16 passenger car engine.

For a short time during World War II, Mr. Barr worked on a tank development project and on a lightweight flying bomb. Following his war projects, he was promoted to Cadillac divisional engineer in charge of engines. In 1945 he was named staff engineer and was responsible for the development of the 331

cubic-inch overhead valve engine, introduced on 1949 Cadillacs.

During the Korean War, Mr. Barr became the assistant, and then the chief engineer at Cadillac's Cleveland, Ohio, Ordnance Tank Plant. While there, he assisted in the development and production of the M-41 Walker bulldog tank and the M-42 twin Bofors 40-mm gun carriage.

Following his Cleveland assignment, he moved to Chevrolet Motor Division in 1952 as assistant chief engineer and became chief engineer four years later. Under his direction, Chevrolet introduced a number of new models, including the Corvette and the Corvair, and features, together with important developments in transmissions, engines, and suspensions and an all-new truck line in 1960.

Coinciding with his appointment as chief engineer, Mr. Barr oversaw the development of the engine for the 1960 Corvair. This vehicle was innovative for the current U.S. market because of its rear-mounted engine. The engine was a horizontally mounted, opposed 6-cylinder, air-cooled design. It was the first modern all-aluminum engine in the domestic industry, the first automotive air-cooled engine since the early 1930s, and the only application of the horizontal opposed configuration in the domestic industry.

It was during this time that Mr. Barr became known for his contributions to engine design and development, including the reduction of exhaust emissions. He received nine U.S. patents during his career, more than half in the area of engine structure and lubrication.

Upon Mr. Barr's death, GM Chairman Robert Stempel said, "Harry Barr was both a fine gentleman and an imaginative engineer who was highly respected throughout the industry for his knowledge of automobile engines."

In March 1963 Mr. Barr was elected vice-president of General Motors in charge of the engineering staff, a post he held until his August 1969 retirement. The engineering staff's mission was to explore and develop future vehicles and technologies and to coordinate corporate safety programs.

His responsibilities included chairing the GM Engineering Policy Group and the General Technical Committee, both of

which coordinated corporate and divisional engineering and technical matters. Also under his engineering jurisdiction were the GM Proving Grounds in Milford, Michigan, and Mesa, Arizona; GM's test facility in Manitou, Colorado; automotive safety engineering; the new devices section; parts fabrication; technical liaison section; and engineering standards.

During his tenure as vice-president, the federal government began its involvement in automotive safety and emissions. Mr. Barr worked with the government and automotive manufacturers as an engineer and industry spokesperson. A year before his retirement he said, "As responsible engineers, it is our duty to lead and inform administrators in the governmental departments that are chartered by law with the task of applying new regulations to our industry. . . . At the same time, we must continue to see that our customers receive the greatest possible value for the cost involved in all these public interest areas, such as safety and air pollution."

New safety features that Mr. Barr supervised included thicker laminate windshield glass, beginning with the 1966 models, to prevent ejection from the vehicle; energy-absorbing steering columns in 1967; and better highway design. This work was based on a research program at the GM Proving Ground, which demonstrated that clearing obstacles from roadsides can reduce the severity of injuries in single-car accidents.

In addition to his election to the National Academy of Engineering, Mr. Barr was a fifty-year member and fellow in the Society of Automotive Engineers (SAE). He held a number of positions in the SAE and was its president in 1970. For ten years he represented the society on the Board of the Coordinating Research Council. He also was a member of the Engineering Society of Detroit and the honorary engineering fraternity Tau Beta Pi.

Throughout his career, Mr. Barr received several honors, including the Alumnus of the Year from the University of Detroit's College of Engineering (1970), the Outstanding Career Achievement Award from *Automotive Industries* magazine (1968), and the Missouri Honor Award for Distinguished Service in Engineering from the University of Missouri (1965).

Based on his many years of observation, Mr. Barr summarized the qualities of successful engineers in a 1964 *GM Engineering Journal* article. According to Mr. Barr, successful engineers have initiative, and they have the ability to make their own decisions and have an open mind. They dare to be different, are enthusiastic team members, effective communicators, and continue to learn about their profession, he said.

"These elements, then, are what I consider to be essential for an engineer in pursuit of success. But possession of them does not assure continual success," Mr. Barr said. "The engineer must expect to encounter failure. In fact, failure is a reality at some stage in most engineering projects. It may, however, be considered as part of the path to success."

There's no doubt among anyone who worked with or knew Harry Barr, that he was one of the successful engineers he described. Mr. Barr's legacy to automotive engineering is still reflected today in GM's cars and trucks.

