

History Of Kelsey-Hayes.doc

Statistics:

Incorporated: 1927 as Kelsey-Hayes Wheel Company

Absorbed: 1998 into LucasVarity's Light Vehicle Braking Systems

SICs: 3714 Motor Vehicle Parts & Accessories

Company History:

The Kelsey-Hayes Group of Companies, once a major supplier of wheels, brakes, and other components to the worldwide automobile industry, ceased to exist as a separate entity after being acquired and absorbed by London-based LucasVarity plc in 1996. Formed by the merger of Lucas Industries and Kelsey-Hayes' former parent Varity Corporation, LucasVarity reorganized its holdings, and Kelsey-Hayes became part of the LucasVarity Light Vehicle Braking Systems (LVBS) Division. Originally a supplier of wooden wheels to the fledgling automobile industry in the early 20th century, Kelsey-Hayes had evolved into a major international corporation and had been the leading producer of electronically controlled antilock brake systems before the acquisition.

Beginnings as Wooden Wheel Manufacturer

Kelsey-Hayes was originally formed in 1927 as the result of a merger of the Kelsey Wheel Company and the Hayes Wheel Company. The parallel wheel-making history of founders John Kelsey and Clarence B. Hayes began much earlier.

John Kelsey formed the K. H. Wheel Company (with partner H. J. Herbert) in 1909 with the hopes of developing a spring wheel. Advised by Henry Ford to focus instead on the production of traditional wheels made of hickory wood, Kelsey took his advice and by 1919 his company was producing wooden wheels at a rate of two million per year and in 1915 the Kelsey Wheel Company was reincorporated for \$13 million. Ford gave Kelsey his flying start, buying more than three quarters of the company's wheel production in 1909. Afraid of becoming too dependent on Ford, Kelsey diversified, giving Ford less than one-third of his business in 1910 and, following a disagreement with Ford, less than ten percent in 1912. While still selling to Ford, by 1915 the company's business had grown to \$3.5 million in total revenues and had 15-20 percent of the wheel market, supplying not only Ford but also Hudson, Paige, Chalmers, and Studebaker. Government demand for artillery type wheels provided a further boost to profitability--in 1918, 80 percent of production was devoted to defense type wheels--and by the end of World War I the company was solidly profitable.

A major cost cutting innovation was a wheel with a metal felloe band that cut the amount of wood needed in the production of wheels. This enabled Kelsey to capture a larger market share and, coupled with the boom in car and truck sales, Kelsey's wheels were on 70 percent of Ford's cars by early 1920. Kelsey Wheel was on its way and growing.

While John Kelsey was achieving great success, Clarence B. Hayes was building a company of his own. Beginning with a one year stint at the Kalamazoo Wheel Company, which built wooden buggy wheels, Hayes quickly moved on to become the vice-president, then president and general manager of the Imperial Wheel Company where he worked with W. C. Durant, who later founded General Motors.

In 1909 Hayes formed the Hayes Wheel Company. After buying out the National Wheel Company plant in Jackson, Michigan, he began to phase out the production of buggy wheels and switched exclusively to the production of wooden car wheels. Hayes would expand his operations to five more plants during the decade and by 1920 he had 60 percent of the U.S. automobile wheel business.

While both the Kelsey Wheel Company and the Hayes Wheel companies got their start with the production of wood wheels, by the 1920s both were expanding into the production of wire wheels. Wire wheels were cheaper to produce and they were replaceable and transferrable from one axle to another (while wood wheels came as part of the entire axle assembly). Wire wheels were on one-quarter of all new vehicles by 1927 and clearly represented the wave of the future. This competitive pressure, a threat to the very existence of wooden wheel makers, was certainly a major motivating force behind the 1927 Kelsey-Hayes merger. The Kelsey-Hayes Wheel Company was born.

John Kelsey's wheel company had been producing wire wheels throughout the 1920s but had been accused of violating a patent for wire wheels that had been issued to Edward Cole of the Wire Wheel Corporation of Buffalo, New York. This company was primarily involved with patent licensing. The nature of the patent dealt with the critical issue of mountability of the wheel and Wire Wheel refused a license to Kelsey and threatened to sue for patent infringement. John Kelsey died early in 1927 and George Kennedy became the company's president. Kennedy's solution to this legal imbroglio was to purchase the Wire Wheel Company to get control of the patent but this wasn't the end of the problem: the patent was actually owned by the Packard Co., which had been receiving royalties from Wire Wheel. Kennedy paid \$500,000 to Packard and production of wire wheels was now fair game. By 1929, the new Kelsey-

Hayes Corporation was producing 10,000 wire wheels a day. The company also entered the brake field, supplying brakes for Ford's Model A.

Depression and Labor Problems

During the lean years of the Great Depression the company solidified its hold on its General Motors market by purchasing the General Motors subsidiary Jaxon Steel Products Company of Jackson, Michigan. Kelsey-Hayes also provided the wheels for Henry Ford's invasion of the European market. By 1931, with the depression in full swing, the company lost \$667,000 and in 1932 it lost \$1.1 million. George Kennedy's Kelsey-Hayes corporation had accumulated massive amounts of short-term debt, mostly owed to banks and to General Motors. After the losses in the early to mid-1930s, Kelsey-Hayes went through a financial restructuring and cost-cutting campaign which resulted in small but growing profits in 1938 and 1939. Ever conscious of the need for new product development, Kelsey-Hayes began supplying standard-equipment hydraulic brakes to Ford and developed a new brake drum. Kelsey-Hayes had weathered the storm and would be prepared for the coming war production effort.

In 1940, Kelsey-Hayes began producing machine guns for the mounting war effort, first for the United Kingdom and then for the United States. It made tank components, wheels and accessories for ordnance vehicles, aircraft wheels, brakes and other parts. In anticipation of the transition to a post-war economy, Kelsey-Hayes acquired French & Hecht, Inc., a leader in the agricultural and construction industry wheel business.

Although the period following the war was a time of massive innovation, the road out of the government regulated war economy was not completely peaceful. With unemployment on the rise and real wages of workers falling, the United States experienced a wave of strikes that shut down much of the U.S. industry for at least some part of 1946. Kelsey-Hayes was not immune. A wildcat strike by 4500 members of the United Auto Workers in 1946 closed the company down for 46 days.

Developing New Products in the Late 1940s

With the strike settled, Kelsey-Hayes looked to cost-cutting measures and product diversification. In 1946 the company also began supplying power brakes to Buick and Chrysler and in 1947 Kelsey-Hayes acquired Lather Company, which also made brake components. The innovation and product diversification continued through the early 1950s as the company reached the highest profit margins in its history. During the Korean War the company made inroads into the aircraft industry.

In recognition of the diversification and expansion, the company changed its name, becoming simply the Kelsey-Hayes Corporation. Kelsey-Hayes was now at the front of new product innovation, introducing chrome-plated wheels, the first aluminum wheels, and power brakes, and was the leading producer of auto wheels, brakes, and other components. The strategy was to diversify in order to grow, both through research and development and through acquisition of other promising companies. To move into research and development for the burgeoning aircraft industry, Kelsey-Hayes acquired Control Specialists, Inc. The company also moved into the production of wheels and brakes for truck trailers, buses, and agricultural equipment.

In 1958 the company began explorations into the development of antilock brake systems for automobiles. Though the technology had been developed much earlier, antilock brake systems had only been employed as a safety measure on commercial aircraft. This basic technology eventually resulted in the development of electronic sensors that could read wheel speeds and send the information to a computer to prevent wheel lock on large automobiles. This evolving technology would be a mainstay of Kelsey-Hayes's business for years to come.

The product innovations continued into the boom years of the 1960s when Kelsey-Hayes was a pioneer in the development of disc brake systems. Kelsey-Hayes disc brake systems beat out the competition and became standard equipment on Lincoln Continentals and Thunderbirds, and by the time the 1970s rolled around, 85 percent of U.S. cars came with Kelsey-Hayes disc brakes. Kelsey-Hayes replaced Bendix as the number one brake supplier to Ford. Not only had Kelsey-Hayes become a leading brake producer, but there were also Kelsey-Hayes parts in virtually every jet engine.

Organizational Turmoil in 1970s and 1980s

While the 1960s were years of expansion and diversification, the 1970s were extremely volatile. As was often the case for Kelsey-Hayes, as goes the automobile business, so goes the business of automobile suppliers. The challenge for Kelsey-Hayes following the oil crunch of the early 1970s was to develop products tailored to the new lighter, more fuel efficient, cars of the future. Towards this end, Kelsey-Hayes opened a research and development center in Ann Arbor, Michigan, designed to accelerate new product development, intensify the application of new manufacturing processes and search for new material applications for new and existing products. At the same time that the company was implementing this longer term strategy its sales continued to expand, topping the half billion dollar mark in 1973.

By 1973, however, in the face of a severe economic downturn, Kelsey-Hayes found

itself over-extended in credit markets and, with its stock value plummeting, takeover loomed. In 1973 Kelsey-Hayes Corporation became a wholly owned subsidiary of Fruehauf Corporation, a leading producer of truck trailers. The takeover was only a small bump in the road for Kelsey-Hayes, however. The new financial support provided from Fruehauf enabled Kelsey-Hayes to continue its growth and by 1975 Kelsey was supplying disk brakes for all new subcompact cars including Volkswagen in Germany. Fruehauf commented in its 1975 annual report: "Kelsey-Hayes recognized the trend toward smaller cars several years ago. All of its automotive manufacturing plants have the flexibility to manufacture the required smaller components." Kelsey-Hayes was also maintaining its market share in wheels, brake components, and axles, as well as in helicopter transmissions, parts for jet engines, and hydraulic brake systems for the military. Kelsey-Hayes had become Fruehauf's shining star, accounting for 60 percent of Fruehauf's corporation revenues and becoming the company's only profitable business.

By 1978 Kelsey-Hayes was in full development of aluminum wheels as a cost cutting improvement over the traditional steel wheels. In addition, with the auto market in a severe slump beginning in 1978, Kelsey began to increase its share of the automobile replacement parts market. Since the auto makers were selling less new cars, older cars were staying on the road longer and hence the demand for replacement parts was rising. Thus, the replacement parts market buffered the negative effects of declines in automobile production.

In the late 1970s Kelsey-Hayes also began looking toward new production processes and, through its purchase of Composithek Engineering Corporation, the company had a new expertise in fiber-reinforced plastics that allowed substantial weight savings in wheel production. By 1979 the company could manufacture every type of wheel, from the traditional steel wheel to a light weight, low-alloy steel wheel. This technological breakthrough, of course, allowed Kelsey-Hayes to make lighter weight die castings and other lighter, stronger, parts.

The success of Kelsey-Hayes following its merger with Fruehauf was not without controversy. Fruehauf's acquisition of Kelsey-Hayes was ruled by the Federal Trade Commission, in 1978, to violate anti-trust laws in three Kelsey-Hayes product lines: heavy-duty wheels, anti-skid braking devices, and truck trailers. The argument was that these markets were serviced by few suppliers and the buyout would reduce effective competition through the possibility that Fruehauf would deny other suppliers the opportunity to sell to Fruehauf. Since Fruehauf had, in the past, attempted to make some of the same products as Kelsey-Hayes, a merger of the two companies was ruled to be a restraint on trade. Fruehauf was ordered to divest itself of some of its

Kelsey-Hayes assets in order to enforce competitive behavior. The legal battle dragged on into the 1980s.

Further complicating the matter was the flurry of leveraged buyouts that affected many businesses in the United States in the 1980s. Following a protracted unfriendly takeover bid, Fruehauf was divested and Kelsey-Hayes became the remaining operation. This new successor to Fruehauf became the K-H Corporation, selling its trailer division and the Fruehauf name to the Terrex Corporation. K-H became the holding company for the Kelsey-Hayes Corporation. For the first time in a long time, K-H became a publicly traded, independent corporation. Thanks to booming sales of its antilock brake systems, aluminum wheels, and electronic sensors its profits grew by more than ten percent in fiscal year 1987.

But the independent K-H Corporation did not last long. At the time, some experts believed that K-H could make a go of it as an independent company. However, saddled with interest payments on a debt load of over \$600 million, which drained its growth potential, the K-H Corporation went looking for a suitor. In 1989 the Varsity Corporation, a Toronto-based farm equipment and auto parts manufacturer, purchased K-H Corporation for \$577 million in cash and securities.

Yet Another Owner in the 1990s

After the buyout by Varsity in 1989, Kelsey-Hayes evolved into the Kelsey Hayes Group of Companies, a wholly owned subsidiary of Varsity. It was reorganized into business units in order to focus on individual product lines: anti-lock brake systems, brakes, aluminum wheels, steel wheels, and others. The Group remained solidly profitable and an integral component of Varsity's operations for several years. Kelsey-Hayes's revenues of \$1 billion in fiscal year 1990 were nearly one-third of Varsity's total revenues. Despite relatively weak markets, Kelsey-Hayes continued to compete aggressively in a global market. The company introduced a four-wheel anti-lock brake system line (that became standard on many cars by the end of the decade) that was compatible with virtually every car and light truck made anywhere in the world.

Hand-in-hand with the development of the antilock brake systems was the development of electromechanical products. Aluminum wheels, originally developed by Kelsey-Hayes in the 1950s, became one of the company's fastest growing markets. These innovations and continued refinement of new products and processes accompanied expansion of overseas production in the Asian-Pacific region, including a joint manufacturing venture with Japan's Topy Industries Ltd.

The Kelsey-Hayes Group of Companies thrived under the parentage of Varity until 1996, when business dealings originating in London would change its future forever. That year, Varity was purchased by a larger corporation, London-based Lucas Industries, which manufactured automotive and aerospace equipment. Lucas had been looking to expand its presence in the United States, following a late 1980s downturn in the U.K. automotive market.

In 1996, Lucas acquired Varity and its subsidiaries, and Kelsey-Hayes became a subsidiary of newly formed LucasVarity plc, which, in turn, became the second largest brake manufacturer and one of the ten largest automotive component manufacturers in the world. The widespread use of the Kelsey-Hayes antilock braking system (ABS) in automobiles established LucasVarity as a major player in the United States, and also allowed it to expand into Asia, Eastern Europe, and Latin America. The company's worldwide annual ABS sales grew to more than five million units.

However, the merger also resulted in massive restructuring expenses, and LucasVarity began to reorganize its operations. In 1998 the former Kelsey-Hayes brake manufacturing business was rolled into LucasVarity's new Light Vehicle Braking Systems (LVBS) division. Kelsey-Hayes ceased to exist as a separate company. LVBS became the largest division of LucasVarity; headquartered in Michigan where Kelsey-Hayes had operated for so many years, LVBS manufactured products at 23 plants, located in North America (where it was the leading two-wheel and four-wheel ABS manufacturer), Latin America, and Europe. Some of the division's major customers included Chrysler, Ford, General Motors, Volkswagen, and Renault.