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Rolls Royce Declares Bankruptcy

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Despite more than sixty years of engineering excellence, Rolls-Royce failed in its attempt to design and manufacture a radically new jet engine to meet contractual obligations with the Lockheed Corporation. Consequently, both British and U.S. governments had to step in to avoid an unprecedented economic catastrophe.

Locale: Derby, England

Categories: Business and labor; manufacturing and industry; organizations and institutions

Key Figures

Sir Denning Pearson (1908-1992), chief executive officer of Rolls-Royce during the 1960's

Sir David Huddie (1914-1998), mechanical engineer with Rolls-Royce who led development of RB-211 jet engine and sold it to Lockheed

Lord George Cole (1906-1979), former chief executive officer of Unilever who replaced Pearson in 1971 and directed Rolls-Royce during its reorganization

Summary of Event

The Rolls-Royce Corporation was founded during the first decade of the twentieth century, the result of the efforts of Charles Stewart Rolls (1877-1910), Henry Royce (1863-1933), and Claude Johnson (1864-1926). With the exception of a brief interlude during World War I, the firm was recognized for the excellence of its very finely designed, engineered, and crafted automobiles, including the Silver Ghost and Phantom models. Beginning in 1929, however, the firm began making sophisticated and powerful piston airplane engines as well as cars. Rolls-Royce's Aero Division activities intensified on the eve of World War II, culminating

in the famous Merlin engine design. It was the Merlin engine, in Spitfires and Hurricanes, that proved decisive during the 1940 Battle of Britain. As the war progressed, Rolls-Royce refined the Merlin, making it far more powerful and thus enabling fighters to increase their top speeds dramatically. Thanks to the efforts of Frank Whittle, the company's staff also began developing jet engines.

After World War II, with its substantial capital investment in the manufacture of aviation technology, large number of employees, and considerable engineering expertise, Rolls-Royce began expanding in the aviation business, despite inherent limitations brought on by the Cold War. Unlike its chief competitors in the United States, Rolls-Royce did limited business with the military; it therefore could not match American manufacturers' efficiency because of lower volume and economies of scale. Some 80 percent of all jet engines in the free world were made in the United States, whereas British firms contributed only about 8 percent to the total.

Further, although the British had a military that needed to be supplied with equipment, it was nowhere near the scale of the military in the United States or the Soviet Union. Thus, for Rolls-Royce, the target market had to be in supplying commercial airlines. During the 1950's, Rolls-Royce developed the popular Dart and Spey engines for commercial airliners. As a result of these projects, Rolls-Royce engineers could list a number of impressive technical accomplishments, including the first air-cooled turbine blades (1957), the first vertical takeoff engine (1958), the first use of composite materials (1962), and the first commercial supersonic engine (1964). The development of the RB-211 engine, however, contracted with Lockheed Aircraft in 1967, would prove so difficult to achieve that it would bankrupt the company by the end of 1970.

The story of the RB-211 centers on the efforts of two talented Rolls-Royce engineers and executives, chief executive officer Sir Denning Pearson and the director of the Aero Division, Sir David Huddie. Pearson, an engineer-entrepreneur, was convinced that the future of Rolls-Royce was in the commercial aviation business. Consequently, he expanded the firm in 1965 with the acquisition of Bristol Siddeley. His aim was to forge a company that would be competitive with American firms Pratt & Whitney and General Electric. Huddie, a 1938 graduate of Trinity College, Dublin, was a talented engineer who proved to be a "supersalesman" in winning a $350 million contract to supply the jet engines for the new Lockheed L-1011 TriStar fuselage design. Huddie moved to New York City in 1967 and sold Lockheed on Rolls-Royce's RB-211 engine, overcoming his American competitors and their attempts to influence negotiations by drawing on support from numerous members of Congress. The contract called for the delivery of 540 RB-211 engines to Lockheed no later than the summer of 1971.

Although the deal was hailed as a great British success, the contract proved to be unfavorable to Rolls-Royce, as it was based on a fixed price for each engine despite the fact that the engine had not yet been fully developed. The engine that was called for was to be a radical departure from previous designs in terms of fuel economy, noise reduction, reliability, and power. The RB-211's design was innovative in numerous respects, including its three-shaft construction and the use of composite materials for its fan blades; it was especially different in terms of the scale of the engine. One major challenge emerged because of the intended use of a material called Hyfil, a carbon fiber that offered enormous advantages in weight savings over steel; in impact tests, Hyfil failed, and subsequent replacement blades made of titanium also caused difficulties.

In short, start-up costs on the project overwhelmed the firm, despite the fact that it received initial support from the British government. More than 80 percent of Rolls-Royce's operations were in aero engine production, and the jobs of many of its eighty thousand employees were in jeopardy. By the end of 1970, the company's cash reserves were depleted and its credit was extended to the limit. Management had no choice but to place Rolls-Royce in receivership, and it followed that both Huddie and Pearson resigned.

A vigorous political debate took place in Great Britain in the wake of the Rolls-Royce bankruptcy, made even more heated because the Conservative government that had come to power, led by Edward Heath, had grave reservations about nationalizing private enterprise. Given the stakes involved, however, including the number of jobs, Britain's national prestige, and issues surrounding national defense, a financially reorganized company was subsequently formed. Under the leadership of Lord George Cole, Rolls-Royce now had the British government as its sole stockholder. Back in the United States, Lockheed was also in financial difficulty, and the U.S. government put up $250 million in loan guarantees to keep that firm on its feet. In the end, RB-211's were produced. By the mid-1970's, Rolls-Royce was regaining its health, although its automobile group was spun off as a separate entity in 1973.

SIGNIFICANCE

The financial collapse of Rolls-Royce as a result of its failure to develop and manufacture the RB-211 engine for Lockheed by 1971 was only a temporary setback for the firm. The RB-211 design was simply ahead of its time, and it took time for technology to catch up with the visionary engineers who had come up with the initial design. By the mid-1970's, the project's engineering and manufacturing difficulties had been remedied, and by the beginning of the twenty-first century, variants of the RB-211 were playing a significant role in international commercial aviation. The RB-211 proved its reliability by becoming the first jet engine to run 27,500 hours without a major overhaul. The eventual success of the RB-211 was a triumph of high technology in a country that did not want to be left behind. Additionally, it was a triumph for Britain's export economy post-1970, a critical event given the collapse of that nation's automobile industry. Indeed, Rolls-Royce became a major competitor to Pratt & Whitney and General Electric by the early 1980's. In 1987, the company was reorganized again as a private venture.

The bankruptcy and subsequent bailout of Rolls-Royce demonstrated the important role of national governments in assisting large corporations when national needs are served and when complex technologies and global economics come into play.

—*John A. Heitmann*

FURTHER READING

Boticelli, Peter. "Rolls-Royce and the Rise of High-Technology Industry." In *Creating Modern Capitalism*, edited by Thomas K. McGraw. Cambridge, Mass.: Harvard University Press, 1997. Excellent survey essay traces the growth of Rolls-Royce from its founding, mentions key individuals, and discusses the shift in the primary focus of the firm from the manufacture of automobiles to the building of aviation engines.

Bowden, Sue. "Ownership Responsibilities and Corporate Governance: The Crisis at Rolls Royce, 1968-71." *Business History* 44 (July, 2002): 31-62. Scholarly essay draws on interviews and archival sources to examine in considerable detail the organizational and financial circumstances behind the Rolls-Royce bankruptcy.

Harker, Ronald W. *The Engines Were Rolls-Royce*. New York: Macmillan, 1979. Popular history by a longtime employee and head of military aviation at the firm provides a good personal account of the bankruptcy and the personalities involved. The closing chapters are informative regarding the inner workings of the company and the political developments that led to the RB-211 engine.

Mecklin, John M. "Rolls-Royce's $2 Billion Hard Sell." *Fortune*, March, 1969, 122-128. Superb contemporary account of the personalities, negotiations, and technology involved in the RB-211 engine deal between Rolls-Royce and Lockheed.

"The Price of a Rolls-Royce Rescue: $144 Million." *Fortune*, December, 1970, 31-32. Contemporary account details the bankruptcy of Rolls-Royce.

SEE ALSO: 1978: Volkswagen Opens the First Foreign-Owned U.S. Auto Plant; 1980: Japan Becomes the World's Largest Automobile Producer; May 12, 1982: Braniff International Suspends Flight Operations; Sept. 24, 1983: Continental Airlines Declares Bankruptcy; 1985: Yugo Begins Selling Cars in the United States; Apr. 13, 1989: Lincoln Savings and Loan Declares Bankruptcy; Nov., 1989: Ford Buys Jaguar; Dec., 1999: First Hybrid Car Appears on the U.S. Market.