

Inside the Iron Works: How Grumman's Glory Days Faded. By *George M. Skurla and William H. Gregory.* Annapolis, Md.: Naval Institute Press, 2004. xi + 225 pp. Illustrations, index. Cloth, \$32.95. ISBN: 1-557-50329-X.

Reviewed by F. Robert van der Linden

Since 1929 the name Grumman has been legendary in the field of aeronautics and astronautics. Known as the Grumman "Iron works," an informal title bestowed in recognition of the company's long line of distinguished and rugged aircraft, the firm became the preeminent manufacturer of fighters and bombers for the U.S. Navy during the Second World War. Its reliance on one customer continued after the war, a pattern that benefited the Navy but ultimately was instrumental in the demise of the original company, which was forced to merge with Northrop at the end of the cold war.

The Grumman Aeronautical Engineering Corporation was formed on December 5, 1929 by three executives who had once worked for the Grover Loening Aeronautical Engineering Corporation: Leroy Grumman, Leon "Jake" Swirbul, and William Schwindler. During the industry consolidation wave that occurred during 1928 and 1929, Grover Loening merged with Keystone and moved from Long Island, New York, to Bristol, Pennsylvania. Grumman, once the company's plant manager, Swirbul, its former factory manager, and Schwindler, the assistant plant manager and engineer, did not wish to relocate. Convinced that many of Loening's best workers shared their reluctance, they established their own company with capital provided by Grover Loening, among others.

Almost immediately Grumman won a U.S. Navy contract to make aircraft floats for Vought OS2U observation aircraft. Its success with this project led to the Navy's purchase in 1930 of a two-seat, carrier-based biplane fighter, designated the FF-1 or "Fifi," as it was popularly known. This aircraft, with its portly lines, phenomenal strength, and excellent performance, set the standard for Grumman aircraft for the next forty years.

Throughout the 1930s, Grumman produced a series of rotund fighters and amphibians for the Navy, and it also entered the executive market, catering to wealthy business commuters with the G-21 amphibian, later known as the "Goose." In 1936,

Grumman was awarded a contract to build the XF4F-2 Wildcat carrier-based fighter, which was the Navy's primary fighter during the early, difficult years of the Second World War. The Wildcat was phased out and gradually replaced in late 1943 by the classic Grumman F6F Hellcat, the first American aircraft to surpass the Japanese Mitsubishi Zero. The maneuverable and stocky Hellcat wrested air superiority from the Japanese and ensured Grumman's place in aviation history. Grumman's TBF torpedo bomber also became a mainstay of America's naval air power in the Pacific theater.

During the World War II, Leroy Grumman revealed himself as an enlightened leader, providing company daycare centers, athletic leagues, and other employee benefits long before such policies became commonplace. In this way, he fostered an efficient and loyal workforce that produced record numbers of high-quality aircraft.

The company's record translated into new orders immediately following the Allied victory and continuing through the cold war. Grumman F9F jets fought in the skies over Korea, while a host of Grumman designs carried out other naval missions. These aircraft, particularly the A-6 Intruder, the S-2 Tracker and its variants, the EA-6B Prowler, and the E-2 Tracker, enhanced the Navy's capabilities, especially during the lengthy Vietnam conflict.

During and after Vietnam, Grumman's fortunes were boosted by the awarding of a contract for the F-14A Tomcat long range fighter and by its commercial successes with the AgCat crop dusters and the Gulfstream series of executive aircraft. Added to the list of its triumphs was the successful design and construction of the lunar module, which landed the first men on the moon and saved the crew of the abortive Apollo 13 mission.

All was not well, however. The F-14 contract was written in such a way that Grumman lost money on each Tomcat it sold, a situation that was compounded by the fact that this sophisticated carrier-based fighter and its weapons systems required a difficult and expensive gestation period. Over time, the three founders either died or retired, and control of the company passed to a new generation of executives, most of whom had come up through the ranks. Changing times required different methods, but the company continued to follow a conservative course while attempting to protect itself through diversification, a decision that many argue was a cause of the company's downfall. Eventually these problems, coupled with the retrenchment of the defense

industry at the end of the cold war, undermined the company's once solid financial underpinnings and led to its acquisition by Northrop in 1994.

This detailed outline of Grumman's corporate history is necessary because the disorderly, wandering text of *Inside the Iron Works* makes it difficult for the reader to follow the chronology of this aerospace enterprise. The author, George M. Skurla, a lifelong Grumman employee, brought to it an insider's view. He joined the company in 1944 after graduating from the University of Michigan and worked his way up the ranks, eventually managing the lunar module and the F-14 production programs. In 1974 Skurla assumed the posts of president and chief operating officer of Grumman Aerospace, and in 1976 he became chief executive officer and chairman of the board. In 1985, the year before he retired, he was promoted to president and became a member of the corporate executive committee.

Skurla began writing this book in 1998, aided by the noted aviation writer William H. Gregory. Unfortunately, Skurla died in 2001 at the age of eighty, before the manuscript could be completed, and it shows. Although the chapter headings follow a logical chronology, their contents do not, and the narrative drifts through often unrelated vignettes. Essentially this is a memoir, based on recorded, but unattributed, oral recollections. Like many memoirs, the text is full of one-side opinions, and no there is no attempt to carry out a critical analysis. Skurla lays much of the blame for Grumman's decline on the company's overdependence on Navy contracts. He argues effectively against monopsony but equally, and confusingly, disapproves of policies of diversification.

While *Inside the Iron Works* offers a unique, firsthand glimpse into the rise and fall of this venerable company, it is not the history that Grumman richly deserves. Nevertheless, despite its serious flaws, the book still provides valuable insights into one of aviation's greatest companies.

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