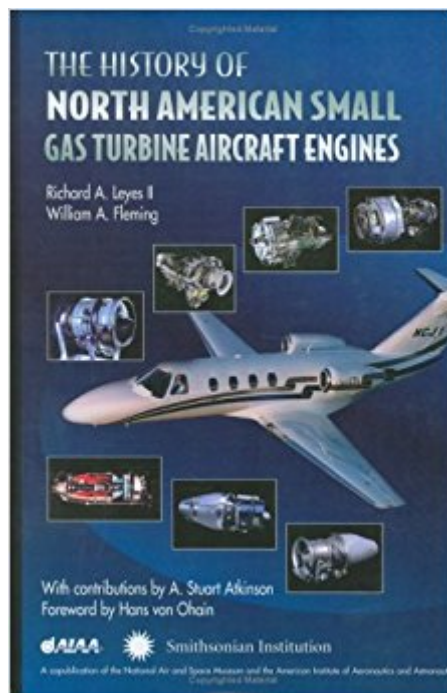




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# The History Of North American Small Gas Turbine Aircraft Engines (Library Of Flight)



## Synopsis

This joint publication between the National Air and Space Museum and the American Institute of Aeronautics and Astronautics chronicles the evolution of the small gas turbine engine via a comprehensive study of a major aerospace industry. Drawing on in-depth interviews with pioneers, current project engineers and company managers, engineering papers published by the manufacturers, and the tremendous document and artifact collections at the National Air and Space Museum, the book captures and memorializes small engine development from its earliest stage.

## Book Information

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## Customer Reviews

Richard A. Leyes II is the Curator for Aero Propulsion at the National Air and Space Museum, Smithsonian Institution. He has a B.A. in Economics from the University of Wisconsin and a M.S. in Industrial and Labor Relations from Cornell University. For NASM, Mr. Leyes has done aircraft engine research and writing, collecting and exhibitions. He also holds a private pilots license and a Federal Aviation Administration Airframe and Powerplant license. William A. Fleming is a graduate of Purdue University with a B.S. in Aeronautical Engineering. He was a pioneer and leader in jet engine research during the 1940s and 1950s at the National Advisory Committee (NACA) for Aeronautics Lewis Flight Propulsion Laboratory. He later directed development of the plan for the National Aeronautics and Space Administrations (NASA) Apollo manned lunar landing program and served in senior management positions at NASA Headquarters. Mr. Flemings publications include

Future Aeronautics and Space Opportunities Volume 1 Space and approximately 30 NACA research reports. Following retirement from NASA, he spent 12 years as a management consultant.

**Contributor** An important contributor to the book is A. Stuart Atkinson, who holds a B.S. in Mechanical Engineering from the University of Arkansas and an MBA from George Washington University. For more than 37 years, Mr. Atkinson held engineering positions in the Department of the Navy associated with aeronautical research and development, including senior managerial positions with the Naval Air Systems Command. Most of his career was in the field of aero propulsion, during which time he developed the technical and program requirements for Navy engines and directed the development of many of the small turbine engines sponsored by the Navy.

This book is a semi-technical, narrative history of small gas turbine engines in North America. It's coverage of examples from the late 1940s to 1999 is absolutely exhaustive. Every engine, from the small turbojets that powered cruise missiles to the somewhat larger turbofans that powered business jets, is included. There are examples from both military and civilian roles, both manned and unmanned. The written material is excellent, beginning with historical contexts and a brief technical introduction, advancing into discussion of the engines divided into chapters by manufacturer, and closing with a group of excellent appendices which show the major engine family trees and tables of models and variants within. The narrative is particularly good because it discusses not only the history of the engines, but also the history of the various airframes the engines were built for. For example, the discussion of the General Electric CJ610 turbojet offers a history not only of the engine, but also discusses the history of important Rockwell, Learjet, and Falcon models it powered. There are some black & white illustrations in the book, but those are purely functional and support the text. They are not a feature in themselves, and nobody should buy this book with an expectation that it is a good picture book. It is, above all, a technical reference. Keep in mind that the book covers development up to 1999, so any advances beyond that date are not included. It is THE go-to reference for this topic. Not only have there been significant technological innovations (FADEC, blisk machining, thrust vectoring, integral APUs, supercritical composite fan blades), but there have been major market shifts as well. The United States has seen its relative share of the small gas turbine engine market decline with the rapid expansion of Pratt & Whitney Canada and Rolls Royce. Microturbines have disappeared from North America almost altogether (with the exception of Jet Central in Mexico), as European and Asian makers have filled the gap. This book covers the real "golden age" of North American engine design - a time when airframes and engines were usually locally sourced.

I do like this book, although like so many of its genre, it is short of good illustrative and graphic material and although that is not the primary reason one buys it, I did hope though that it would have a little of the style of "The Jet Engine", Rolls Royce Plc 1986, ISBN 0902121235. It does to some extent make up for that in the text itself with quotations from some of the key players in the field of small aircraft turbines and what black and white illustrations it has are good. Ultimately, it is a summary that will lead you (if you have the interest) to do further research. I do not believe that the story on gas turbines is yet fully told and there is still room for much more innovation in many areas, not least of which are the fuels, combustors and materials. It may yet have a "George Jetson" future, I for one hope it does.

Hmm~ nice overview of history but somewhat lacking in technicalities. Also doesn't cover the more modern engines such as the Williams FJ33

This book is a wonderfully rich source of information on the development of quite a few turbine engines. The information is well researched and concise, given in a format that is broken down by the manufacturer. There is a lot of information on some small turbine engines developed for cruise missile applications that I have not seen elsewhere. There are a decent amount of photos that give a good sense of most of the engines. I wonder though with all the research that was done for this book if many more interesting photos were left out? The introduction is good and the information they present with the problems involved in design and production of small scale turbine engines is very interesting. All in all this is money well spent for anyone who enjoys the history of gas turbine engines.

Thorough, details after detail. Probably only interesting to somebody who worked or had close ties to the companies involved.

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