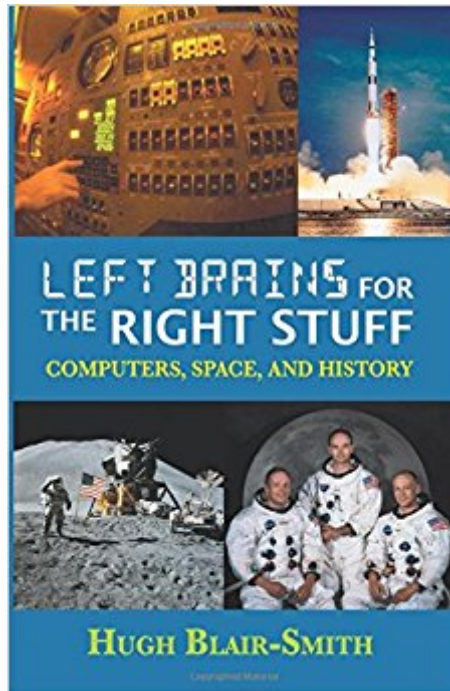The book was found

# Left Brains For The Right Stuff: Computers, Space, And History

# Synopsis

What made the Space Race possible? What made it necessary? How close a race was it? And what did it achieve? The answers are connected in surprising ways. Left Brains for the Right Stuff briefly summarizes the history of three technologies-rockets, navigation, and computers-and recounts how they were woven into the rise and rivalry of superpowers in the twentieth century. President John F. Kennedy inherited a small Space Race and transformed it into a Moon Race by creating the Apollo program (-... achieving the goal, before this decade is out, of landing a man on the moon ...-). To make it an -offer- the Soviet Union couldn't refuse, he added, -We choose to go to the moon ... not because [it is] easy, but because [it is] hard.- Apollo won the Moon Race and, combined with the Space Shuttle, won the Space Race, which did much to win the Cold War and preserve the momentum of American leadership that had been created in World War II. Many big companies worked on those programs, and so did a small academic research laboratory. At Massachusetts Institute of Technology (MIT), the Instrumentation Laboratory (-the Lab-) was the creation of one man, Charles Stark -Doc- Draper, who invented inertial navigation. Author Hugh Blair-Smith was a staff engineer at the Lab from 1959 through 1981. Trained as an electronic engineer and computer scientist, his two-pronged expertise contributed to both the hardware of spacecraft computers and the programming that had to make the most of their limited resources. This is a history, an inside story, and a riveting account of the Space Race, studded with startling insights into causes and effects. In those exciting years, Blair-Smith joined many thousands of people in cooperating gladly, generously, and passionately to add electronic left brains to the Right Stuff. Their creations answered the long-sought quest for -a moral equivalent to war.-

# Book Information

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## Customer Reviews

As the Space Race began, Hugh Blair-Smith joined the engineering staff of MIT's Instrumentation Laboratory, founded by Charles Stark -Doc- Draper to develop self-contained inertial navigation for missiles, aircraft, and spacecraft. That timing gave him a ground-floor spot with Apollo's Primary Guidance, Navigation, and Control system, where he became the software specialist on the Apollo Guidance Computer design team, and the computer hardware specialist on the AGC programming team. Halfway through a 22-year career at MIT, he refocused on fault tolerance logic for the Space Shuttle's onboard computer system. Direct contact with astronauts included Buzz Aldrin (studying rendezvous science at MIT), Dave Scott (among the first to fully embrace the AGC way of flying), and Bob Crippen (a team member on the Shuttle work). Leaving MIT at the end of 1981, he specialized in user-interface and system-performance software, and after retiring to Cape Cod in 2005, worked with NASA on reliability software for an instrument in the Lunar Reconnaissance Orbiter, thereby placing thousands of his own ones and zeros in orbit around the Moon. Hugh and his wife Vicki, married since 1968, have two grown children, who are successful professionals. There are also two teenaged grandchildren and approximately twenty-five granddogs. When he's not sailing or preparing a paper to give at the next Digital Avionics Systems Conference, he enjoys teaching boating skills, reading (mostly history and other non-fiction), avoiding watching television, taking medium walks and thinking long thoughts, and puzzling out the meaning in a busy life.

Having worked on support equipment for the Apollo program, I was looking forward to this read and I was not disappointed. While a good deal of the book is geared to a highly technical audience, as evidenced for example by an extensive glossary of acronyms to which I found myself constantly referring, there is plenty here for the layman. Mr. Blair-Smith's description of the key role that he and his colleagues at the MIT Instrumentation Lab played in winning the race to the moon is written with passion and with a subtle degree of humor where appropriate. Not only does he follow our progress on the way to the moon with its extraordinarily successful responses to many unanticipated challenges, but he simultaneously educates us on the USSR's failed effort to match us. You will also meet some of the astronauts, formerly familiar to you by name only.

Exciting account of a person who clearly found passion in his career. A bit dense at parts, but the

author's enthusiasm for his work is infectious!

I would recommend to anyone who would to better understand an important time in is history. Also for those interested in the history of computers!

Mr. Blair-Smith is a gifted writer, with a sharp intellect and encyclopedic knowledge base. Written in such an engaging style, Left Brains for the Right Stuff takes very challenging subject matter and renders it exceptionally readable and informative. It's far more prose than text book, like a mid morning class from that favorite professor whose words were hung onto months after the final exam. So many gaps were delightfully filled in my understanding and knowledge base of the science, the physics, the evolution, and the brilliant people involved in the development of the technology involved in space exploration. Blair-Smith was There, in the thick of it, surrounded by some of the most creative, productive, intelligent people of the last century. He puts you there with him! A very enjoyable read.

Thoroughly enjoyed the front-line lens through which this historic time in the US-USSR relations and space exploration's hastened Cold War cadence was told; the colorful personalities at the MIT IL, the excursion in the VAB before catching up on sleep the hours before a launch, NASA and the not-all-that surprising rhetorical blockades by the lobbying arm of IBM were among my favorite passages. The authenticity, detail and joy in which the author recounts the details and broad phases of this era while capturing the greater meaning of it all for the participants makes for an engaging read.

Many books have been written about the Apollo program and about the computers that served the missions. This is one of the very few to have been written by a mathematician and an engineer who was there from the very beginning. The author designed and implemented the assembler for the series of computers that guided the Apollo missions. Left Brains is a fun read captures the discovery, ingenuity and invention that went into building and programming the Apollo Guidance Computers. Along the way, it offers an overview of the history of computer science and describes how something so grand was accomplished by a handful of tightly bound and highly talented folks.

Amazing book! Reminds me that at one time the USA was great and mighty. We suck now.

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