



The Astronaut Maker:

How One Mysterious Engineer Ran Human Spaceflight for a Generation
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It is Sunday, October 6th 1975, early. A 1955 Oldsmobile sits by the eastbound side of the highway. There are pockets of early snow on the darkened dirt to either side. There is no traffic beyond the old slow moving semi or pickup truck. A young man leans against the driver's side, staring to the West. He is short and slim with dark hair and is wearing blue slacks and a windbreaker. The clothing is not suited to the weather. Name is George Abbey. He is First Lieutenant in the US Air Force at the Randolph Air Force Base near San Antonio. He is driving back to Texas from his hometown of Seattle, where he was visiting his family. It's a trip he is made from one start or another many times.

Hearing on the radio earlier this day that Sputnik might be visible to Montana residents this very night, Abbey pulled off the road to see. He glances at his watch - and there's Sputnik, moving swiftly from northwest to southeast, a small, bright dot. Abby has seen shooting stars before, but this is different. Shooting stars vanish in a second or less. This light in the October sky remains steady. A satellite! He is stunned by the sight of it - and surprised by the depths of his reaction, feeling a bit like Saint Paul on the road to Damascus.

He has grown up with rockets, seen newsreel footage of German V-2's rising to incredible altitudes over New Mexico. He knows about the V-2's descendants, the Redstone, and its rival cousin, the Atlas. But it isn't until this moment that he connects them all - satellites, rockets, high speed aircraft: the chance to see Earth from orbit, to walk on the Moon, and to visit Mars. The Space age is no longer that thing-to-come - it's here. If the navy and aviation are in George Abbey's blood, his bones are space and rocketry.

George applied for United States Naval Academy in Annapolis, Maryland and barely passed the entrance examination. He received his bachelor's degree in general science there in 1954; and a master's degree in electrical engineering from the U.S. Air Force Institute of Technology at Wright-Patterson Air Force Base, Ohio, in 1959 [1]

Abbey had its first encounters with potential astronauts at Wright Airforce base, meeting Gus Grissom, (assigned to the same base as a test pilot), Alan Shepard and John Glenn when they were among 30 candidates undergoing psychological tests in March 1959. All were senior to Abbey in age and experience, but meeting them as a reminder that humans would indeed be flying in space with a year or two. And Abby could be one of them.

But Abbey knew he didn't qualify for test pilot training, which was a precondition to become an astronaut candidate.

A visit to the Wright's AFB personal office alerted him to an immediate opening in the Dyno-Soar program. Dyno-Soar, its name a contraction of the term dynamic and soaring was a radical new step in high altitude flight in which a dart shaped piloted vehicle could be launched atop a Titan rocket to complete a single loop around the earth, flying through reentry to a controlled landing at an air base. Abby was drawn to the idea because it combined a spacecraft and aircraft - launching atop a rocket but landing on a runway. Dyno-Soar was officially approved in October 1959, just as Abbey signed on.

Boeing was to build the winged vehicle, and the Martin Company in Baltimore was to provide a launcher based on its Titan missile.

During this time he also became familiar with the USAF program Manned Orbiting Laboratory (MOL, 1963-69) which also recruited an astronaut team, later being transferred to NASA.

Abbey's NASA Tenure: A Storied Career in Space Exploration

Abbey joined NASA in 1964 as an Air Force captain assigned to the Apollo program. A pilot in the U.S. Air Force, Abbey had more than 4,000 hours in various types of aircraft including helicopters as helicopter instructor before being detailed to NASA. [1]

In December 1967 he left the Air Force and was appointed as technical assistant to the Johnson Space Center director and Apollo spacecraft program manager George Low. [1] In fall of 1967 Abbey worked for both, Chris Kraft, the new deputy center director of the Manned Spaceflight Control Center (MSCC) and Robert Gilruth, JSC center director. [2]

This all happened in the tumultuous 1960's decade of political assassinations, civil-right movements, the Vietnam war, the Flower-Power movements and the Moon landing

In December 1972 Chris Kraft became JSC center director, remained Abby his reliable technical assistant, and from 1972 Abbey as appointed as director of Flight operations, that means he was involved in all NASA manned space flight programs Mercury, Gemini, Apollo-Soyuz Test Program with Russia, responsible for the Apollo program, and now responsible for the reusable Space Transportation System (STS), the Space Shuttle program. He was in charge of mission control, Astronaut selection and training and all important flight assignments. [2]

In March 1988, two years after the Challenger accident Abbey was appointed deputy associate administrator for space flight at NASA Headquarters in Washington, D.C.

In July 1990, he was selected as deputy for operations and senior NASA representative to the Synthesis Group, charged with defining strategies for returning to the Moon and landing on Mars.

In July 1991, Abbey was appointed senior director for civil space policy for the National Space Council in the Executive Office of the President. President George H. W. Bush reestablished, by executive order, the National Space Council, led by Vice President Dan Quayle. In 1992, he was named special assistant to the NASA administrator.

In 1994 Abbey was named deputy director of the Johnson Space Center and was subsequently selected as the JSC director in 1996. Abbey served as the director of the Johnson Space Center (JSC) from 1996 to 2001.

The Astronaut Maker

The book traces his career at NASA in very detailed manner from his first sighting of the Sputnik in the sky over Montana through his retirement NASA after 37 years.

What makes Abbey unique is that he worked for or with all the key persons. He was an engineer and administrator, a department head, a staffer, and finally a center director and program manager whose control over the Johnson Space Centre was so complete that it became known as his "fiefdom".

With his "all-round" knowledge of human spaceflight acquired during his involvement in almost all NASA human spaceflight projects in various capacities and with his military pilot education he could deploy his technical and team-building skills during his tenure as JSC Director of Flight Operations. In particular his talent for astronaut crew selection and flight appointments was instrumental for the success of the STS shuttle program.

Having worked my way through the description of the crew selection processes starting with

Astronaut Group 8, the "Thirty-Five New Guys" TFNG crew (or 'The F* New Guys', according to military slang) in January 1978 up to the crew combination of the fatal Challenger flight the constraints imposed by the different skills of the astronauts the introduction of *mission specialists* and *payload specialists* (US and from partner Nationalities) and the opening for women, Afro-American astronauts, minority groups and non-military test pilots as well as the growing demands of politicians to fly (Senators Garn and Nelson), not to forget about the "inner workings" of a selected flight group made Abbey's task look like a multi-dimensional chess game.

And Abbey had the talent to master this game perfectly, staying always at "low-key" in the background which made him a mysterious person to the public.

A little warning for readers not so familiar with human spaceflight activities – the sheer number of key-personnel names of NASA HQ and NASA centers and industrial subcontractor managers, and all the hundreds of astronauts being selected or dropped out later, each one being characterized and sometimes followed through his career, might be sometimes confusing, but always returns to the main focus of the book, Abbey's perspective and assessments.

After having reviewed MacDonald's book 'Truth, Lies and O-Rings' [3] just recently it was very interesting to read about Abbey's involvement and his assessment of important Challenger accident consequences: the Shuttle-Centaur stage (foreseen for the upcoming Galileo and Ulysses launches) was cancelled, the Vandenberg site for polar orbit shuttle launches was mothballed, it was decided to develop an additional shuttle (called Endeavor) as Challenger's replacement, an escape pole for emergency exits was developed and Abbey's main goal remained to "return to flight" as soon as possible and live-up to the ambitious a dozen flights per year Shuttle manifest, thus Abbey continued with astronaut candidate recruitments as planned before the accident.

On September 29, 1988 the shuttle fleet resumed flights with Discovery, Abbey was present at the KSC, however as a NASA HQ representative, but he felt watching his "baby" and his crew to fly. As a consequence of the Challenger accident Abbey made it his duty to participate in all Shuttle Flight Readiness Reviews (FRR's) decisions.

With great interest I read Abbey's activities during his NASA HQ tenure (1988-1996), as I headed the German Aerospace (DLR) Columbus project office from 1984. I was amazed to learn what radical discussions, changes and reallocations within NASA and its centers took place during this time. To us Europeans NASA always appeared to be unified and goal-oriented - not least thanks to Abbey's talent in team-building and convincing his partners with his clear ideas by assessing their abilities, judging who could be beneficial for his project.

One of his important involvements was the co-authorship of the program paper "America at the Threshold", the report of the Stafford/Abbey Synthesis Group on President George H. W. Bush's Space Exploration Initiative, asking to return to the Moon, build a space station (*Freedom*) and go beyond the Moon to Mars.

In spring of 1992 NASA Administrator Truly was replaced by Dan Goldin ('faster, better, cheaper') and Abbey became his special assistant. He was determined to keep the Shuttle manifest and together with Goldin decided to keep the space station idea alive as main target for the Shuttle. They finally succeeded barely with a 216 to 215 vote in Congress proposing a partnership with Russia (Goldin and Abbey met and negotiated an agreement with Yuri Koptev, head of Russian space agency), creating a newly designed space station under radical cost reduction aspects, called 'International Space Station' (ISS). In addition they agreed on ten (phase I) Shuttle/Mir missions to gather flight experience with Russia in 1993.

In 1994 Abbey returned to JSC as deputy director to Carolyn L. Huntoon after Goldin had decided to assign the Shuttle *and* ISS lead responsibility to JSC.

Abbey was appointed JSC director in January 1996.

Notably, during his tenure as JSC director (1996-2001), he oversaw critical aspects of the Space Shuttle program and the construction of the International Space Station (ISS). His strategic guidance and decision-making prowess were crucial in maintaining the momentum of human space exploration during a period of transition and challenge.

The author Michael Cassutt lifts the veil off the mysterious George Abbey by analyzing the background of all important decisions and lets us into Abbey's world of thoughts allowing the reader to understand them.

Additionally, Cassutt provides a complete, epic account of the development of the entire NASA human spaceflight program and its interactions with Russia up to the turn of the millennium, experienced and influenced by George Abbey as an involved engineer, pilot and manager.

My Summary

I highly recommend this book to all readers with an interest in human spaceflight.

It opens your eyes to the complexity of these projects with their thousands of “players” from all areas of science, the military, industry and politics and bureaucracy. The book provides a sample in that you have to struggle through an overwhelming number of organizations and responsible people in order to keep track.

All astronauts Abbey ever dealt with are accounted for by the author with a brief (Abbey-) characterization, so the book at times reads like an astronauts' almanac.

The book also shows that success cannot be achieved without exceptional, dedicated leaders - it always needs the right persons at the right time in the right place, and Abbey was such a person. George Abbey's name stands tall besides Max Faget's and Chris Kraft's, and having read the book I dare to say without Abbey the human spaceflight scenario we have today, in 2024 would look very different without Abbey's work behind the scenes since the beginning of his NASA employment in 1964.

George Abbey's legacy in space exploration is characterized by his unwavering commitment to advancing human spaceflight capabilities and make space available for all.

References

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[3] See Journal of SpaceOperations & Communicator Vol. 20, issue 1, 2024:
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