

ESD.30J Engineering Apollo

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Book Review on Chris Kraft's Flight

Chris Kraft's Flight is his story of being “part of the crowd, then part of the leadership that opened space travel to human beings” (Kraft 355). The author worked in key operational positions at the National Aeronautics and Space Administration (NASA) to integrate technology and policy in the 1960's to put a man on the moon. The following paper provides a brief summary, a critical review of Flight, analyzes Kraft as a source, evaluates the relevance of his topic to the overall Apollo story, and examines an engineering decision that was driven by the politics of the era.

Brief summary

Kraft recounts his journey from his boyhood in Phoebus, Virginia, to becoming an engineer at the National Advisory Committee for Aeronautics, then one of the original thirty-six members of the Space Task Group. He shares how he became “Flight” for NASA. “Flight” has complete authority “while the mission is under way...Flight is God” (Kraft 2). He served in this capacity for all the Mercury flights and through Gemini 6 and 7. Following these Gemini flights, he moved to a higher management position to help the Apollo program along, while continuing to play an active role as the man who developed the Mission Control room and groomed and mentored his “men called Flight” (Kraft 316)—Gene Kranz, Cliff Charlesworth, Glynn Lunney, and Gerry Griffin. This is Kraft's story of how he “was lucky to be part of” a team “from NASA, industry, science, and academe who brilliantly sent Americans” (Kraft 355) to the moon.

Critical examination

The space story in Flight leaves the reader feeling nostalgic over the events that Kraft describes, including times of high drama and inspiration, such as when Ed White took a space walk from Gemini IV or when Neil Armstrong stepped out on the moon. Kraft remembers that “euphoria held us and the moment never seemed to end” (Kraft 324). His involvement with the Apollo project dominated his life. Having invested so much in the space program, Kraft understandably has an interest in conveying the Apollo project in a positive light that will leave

the reader in awe over what he and the other men accomplished. He credits *Time* magazine writer James Schefter for helping him “[create] a compelling memoir” (Kraft X).

The author has had thirty years to create a story based on how he wants to shape his legacy. He includes a critique of Apollo 13, a nod to the influence of this popular movie in forming Americans’ perceptions of the program. He focuses on the benefits to society today, such as the furtherance of communication satellites, digital computers and “remote sensing in medicine” (Kraft 354). Looking forward, he believes “this nation can find no better investment in the health, safety, security, education, and overall well-being of the American public than for a visionary president to declare that Americans will land on Mars. And then make it happen” (Kraft 355). In line with this thinking, his book concentrates on the advantages that the Apollo program provided America in “health, safety, security, education, and overall well-being,” which reinforces his legacy as a patriotic American and is also an argument for further space exploration and the continuation of the space program.

Sources

This memoir revolves around the eyewitness accounts of Kraft himself. Flight is convincing and appears valid, as it aligns with other accounts of that time, and Kraft is open and honest, even showing some of his negative moments or decisions. However, Kraft does have his own unique perspective through which he views the events of the Apollo program. Growing up in a small town that no longer exists, his family was hit hard by the Great Depression and did not have a lot of money or luxuries. An active participant in Virginia Polytechnic Institute’s Corps of Cadets, Kraft tried to gain a commission to fly during World War II. He was disqualified because of a childhood accident that burned his hand and chose to serve as an engineer developing airplanes to combat the Germans. An all-American type, this background contributed to Kraft’s strongly patriotic understanding of why they were working so feverishly to meet the challenge of the Apollo program.

His operations mentality is evident in his perspective of the astronaut corps. For instance, he does not hide his dislike for Scott Carpenter, which he grounds in his perception that Carpenter was incompetent. Competency is a life and death trait for someone in operations. With Grissom, he accepts his blown hatch story because of “Grissom’s professionalism” (Kraft 147).

Relevance to larger Apollo project

Flight is a secondary piece of literature in the study of the Apollo project; it is a firsthand account of a key eyewitness who was involved with the project but is not a source document or manuscript. It is a memoir written thirty years after the fact with the influence of thirty years of living and popular culture to refine Kraft's memories. From "Interpreting the Moon Landings: Project Apollo and the Historians," Roger Launius's five categories are useful in pointing to some areas to be cautious of in Kraft's story. Flight is Kraft's memoir account, which is like Launius's third category; as such, the book should be read with the understanding that this is his limited "nosecone" (Launius 237) perspective as one individual in a program. Kraft is probably not as limited in scope as a single astronaut, but is still limited.

Kraft's book shows a NASA operations insider's emphasis on the development of procedures for executing the mission. Many of the sources covered in the Engineering Apollo course focus on the Apollo project individually, disregarding the other NASA projects of the time period. Kraft's story helps shed light on how both Mercury and "Gemini bridged the technology gaps that made Apollo possible" (Kraft 265). Without these two predecessor programs, "the Kennedy goal of landing a man on the moon and returning him safely to Earth by the end of that marvelous decade would not have been accomplished" (Kraft 265). Flight contributes to the understanding that Apollo was not something that occurred overnight but was the integration of years of preparation work.

Another important link to the larger Apollo project is how Kraft portrays the involvement of man in this endeavor. Kraft asks if "the Camelot of the sixties [was] a final resurgence of the frontiersmanship that made America ready to accept one final big challenge" (Kraft 234), and ponders the role of the astronaut as that ultimate frontiersman. Manned spaceflight was politically vital to the program's purpose. In recounting the misfire story of Gemini 6, when Wally Schirra chose not to eject, Kraft also confirms the importance of having a man in the loop from the technical or design perspective when he states, "we didn't hire those guys because they always followed the rules" (Kraft 243). He makes the point that man is vital because he can see, think, and act outside of the box. Kraft's focus on man reinforces the importance both politically and technologically of having a human in the flight loop; computers are limited to the code, but humans can deal with the unexpected.

An engineering or political decision

Discussing the decision to go to the moon, as opposed to Mars, Kraft recognizes that “politics always plays a bigger role in a major national decision than does simple pragmatism” (Kraft 189). Ironically, he later relates a decision he made because of politics. Right before Apollo 11’s launch, George Low began thinking that perhaps the mounted television camera should be removed from the lunar excursion module (LM); this camera was on the LM to capture the images of the astronauts as they climbed out of the LM and onto the moon’s surface.

Low instructed Kraft to call a meeting and make a decision. Knowing the political importance of the camera, Kraft stacked the attendees with those he knew would side with him. Pragmatically, from a technical standpoint the camera “added weight and would take some of the astronauts’ valuable moon time to set it up” (Kraft 307). The scientist could not justify a need for it, and one of Kraft’s own engineers concluded it was “a nicety,” but not a necessity, and it “should be left behind” (Kraft 308). There was no technical constraint one way or the other. Kraft responded bluntly, “We’ve been looking forward to this flight—not just us, but the American taxpayers and in fact the whole world—since Kennedy put the challenge to us” (Kraft 308). Kraft had a big picture understanding of how important it was to capture the first step on film, to record this live moment for “the thousands of dedicated people in industry, academe, and government who contributed to the success of one of man’s greatest adventures” (Kraft V). This decision is an illustration that in a large project like Apollo there are numerous moving pieces technically, but also socially and politically. Balancing and integrating all of these pieces is vital.

Word count: 1492

References

- Kraft, C. C. with James L. Scheffer. Flight: My Life in Mission Control. New York: E. P. Dutton, 2001.
- Launius, R. D. (2006) Interpreting the Moon Landings: Project Apollo and the Historians. *History and Technology*. 22(3), 225-255.