Space was the place, says old NASA hand.

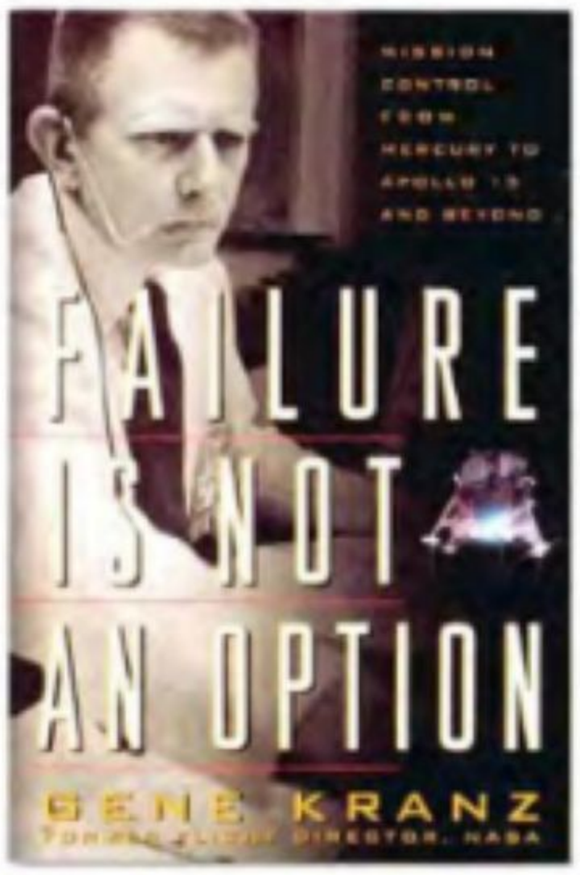
Failure Is Not an Option
Mission Control From Mercury to Apollo 13 and Beyond

By Gene Kranz

416 pages, Simon & Schuster, $26

IT'S A HOOT in the movie *Apollo 13* when those platoons of crew-cut Mission Control engineers whip out their slide rules to calculate how they'll bring Tom Hanks, playing Jim Lovell, and the boys back to earth. However, upon reading the opening pages of Gene Kranz's *Failure Is Not an Option*, you'll realize that to reach that technological level by 1970, the American space program had crammed more development into the preceding ten years than human beings may have ever managed before in one decade.

For, as Mr. Kranz describes the primitive hardware existing at the Mercury program's inception, it seems reminiscent of some forever-ago sci-fi flick or television show in which grainy black-and-white U.S. Air Force footage is intercut with scenes featuring tinfoil props that the actors struggle not to knock over. Yes, you want to say, there they are: the bulky computers spouting data via chattering teletype machines; the spacemen pulling down periscopes to see outside their spaceship. That's because the Mercury capsule in which Alan Shepard became the first American in space actually *had* such a periscope. And Mercury Mission Control was dominated by a huge map of the earth across which a toy-like spacecraft model was moved, suspended by wires, as the capsule orbited; on boards beside the map, measurements were plotted by sliding beads—resembling those of an abacus—moving up and down more wires.



Preceding this, a fledgling National Aeronautics and Space Administration had faced the minor snag of getting anything into orbit. Having joined just before the Mercury 1 test in 1960, Mr. Kranz was pleasantly surprised when, after ignition, the TV cameras panned upward and the unmanned rocket had apparently shot from sight. Till the camera panned back down, revealing the booster—which resembled a large black-and-white stovepipe—fallen back in its cradle. Simultaneously, the capsule—with its corrugated black sheet metal and a tall red escape tower, writes Mr. Kranz, "like a buoy in a harbor"—had fired loose and landed in Florida palmetto scrub 1,200 feet away. The crew in the blockhouse, a reinforced concrete edifice set close to where the booster sat with its destruct system primed, frantically tied up the intercom, lapsing from Strangelove-like English into their native tongue (if these men seemed selected by central casting to suggest the sort of Germans who'd come to the United States after the Nazis' defeat, that was because they were Wernher von Braun's V-2 veterans). When there was no way to secure the Mercury 1 booster, *Failure Is Not an Option* reports, it was simply left overnight till its batteries depleted and its destruct system disarmed.

Such were NASA's beginnings. Mr. Kranz participated in creating its procedures from the ground up. He was part of the Mission Control team that in January 1961 launched a chimp into space, in May 1961 made Alan Shepard the first American in space, in July 1961 placed Gus Grissom in orbit, in February 1962 orbited John Glenn around earth three times, and in May 1963 launched Gordon Cooper to complete the last Mercury mission with 22 earth orbits. During the Apollo missions, Mr. Kranz was one of those who undertook responsibility for the Apollo 1 tragedy in which Grissom, Ed White, and Roger Chaffee were consumed during a launch pad fire. He was flight director for Apollo 11, when Neil Armstrong stepped out on the moon, and for Apollo 13. (Anyone who's seen the film will remember the actor Ed Harris playing Mr. Kranz with his signature waistcoats and buzz cut proclaiming "failure is not an option," which the real Mr. Kranz never said.) Despite the advent of a new generation of flight directors and his own post-lunar *tristesse*, Mr. Kranz spent his working life in NASA; the 1993 shuttle mission to repair the Hubble Space Telescope was his last Mission Control project.

Thus, while *Failure Is Not an Option*'s style isn't fancy (in a couple of early attempts to wax poetic, Mr. Kranz mashes syntax like a clumsy high school student), this is the testament of a man who was among a specialized, select elite. This elite amounted to a tiny subculture with its own values even within the America in which it had its great triumphs.

And that America was very different from today's nation, where the most vital news our CNBC-tuned televisions brings us is the market's latest rises and falls. NASA was created because President Eisenhower, a Republican, made Senate majority leader Lyndon Johnson, a Democrat, responsible for determining how the United States should respond to *Sputnik*. Such bipartisanship, while attractive yet altogether unlikely today, was occasioned in 1957 by national fear. By 1961, Yuri Gagarin's spaceflight and U.S. humiliation at the Bay of Pigs

SHELF LIFE

Vanishing Voices: The Extinction of the World's Languages, by Daniel Nettle and Suzanne Romaine (Oxford University Press, $27)

When Tefvik Esenc died in Turkey in 1992, the Ubykh language died along with him. This obscure language of the northwestern Caucasus was not the only language that failed to make it out of the 20th century alive. Hundreds of languages disappeared, a disturbing trend that anthropologist Daniel Nettle and English professor Suzanne Romaine document and analyze in *Vanishing Voices*.

The 21st century is facing a mass extinction of even greater proportions. Mr. Nettle and Ms. Romaine estimate that half of the world's 5,000 to 6,700 languages will be extinct by the year 2100. At greatest risk are the 90 percent of the world's languages that are spoken by only 10 percent of the world's people, because most of them are spoken by fewer than 100,000 persons.

The authors of *Vanishing Voices* don't identify this trend solely with the development of telecommunications and a global mass culture. They delve into the underlying causes, tracing the beginnings of language extinction to the agricultural revolution 10,000 years ago and identifying its increased pace with colonialism and the industrial revolution. As English became the dominant global language, the disappearance of languages spoken less widely has only accelerated.

These languages are at risk primarily because ethnic minorities and indigenous peoples are forced to abandon their languages and ways of life either by governments or, for those who stay within a small linguistic community, by the lack of economic opportunity. Mr. Nettle and Ms. Romaine do an impressive job of identifying the process by which languages are abandoned or not passed down to the next generation, framing it in terms of disparities in social, political, and economic status.

They also address the issue of why we should protect languages from extinction, drawing connections between the world's linguistic and biological diversity. They argue convincingly that preserving an ecosystem is best accomplished by preserving the language—and thus the knowledge and wisdom—of the indigenous people who live within it.

Mr. Nettle and Ms. Romaine call for a new recognition and respect for the rights of minority-language speakers. They believe that demanding linguistic unity within nation-states is outmoded in the new global reality, and that minority groups must be able to maintain their languages and cultures without sacrificing the benefits of full citizenship. While persuasive, their argument touches only lightly on the most important reason to preserve a language—for its own sake.

—*Peter Rojas*

made it conceivable that—as Khruschev, pounding his shoe on a United Nations lectern, shouted—the Soviets would bury us. Furthermore, whether military or corporate, monolithic organizations were then our dominant social institutions. This was the America that molded Mr. Kranz and his achievements at NASA, and from which he addresses us.

Consequently, his language sometimes may be slightly tough for us to parse. For instance, take this description of how coworkers bring him an American flag for Mission Control: "I was speechless...(then) as I admired the the flag, Don Bray, a young controller with the talent of an Army supply sergeant, stepped forward." Disregarding the flag issue, some readers may need a second to decide if it's a compliment to say somebody has an Army supply sergeant's talent. Overall, it's not that Mr. Kranz's utter seriousness about America's high purpose in space precludes enjoyment of his own self-theater; he reports how his Hispanic wife Marta made his "mission vests" and told him when, in the days preceding a launch, it was time for his "mission haircut." But the key to his outlook is in his book's appendix, which contains the credos that were the "Foundations of Mission Control." One sentence says it all: "To always be aware that suddenly and unexpectedly we may find ourselves in a role where our performance has ultimate consequences."

Mr. Kranz and his NASA peers thought what they were doing could have ultimate consequences. Not just for their astronauts, but also because they believed the future of humanity depended on America's space program. They constituted, as I say, a singular subculture. By 1971 they realized that Apollo missions 18 and 19 would likely be cancelled. Seeking renewed public interest and budgets, they envisioned scenarios like landing on the other side of the moon. Dropping in on the other side of the '60s, however, Mr. Kranz visited the University of California at Santa Cruz for NASA. What he found, he writes, "was beyond my belief...I was glad to get back to a world I understood. Would these young people comprehend...the legacy we were trying to pass on to them—and to the rest of mankind?"

Finally, there were six lunar landings. What remains of that legacy today?

NASA's Web site lists space technology spin-offs in our lives (www.sti.nasa.gov/tto/spinoff.html). These are a few from Apollo: CAT scanners, kidney dialysis machines, cordless power tools and appliances, modern athletic shoes, freeze-dried food, control systems for electric power grids, and computer systems for stores, banks, airlines, car rental agencies, and hotels. *Failure Is Not an Option*, however, doesn't bother with such lists. "We stand with our feet firmly planted on the ground when we could be exploring the universe," Mr. Kranz writes. As different as the '60s counterculture was from NASA, he claims, he finds its ideals less alien than the tenor of American culture today. "We have become a nation of spectators, unwilling to take risks or act on strong beliefs."

We have, he insists, unfinished business in space.

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