

Human Space Flight and National Power

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At great expense, the United States has developed the capability to launch people into space, and in the past 45 years sent 290 different men and women into orbit and beyond, some of them several times. There are many reasons for carrying out such a sustained program of human space flight. This article focuses on one particular rationale: the assertion that human space flight contributes significantly to US spacepower, and through it, to US power overall.¹

As used here, *power* is defined as “the ability to effect the outcomes you want, and if necessary, to change the behavior of others to make this happen.” Harvard Professor Joseph Nye identifies three types of national power: **military power**, the ability to threaten the use of, and use if necessary, force; **economic power**, the ability to influence the operation of the global market in ways that advance one’s national interests; and **soft power**, the ability of a country to “obtain the outcomes it wants in world politics because other countries want to follow it, admiring its values, emulating its example, aspiring to its level of prosperity and openness.”² Does human space flight contribute to one or more of these types of national power?

Human Space Flight and Military Power

Since the very start of the space age in 1957—indeed even before—the US military has been seeking to demonstrate to government leaders that having military crews operating in orbit can contribute to US military power. From the visionary proposals of General Bernard A. Schriever during the 1950s for a major US Air Force role in space, through the cancellation of the Manned Orbital Laboratory (MOL) program in 1969, there were many suggestions for human space flight activities under dedicated military auspices. Both the Dynasor X-20 program and the MOL program got close to flight testing. Ultimately the lack of a clearly defined mission that could not be performed either more cheaply or more effectively by other means doomed these programs.³

From 1971 to 1986, military planning for human space flight focused on the Space Shuttle, to be operated by the National Aeronautics and Space Administration (NASA) but to be used by the national security community as its sole means of access to space once declared operational, which happened in 1982.⁴ A number of military officers trained as Shuttle pilots and mission specialists, national security payloads were redesigned so that they could take advantage of the Shuttle’s capabilities for orbital operations, and dedicated military and national security missions, some of them at high classification levels, were carried out, with more in the planning stage. The US Air Force bore the high costs of a Shuttle launch facility at Vandenberg AFB, California to be used for missions into polar orbit. Even the Under Secretary of the Air Force, E. C. “Pete” Aldridge, trained to be an astronaut

aboard the first launch from the Vandenberg facility. On 1 August 1985, Pete Aldridge issued the following guidance:

The Air Force has been examining the potential role of military man in space for over two decades. Thus far, our military space missions have not required man’s presence in space. Thus, there has not been an identified role for the military man in space. However, with the advent of the space shuttle and man’s routine presence in space, there is a greater opportunity to exploit man’s unique capabilities. Accordingly, the following policy should be used in the planning of future space systems by the Air Force: “The Air Force policy is to ensure that the unique capabilities that can be derived from the presence of military man in space shall be utilized to the extent feasible and practical to enhance existing and future missions in the interest of national security objectives.”⁵

This guidance quickly became obsolete. Among the many myths that was punctured by the 28 January 1986 *Challenger* accident was the notion that the Space Shuttle could be an affordable and routine means of conducting national security operations in space. By the start of 1987, Department of Defense (DoD) planning for future uses of the Space Shuttle had ceased (although several previously planned national security missions were carried out once the Shuttle returned to flight in 1988), and the US Air Force reactivated its production lines for the Delta and Titan expendable launch vehicles. (The production of what became the Titan IV launcher had been authorized in 1985 as a backup to the Shuttle for the most critical national security payloads.)

The unfortunate experience of the DoD in becoming dependent on what was in essence an experimental system, controlled by a civilian agency, did not completely dampen military interest in human space flight. The DoD for a few years beginning

in 1986 became with NASA a co-funder of the National Aerospace Plane, a technology development effort aimed at a system that could fly directly into orbit after a runway takeoff. When the program ran into significant technological hurdles, the DoD withdrew from the effort.

Over the past 15 years, there have been sporadic expressions of military interest in developing dedicated systems for human space flight.⁶ Research and some development, but at a relatively modest level of funding, continue, and there are advocates for human space flight within the



The Titan IV was developed to provide assured capability to launch space shuttle-class payloads for the Air Force.

military services and the defense research establishment. It is fair to conclude, however, that the 50-year quest to demonstrate the contribution of human space flight to US military power has not borne fruit.

Human Space Flight and Economic Power

There are few students of the US space program who would argue that human space flight has had to date direct payoffs in terms of US economic power vis-à-vis the other countries of the world. To the degree that the skills and technologies developed for human space flight programs have strengthened the US high technology industrial base, they indeed may have added to US economic power, but this is at best an indirect benefit. There are indeed those who would argue that the hundreds of billions of dollars spent to date on human space flight by the United States has had a significant opportunity cost in terms of diverting those funds away from other, more economically productive sectors.

This assessment *could* change in the future if, as some predict, public space travel, more colloquially known as space tourism, becomes an economic success. There are predictions that public space travel could become a multi-billion dollar annual business.

The United States is in the lead in developing, through privately-funded efforts, the systems that might make travel to orbit and even beyond affordable enough and safe enough to create a business akin to today's commercial air travel. Just as US manufacturers for most of the time since scheduled air travel began have dominated the passenger aircraft market, thereby being a major contributor to the US balance of trade and economic strength, one could speculate that the equipment for commercial space travel could be an important segment of the US economy at some point in the future, especially if it is developed in such a way to also favor US operators using US equipment to offer the service.

Human Space Flight and Soft Power

What the above analysis suggests is that if human space flight has made, and will continue to make, a significant contribution to US national power, that contribution will come in the form of "soft power."

That this could be the case has been recognized from the start of the US human space flight program. For example, the first comprehensive statement of US space policy, approved by President Dwight D. Eisenhower in January 1960, declared, "To the layman, manned space flight and exploration will represent the true conquest of outer space. No unmanned experiment can substitute for manned exploration in its psychological effect on the peoples of the world."⁷ The May 1961 DoD memorandum suggesting to President John F. Kennedy that he set a manned lunar landing as a national goal noted that "Dramatic achievements in space ... symbolize the technological power and organizing capabilities of a nation," that "This nation needs to make a positive decision to pursue space projects aimed at national prestige. Our attainments are a major element in the international competition between the Soviet system and our own. ... 'civilian' projects such as lunar and planetary exploration are, in this sense, part of the battle along the fluid front of the cold war," that "such undertakings may affect our military strength only indirectly if at all, but they have an increasing effect on our national posture,"

and that "It is man, not machines, that captures the imagination of the world."⁸

The case for the soft power payoffs from human space flight may have most clearly and pungently been stated by former Secretary of Defense Caspar Weinberger, who in 1971 was deputy director of the Office of Management and Budget (OMB). Writing to President Richard M. Nixon about recommendations of the OMB staff to cancel the two remaining Apollo flights and to not approve Space Shuttle development decision which would have had the effect of ending the US human space flight program, Weinberger suggested:

Recent Apollo flights have been very successful from all points of view. Most important is the fact that they give the American people a much needed lift in spirit, (and the people of the world an equally needed look at American superiority). [Canceling Apollo 16 and 17 and not approving Shuttle development] would be confirming in some respects a belief that I fear is gaining credence at home and abroad: That our best years are behind us, that we are turning inward, reducing our defense commitments, and voluntarily starting to give up our super-power status, and our desire to maintain world superiority.⁹

Twelve years later, NASA made much the same argument in the briefing to President Ronald W. Reagan which asked him to approve the development of a space station, saying that "The presence of man is the key to leadership in space."¹⁰

Unfortunately, neither the Space Shuttle nor the International Space Station (ISS) programs have lived up to their promised performance, and thus it is a fair question to ask whether human space flight as carried out by NASA over the past quarter century has been a significant contributor to US soft power. The recent contribution of human spaceflight to US national prestige is uncertain, particularly given the uneven record of the international partnership on the ISS. However, the ability to carry non-US astronauts on the space shuttle is a useful foreign policy tool.

Even so, space achievements involving direct human presence remain a potent source of national pride, and that such pride is the primary underpinning reason why the US public continues to support human spaceflight. Certainly, space images—an American astronaut on the Moon, a Space Shuttle launch—rank only below the American flag and the bald eagle as patriotic sym-



International Space Station (ISS) photographed following separation from the Space Shuttle Discovery, 19 December 2006.

bols, and such patriotism is a foundation of US soft (and hard) power. The self-image of the United States as a successful nation is threatened when we fail in our space efforts, and catastrophes such as *Challenger* and *Columbia* seem to tap deep emotions.

Space Exploration and National Power

President George W. Bush announced a new US “Vision for Space Exploration” on 14 January 2004; that vision aims at “a sustained and affordable human and robotic partnership to explore the solar system and beyond,” with an initial human return to the Moon and the human missions to Mars. The fundamental goal of the vision is “to advance US scientific, security, and economic objectives.” [emphasis added]¹¹ In what ways can human exploration of the Moon, Mars, and beyond contribute to space power, and thus to national security?

This question has been eloquently addressed by the current NASA administrator, Dr. Michael D. Griffin: “The most enlightened, yet least discussed, aspect of national security involves being the kind of nation and, doing the kinds of things, that inspire others to want to cooperate as allies and partners rather than to be adversaries. And in my opinion, this is NASA’s greatest contribution to our Nation’s future in the world.” He added,

Today, and yet not for much longer, America’s ability to lead a robust program of human and robotic exploration sets us above and apart from all others. It offers the perfect venue for leadership in an alliance of great nations, and provides the perfect opportunity to bind others to us as partners in the pursuit of common dreams. And if we are a nation joined with others in pursuit of such goals, all will be less likely to pursue conflict in other arenas.

Griffin went even further in his analysis: “Imagine if you will a world of some future time—whether it be 2020 or 2040 or whenever—when some other nations or alliances are capable of reaching and exploring the Moon, or voyaging to Mars, and the United States cannot and does not. Is it even conceivable that in such a world America would still be regarded as a leader among nations, never mind *the* leader?” He asked “Are we willing to accept those consequences?”¹²

These remarks have been quoted at some length because they sum up the core argument of this essay—that human space flight, well conceived and well executed, is a valuable source of soft power for the United States. Whether or not direct military or economic benefits flow from having the ability to send people to orbit and beyond, human space flight will continue to make an important contribution to having the rest of the world see the United States as a great country.

Notes:

¹ This article is based on a presentation to the National Defense University Spacepower Theory Group on 11 August 2006.

² Joseph S. Nye, Jr., *The Paradox of American Power: Why the World’s Only Superpower Can’t Go It Alone* (Oxford: Oxford University Press, 2002), 4-9.

³ See David N. Spires, *Beyond Horizons: A Half Century of Air Force Space Leadership* (Washington, DC: Air Force Space Command in association with Air University Press, 1998) for an account of US Air Force aspirations with respect to human space flight.

⁴ By contrast, the Department of Defense was opposed to NASA’s 1982-1983 plans to develop a space station, fearing that such a development would distract NASA from Shuttle operations.

⁵ E.C. Aldridge, to the vice chief of staff, USAF, from the Office of the Under Secretary, memorandum, “Air Force Policy on Military Man-In-Space – INFORMATION,” 1 August 1985.

⁶ See, for example, John Tirpak, “In Search of Spaceplanes,” *Air Force Magazine*, December 2003.

⁷ National Aeronautics and Space Council, “US Policy on Outer Space,” 26 January 1960, reprinted in John M. Logsdon et al., *Exploring the Unknown: Selected Documents in the History of the US Civil Space Program, Volume I, Organizing for Exploration* (Washington: NASA Special Publication 4407, 1995), 365.

⁸ James E. Webb and Robert McNamara, for the vice president, memorandum, “Recommendations for the National Space Program: Changes, Policies, Goals,” 8 May 1961, reprinted in *Exploring the Unknown*, 444, 446.

⁹ Caspar Weinberger, for the president, “Future of NASA,” memorandum, 12 August 1971, reprinted in *Exploring the Unknown*, 547.

¹⁰ NASA, “Revised Talking Points for the Space Station Presentation to the President and Cabinet Council,” 30 November 1983, with the attached “Presentation on the Space Station,” 1 December 1983, reprinted in *Exploring the Unknown*, 597.

¹¹ The White House, “A Renewed Spirit of Discovery: The President’s Vision for US Space Exploration,” January 2004.

¹² Michael Griffin, National Space Symposium, remarks, 6 April 2006, http://www.nasa.gov/pdf/146291main_NationalSpaceSymposium_new.pdf (accessed 24 January 2007).



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