

The Budget Bureau's Administrative Doctrine and the Creation of an Independent NASA, 1958

William F. Finan III



President Eisenhower with Dr. T. Keith Glennan (right) and Dr. Hugh L. Dryden (left), NASA's first administrator and deputy administrator, respectively. Eisenhower insisted on civilian control of the U.S. space program.

On October 4, 1957, the Soviet Union launched *Sputnik I*, quickly followed in early November by the far heavier *Sputnik II*. Reacting to the Soviet success in space, Congress nine months later passed the National Aeronautics and Space Act of 1958 (the Space Act or the Act) establishing the National Aeronautics and Space Administration (NASA). Dr. James R. Killian Jr., who led the Eisenhower administration's efforts to bring NASA into existence, praised the Bureau of the Budget's contribution to creating NASA, saying the Bureau was "enormously helpful and cooperative and influential."¹

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¹ Dr. James R. Killian Jr., Interview by E.M. Emme and A.F. Roland, July 23, 1974, 34. NASA Historical Archives, Record No. 12400 (hereinafter Killian Interview).

The Bureau of the Budget played an influential role in planning NASA's organization because it had the responsibility to assist the president in coordinating and organizing the executive branch since 1939.² “[The Bureau] saw organization as [their] business and felt [they] knew how to organize agencies.”³ In the decade after World War II there was a “sprawl” of federal agencies, some originating from the New Deal, some added due to the federal government's rapid wartime expansion, and some added due to new functions being undertaken by the government. This unwieldy government organization complicated government-wide management and coordination and made budgeting difficult. In this setting, the Bureau's management and organization staff was central to helping the White House gain more control of and better coordinate and manage the federal government. Because Congress generally concurred about the pressing need to reorganize the federal agencies, thanks in part to former President Herbert Hoover's involvement and support, the Bureau's staff worked closely with Congress in a nonpartisan way.⁴

The Budget Bureau's management planners' practical knowledge, gained from helping the White House manage the organization of the executive branch, became distilled

² The Reorganization Act of 1939, enacted on April 3, 1939, created the Executive Office of the President (EOP) and provided the president the authority to initiate a reorganization plan, within prescribed conditions. The first reorganization plan Roosevelt submitted to Congress on July 1, 1939, Reorganization Plan No. I of 1939, transferred the Bureau of the Budget and its functions and personnel from the Treasury Department to the EOP. Roosevelt's Executive Order 8248, effective September 11, 1939, Part II, Section 2, defined the functions and duties of the Bureau of the Budget to include “developing plans of administration management.” In June 1949 the First Hoover Commission, officially the Commission on Organization of the Executive Branch of the Government, issued recommendations for modernizing the administration of the federal government. The Budget and Accounting Procedures Act of 1950 was one result of the Commission's recommendations. The Act's Section 104 embedded the Bureau's reorganization authority into law. Whether this statutory authority was necessary was an open question. William F. Finan Jr., Assistant Director of the Bureau of the Budget for Administrative Management, testified, “These sections [of the Act] are in line with recommendations and findings of the Hoover Commission. We do not, however, interpret them to vest new functions in the Bureau of the Budget, nor is it representing a substitution for existing authority of the President.” Hearing Before the Committee on Expenditures in the Executive Departments, House of Representatives on H. R. 9038, July 11, 1950, 55.

³ *Legislative Origins of the National Aeronautics and Space Act of 1958*. Proceedings of an Oral History Workshop Conducted April 3, 1992. Monographs in Aerospace History, Number 8 (NASA History Office: Washington, DC, 1998), 10 (hereinafter *Legislative Origins*).

⁴ Donald Stone, first head of the Bureau's Administrative and Management Division, wrote that because the Bureau's staff were career professionals, they enjoyed the confidence of members of Congress. Donald C. Stone, “Administrative Management: Reflections on Origins and Accomplishments,” *Public Administration Review* 50, no. 1 (Jan.–Feb. 1990): 18. In 1952 the Administration and Management Division became the Management and Organization Division.

into an informal “administrative doctrine,” defined below. The recommendations the Bureau’s management planners made to the White House about the new space agency’s organization adhered to key tenets of this administrative doctrine. Likewise, the Bureau’s management planners applied their administrative doctrine in drafting key provisions of the legislation establishing NASA’s administration and organization. William F. Finan Jr., head of the Bureau’s Management and Organization Division responsible for coordinating the drafting of the administration’s bill, said, “It is fair to say that [the] main organizational and administrative arrangements under which the civil space program is being administered are those which were originally projected by the management planners of the Budget Bureau.”⁵

Many historical accounts describing NASA’s beginnings overlook, or fail to properly explain in sufficient detail, the Bureau’s significant role in defining NASA’s administrative arrangements.⁶ One reason behind this may have been the culture of the Bureau itself, which famously had a “cloistered mode of operation,” preferring to work out of the public view.⁷ Three accounts that do discuss in some detail the Bureau’s role in creating NASA merit highlighting since they provide critical documentation for this discussion.

First, a 1963 monograph by Enid Curtis Bok, an MIT graduate student at the time, provides important details around the Bureau’s role in creating NASA.⁸ Bok interviewed, among others, Dr. Killian and William Finan, making her paper

⁵ William F. Finan, “Organizational and Administrative Problems of the Government’s Space Programs,” speech to the Annual Meeting of the American Political Science Association, September 10–12, 1959, 6. NASA Historical Archives Record No. 12400 (hereinafter Finan Speech).

⁶ An example of an article discussing the origins of NASA that fails to mention the Bureau at all is Eugene M. Emme, “HISTORICAL ORIGINS OF N.A.S.A.,” *The Air Power Historian* 10 no. 1 (1963): 18–23. In 1966 the NASA History Office released a monograph reviewing the early history of NASA, but it only briefly mentions that the Bureau was involved in drafting the legislation establishing NASA. Robert Rosholt, *An Administrative History of NASA, 1958–1963* (NASA: Washington, DC, 1966) (hereinafter *Administrative History*), 10. Another NASA monograph on NASA’s beginnings that also only briefly references the Bureau’s involvement is Homer E. Newell, *Beyond the Atmosphere—Early Years of Space Science*, NASA Historical Series, NASA (NASA: Washington, DC, 1980), 92.

⁷ “Not many newsmen or scholars penetrated [the Bureau’s] curtain of secrecy and bureaucratic routines.” Allen Schick, “The Budget Bureau That Was: Thoughts on the Rise, Decline, and Future of a Presidential Agency,” *Law and Contemporary Problems* 35, no. 3, *The Institutionalized Presidency* (Summer 1970), 519.

⁸ Enid Curtis Bok (m. Schoettle), “Making American Space Policy—The Establishment of NASA,” School of Industrial Management, MIT, January 1963. The monograph was a case study in public policy processes prepared for the MIT School of Industrial Management, Political Science Section. After earning a Ph.D. from MIT in Political Science, Enid CB Schoettle had a distinguished career in foreign policy and international relations. In 1996 she was awarded the National Intelligence Distinguished Service Medal for her work at the National Intelligence Council.

particularly helpful in gaining a better understanding of the Bureau's involvement and its important contributions.⁹

Second, Dr. James Killian wrote a book in 1977 describing his experiences as the first presidential science advisor and the influential role of scientists advising President Dwight D. Eisenhower on space policy because they were “given free access to the president, who knew he needed their help.”¹⁰ He recounts his frequent interactions with the Bureau's management planners starting in December 1957, saying, “Finan worked closely with my office as his group drafted the [space] legislation,” calling it a “fine example of a good working relationship between the Bureau of the Budget and the president's science advisers.”¹¹

Third, in 1992 the NASA History Office held a symposium on the legislative origins of NASA and gathered oral histories from eight persons involved in the Space Act legislation.¹² Two participants discussed the Bureau's role. The first was Willis Shapley, who was in the Bureau's Military Division in 1958. He provided background on the Bureau's general role in managing government reorganizations and some details about the Bureau's involvement in coordinating drafting the administration's space bill. The second oral history was with Paul G. Dembling, general counsel of the National Advisory Committee for Aeronautics (NACA) during the 1957–1958 period.¹³ When Dembling was asked who drafted the administration's bill, he answered that “all of the terms and conditions on the authorities and the functions” originated from a “NACA-generated draft” he had prepared.¹⁴ His answer reflected

⁹ Bok's excellent paper has been mostly overlooked in the literature about the beginnings of NASA. The author learned about it by chance. It was mentioned in correspondence between MIT Associate Professor Robert Wood, Enid Bok's faculty advisor, and William Finan Jr. MIT Associate Professor Robert C. Wood's letter to William Finan, October 28, 1960. William F. Finan Papers, Harry S. Truman Presidential Library & Museum (hereinafter Finan Papers).

¹⁰ James R. Killian, Jr. *Sputnik, Scientists, and Eisenhower, A Memoir of the First Special Assistant to the President for Science and Technology* (Cambridge: MIT Press, 1977), 111.

¹¹ *Ibid.*, 134.

¹² *Legislative Origins*. NASA chose to publish the monograph about the legislative origins of NASA in 1998 on the 40th anniversary of NASA's creation.

¹³ NACA was a civilian agency created by Congress in 1915 to “supervise and direct the scientific study of the problems of flight . . .” By 1958 its research budget exceeded \$100 million, and it employed about 8,000 persons. Robert L. Rosholt, “Chapter Two: A Brief History of NACA,” in *An Administrative History*, 3, 19–20. Also see Roger E. Bilstein, *Orders of Magnitude—A History of the NACA and NASA, 1915–1990*, NASA History Series (NASA: Washington, DC, 1989).

¹⁴ Paul Dembling later wrote that the Bureau's role was limited to overseeing “the clearance process” review for the space legislation, and in this context the Bureau made “several changes to the original draft submitted by NACA.” Paul G. Dembling, “The National Aeronautics and Space Act of 1958: Revisited,” *Journal of Space Law* 34, no. 2 (Winter 2008): 207.

what many histories of NASA's beginnings stated, but it was incorrect, as will be shown.

This article provides a more complete description of the Bureau of the Budget's management planners' significant contributions to drafting the Space Act, which formally established NASA as a legal and independent agency, effective October 1, 1958.¹⁵ The Bureau's management planners' expertise and depth of experience managing the federal agencies led them to insist, even in the face of some resistance from the White House, that the new space agency's organizational framework be consistent with key tenets of their administrative doctrine. Thus, per the Bureau's recommendations, the administration's bill established a single executive, appointed by and reporting directly to the president, with the full authority to manage the agency's operations. Killian stressed to Eisenhower that this organizational arrangement as a civilian-led agency, operating independently from the direct control of the Defense Department (DOD), would enable NASA to gain "a dominating position" in space technology. It is fair to say that the Bureau's farsighted planning of NASA's organizational framework helped ensure its long-term success.

Doing Something Major About Space

The surprising Soviet success in space caused "a near panic in Washington."¹⁶ According to Killian, there was a "climate of near hysteria in many people" who concluded the Soviets had surpassed the United States in science and technology, and, crucially, in military technology.¹⁷ Reflecting the public's unsettled mood, the mid-November 1957 issue of *LIFE Magazine* featured a cover showing Dr. Wernher von Braun, whom it called the "nation's top missile man," and stated that Americans were filled with "self-doubts and recriminations" over the Soviet successes.¹⁸ The same issue included an article making "the case for panic," saying that "this time we may not win."¹⁹

President Eisenhower came under intense political pressure, especially from Congress, to quickly take major action to calm the public's fears. Eisenhower chose

¹⁵ *Administrative History*, 3.

¹⁶ Glen P. Wilson, "How the Space Act Came to Be," Appendix A, *Legislative Origins*, 49. Wilson's monograph was separately published as "Lyndon Johnson and the Legislative Origins of NASA," *Prologue: Quarterly of the National Archives* 25 (Winter 1993): 362–72.

¹⁷ Killian, *Sputnik, Scientists, and Eisenhower*, xv.

¹⁸ *LIFE Magazine*, November 18, 1957.

¹⁹ George R. Price, "Arguing the Case for Being Panicky, scientist projects blackmail steps by which Russia could conquer us," *LIFE Magazine*, November 18, 1957: 125.



Dr. James R. Killian Jr., MIT president and Eisenhower's science advisor, framed the objectives for the new civilian-led space program in the administration's bill creating NASA.

to respond quietly and deliberately.²⁰ In early November, he asked Dr. James Killian, president of the Massachusetts Institute of Technology (MIT), to join the White House staff as its first special assistant for science and technology. Eisenhower and Killian already had developed a close working relationship dating back to 1954 when Eisenhower created the Technological Capabilities Panel (TCP) to review U.S. technological strengths from a national security perspective and asked Killian to chair it.²¹ Killian took charge of developing plans for a space program's objectives and met regularly with Eisenhower to discuss space policy questions and developments.²² By mid-December Killian recommended to Eisenhower that the civilian and military aspects of space exploration be separated and outlined how a new space agency should be created under civilian control.²³ Eisenhower concurred, though he did not make his decision public.²⁴ Shortly after taking office in 1953 Eisenhower had issued a reorganization plan for the Defense Department and explained, "Our

²⁰ Immediately after the first *Sputnik* launch, Eisenhower said publicly, "The satellite, does not raise my apprehensions, not one iota." *New York Times*, October 10, 1957, 15. In private he said the same thing. At an October 15 closed meeting of the Office of the Defense Mobilization (ODM) Science Advisory Committee, Eisenhower asked the scientists present, "Is American science really being outdistanced?" Then toward the end of the meeting, "[The President said] we need to work out a careful plan [to respond to the Soviets] . . . He was not concerned about the Soviets beating us in the satellite field." Detailed (largely verbatim) notes on meeting of the ODM Science Advisory Committee with the President on October 15, 1957 (declassified from SECRET). NASA Historical Archives, Record No. 12400 (hereinafter ODM Meeting Notes).

²¹ For Killian's interactions with Eisenhower before 1957, see Richard V. Damms, "James Killian, the Technological Capabilities Panel, and the Emergence of President Eisenhower's 'Scientific-Technological Elite,'" *Diplomatic History* 24, no. 1 (Winter 2000): 77. Damms describes Eisenhower's and Killian's "close working relationship." Damms, 77. According to Damms, Killian, who was not a scientist, was chosen by Eisenhower to head the TCP because, as MIT's president since 1949, he had developed a reputation as an "astute administrator of scientists and engineers." Damms, 65.

²² Killian Interview, 38.

²³ Finan Speech, 1.

²⁴ Killian suggests that Eisenhower had already come to this view independently from Killian's recommendation. Killian Interview, 24.

William F. Finan Jr., assistant director of the Bureau of the Budget for Administrative Management, 1950–1959, insisted on NASA having a single executive (administrator) and oversaw drafting of the administration’s bill sent to Congress creating an “independent” NASA.

Military Establishment must be founded upon our basic constitutional principles and traditions. There must be a clear and unchallenged civilian responsibility in the Defense Establishment.²⁵ Thus, the question of who should control the space program resonated strongly with Eisenhower, and he came down firmly on the side of civilian control.²⁶



In late December, Killian “requested that the [Budget] Bureau take the leadership for the organization and administrative planning of the space program.”²⁷ William F. Finan Jr., the Bureau’s assistant director for Management and Organization, was assigned by the Bureau’s director to assist Killian. By a bit of luck, Killian already knew Finan well.²⁸ Since 1950, Finan had headed the Management and Organization Division with a staff of approximately 20 and was “the key assistant to the Budget Director for the improvement of organization and management in the entire executive establishment.”²⁹ Finan immediately recognized that the Bureau “had been handed a responsibility—and an opportunity—for which no close parallel could be found in [the] recent history of our Government.”³⁰

²⁵ Message of the President to the Congress of the United States, accompanying Reorganization Plan No. 6 of 1953 (Department of Defense), April 30, 1953.

²⁶ Eisenhower’s insistence on civilian control of the U.S. nonmilitary space program was called “fanatical.” It was “his one piece of enthusiasm in the whole space program.” Frank Gibney, “The Missile Mess,” *Harper’s Magazine* (January 1960), 44. “Eisenhower was already distressed over the enormous power and unmanageability of what he later called the military-industrial complex. Eisenhower was not disposed to foster further growth by adding another very large, very costly enterprise to the Pentagon’s responsibilities.” Newell, *Beyond the Atmosphere*, 89.

²⁷ Finan Speech, 1.

²⁸ Killian first met Finan in 1952 when Killian was a member of President Truman’s President’s Advisory Committee on Management and Finan served as the committee’s executive secretary. Killian, *Sputnik, Scientists, and Eisenhower*, 134.

²⁹ William F. Finan Jr., National Civil Service award citation, March 1959.

³⁰ Finan Speech, 1.

The Bureau's Administrative Doctrine

Presidents Harry Truman and Dwight Eisenhower relied on the Bureau's management experts to help them organize and manage the federal agencies.³¹ The Bureau's management planners had developed an administrative doctrine that guided how they planned agency reorganizations with an objective of "preserving the integrity of the government as a whole."³² The Bureau's administrative doctrine consisted of three management principles: first, apply "economical management" (i.e., rely on existing institutions and avoid creating a new agency), and reorganize or transfer existing functions³³; second, allow maximum administrative flexibility in managing both internal management and interagency relationships³⁴; and third, rely on a "single executive model" (explained further below), applying the "cardinal principal . . . [to] vest in the head of each department and agency, rather than in the bureaus or other subordinate units, . . . all the legal powers entrusted to that agency."³⁵

The challenge the Bureau's management planners faced was how best to apply its management principles to the novel issues posed by creating the new space agency.³⁶ At the outset the Bureau felt there was no perfect, obvious solution, as Finan explained:

³¹ Starting with the 1939 Reorganization Act, Congress delegated reorganization authority to the president, subject to certain limitations. See "Presidential Reorganization Authority: History, Recent Initiatives, and Options for Congress," Henry B. Hogue, Congressional Research Service, December 11, 2012. For further discussion of the president's reorganization authority, see Peri Arnold, *Making the Managerial Presidency, Comprehensive Reorganization Planning, 1905–1996*, (Princeton, NJ: Princeton University Press, 1986).

³² Bok, *Making American Space Policy*, 139; Willis Shapley, *Legislative Origins*, 9.

³³ Economical management is derived from the 1939 Reorganization Act's authority whereby the president is only authorized to transfer or reorganize agency functions but cannot create a new agency or function.

³⁴ Willis Shapley said, "One of the guiding lights in writing reorganizations from the Executive Branch standpoint is to leave everybody flexibility." *Legislative Origins*, 10. This can be gleaned from the Bureau's numerous congressional testimonies explaining proposed reorganization plans. For example, Hearings before the House Committee on Government Operations on the Reorganization Plan No 2 of 1953, May 21, p. 120, William Finan explained that giving the head of an agency management flexibility encouraged greater management accountability.

³⁵ "[This] cardinal principal . . . was embodied in a sweeping series of reorganization plans [first] submitted in 1950 [and in following years]." Thomas A. Morgan. "Improvement of Management in the Federal Government: Report to the President of the President's Advisory Committee on Management." *Public Administration Review* 13, no. 1 (1953): 43.

³⁶ It would have been inappropriate to rely on the president's 1939 Reorganization Act authority for at least three reasons: First, the 1939 Reorganization Act's authority was limited to reorganizing agency functions but did not allow creation of an entirely new agency performing new functions. Second, Congress had a major stake in shaping the space program and would never have agreed to the administration submitting a reorganization plan creating NASA and only allow the Congress an up or down vote. Third, within the administration there was no consensus on whether to set up a civilian space agency independent of DOD's control. The White House had by design kept DOD outside the tent, so to speak, in planning NASA. If DOD and the services wanted major changes in the administration's bill, they would be forced to make their case with Congress.

For many years organizational and administrative planning in the Federal Government had mainly involved efforts to improve the framework in which old programs were conducted, or to equip agencies to assume new responsibilities closely allied to functions they were already carrying out. Even where a program had been new to our government it was similar to programs already existing in other countries with political and administrative systems which made their experiences relevant and useful guides to U.S. organizational and administrative planners. Here, however, the management analysts were being asked to plan an organization and an administrative system for a program so new, so unique, that even its principal purposes—to say nothing of its detailed character—were the subject of speculation and debate.³⁷

The Fierce Scrum to Control the Space Program

The Soviets' success in space ignited a fierce scrum in Washington over which agency, new or existing, would oversee America's rapidly expanding space program. The Defense Department's leaders, including the three military branches, automatically assumed, incorrectly it turned out, that DOD would have the primary role overseeing the entire space program, even in the case where a civilian space research agency was created.³⁸

Congress, too, became deeply involved in space policy. It reacted to *Sputnik* by holding hearings, and in January, introducing a flood of legislation. One bill assigned the Atomic Energy Commission (AEC) the lead role for space, while another introduced by Senator Hubert Humphrey (MN) created a Department of Science and Technology.³⁹ Unquestionably, the most interesting, important, and politically savvy person in Congress about the political implications of space was Senator Lyndon Johnson (TX). Whereas Eisenhower was slow to publicly react to *Sputnik*, Johnson was not.⁴⁰ Starting in late November 1957 Johnson took over as chair of the dormant Preparedness Subcommittee of the Senate Armed Services

³⁷ Finan Speech, I.

³⁸ Killian, *Sputnik, Scientists, and Eisenhower*, 132. According to William Finan, at a February 3 White House meeting, DOD's representative, Undersecretary Donald A. Quarles, and Killian discussed the respective roles of NACA and DOD. Quarles said Defense should be lead with NACA acting in a subsidiary role. "Sequence of Events in the Development of the National Aeronautics and Space Act of 1958," April 8, 1958, 1, paragraph 5. NASA Historical Archives, Record No. 12400 (hereinafter Finan Memo). See also Bok, *Making American Space Policy*, Chapter II.

³⁹ Wilson, *Legislative Origins*, 51.

⁴⁰ The January 20, 1958, issue of *LIFE Magazine* featured Johnson on its cover, calling him "A Man of Urgency."



Senator Lyndon B. Johnson (TX) issued a 17-point plan to win the “race for survival” and used his political influence in Congress to overcome Defense Department opposition to creating a civilian-led space agency.

Committee and started holding hearings on space policy.⁴¹ In late January 1958, the committee issued a 17-point plan to win the “race for survival,” including recommending creation of a new civilian space agency. Lyndon Johnson’s public support for a civilian-led space agency was helpful to the administration’s planning. It signaled that Johnson would be willing to oppose and overrule others in Congress who preferred keeping the entire space program, military and civilian, firmly under DOD’s control.

The central argument in favor of keeping DOD in charge of the entire space program was a strong belief that “urgent” action on a “major scale” was essential to overcome Russia’s lead in space.⁴² The personnel (especially the scientists) and facilities for outer space projects were already located within the Defense Department, and within the Army, the Navy, the Air Force, and their contractors. DOD argued that under these circumstances only by keeping it in control of the entire space program could the nation effectively mount an urgent response.⁴³ Some in Congress, according to Killian, were also concerned about the possible conflict that might arise between military and civilian objectives for the space

⁴¹ The Preparedness Subcommittee of the Senate Armed Services Committee was formed in 1950 following the outbreak of the Korean War but had become dormant before Johnson became chairman. Lina Mann, “Lyndon B. Johnson: Forgotten Champion of the Space Race,” White House Historical Association, whitehousehistory.org/lyndon-b-johnson-forgotten-champion-of-the-space-race. Johnson’s committee held hearings for two months with over 70 experts testifying. In February 1958, Johnson created a new committee, the Special Committee on Space and Aeronautics (hereinafter the Special Committee), which he chaired. Johnson’s Special Committee held hearings in May 1958 on the administration’s bill to create NASA. The Special Committee became the Committee on Aeronautical and Space Sciences on March 11, 1959. In 1977 the Committee on Aeronautical and Space Sciences was folded into the Senate’s Committee on Commerce, Science and Transportation.

⁴² Testimony of Dr. Wernher von Braun, Director, Development Operations Division, Army Ballistic Missiles Agency, Huntsville, Alabama Command, before the House Select Committee on Astronautics and Space Exploration, 85th Congress, on H.R. 11881 (hereinafter HH), April 17, 1958, 22. Killian, too, reflected this view telling Eisenhower as far back as October 15, “there is a need to do things on an urgent basis,” ODM Meeting Notes.

⁴³ Eilene Galloway, National Defense Analyst, Foreign Affairs Division, Legislative Reference Office, Library of Congress, HH, April 15, 1958, 9. The official NASA history said the debate is “almost impossible to summarize.” *Administrative History*, footnote 8, 7.

program.⁴⁴ DOD agreed. It argued that it would be a major mistake to divide control of the space program because it would “increase the interdepartmental coordination requirement” and thereby slow the vital effort to overtake the Russians in space.⁴⁵ But, if Congress decided to move ahead to set up a new civilian space agency, DOD believed its mission should be limited to carrying out basic research on space-related topics under DOD’s control to avoid duplication of effort and simplify coordination.⁴⁶

The White House made two arguments in favor of civilian control over the space research program.⁴⁷ First, it believed the space agency’s mandate should be “to pursue a broad program of exploration and development in space,” and therefore “military need and military opinion” should not dictate the space research agenda and thereby place limits on it. Second, it was essential to demonstrate to the world that U.S. efforts in space would be for peaceful purposes.⁴⁸

The question of how to define what is civilian and what is military later turned out to be a major question once the administration’s draft of the space legislation came under congressional review.

The Scientists and the Bureau

Starting in late December, 1957 Killian and Finan began meeting regularly. Killian said the Bureau’s management planners found the challenge of planning the new space agency “more exotic than any [the Bureau] had confronted before.”⁴⁹ Finan and his team needed to understand the objectives Killian and the President’s Science

⁴⁴ Killian, *Sputnik, Scientists, and Eisenhower*, 135.

⁴⁵ Testimony of Maj. Gen. J. D. Medaris, commanding general, U.S. Army Ordnance Missile Command, HH, April 17, 1958, 146. According to Killian, Medaris and von Braun strenuously argued that civilian control would be a “terrible mistake” costing valuable time. Killian, *Sputnik, Scientists, and Eisenhower*, 127.

⁴⁶ “Despite Defense’s early emphasis upon missiles . . . [it] wanted a major role in whatever space program appeared.” Bok, *Making American Space Policy*, 43. According to Finan, Undersecretary of Defense Donald A. Quarles at a White House meeting on February 3, 1958, “suggested that Defense should have the primary lead in space matters, with NACA occupying the subsidiary role of a research agency undertaking the solution of specific problems encountered in developing satellites, missiles, and space vehicles.” Finan Memo, par. 5.

⁴⁷ *New York Times*, February 18, 1958, 1.

⁴⁸ In the 1950s at the height of the Cold War, Soviet successes in space were damaging confidence in U.S. superiority in technology among so-called “neutrals.” Thus, the administration sought to emphasize to these neutral countries the U.S. interest in the peaceful development of space. *New York Times*, November 4, 1957, 1.

⁴⁹ Killian, *Sputnik, Scientists and Eisenhower*, 132.

Advisory Committee (PSAC) had for the space program.⁵⁰ In early January, Finan, along with several others from the Bureau, started attending meetings of the Space Science Panel of the full PSAC.⁵¹ At first there was a significant disconnect between the scientists' ideas about the space program and the Bureau's planners, who took a more, so to speak, down-to-earth approach. As Finan explained.

The scientists had some difficulty in communicating with the management planners. The latter had read too much, or perhaps too little, science fiction in the past and were also bemused by what they were then reading in the press, hearing on the radio, and seeing on television. It required the application of special mental discipline to be sure that they were planning for the organization and administration of the program being officially conceived and not the even more fantastic projects being speculated about in the public.⁵²

Gradually, the scientists and the Bureau's planners formed good relationships as the latter sought guidance on a host of problems that they felt unprepared to deal with. The Bureau's management planners came to understand that the space program would be civilian in character, aimed principally at the extension of man's knowledge of the earth, the solar system, and the universe. Importantly the planners understood that civilian space research projects would supplant general-purpose space research projects already underway at DOD but leave Defense responsible for military applications of space technology.⁵³

Creating the New Space Agency—the Bureau's Recommendation

In early February, 1958 the Bureau's management planners prepared a summary of four possible organizational alternatives for administering the new space research function.⁵⁴ The first alternative would simply let DOD continue to manage all space programs, both civilian and military. The Bureau's planners rejected this option because civilian projects would produce benefits largely unrelated to the central mission of the Defense Department. They also felt that adding additional civilian-oriented space program assignments to DOD, which was already stretched for resources, should

⁵⁰ The ODM Science Advisory Committee was transformed into the President's Science Advisory Committee on November 21, 1957, with Killian becoming its first chairman. According to Killian, "PSAC played a dominant role" in shaping the administration's space policy. Killian Interview, 34.

⁵¹ *Administrative History*, 8. Bok, *Making American Space Policy*, 97.

⁵² Finan Speech, 2.

⁵³ *Ibid.*

⁵⁴ According to Enid Bok, the Bureau reviewed the pros and cons of the four alternatives in part to simply buttress the rationale for settling on using NACA, despite its liabilities, to form the nucleus for the new space agency. Bok, *Making American Space Policy*, 103.

be avoided. Regarding the problem of coordinating civil and defense programs, the Bureau's management planners concluded that "adequate civil-military cooperation could be achieved without assigning the program to [Defense]."⁵⁵

A second alternative would authorize the Atomic Energy Commission (AEC), a civilian agency with competence directing scientific research and development projects in cooperation with the military services, to house the new space research program. This idea had already been floated by several influential members of Congress and the AEC itself. But the Bureau's management planners never considered the AEC's organization a good management model to apply to NASA.⁵⁶ The Bureau dryly concluded that "[U]tilization of the AEC was not recommended because it is chiefly concerned with a single form of energy . . . (and space vehicles were expected to rely on chemical propellants)."⁵⁷

The third alternative, per Senator Humphrey's legislative proposal, would have created a Department of Science and Technology. The Bureau's planners rejected this alternative because they concluded that science and technology, of themselves, did not provide a sound basis for organizing an executive department. They were also concerned that it would take too long to establish and organize a new department, and the administration needed a solution that could be implemented quickly.

The fourth alternative relied on using NACA as the nucleus of a new aeronautics and space agency. This became the preferred option of Killian, the scientists, NACA's leadership, and the Bureau planners.⁵⁸ Finan had worked on NACA administrative issues since 1950 and was familiar with NACA's administrative limitations, and thus rejected simply assigning additional functions to a renamed NACA. The space program, Finan said, needed "a drastically different and much more powerful agency . . . [to] be erected upon the foundation provided by the NACA."⁵⁹

⁵⁵ Finan Speech, 3.

⁵⁶ "Analogies to the Atomic Energy Commission were widespread throughout the legislative creation of the new space agency." Robert R. MacGregor, "Imagining an Aerospace Agency in the Atomic Age," in *Remembering the Space Age*, Steven Dick, ed. (NASA History Division: Washington, DC, 2008), 64. Eilenne Galloway of the Legislative Service of the Library of Congress wrote an influential analysis for Congress "comparing and contrasting" issues of outer space and atomic energy as a legislative problem. HH, April 15, 1958, 6. At a White House meeting on February 3, between Lewis Strauss, head of the AEC; Sherman Adams, Eisenhower's chief of staff; Killian; and the Bureau, it was decided "that the AEC should not be charged with the primary responsibility for developing space vehicles or space exploration." Finan Memo, par. 5.

⁵⁷ *Ibid.*

⁵⁸ Killian said two members of the PSAC, James McCormick and James Fisk, first suggested using NACA as the foundation for the new space research agency. Killian Interview, 15.

⁵⁹ Finan Memo, par. 4.

Soon after *Sputnik II* in November, NACA started promoting itself with the Congress and the White House as the best solution to manage the space program, claiming that under its 1915 authorizing statute NACA already had the original authority to lead and carry out a civilian space research program.⁶⁰ On January 27, 1958, NACA's board released a paper cleared by Killian outlining a civilian space research program and calling for "an expanded NACA to provide the principal leadership in space technology."⁶¹ The Bureau reacted favorably to the NACA proposal, having already started considering NACA as the "logical nucleus of a new aeronautics and space agency."⁶²

In early February, while a consensus had formed around "reconstituting" NACA to house the new civilian space program, there was an important difference of views between Killian, the scientists—PSAC, and NACA's leadership—and the Bureau's management planners regarding how the new space agency should be administered. NACA was run by a committee of scientists and engineers that oversaw the operations of the agency, with a director selected by the committee managing day-to-day operations.⁶³ NACA's decision-making, by design, moved research projects forward cautiously and deliberately, relying almost exclusively on in-house resources. Killian, as MIT's president, and most members of the PSAC came from university research backgrounds, and like NACA's leadership, they initially favored keeping the NACA style research committee management structure to oversee the new space agency.⁶⁴

The Bureau's management planners strongly disagreed. They insisted that, consistent with their administrative doctrine, the new space agency be headed by a single executive empowered with the full authority to oversee the operations of the agency. Enid Bok

⁶⁰ NACA's leadership considered managing the civilian space research program a matter of organizational survival. NACA's general counsel, Paul Dembling, said "We felt in NACA that there was enough authority for us to take over the space program." *Legislative Origins*, 25. "On January 26 the NACA [board] adopted a resolution 'on the subject of space flight' asserting that NACA had within its own broad original authority [referring to NACA's 1915 authorizing statute] investigation of problems relating to flight in all its aspects outside of or within the earth's atmosphere thereby including missiles, satellites and other space projectiles and vehicles as well as aircraft." (Emphasis in original.) NACA's director, Dryden, gave a speech before the Institute for Aeronautical Sciences speaking about alternative proposals for the organization of the space program, Dryden called them solutions, saying, "Actually this solution is old and well-tested. It is explicitly stated in the 1915 legislation that established the NACA." Bok, *Making American Space Policy*, 77–78.

⁶¹ Finan Memo, 1, par. 4.

⁶² *Ibid.*

⁶³ "Interview with Paul Dembling," *Legislative Origins*, 28. Also see *Administrative History*, 28, which explains NACA's complex committee organization and management structure.

⁶⁴ NACA had maintained close working relationships with all the major research universities—something the scientists on PSAC concerned with creating NASA wanted to preserve. *An Administrative History*, 19–20.



NACA's Executive Committee at NACA's Wallops Island, circa September 1957, two weeks before the Soviet launch of *Sputnik I*. The Budget Bureau's management planners rejected having NASA run by a NACA-style committee.

said that the Bureau's preferred approach was "a sharp departure from the traditional organization[al] preferences of scientists who heretofore had preferred multi-headed [research] agencies and heavy management representation by scientists."⁶⁵ The Bureau believed that NACA's committee organizational structure would be too slow and that NACA's leadership "was without experience in administering a politically supercharged program such as the projected civil space program had already become."⁶⁶

Killian came to understand that a research committee structure administering the space program would not be feasible and that "the sums of money space [programs] might come to need require an organization unambiguously responsible to the President."⁶⁷ It was most likely Finan who persuaded Killian to accept the Bureau's preferred single-executive model for NASA's administration.

In mid-February at Killian's request, Finan started drafting a memorandum—with input from Killian and Paul Johnson of his staff—that would form the basis for a decision by the president on organizing the space research program.⁶⁸ The memorandum explained

⁶⁵ Bok, *Making American Space Policy*, 140. According to Finan, from January up to the middle of February an influential member of the Space Panel, Dr. Herbert York, pressed to have space research be managed and conducted by nonprofit private contractors such as the Jet Propulsion Laboratory of the California Institute of Technology. The Bureau staff explained to Killian the difficulties with York's proposal. Finan Memo, 2, par. 6.

⁶⁶ Finan Speech, 4. T. Keith Glennan, NASA's first administrator, explained that, because of NACA's university-like research culture, it had limited exposure to dealing with Washington political fighting and importantly "little depth and little experience in the management of large projects." *The Birth of NASA, the Diary of T. Keith Glennan*, NASA Historical Series, 1993 (NASA: Washington, DC, 1993), xxii, 5.

⁶⁷ Killian, *Sputnik, Scientists, and Eisenhower*, 131.

⁶⁸ *Ibid.*, 133. Paul Johnson was director of the Institute for Aeronautical Sciences before joining Killian's staff where he became the liaison between the Bureau and Killian. He later served as the first director of the National Air and Space Museum of the Smithsonian Institution. Killian Interview, 33.

that the new space agency would take on entirely new functions that were “drastically different” from NACA’s and have a director reporting directly to the president with full authority over the agency’s administration of the space program. Finan stressed the importance of this point later in his testimony in May before Senator Johnson’s Senate Space Committee saying that “a space program is one in which the normal machinery of Government ought to be allowed to work, which is to place one man in the position where the President and the Congress can clearly and without any doubt hold him fully responsible, not for such successes as his Agency might have, but for any failure which may occur.”⁶⁹ The Bureau’s management planners also sought to give the new agency’s director maximum flexibility working out the agency’s operational relationships with the DOD, the AEC, and other agencies consistent with its administrative doctrine that agency disagreements were best sorted out on a case-by-case basis between the affected agencies with the president acting as the ultimate arbiter if needed.⁷⁰ This would become one area where Congress disagreed with the Bureau.

On February 22 Finan discussed the completed memorandum with Killian and Nelson Rockefeller, chairman of the President’s Advisory Committee on Government Organization (PACGO).⁷¹ They reached a decision to prepare a decision memorandum for the president embodying the Bureau’s recommendations.⁷² Finan drafted the decision memorandum, again with Killian and Johnson closely reviewing it. The decision memorandum included a recommendation for an all-out effort to draft legislation to be submitted during the current session of Congress. Before sending the decision memorandum to the president, Killian had Rockefeller’s committee review it. PACGO approved it with no substantive changes, even though Rockefeller had recently made a public statement saying the space program should be managed by the military.⁷³

The Decisive March 5 Meeting

On March 5 Killian met with the president and summarized the decision memorandum, which closely tracked the Bureau’s recommendations of February

⁶⁹ Testimony of William F. Finan, Assistant Director, Management and Organization, Bureau of the Budget. SH, 305.

⁷⁰ Soon after NASA became operational it sought to gain control over the Army’s Jet Propulsion Laboratory at Pasadena and the Army’s Ballistic Missile Agency at Huntsville, Alabama. The Army resisted giving up control. Eventually they reached a compromise, and NASA ultimately gained control of both facilities. Allan S. Nanes, “Challenge in Space,” *Current History* 38, no. 224 (1986): 197.

⁷¹ Finan Memo, 2, par. 7. Rockefeller considered the space agency organization question to fall within his purview as chair of PACGO. Regarding the important role PACGO played in the Eisenhower White House, see Peri E. Arnold, *Making the Managerial Presidency*, Chapter 3.

⁷² Finan Memo, 2, par. 7.

⁷³ Killian, *Sputnik, Scientists, and Eisenhower*, 132–33.

22.⁷⁴ Killian explained that civil space leadership would be lodged in a renamed and strengthened NACA using existing NACA facilities and competence as the core.⁷⁵ He said it was not simply a matter of assigning space duties to NACA; rather the new agency would have far broader responsibilities. It would be headed by a director who would be appointed by the president and confirmed by the Senate. An aeronautics board would be established but would only function in an advisory capacity. Killian added several concluding remarks, saying, “[First, it] will be essential that DOD make facilities (such as missile test facilities) available for NASA use. Second, NASA must be in the dominating position with respect to space activities.”⁷⁶ Eisenhower approved Killian’s recommendations, adding that he opposed a research committee structure because “these have failed badly to give necessary control of activities, including control of money.” Eisenhower then directed that the Bureau of the Budget, with Killian’s assistance, draft the legislation.⁷⁷ He set early April, less than one month away, as the deadline for the administration’s draft of the space legislation to be sent to Congress.

Drafting the Space Legislation

Three groups separately drafted versions of the space legislation. On Capitol Hill, after Johnson’s Preparedness Subcommittee released its report on space research in mid-January, Gerald Siegel, along with other committee staff members, started working on drafting a Senate version. Thus, when the administration’s bill came to the Hill, Johnson’s staff was well prepared to consider changes. Siegel later commented that the committee’s version was “quite different than [what the Administration] sent up . . . but not that much.”⁷⁸

In January NACA’s general council, Paul Dembling, sensing a growing number of competitors seeking control of the space program, got permission from NACA’s director, Dr. Hugh Latimer Dryden, and its chairman, Dr. James H. Doolittle, to draft a bill.⁷⁹ On February 25 he completed his first draft, titling it the “Space

⁷⁴ Finan Memo, 2, par. 8. The decision memorandum listed the liabilities of using NACA as the platform for the new agency, but then indicated that the liabilities could be overcome. An attachment contained the Bureau’s discussion of why it rejected alternative organizational arrangements. *Administrative History*, 9–10. Killian called the March 5 meeting with Eisenhower the “conclusive act” to establish NASA. *Administrative History*, 9.

⁷⁵ March 5 Conference Memo.

⁷⁶ *Ibid*

⁷⁷ Killian, *Sputnik, Scientists, and Eisenhower*, 133; also see Wilson, *Legislative Origins*, 52

⁷⁸ Gerald Siegel, Oral History, 42; Lyndon B. Johnson Presidential Library. Siegel was considered the *de facto* director of Senator Johnson’s Special Committee on Space and Astronautics. Wilson, *Legislative Origins*, 52.

⁷⁹ Dr. Doolittle, a.k.a. Lt. General Doolittle, famously led the attack on Tokyo in World War II and held a Ph.D. from MIT. Doolittle was a member of PSAC, and presumably would have provided NACA’s perspective on space research objectives to PSAC and Killian.

Research Act of 1958.”⁸⁰ Dembling’s draft amended the NACA’s 1915 statute to make it clear that NACA had the duty “to supervise and direct scientific studies of aircraft, missiles, and spacecraft” and retained the NACA board (renaming it a “commission”) with the authority to appoint the agency’s director.⁸¹ His draft made no mention of creating a new space agency. That same day, Dembling wrote a memo to the file that read in part, “Director by appointment by President, with advice and consent of the Senate.”⁸² This reference suggests that he had read the Bureau’s February 22 memorandum after preparing his first draft.

On March 4 Dembling released a second draft, which again amended NACA’s 1915 statute but now also expressly established a new agency, the National Aeronautics and Space Authority.⁸³ An interesting facet of his second draft appears in the fourth paragraph, which describes the appointment of the NASA director in two mutually exclusive ways. The first way empowered NACA’s board to appoint the director; the second way gave the president the authority to make the appointment.⁸⁴ This odd construction suggests that Dembling might have been caught between NACA’s director/chair, who preferred NACA’s board keeping the authority to appoint the NASA director, and Killian, who had already accepted the Bureau’s recommendation to have a single executive appointed by the president.⁸⁵

The Bureau flatly rejected Dembling’s approach to forming the new space agency by amending NACA’s 1915 statute. The Bureau’s intent was to make it clear that

⁸⁰ Paul G. Dembling Collection, George Washington University Law Library (hereinafter Dembling Collection).

⁸¹ “Draft of 2/25/58 DEMB” Dembling Collection. Dembling’s first draft did not create a new space agency perhaps because NACA’s leadership believed NACA already had the requisite statutory authority under its 1915 statute to manage the space research program.

⁸² Handwritten before this phrase was a “?”. Paul Dembling Notes and Memorandum for Record – 2/24/58. Dembling Collection.

⁸³ “DRAFT 3-4-58,” Dembling Collection. Dembling titled his second draft “To amend the Act approved March 3, 1915, establishing the National Advisory Committee for Aeronautics, as amended, (38 Stat. 930, 50 U.S.C. §151) the National Aeronautical and Space Agency, and other for purposes.” His original typed version named the agency the National Aeronautical and Space Agency but then struck out “Agency” and in a handwritten revision called it the “Authority.” The draft’s Chapter 3, Functions, relied on language taken directly from NACA’s 1915 statute.

⁸⁴ Dembling’s draft stated, “If the president appointed the Director, the Board may make recommendations to the President with respect to the appointment of the Director, and the Director shall not be appointed until the Board shall have the opportunity to make such recommendations.” This language was never going to be accepted by the Bureau and the White House.

⁸⁵ In his testimony before Congress, when asked to compare NACA’s committee organization with the administration’s single administrator approach, Dr. Doolittle testified, “I like the present [NACA] system better.” SH, 20.

NASA was not simply NACA with added functions.⁸⁶ The Bureau believed that to create an “independent,” “more powerful” agency capable of managing the space program required transforming NACA into a new space civilian agency reporting directly to the president, with its own budget authority, and thus capable of operating independently of DOD’s direct control. In the Space Act, the Bureau’s planners established NASA as an entirely new agency at Section 3, and then at Section 10 it stated, “On the effective date of the Act the [NACA] shall cease to exist as such and all real and personal property, personnel, funds, and records of that organization are hereby transferred to the Agency.”⁸⁷

After the March 5 meeting, Killian asked Finan to coordinate drafting the administration’s bill to create NASA. Finan established a small drafting group that included Alan Dean, of Finan’s staff; Kenneth McClure, assistant general counsel of the Commerce Department; and Paul Johnson, from Killian’s staff.⁸⁸ On March 13, Finan and Alan Dean of his staff met with Killian to discuss next steps. There was a sense of urgency to start drafting the legislation because they feared that “there would be efforts to support alternative plans.”⁸⁹ The same day, Finan, Maurice Stans, the Bureau’s new director, and others from the Bureau met with Doolittle and Dryden of NACA. They agreed that the Bureau would take the lead in drafting the legislation and an accompanying presidential message, and Paul Dembling would join the Bureau’s drafting group representing NACA. They also agreed that the new space agency would be named the “National Aeronautics and Space Agency.” According to Finan, “Some uncertainty remained as to the relative authorities of the Director and the agency’s board or committee, but there was general agreement that the Director should be strengthened and should be appointed by the President by and with the advice and consent of the Senate.”⁹⁰ The “uncertainty” Finan mentioned was that NACA’s leadership remained unwilling to

⁸⁶ Killian explained how he came to understand that the Bureau did not like to see the government structure made more complex by new agencies, and thus the Bureau preferred to “reshape” NACA into a new agency. Killian, *Sputnik, Scientists, and Eisenhower*, 132.

⁸⁷ Section numbers hereinafter refer to the section numbering of the administration’s bill as submitted to Congress on April 2, 1958.

⁸⁸ According to Killian DOD was excluded from the drafting group because the administration wanted to move with “deliberate haste. It wished to avoid the delay and recommendations for drastic changes that would surely result if the DOD undertook to get agreement within its own ranks about the bill.” Killian, *Sputnik, Scientists, and Eisenhower*, 135. The absence of DOD representation on the drafting group became a major concern raised by many in Congress. See *Administrative History*, 10, footnote 20.

⁸⁹ Killian Interview, 38.

⁹⁰ At the same time, Willis Shapley and Wreatham Gathright of the Bureau’s Military Division prepared interim instructions to go to NACA and DOD about on the space program. Finan Memo, 2–3, paragraphs 9 & 10.

concede on having an advisory board retain the authority to set the space agency's research agenda (and advise on appointing the space agency's director).

On March 18 Alan Dean, assisted by Kenneth McClure, started drafting the administration's bill. They would continue working around the clock to prepare subsequent versions. On March 20, Dembling, Johnson, and others in the White House reviewed their initial draft.⁹¹ The following day Finan, then Killian, and finally the Bureau's director reviewed Draft No. 3 and suggested changes. On March 24 Draft No. 5 was completed incorporating Finan's and Killian's changes. This draft fully fleshed out seven objectives for the space program, established the "National Aeronautics and Space Agency," and stated that the agency "shall be headed by a Director who shall be appointed by the President by and with the advice and consent of the Senate." It continued: "The Director shall be the chief officer of the Agency . . . [and] shall exercise the functions of the agency." And it delineated the functions of the agency's advisory board, defined the agency's functions, and included details concerning the new agency's administration once it started operating.⁹²

The space program's objectives came primarily from Killian, with input from members of the Space Science Panel, and stated:

The Congress hereby declares that the general welfare and security of the United States requires adequate research into, and the solution of, problems of flight within and outside the earth's atmosphere . . . The Congress further declares that such activities should be conducted as to contribute materially to one or more of the following policy objectives: (1) the expansion of human knowledge of phenomena in the atmosphere and space, (2) improvement of the usefulness, speed, safety and efficiency of aircraft, (3) the development and operation of vehicles capable of carrying instruments, equipment, and living organisms into space, (4) the preservation and enhancement of the prestige of the United States among the nations of the world as a leader in aeronautical and space science and technology, (5) the making available to agencies directly concerned with national security of discoveries that have military value or significance, (6) cooperation with other nations in work done pursuant to this act and in the peaceful application of the results thereof, and (7) civilian

⁹¹ Finan Memo, 2, par. 10. Paul Johnson was Killian's representative on the drafting group and reported regularly on progress to him. Space Science Panel members were also provided with drafts for comment. Finan Memo: 3, par. 10. Bok, *Making American Space Policy*: 101.

⁹² Fifth Draft, March 21, 1958, Dembling Collection.

conduct and control over the space and aeronautical research of the United States, except insofar as such research may be in direct responses to military requirements or serves purposes peculiar to or primarily associated with weapons systems or military operation.⁹³

These seven objectives remained essentially intact in the Act as passed by Congress.⁹⁴

Dembling along with Killian and members of the Space Science Panel were principally responsible for defining the new space agency's functions, which included development of aeronautical and space vehicles and conducting scientific studies of the problems of manned or unmanned flight within or outside the earth's atmosphere.⁹⁵ Congress made limited modifications to the administration's description of the new space agency's functions.

The Bureau's planners along with Dembling were the principal drafters of the bill's provisions stating the space agency's authorities to carry out its functions.⁹⁶ The Bureau's management planners wanted to address two important problems they foresaw as the new space agency started functioning: employing experienced personnel, especially scientists; and rapidly acquiring the DOD facilities it needed to operate. As Finan explained, "the scientists who had done the most work on rocket engines were employed by the Defense Department agencies and contractors." It would be critical for NASA to be able to employ these experienced scientists and engineering personnel.⁹⁷ The Bureau included five provisions in the administration's bill related to this issue.⁹⁸ To facilitate the rapid transfer of DOD facilities to NASA, the Bureau added an "exotic touch" to the bill—the section called "Transfer of Related Functions." Under this section, as the Bureau's planners drafted it, Congress granted a special reorganization authority to the new space agency for up to a three-year period whereby NASA could unilaterally elect to

⁹³ Ibid., "Declaration of Policy." Dembling Collection.

⁹⁴ In the final version of the Space Act, Congress added two objectives, one indicating the establishment of studies about the benefits of space activities, and the other calling for close cooperation among agencies to avoid duplication of effort, facilities, and equipment.

⁹⁵ Dembling's 2-24-58 Memorandum for Record listed eight authorities the new agency should have, including the ability to operate laboratories, acquire facilities, and make grants or enter into contracts for the conduct of basic and applied scientific research. Dembling Collection.

⁹⁶ Dembling said he sought to draft the act with the "broadest authorities." *Legislative Origins*, 28.

⁹⁷ Finan Speech, 5.

⁹⁸ For instance, Section 6(b)(2) of the Space Act dealt with Civil Service classifications saying the agency could adjust pay scales to match the private sector. Finan wrote that "some scientists were unwilling to work under the limitations imposed on civil service agencies." Ibid.

transfer to itself any function relating primarily to the civilian space program and simply make a report to the Congress about “the nature and effect” of any transfer made before January 1, 1958. Congress would have had no say whatsoever in approving the transfer. Congress, not surprisingly, did not fully approve of this section, though in the final version of the bill the Bureau’s idea, somewhat moderated, did survive.⁹⁹

The Bureau’s management planners made their most significant contribution to the administration’s bill in applying their administrative doctrine to NASA’s organization and administration. According to Killian, the Bureau “saw an opportunity to preserve NACA while shaping [NASA] into an agency that conformed to the Bureau’s most advanced ideas about the organization of independent government agencies.”¹⁰⁰

First, the Bureau’s management planners strongly pushed back against the scientists, including Killian, and NACA’s leadership, who favored retaining a board of scientists overseeing the civilian space research program with, in NACA’s case, authority over appointing the agency’s director. The Bureau management planners insisted on adhering to their administrative doctrine of having the agency headed by a single executive—what Finan called in his testimony before Johnson’s Special Committee “a straight-line approach”—appointed by the president and operating under the supervision and control of the president.¹⁰¹ Gerald Siegel said the director (later called the “administrator” by Congress) had “a good deal of additional power, being that close to the President.”¹⁰² The Bureau’s management planners also applied their cardinal principle of vesting the agency’s director with all the authority necessary to accomplish the purpose

⁹⁹ In the Bureau’s July 1958 memorandum to the president, the Bureau’s director wrote that “the Department of Justice has advised informally that the provision for disapproval of transfer by concurrent resolution [of Congress] is of doubtful constitutionality. However, the Department considers that in its practical application this provision is not so objectionable as to warrant disapproval of the bill, particularly since this procedure does not become effective until January 1, 1959. It is anticipated that by then most of the transfers to the new agency will have been accomplished.” Maurice Stans, Director, Bureau of the Budget, Executive Office of the President, message to the President explaining H. R. 12575, the Space Act, July 26, 1958, NASA Historical Archives Record No. 1240058 (hereinafter, Stans’s Memo.).

¹⁰⁰ Killian, *Sputnik, Scientists, and Eisenhower*, 132. Enid Bok wrote that “to Finan the working group had a priceless opportunity to write a ‘kitchen stove kind of bill’ based on optimal administrative theory.” Bok, *Making American Space Policy*, 103–4.

¹⁰¹ SH, Part 2, 295. “We have learned to operate our major business enterprises successfully and our major governmental enterprises successfully under the single-executive arrangement.” William Finan testifying before the Special Space Committee. SH, Part 2, 305.

¹⁰² Siegel, Oral History, 46.

of the act.¹⁰³ Overall, the Bureau's approach to the space agency's administration made NASA "amenable to clear executive coordination and control, thereby avoiding the pitfalls of . . . potential military domination."¹⁰⁴

Second, the Bureau management planners believed interagency coordination was best secured through regular communication channels within the executive branch.¹⁰⁵ This again was one of the Bureau's management principles. The Bureau's management planners knew from experience that "it was impossible to establish precise divisions between agencies with closely related programs."¹⁰⁶ Thus, the administration's draft legislation avoided setting up any statutory liaison committee—Enid Bok said the administration's bill was "almost cryptic" around this point. She summarized the Bureau's reasoning not to have a liaison committee as saying that "no special statutory language to confirm the natural workings of the Executive Establishment, and the plenary powers of the President [was needed]."¹⁰⁷ In testimony before Johnson's Special Committee, Finan explained further.

This is part of the constitutional responsibility of the President. This is just part of his normal day-to-day work. . . . [The Bureau's] experience has been where agencies have interrelated programs they can and do work together; and to the extent problems develop . . . and they are of a complicated character . . . then only the Chief Executive can correctly straighten them out.¹⁰⁸

Congress, especially the House, rejected the Bureau's *laissez faire* approach to managing interagency relationships and insisted on imposing a Civilian-Military

¹⁰³ Section 202 of the Space Act stated, "Under the supervision and direction of the President, the Administrator shall be responsible for the exercise of all powers and the discharge of all duties of the Administration and shall have authority and control over all personnel and activities thereof." This objective had been originally explained in the March 5 Conference decision memorandum and was based on the Bureau's recommendation.

¹⁰⁴ Bok, *Making American Space Policy*, 102.

¹⁰⁵ *Ibid.*, 103.

¹⁰⁶ Testimony of Maurice H. Stans, Director, Bureau of the Budget, SH, Part 2, 282.

¹⁰⁷ Bok, *Making American Space Policy*: 104.

¹⁰⁸ SH, Part 2, 298. In testimony before McCormack's Select House Committee, Deputy Secretary of Defense Donald A. Quarles agreed with the Bureau's point of view on flexibility and how interagency coordination should be dealt with in the legislation, "I favor legislation which establishes the agency and defines its purposes and functions broadly and does not attempt to rigidly establish a line between the Agency and military agencies . . . there should be no attempt to legislate prohibitions on either agency." HH, April 29, 1958, 1109.

Liaison Committee.¹⁰⁹ The liaison committee, as the Bureau's management planners correctly anticipated, turned out in practice not to be very useful and was later dropped.

Before Draft No. 5 could be circulated to other agencies for comment, one outstanding matter remained to be resolved. NACA's leadership still objected to the Bureau's version of Title II of the bill, "Coordination of Aeronautical and Space Activities," which contained the provisions setting up a space board (now calling it the "National Aeronautics and Space Council"). The Bureau insisted on limiting the Space Council to an advisory and consultative function. This was unacceptable to Dryden and Doolittle. The Bureau's staff met with Dembling and Dryden the afternoon of March 24 to try to obtain Dryden's agreement. According to Finan, Dryden stated that he and Dr. Doolittle felt that the council should have directive authority and that if it lacked such power "it would be less attractive to qualified members than NACA's advisory board had been."¹¹⁰ The Bureau responded that the president had made it clear he wanted NASA's director to have full administrative authority within the agency. The issue remained unresolved for several more days, threatening to derail getting the administration's bill to Congress before the congressional Easter recess at the beginning of April—the deadline set by Eisenhower. Only after further discussions between Dryden, Stans, and Killian did Dryden finally accept Draft No. 5 as final.¹¹¹

On Wednesday, March 26, the Bureau's Legislative Affairs Division circulated the draft of the space legislation to 10 agencies asking for their comments by noon on Monday, March 31.¹¹² This tight schedule infuriated all the agencies, but especially DOD and the military services.¹¹³ In one last attempt to prevent NASA from

¹⁰⁹ According to the oral history of Willis Shapley, the administration did not strongly resist this idea but later came to regret it. *Legislative Origins*, 10. DOD commenting on the Space Act as passed by Congress suggested amending it later to delete this provision "on the ground that more effective liaison could be achieved without such a statutory body." Stans's Memo, 3.

¹¹⁰ Finan Memo, 3, par. 12.

¹¹¹ *Ibid.* During congressional deliberations on the bill, a major fight ensued over the question of a space advisory board and its authority over the director. Establishing a space advisory board was something Lyndon Johnson strongly favored, and Eisenhower just as strongly resisted. They compromised on having the space advisory board report to the president. In a few short years, the board fell into disuse.

¹¹² Bureau Director Maurice Stans testified that "the bill was sent to the agencies on March 26, 1958, with a deadline for replies set at noon, Monday March 31, 1958 . . . Thus, 5 to 6 days were given each agency, including the Department of Defense, to study and comment on the draft legislation . . . The major features of the legislation had been communicated to ranking officials of the most directly affected departments and agencies well in advance of the circulation of the draft bill." SH, 280.

¹¹³ Bok, *Making American Space Policy*, 105. According to Killian, Lyndon Johnson supposedly said the Bureau's draft was "whizzed through the Pentagon on a motorcycle." Killian, *Sputnik, Scientists, and Eisenhower*, 135.

gaining full independence from DOD, DOD's Undersecretary Donald A. Quarles commented back to the Bureau that DOD wanted the relationship between NASA and DOD to be comparable to the one that existed between NACA and DOD. Enid Bok wrote that DOD believed that "NASA like NACA before it would function as a 'helpmate' in projects which [the Defense Department] was willing to relegate to it."¹¹⁴ The Bureau rejected Quarles's suggestion as being in opposition to the civilian space organization as approved by the president—that is, the new civilian space agency would operate independent from DOD.¹¹⁵

On April 2, the Bureau transmitted the administration's space bill to Congress along with an accompanying message from Eisenhower on space and science exploration, including an explanation of the salient features of the legislation prepared by Finan.¹¹⁶

Public Law 85-568, The Space Act

On April 14, the administration's bill was introduced by Senators Lyndon Johnson and Henry Styles Bridges in the Senate (S. 3609) and by Congressman John W. McCormack and others in the House (H. R. 11881). The House held hearings starting on April 15 with a total of 48 witnesses appearing over 17 days, producing voluminous testimony running to over 1,500 pages.¹¹⁷ Johnson's Special Committee followed with six days of hearings in May. Twenty witnesses appeared, producing slightly over 400 pages of testimony. At the end of the Bureau's testimony before the Special Committee, in an indication of the respect for the Bureau's work on the space legislation, Senator Johnson had the following exchange with Finan:

Senator Johnson. Mr. Finan, in your opinion, will this bill get us into outer space more rapidly and more efficiently than our present setup?

Mr. Finan. Well, without this bill, Senator, we are not going to be getting into outer space with a civilian program of any significance. The only civilian space program that currently is authorized is this temporary arrangement under

¹¹⁴ Bok, *Making American Space Policy*: 106. Roy W. Johnson, Director, Advanced Research Projects Agency, DOD, testified, "Within the Department of Defense, up until recently, there was a feeling that [NASA] was basically an extension of the relationship with NACA, as it existed in the past." SH, 168.

¹¹⁵ Finan Memo, 4, par. 14. In a memorandum from Finan to Director Stans, Finan said, "The views of the ten affected agencies have, insofar as possible within the framework of the President's instructions, have [*sic*] been taken into account in the preparation of the draft bill." William F. Finan, Memorandum to the Director, Transmittal of draft aeronautics and space legislation, April 2, 1958. NASA Historical Archives, Record No. 12400 (hereinafter Transmittal memo).

¹¹⁶ Transmittal memo.

¹¹⁷ At least a quarter of the House testimony (by page count) was provided by NACA's Director Glennan and Dr. Doolittle, NACA's chairman. The Bureau did not testify before the House.

the Advanced Research Projects Agency of the Department of Defense which terminates early next year.

Senator Johnson. Your answer, then would be “Yes”?

Mr. Finan. Yes, sir.

Senator Johnson. I want to commend you on the quality and the candor of your response to all the questions that have been asked of you....

After congressional passage of H. R. 12575 on July 18, 1958, in a memorandum to the president, Bureau Director Maurice Stans concluded, “The bill substantially conforms with the administration bill transmitted to the Congress on April 2nd, 1958.”¹¹⁸ On July 29 Eisenhower signed H. R. 12575 into law.

History has evaluated the Space Act favorably. The Senate has designated it a landmark piece of legislation. From an administrative viewpoint, “the Space Act has stood up rather well. Amendments have been few and of relatively minor importance.”¹¹⁹

Dr. Killian wrote that “the [Space Act] was a remarkable blending of the interests, needs, and objectives of the administration, the Department of Defense, and the scientific community.”¹²⁰ However, neither Eisenhower nor the Bureau management planners compromised on what they believed to be essential, principled positions for the success of the new space agency.

Lyndon Johnson’s leadership was unquestionably key to securing congressional support for creating NASA as a civilian-led space research agency with a broad mission.¹²¹ But it was Eisenhower who made the pivotal decision early on in November 1957 not to have the Defense Department and the military services continue to control the entire U.S. space program. The advice Eisenhower received from Killian and the PSAC advisors who strongly favored creating a civilian-led research space agency probably reinforced his view, but it was not decisive. As his 1953 message on the reorganization of the Defense Department indicated, Eisenhower firmly believed in the importance of retaining civilian control and adhering to “constitutional principles and traditions.”¹²² At the time of his decision,

¹¹⁸ Stans’s Memo, 1. It appears likely the summary was prepared by Finan.

¹¹⁹ *Administrative History*: 6.

¹²⁰ Killian, *Sputnik, Scientists, and Eisenhower*, 141.

¹²¹ Jeff Shesol, “Lyndon Johnson’s Unsung Role in Sending Americans to the Moon,” *New Yorker Magazine*, June 20, 2019. <https://www.newyorker.com/news/news-desk/lyndon-johnsons-unsung-role-in-sending-americans-to-the-moon>.

¹²² In his 1960 State of the Union Address, Eisenhower remarked how some “mistakenly supposed [space exploration] was an integral part of defense.” *New York Times*, January 10, 1960, E1.

Dr. James E. Webb, NASA's second administrator, February 1961–October 1968. Webb's leadership led to NASA's successes in space research and manned spaceflight but also made him accountable to Congress for the agency's failures (e.g., the *Apollo 1* disaster in February 1967 that killed three astronauts).



Eisenhower could have easily decided to leave DOD and the military services (and their contractors) in charge of the entire space program since they already controlled the specialized resources and personnel, and the United States was in a vital race with the Soviets for leadership in space technology. The president could have then allowed Congress to grapple with the important question of civilian versus military control. The outcome almost certainly would have been very different given the powerful congressional allies DOD and the military services had in Congress.

The Bureau's management planners in their planning of NASA's administration and organization refused to compromise with Killian, the PSAC, and NACA's leadership on key organizational issues. They insisted on applying the tenets of their administrative doctrine, which they believed were essential to the new space agency's success. Congress trusted the Bureau's judgment and competence in the reorganization sphere. That trust facilitated Congress's acceptance of the Bureau's solution to the exotic problem of creating NASA—specifically applying a single-executive model. As Bureau Director Stans wrote to the president recommending he sign the bill, “The Administrator of the new agency is made responsible to the President alone for conduct of civilian aeronautical and space activities. He is equipped with the authority required to accomplish the purpose of the act.”¹²³ Gerald Siegel said that “one of the major contributions . . . was to set [NASA] up as an administrative rather than an AEC-type agency . . . It was so important we just had to have nothing short of the Chief Executive heading up space policy planning.”¹²⁴ This central feature of the Bureau's plan for NASA's administration and organization was consistent with Eisenhower's insistence on a civilian-led space research agency.

¹²³ Stans's Memo, 1.

¹²⁴ Siegel explained that “the House was sort of determined to make it an Atomic Energy Commission . . . with a liaison committee to the Pentagon. And we [the Senate] said, no this would be an independent agency.” Siegel, Oral History, 45–46.

On December 25, 2021, NASA successfully launched the James Webb Space Telescope, named after the second administrator of NASA from February 1961 to October 1968. NASA's website explains: "Webb believed that the space program was more than a political race. He believed that NASA had to strike a balance between human spaceflight and science because such a combination would serve as a catalyst for strengthening the nation's universities and aerospace industry."¹²⁵ This is the legacy for the civilian space program that Eisenhower, Killian, the scientists on the PSAC, and Johnson sought to achieve and did so with the Bureau of the Budget's management planners' assistance.

Picture credits: William F. Finan Jr., courtesy of the author; Senator Lyndon B. Johnson, Senate History Office; NACA Executive Committee, Eisenhower, Glennan and Dryden, James E. Webb, NASA History Archives; James R. Killian, MIT Museum.

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¹²⁵ NASA Webb Space Telescope, Goddard Space Flight Center, <https://webb.nasa.gov/content/about/faqs/whoIsJamesWebb.html#:~:text=Webb%2C%20who%20ran%20the%20fledgling,would%20be%20named%20after%20him> (accessed October 20, 2022).