The United States and Sputnik: a Reassessment of Dwight D. Eisenhower's Presidential Legacy

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Dwight D. Eisenhower was an extraordinary serviceman adored by his country for his accomplishments in military and civilian life. As a four-star general, Eisenhower led the United States through the European Theatre of the Second World War, having coordinated the liberation of France in 1944 and spearheaded the Western Allies' advance into Germany in 1945. After the war, Eisenhower served as the first Supreme Allied Commander of the North Atlantic Treaty Organization (NATO), the military governor of the American occupation zone in Germany, and later as president of Columbia University. Indeed, Eisenhower's life was nothing short of exceptional.

Yet Eisenhower's tenure as President of the United States from 1953 to 1961 failed to arouse the same fervour of admiration as generated by Eisenhower 'the General.' In fact, for much of his post-presidency life Eisenhower endured a barrage of criticism from academics and journalists alike. The stereotypical characterization of Eisenhower was that of a do-nothing president whose ignorance and complacency tarnished the prestige of the executive office. In his 1958 publication *Eisenhower: Captive Hero*, journalist Marquis Childs chastised the former president's political inexperience. Eisenhower had "no understanding of the uses of patronage and power," and surrounded himself with equally simplistic and unimaginative Cabinet members.¹ Likewise, Emmet J. Hughes—a former speechwriter for Eisenhower—lambasted Eisenhower for his passive style of leadership. In his 1963 publication entitled *Ordeal of*

¹ Anthony James Joes, "Eisenhower Revisionism and American Politics," in *Dwight D. Eisenhower: Soldier, President, Statesmen*, ed. Joann P. Krieg (New York: Greenwood Press, 1987), 283.

Power, Hughes argued that the 1950s was a “lost decade” because of Eisenhower’s “disdainful aloofness from aggressive politics, an aversion to rough political combat, and to the President’s basic assumption that many heads are better than one – especially one’s humble own.”² Adding insult to injury, a poll conducted in 1962 by Arthur Schlesinger Jr. among American historians who have assessed presidential performance ranked Eisenhower twentieth out of thirty-five presidents, tied with Chester A. Arthur and behind Benjamin Harrison.³

By the 1980s, however, both popular and scholarly opinion of President Eisenhower experienced a remarkable reversal in assessment. A combination of disastrous foreign policy pursuits (e.g. the Vietnam War) and declining economic growth produced a nostalgic yearning for the peace and prosperity that defined Eisenhower’s two terms as president. Furthermore, the declassification of National Security Council archives and the publication of Eisenhower’s memoirs precipitated a shift in scholarly opinion of President Eisenhower. In his 1982 biography of Eisenhower, political scientist Fred Greenstein praises the former president as “politically astute and informed, actively engaged in putting his personal stamp on public policy, and [who] applied a carefully thought-out conception of leadership to the conduct of his presidency.”⁴ Eisenhower’s “hidden-hand” style of leadership, namely his use of cabinet ministers as “lightning rods” for Cold War policy, enabled the president to preserve his popularity and credibility with the American public.⁵ In *Eisenhower and the Cold War*, historian Robert Divine applauds

² Ibid, 285.

³ Ibid, 283.

⁴ Mary S. McAuliffe, “Commentary/Eisenhower, the President,” *Journal of American History* 68, no. 3 (1981): 627.

⁵ Stephen G. Rabe, “Eisenhower Revisionism: A Decade of Scholarship,” *Journal of Diplomatic History* 17, no. 1 (Winter 1993): 114.

Eisenhower for using his knowledge and expertise in foreign policy to keep the United States out of war for eight years.⁶ The essence of Eisenhower's strength, Divine claims, "lies in his admirable self-restraint."⁷ An additional poll conducted by Schlesinger Jr. in 1982 placed Eisenhower eighth out of forty presidents.⁸

President Eisenhower's response to the launch of the Soviet satellite *Sputnik* on 4 October 1957 is a testament to his capabilities as president. Unfortunately, the *Sputnik* Crisis is an overlooked episode of the Eisenhower administration and in American history. The available literature on Eisenhower either minimizes the *Sputnik* Crisis to focus on more memorable domestic crises during this period, namely, the Little Rock Crisis of 1957 or ignores *Sputnik* altogether. Jim Newton, for example, devotes only three of 350 pages to Sputnik in his 2011 biography on Eisenhower, while John Logsdon's 1997 publication *Spaceflight and the Myth of Presidential Leadership* focuses solely on the Kennedy administration.⁹

Eisenhower showed himself to be a proactive and attentive president who responded rationally and intelligently to *Sputnik*. Upon receiving word of the successful launch of the Soviet satellite in October 1957, Eisenhower surrounded himself with scientists, engineers, and academics in the President's Scientific Advisory Committee (PSAC) in order to rationally assess *Sputnik's* implications for American national security and to develop the appropriate policy responses to reassert American resolve during the Cold War. As such, Eisenhower and the PSAC accelerated American intercontinental

⁶ Joes, 290.

⁷ Ibid, 294.

⁸ James T. Patterson, *Grand Expectations: The United States, 1945-1974* (New York: Oxford University Press, 1997), 243.

⁹ Mark Shanahan, *Eisenhower at the Dawn of the Space Age: Sputnik, Rockets, and Helping Hands* (Lanham MD: Lexington Books, 2017), 20-25.

ballistic missiles (ICBM) and satellite programs to end the Soviet monopoly in space and established the National Aeronautics and Space Administration (NASA) as a civilian space agency to conduct further civilian pursuits in space. To eliminate the inter-departmental competition over resources, Eisenhower augmented the authority of the Defense Secretary in the Department of Defense over financial allocations to the Army, Navy, and Air Force, and created a director for research and development to eliminate duplication amongst the armed forces. On the domestic front, the administration provided for moderate infusions of federal funding into post-secondary education via the National Defense Education Act (NDEA) to stimulate student enthusiasm for science and engineering. Despite facing a Democrat-controlled Congress, the Republican Eisenhower succeeded in securing most of his policy goals. Indeed, an examination of Eisenhower's responses to *Sputnik* contributes to the scholarly re-evaluation of Eisenhower's legacy and cements Eisenhower's place in historiography as an impactful and effective president.

At approximately 7:30 p.m. on 4 October 1957, the Soviet Union fired an R-7 ICBM carrying the world's first manmade satellite, *Sputnik*, into orbit.¹⁰ Neither Eisenhower nor his administration expressed significant alarm over the launch of the Soviet satellite. Was *Sputnik* truly unexpected? The National Security Council (NSC) had known since 1955 that the Soviet Union intended to launch a satellite in accordance with the International Geophysical Year (IGY), a period from 1 July 1957 to 31 December 1958 in which the International Council of Scientific Unions (ICSU) recommended that

¹⁰ Yanek Mieczkowski, *Eisenhower's Sputnik Moment: The Race for Space and World Prestige* (Ithaca: Cornell University Press, 2013), 12.

governments develop and launch earth satellites in the interests of global science.¹¹ In November 1956, the NSC even predicted that the Soviet Union would launch a satellite before the United States, but concluded that the American satellite, dubbed Project *Vanguard*, would contribute more to science because of its superior scientific network.¹² The NSC also asserted that satellites themselves did not constitute an active military threat, *Sputnik* notwithstanding.¹³ Indeed, *Sputnik* did not indicate to the United States that the Soviet Union achieved superiority. By the autumn of 1957, the American intercontinental (ICBM) and intermediate-range (IRBM) ballistic missiles neared completion, while U-2 reconnaissance flights over the Soviet Union confirmed that the United States possessed an enormous lead over the Soviet Union in missile technology.¹⁴ Eisenhower—who was not even in Washington at the time of *Sputnik*'s launch—thus had little reason to believe that *Sputnik* threatened national security: “*Sputnik* does not rouse my apprehensions, not one iota. [...] They [the Soviets] have put one small ball into the air.”¹⁵

Sputnik may not have posed a military threat, but the “small ball” produced mass hysteria throughout the media and Congress. The editors of the *New Republic* compared *Sputnik* to the discovery of the New World and feared that *Sputnik* signalled the Soviet Union's ascendancy as a leading technological and scientific power.¹⁶ Likewise, the *Chicago Daily Tribune* feared the military implications of *Sputnik*, warning, “[if] the

¹¹ “National Security Council Report 5520: Note by the Executive Secretary to the National Security Council on U.S. Scientific Satellite Program,” *Foreign Relations of the United States, 1955-1957, United Nations and General International Matters, Volume XI*, 20 May 1955. Accessed on 17 October 2017.

¹² Shanahan, 47.

¹³ “National Security Council Report 5520, 20 May 1955.”

¹⁴ Shanahan, 60.

¹⁵ Walter A. McDougall, ...*The Heavens and the Earth: A Political History of the Space Age* (Baltimore: The Johns Hopkins University Press, 1997), 146.

¹⁶ *Ibid.*

Soviets could deliver a 184-pound ‘moon’ into a predetermined pattern 560 miles out into space, the day is not far distant when they could deliver a death-dealing warhead into a predetermined target almost anywhere on the earth’s surface.”¹⁷ Meanwhile, the Senate Majority Leader, Democratic Senator Lyndon Johnson, ordered a congressional inquiry into the satellite and missile programs of the Eisenhower administration, hoping to “blast the Republicans out of the water.”¹⁸ For several days politicians laboured over the causes of the United States’ humiliating defeat in the satellite race. These alleged causes ranged from inter-service rivalry, administrative complacency, an inferior education system, and an ineffective White House presided over by a semi-retired golfer [Eisenhower].¹⁹ Astonishingly, popular attitudes did not evoke similar apprehensions to *Sputnik*. A Gallup poll conducted between 11 and 14 October found that half of the sample considered the Soviet satellite as a “serious blow to U.S. prestige,” but a surprising 61% of respondents believed that satellites would improve rather than endanger humanity.²⁰

The importance of psychology for national security was certainly not foreign to Eisenhower. He personally supervised the psychological components of the African Campaign in 1942 and the Normandy campaign in 1944.²¹ He even once described the Cold War as a “struggle of ideas” in which the United States and the Soviet Union fought over the hearts and minds of domestic and foreign audiences.²² The fear of international communism and internal subversion could exert pressure on Washington to increase substantially the military budget and intervene in peripheral wars for security. As a fiscal

¹⁷ Shanahan, 70.

¹⁸ McDougall, 149.

¹⁹ Ibid.

²⁰ Ibid, 144.

²¹ Kenneth A. Osgood, “Form Before Substance: Eisenhower’s Commitment to Psychological Warfare and Negotiations with the Enemy,” *Diplomatic History* 24, no. 3 (Summer 2000): 410.

²² Ibid, 412.

conservative, Eisenhower wanted to avoid crash spending of any kind. Indeed, the most pressing issue facing his administration in the aftermath of *Sputnik* was primarily psychological: “the first [problem created by *Sputnik*] was to find ways of affording perspective to our people and so relieve the current wave of near-hysteria.”²³ Eisenhower’s actions in the ensuing months reflected his administrative desire to alleviate the nation from the feelings of inferiority that *Sputnik* generated.

Throughout October Eisenhower consulted with members of the Science Advisory Committee (SAC) to assess the severity of *Sputnik* and the appropriate administrative responses thereof. Deltev Bonk, the head of the National Academy of Sciences, cautioned against pursuing crash programmes, noting, “we can’t always go changing our program in reaction to everything the Russians do.”²⁴ Likewise, Nobel Prize laureate Isidor Isaac Rabi told Eisenhower that *Sputnik* provided the Soviet Union with tremendous momentum and that unless the administration adopted vigorous action the United States would likely fall behind in two to three decades.²⁵ Rabi pointed out that Eisenhower lacked a scientific advisor, someone to provide the president with a scientific perspective and suggest policy changes accordingly.²⁶ Scientist and co-founder of the Polaroid Corporation Edwin H. Land recommended that the administration find ways to invigorate an enthusiasm for science in schools.²⁷

²³ Dwight D. Eisenhower, *The White House Years: Waging Peace, 1956-1961* (Garden City, NY: Doubleday, 1965), 211.

²⁴ Andrew Jackson Goodpaster, “Memorandum of Conference with the President, on October 8, 1957, 5:00 p.m.,” *Dwight D. Eisenhower Presidential Library*, “Sputnik and the Space Race.”

²⁵ Andrew Jackson Goodpaster, “Memorandum of Conference with the President, on American Science Education and Sputnik, October 15, 1957, 11 AM,” *Dwight D. Eisenhower Presidential Library*, “Sputnik and the Space Race.”

²⁶ Ibid.

²⁷ Ibid.

With these suggestions in mind, Eisenhower unveiled his administration's offensive during two nationwide radio and television addresses. On 7 November 1957, Eisenhower announced the creation of the office of Special Assistant to the President for Science and Technology to advise the President on all matters related to science and nominated James R. Killian Jr., president of the Massachusetts Institute of Technology (MIT), for the post.²⁸ Eisenhower also expressed his commitment to reforming the Department of Defense to eliminate inter-service rivalry, eliminate duplication, and provide the Secretary of Defense with absolute authority in guided missile directing.²⁹ During his second address on 13 November, Eisenhower advocated a system of nationwide science testing in high schools, incentives for students to pursue scientific or professional studies, programs to stimulate quality teaching of mathematics and science, provisions for greater laboratory facilities, and measures to increase the output of qualified teachers. Yet he also stressed the importance of patience, noting that it took time for an idea to become an accomplishment and for a student to become a scientist.³⁰ Indeed, as Eisenhower pointed out to an audience in Oklahoma City, the United States needed "not only Einsteins and Steinmetzes, but Washingtons and Emersons," people of good character and of sound mind who were impervious to communist propaganda.³¹ By the end of 1957, Eisenhower reconstituted the SAC into his own presidential committee (PSAC) composed of eighteen notable scientists, academics, and engineers, including Killian, Bronk, Land, Rabi, the Director of the National Advisory Committee for

²⁸ Dwight D. Eisenhower, "Text of address by the President delivered from the Oval Office in the White House on "Science in National Security," November 7, 1957, *Dwight D. Eisenhower Presidential Library*, "Sputnik and the Space Race."

²⁹ Text of address on "Our Future Security" delivered by the President in Oklahoma City," November 13, 1957, *Dwight D. Eisenhower Presidential Library*, "Sputnik and the Space Race."

³⁰ Ibid.

³¹ Ibid.

Aeronautics (NACA) Hugh L. Dryden, Director of the National Science Foundation (NSF) Alan T. Waterman, and general and aeronautical engineer James H. Doolittle.³²

During his State of the Union Address in 1958, Eisenhower requested from Congress an additional \$1.3 billion in the 1958 budget, with more than half going to increased missile development and production.³³ The president justified his response with the hope that “this [increase] expresses the way the American people will want to respond to the promises and dangers of the dawning age of space conquest.” But before the administration could proceed, the United States needed to successfully launch a satellite into space. The official American satellite project, the Navy’s Project *Vanguard*, exploded only a few seconds after take off on 6 December 1957, embarrassing the nation.³⁴ On 3 January 1958, Killian forwarded a memorandum to Eisenhower, suggesting that the Army’s Jupiter-C rocket and *Explorer* satellite offered substantially greater chances of success than the Navy’s Project *Vanguard* and thus recommended that the administration stop developing Project *Vanguard* for the IGY and instead switch over to the *Explorer*.³⁵ During a NSC meeting on 24 January 1958, Eisenhower instructed his Secretary of Defense James McElroy to give Jupiter-C the same priority as Project *Vanguard* and accelerate the production of the Thor, Jupiter, Polaris, and Atlas IRBMs.³⁶ A scheduled launch on 29 January saw *Explorer* blast off without incident, reaching orbit

³² James Rhyne Killian Jr., *Sputnik, Scientists, and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology* (Cambridge, Massachusetts: The Massachusetts Institute of Technology Press, 1977), 107 and 278.

³³ Divine, 82.

³⁴ Ibid, 71.

³⁵ Killian Jr., 122-123.

³⁶ “National Security Council Action No. 1846, approved January 24, 1958” in “Intercontinental Ballistic Missile (ICBM) and Intermediate Range Ballistic Missile (IRBM) Programs.” Central Intelligence Agency, Electronic Reading Room. Accessed 24 October 2017.

just before midnight on 1 February.³⁷ The United States now had a satellite in space. In comparison to *Sputnik*, *Explorer* carried much more sophisticated scientific equipment, including the capability of measuring cosmic rays beyond the atmosphere and sending the data back to earth via two radio transmitters.³⁸ Equipped with this powerful technology, *Explorer* discovered the Van Allen radiation belts shortly after its launch in early 1958.³⁹

On 4 February 1958, Eisenhower appointed a PSAC panel led by Nobel laureate Edward Purcell to recommend the outlines of a space program and organization for the United States.⁴⁰ Until then, the National Advisory Committee for Aeronautics (NACA) accounted for the closest the United States had to a space agency. Created in 1915 under President Woodrow Wilson, NACA worked on aircraft and missiles for four decades.⁴¹ But NACA's resourcefulness declined by the late-1950s as the armed forces circumscribed rocket research from NACA. Each service pushed for independent space and satellite projects. In December 1957, the Army submitted a fifteen-year space program that forecasted lunar reconnaissance and two-man satellites by 1962, manned lunar circumnavigations by 1963, and a fifty-man moon base by 1971.⁴² In contrast, the Air Force worked towards manned spaceflight with the X-15 program, while the Navy lobbied for the use of satellites for navigation, weather, and fleet communication.⁴³ During Senate hearings in January of 1958, each service tried to convince the administration of its own capability in space by calling for recognition of their services'

³⁷ Divine, 86.

³⁸ Ibid, 96.

³⁹ Ibid.

⁴⁰ Killian Jr., 122.

⁴¹ Mieczkowski, 171.

⁴² McDougall, 166.

⁴³ Ibid.

respective skills and contributions to the military.⁴⁴ It seemed as though space policy would be the next victim for inter-service rivalry.

In March of 1958, the PSAC released its essay, “Introduction to Outer Space,” which outlined four reasons why space technology and exploration were important: man’s compelling urge to explore and to discover, military security, national prestige, and science. Eisenhower received the paper with great enthusiasm, proclaiming “I found this to be so informative and interesting that I wish to share it with all the people of America, and indeed with all the people of the earth,” and urged the media to widely distribute the essay throughout the country.⁴⁵ The PSAC discounted most calls from the armed services for crash space programmes, but granted the military the importance of reconnaissance, meteorology, and communications. These military functions, however, raised questions concerning international law such as where space began, the legality of over-flight, and the regulation of space vehicles.⁴⁶ These concerns suggested the wisdom of a civilian agency free from the bureaucracy, free to draw talent from inside and outside the government, and possessing contractual powers in the private sector.⁴⁷

But *who* would have control over space exploration for the United States? A new space agency took time to organize and required legislative approval from Congress, NACA did not have relief from the civil service, and the new Advanced Research Projects Agency’s ties to the Army would give spaceflight a military and not civilian character.⁴⁸ The PSAC report thus favoured the establishment of a new space exploration agency by legislation and concluded that the major goals of spaceflight were scientific

⁴⁴ Ibid.

⁴⁵ Killian Jr., 124; Mieczkowski, 152.

⁴⁶ McDougall, 172

⁴⁷ Ibid.

⁴⁸ Ibid, 171.

and political, not military: “the psychological impact of the Russian satellites suggests that the U.S. cannot afford to have a dangerous rival outdo it in a field which has so firmly caught, and is likely to continue to hold, the imagination of mankind.”⁴⁹ The new American organization would leave military satellites to the Pentagon, but otherwise would be lodged in a transparent civilian agency as a contrast to Soviet secrecy.⁵⁰ NACA was the preferred choice because of its experience as a research organization, but the organization was too small and lacked access to the rocket and space engineers available in the Army, Navy, and Air Force. As such, the PSAC report recommended that NACA’s basic laws be amended to tap into military resources, to provide for a single director appointed by the President, free NACA from the civil service, coordinate with the Department of Defense, and permit contracts with private industry.⁵¹

Eisenhower instructed Killian to draft a bill by 27 March 1958, hoping to avoid delay and recommendations for drastic changes by the Department of Defense.⁵² Entitled the National Aeronautics and Space Act of 1958, the legislation stressed that the purposes of space activities included the expansion of human knowledge, improvement of aircraft and space vehicles, preserving the United States as a leader in science, promoting cooperation with other nations, and utilizing American scientific and engineering resources for exploration.⁵³ However, the Act’s most important provision was the establishment of the National Aeronautics and Space Agency (NASA) as an independent office of the government to replace the ailing NACA governing board and the chartering of two parallel space programs with split responsibilities between NASA and the

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid, 172.

⁵² Killian Jr., 135.

⁵³ McDougall, 172.

Department of Defense: the former devoted to research and a civilian application of science and the latter devoted to military applications.⁵⁴

The National Aeronautics and Space Act encountered stiff resistance in the Democrat-controlled Congress. Many felt that “agency” sounded too weak for an organization with enormous responsibilities in science. Eileen Galloway, a prominent researcher, suggested changing “agency” to “administration” and appointed an administrator to head the new organization.⁵⁵ The bill found support in the House of Representatives, but Senate Majority Leader Johnson wanted to ensure that the bill did not impose limitations on the Department of Defense’s fulfilment of military needs in space.⁵⁶ Johnson submitted a revised version of the bill that created a National Aeronautics and Space Council, a powerful policy-making and coordinating group to advise the administrator of NASA.⁵⁷ Both Eisenhower and Killian opposed the suggestion because the committee would be too powerful, be composed of cabinet officers, and could try to dictate policy to him.⁵⁸ Eisenhower broke the Congressional deadlock by inviting Johnson to the White House on 7 July 1958 to settle their differences. Eisenhower worried that the NASC placed too many demands on the president, but Johnson allayed Eisenhower’s concerns with the suggestion that he [Eisenhower] chair the proposed Space Council.⁵⁹ Eisenhower agreed with Johnson’s proposal. In the ensuing compromise the Space Council would be modelled after the NSC with the president as chairman, while the Council itself would include nine members,

⁵⁴ Ibid.

⁵⁵ Mieczkowski, 172.

⁵⁶ Killian Jr., 136.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Divine, 147.

with three from outside the government.⁶⁰ The final Senate conference bill agreed to give NASA control over aeronautics and space activities sponsored by the American government except for defense and military operations, which would be preserved in the Department of Defense.⁶¹ Eisenhower signed the bill on 29 July 1958. On 1 October 1958, NACA would disappear and remerge as the National Aeronautics and Space Administration.⁶² By the end of 1960, NASA had launched thirty-six earth satellites and four deep space probes, whereas the Soviet Union had only one satellite orbiting the earth and one orbiting the sun.⁶³

For many observers, the lengthy time it took for the United States to develop a satellite indicated the extent to which inter-service rivalry within the Department of Defense hampered national security initiatives. As expressed by a 1957 issue of *U.S. News and World Report*, “many blame the U.S. missile lag on arguments over which service should develop which missile.”⁶⁴ Since the announcement of the American satellite program in 1955 the Army, Air Force, and Navy conducted their own independent rocketry research, and each service wanted pre-eminence in developing rocketry.⁶⁵ An ideal solution for the satellite program was to marry the Army’s Redstone rocket to the Navy’s scientific instruments. Doing so would have allowed the United States to launch a satellite sooner, but Army-Navy rivalry nullified this proposition.⁶⁶ Despite the administration’s designating of the Navy’s Project *Vanguard* as the United

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² McDougall, 176.

⁶³ Eisenhower, 260.

⁶⁴ Ibid, 87.

⁶⁵ Mieczkowski, 45.

⁶⁶ Ibid.

States' first satellite, the development of separate ICBMs, IRBMs, and satellite projects continued in the Army and the Air Force, leading to duplication and waste.

The reorganization of the Pentagon and the Department of Defense were always on Eisenhower's presidential agenda. Eisenhower often complained to Defense Secretary McElroy and Deputy Secretary Donald Quarles that the burdensome and chaotic organization of the Pentagon hampered the Defense Department's ability to respond to military threats:

The Joint Chiefs of Staff [uniformed military advisors to the president, the Defense Department, and the NSC] as it now exists is too complicated to work in warfare when minutes will be as precious as months have been in the past. Readiness for anticipated emergency demands that the peacetime organization be made so simple and clear that decision and control are free of delays and obstructions.⁶⁷

Eisenhower frequently derided the Joint Chiefs for their obsession over missiles and their acting as spokesmen for their own branches rather than providing the Secretary of Defense with concrete advice and recommendations for action.⁶⁸ As per his defense policy, the "New Look," Eisenhower sought the reorganization of the Department of Defense to strengthen civilian control in the Pentagon, eliminate cumbersome boards and committees, provide mechanisms for better strategic planning, and strengthen the position of the Secretary of Defense vis-à-vis the Joint Chiefs of Staff.⁶⁹ Eisenhower did not push the issue further because he did not want to arouse the opposition of the Pentagon before the 1956 presidential election.

The fiasco over *Sputnik* provided Eisenhower with the ideal opportunity to pursue his long-awaited reorganization plans for the Pentagon. During a meeting with Secretary

⁶⁷ Eisenhower, *Waging Peace*, 245.

⁶⁸ Divine, 87.

⁶⁹ Dwight D. Eisenhower, *Mandate for Change, 1953-1956* (Garden City, NY: Doubleday & Company Inc., 1963), 447.

of Defense McElroy, Eisenhower outlined three primary considerations that he expected to see in the reformation plan. The first called for unified commands that provided the Secretary of Defense with full control over the Army, Navy, and Air Force. The second called for “fiscal flexibility” that would give the Secretary of Defense the power to allocate funds to the three services directly rather than through Congress. The third proposed the creation of a new position of Director of Defense Research and Engineering, a nationally recognized leader in science to supervise all weapons, engineering, and scientific developments within the Department of Defense to eliminate duplication and waste.⁷⁰ On 1 April 1958, McElroy instructed Charles A. Coolidge, head of an advisory group on organizational affairs in the Pentagon, to submit the Department of Defense recommendations to Congress.⁷¹ The House of Representatives, however, opposed the reorganization plan because the second clause on “fiscal flexibility” violated the powers of the purse afforded to Congress via the American Constitution.⁷² Eisenhower responded with a letter to Congress dated 3 April 1958, in which he justified his reorganization on the grounds that atomic warfare required efficiency and expedient decision-making. Eisenhower altered his proposal to ask only that the Secretary of Defense be given limited authority in the allocation of funds between the services in special cases, but the House stood firm in its opposition.⁷³ Democratic Representative Carl Vinson from Georgia accused Eisenhower of attempting to establish a “Prussian-

⁷⁰ Divine, 87.

⁷¹ Ibid, 129.

⁷² Ibid, 131.

⁷³ Ibid.

style” general staff, and reminded the president that “space ships, satellites, and guided missiles cannot abrogate the Constitution.”⁷⁴

Undaunted by Congressional opposition, Eisenhower brought the issue of defense reorganization public. After 20 April, the president devoted nearly every public appearance address to the issue of defense reorganization in order to build public support, making speeches to the United States Chamber of Commerce, the Advertising Council, and at a Republican National Committee dinner honouring Republican members of Congress.⁷⁵ In a far more ambitious undertaking, Eisenhower wrote to more than one hundred business executives of companies benefitting from defense contracts to bring pressure on Congress.⁷⁶ The executives responded overwhelmingly in favour of Eisenhower’s proposals and bombarded Congress and the armed service committees with letters expressing their endorsement of defense reorganization.⁷⁷ Regardless, the Democrat-controlled House of Representatives continued to oppose the bill. On 22 May, the House Armed Services Committee submitted a draft bill that gave Congress the power to veto any attempt by the Secretary of Defense to shift combat functions within the Pentagon, gave the Secretary of Defense the ability to exercise authority only through the secretaries of each department, and gave the Joint Chiefs the ability to express their views directly to Congress and thus bypass the defense secretary entirely.⁷⁸ Eisenhower dismissed the third alteration as “legalized insubordination” of the defense secretary to the Joint Chiefs and Congress.⁷⁹

⁷⁴ Ibid; Eisenhower, *Waging Peace*, 250.

⁷⁵ Divine, 134.

⁷⁶ Eisenhower, *Waging Peace*, 252.

⁷⁷ Divine, 134-5.

⁷⁸ Ibid, 137; Eisenhower, *Waging Peace*, 252.

⁷⁹ Eisenhower, *Waging Peace*, 252.

The political atmosphere of the Senate proved much more receptive to Eisenhower's policy preferences. The key figure in the senate, Democratic Senator Stuart Symington of Missouri, supported Eisenhower's bill, and even rejected the advances of Democratic senators to lead the opposition.⁸⁰ Eisenhower also secured the support of Senate Minority Leader Republican William Knowland, who convinced Eisenhower to concede on Vinson's third amendment in order to persuade the Senate to remove the first two amendments from the bill.⁸¹ In particular, the Senate Committee recommended a change to the wording of the bill, from "separately administered" services to "separately organized," which removed the three services from the chain of command and allowed the defense secretary to issue orders without consulting each service in return for the secretary's acceptance of a congressional veto over fund allocations.⁸² With the support of the Joint Chiefs and Secretary McElroy, the modified bill passed both Houses unanimously, and Eisenhower signed the bill into law on 6 August 1958.⁸³ The final draft maintained the "legalized subordination" proposition and the Congressional veto over transfers of combat functions, but did provide the Secretary of Defense with the power to transfer, reassign, abolish, and/or consolidate functions to increase efficiency.⁸⁴ As a compromise to Eisenhower's concession on an enlarged the Joint Staff, the bill provided the President with the authority to establish and control unified and/or specified commands for military missions via the Secretary of Defense and also established a

⁸⁰ Divine, 139.

⁸¹ Ibid, 140.

⁸² Ibid, 141.

⁸³ Ibid, 141-142.

⁸⁴ Eisenhower, *Waging Peace*, 252-253.

Director of Defense Research and Engineering to eliminate waste and duplication amongst the various armed services.⁸⁵

The final, and perhaps the most controversial, of Eisenhower's responses to *Sputnik* was the National Education Defense Act. For politicians, scientists, and the media *Sputnik* exposed the scientific ineptitudes of the American school system vis-à-vis the Soviet Union. American physicists in particular lamented what was perceived to be a "science gap" between the United States and the Soviet Union that benefited the latter, although the physicists exaggerated much of their concerns. Three studies conducted between 1955 and 1961 by the NSF, MIT, and the National Research Council indicated that the Soviet Union trained two to three times as many scientists and engineers as the United States, with 75% of graduating students in the Soviet Union majoring in science in comparison to 25% of American students.⁸⁶ The Soviet Union also had higher numbers of graduates than the United States: 95,000 to 57,000.⁸⁷ William Burton, publisher of *Encyclopaedia Britannica*, visited the Soviet Union and concluded that Soviet schools, libraries, and laboratories posed a greater threat to the United States than nuclear weapons.⁸⁸ Director of the American Institute of Physics Elmer Hutchinson told *Newsweek* that "the entire American way of life could well be doomed to rapid extinction unless the nation's scientific reserves were expanded quickly."⁸⁹ Worse yet, by the time of *Sputnik* a demographic time bomb threatened the American education system. The

⁸⁵ Ibid.

⁸⁶ The two researchers involved, engineers and Soviet expiates Nicholas DeWitt and Alexander Korol, inflated some of the statistics to highlight greater discrepancies between the American and Soviet educational systems to lobby the American government for greater science funding; David Kaiser, "The Physics of Spin: Sputnik Politics and American Physicists in the 1950s," *Social Research: An International Quarterly* 73, no. 4 (Winter 2006): 1231.

⁸⁷ Ibid

⁸⁸ Mieczkowski, 173.

⁸⁹ Kaiser, 1235.

baby boom generation that entered the elementary school system in the late 1940s began to enter high school in the late 1950s and were projected to enter higher education by the early to mid-1960s.⁹⁰ The perceived deficiencies of the American education system required immediate federal attention.

As a fiscal conservative, Eisenhower generally opposed federal intrusion in the education system. But Eisenhower was not a rigid ideologue and often modified his stances on education when necessary. For example, during his first term Eisenhower authorized a four-year, \$325 million program for federal aid to construct new schools, but the bill died in Congress.⁹¹ In 1956, Eisenhower appointed professor Lawrence G. Derthick as Commissioner of Education and head of the Office of Education. A subsequent Office of Education task force recommended the expansion and improvement of graduate programs to increase the number of college teachers, an improved guidance and counselling program to identify promising talent, and college-level programs to train technicians.⁹² Although the aforementioned proposals were far too “radical” to receive official endorsement, they did indicate a growing awareness within the administration of the need for increased federal attention towards education.⁹³

After *Sputnik*, Eisenhower consulted with his colleagues from the PSAC to determine an appropriate response to the “science gap” between the United States and the Soviet Union. Dr. Land recommended that the administration find ways to inspire an equal vigour and enthusiasm for science amongst the nation’s youth and the scientific

⁹⁰ Wayne J. Urban, *More Than Science and Sputnik: The National Defense Education Act of 1958* (Tuscaloosa, Alabama: University of Alabama Press, 2010), 75-76.

⁹¹ Mieczkowski, 159.

⁹² Ibid.

⁹³ Ibid.

community, who at the present felt isolated.⁹⁴ Dr. Rabi concurred, speculating that the Soviet Union “could pass us swiftly just as in a period of twenty to thirty years we caught up with Europe and left Western Europe behind.”⁹⁵ Likewise, Killian urged the modernization and invigoration of science education in public schools.⁹⁶ Eisenhower agreed wholeheartedly. Like his advisors, the president hoped that the crisis of confidence in the American education system facilitated by *Sputnik* would encourage people to take an active interest in modern science.⁹⁷

On several occasions Eisenhower invited Killian to meetings with his brother, Milton Eisenhower, president of Johns Hopkins, in the mansion to discuss the various educational proposals. Killian recalls that in the discussions that followed both Eisenhower and himself expressed concern that the euphoria from *Sputnik* would overstress science and engineering to the neglect of other subjects.⁹⁸ Killian felt that public schools often emphasized athletics and the humanities in the curriculum to the neglect of science and engineering.⁹⁹ Eisenhower understood this concern. He cautioned against a purely scientific and technological response to the Soviet feat, noting, “specialized programs must not be allowed to upset the important balance needed in a well-rounded educational program which must insure programs in the teaching of all areas of learning.”¹⁰⁰ Educational reform had to elevate science to a position on par with other subjects in the curriculum, not provide science with an exclusive position of superiority. Eisenhower’s overall plan involved moderate and short-term infusions of

⁹⁴ Goodpaster, “Memorandum of the Conference with the President, 15 October 1957.”

⁹⁵ Ibid.

⁹⁶ Killian Jr., 194.

⁹⁷ Goodpaster, “Memorandum of the Conference with the President, 15 October 1957.”

⁹⁸ Killian Jr., 194.

⁹⁹ Ibid.

¹⁰⁰ Divine, 92.

federal funds into the education system in order to assure the citizenry that concrete steps were being taken to correct the “science gap.”¹⁰¹

Eisenhower assigned Elliot Richardson, the Assistant Secretary of Health, Education, and Welfare (HEW), to develop an administrative proposal for educational reforms. On 27 January 1958, Eisenhower submitted the draft Educational Development Act of 1958 to the House of Representatives, which “recommended certain emergency Federal actions to encourage and assist greater effort in specific areas of national concern.”¹⁰² The bill earmarked \$140 billion for the National Science Foundation (NSF) to support basic research and \$1 billion for HEW to create 40,000 scholarships for high-aptitude high school graduates as an incentive to attend college.¹⁰³ It also expanded the NSF’s efforts to improve the quality of science teaching in schools with new textbooks, laboratory equipment, and supplies, as well as matching funds to assist underperforming schools.¹⁰⁴ Eisenhower emphasized the temporary nature of the bill, hoping that the bill would “produce a growing supply of highly trained manpower – scientists, teachers, and engineers” to match the Soviet challenge.¹⁰⁵

Two days later, Democrats Senator Lister Hill and Congressman Carl Elliott submitted their own educational bill, which replicated the administration’s bill except for a provision that provided for substantial student loans through a long-term program for educational improvement.¹⁰⁶ Eisenhower opposed the increase in loans, scholarships, and the elimination of the ‘needs’ test and insisted on making education available to an able

¹⁰¹ Urban, 81.

¹⁰² Ibid.

¹⁰³ Divine, 93.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid, 89.

student while encouraging a degree of self-reliance.¹⁰⁷ Compromise between the administration and Congress resulted in a final draft bill that stipulated 90% federal funding and 10% institutional funding that granted loans and provided that institutions could borrow their 10% contributions from the federal government if they could not raise sufficient funds.¹⁰⁸ The final act appropriated \$1 billion to education, with \$295 million earmarked for a federal loan program based on financial need, and an additional \$59.4 million to “national defense scholarships” to encourage students to pursue teaching and universities to develop graduate programs.¹⁰⁹ Although the final bill did not reflect the totality of Eisenhower’s proposals, he nonetheless accepted the bill as an acceptable compromise. On 2 September 1958, Eisenhower signed the National Defense Education Act into law.¹¹⁰ By the mid-1960s, approximately 5,500 students received graduate fellowships to become college teachers, 350,000 undergraduates and graduates borrowed \$225,000 in federal aid, and 1,450 educational institutions participated in the NDEA’s student loan program.¹¹¹ President Kennedy renewed the NDEA in 1961, which shattered Eisenhower’s hopes for a temporary federal solution to the United States’ education problems.¹¹²

Dwight D. Eisenhower’s reputation as President of the United States has undergone a remarkable shift in scholarly reputation. Previously derided as an ineffectual president, contemporary academics now herald Eisenhower for his resourcefulness, moderation, and wisdom. The *Sputnik* Crisis of 1957 and Washington’s responses thereto are further

¹⁰⁷ Eisenhower, *Waging Peace*, 243.

¹⁰⁸ Urban, 97.

¹⁰⁹ Mieczkowski, 160.

¹¹⁰ Ibid.

¹¹¹ Ibid, 162-163.

¹¹² Ibid.

testaments to Eisenhower's effectiveness as president. Recognizing the psychological ramifications of *Sputnik* on American morale, Eisenhower consulted with scientists, engineers, and academics in the President's Scientific Advisory Committee (PSAC) in order to rationally assess *Sputnik's* implications on national security and to implement the appropriate policy changes necessary to reassert American resolve during the Cold War. As such, Eisenhower and the PSAC accelerated American ICBM and satellite programs to end the Soviet monopoly in space and established the National Aeronautics and Space Administration (NASA) to coordinate future civilian applications of science in space. To reduce inter-service rivalry over funding, Eisenhower strengthened the position of the Defense Secretary vis-à-vis the Joint Chiefs of Staff over resource allocation and also established a director of research and development to eliminate waste and duplication between the services. Finally, the administration infused federal funding into post-secondary education via the National Defense Education Act to stimulate enthusiasm for science and engineering in American schools. An examination into Eisenhower's responses to *Sputnik* contributes to the scholarly re-evaluation of Eisenhower's legacy as president and cements Eisenhower's place in historiography as a proactive and competent executive during times of national distress.

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