Introduction

> We must be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.
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> —Eisenhower's Farewell Address, 17 January 1961

President Dwight D. Eisenhower's farewell address is most remembered for its warning against the unwarranted influence of the "military-industrial complex." Eisenhower issued a second warning, since overshadowed by the first, that is seldom quoted and even less understood. The departing president cautioned Americans that the growing influence of government-sponsored scientific research risked making public policy the "captive of a scientific-technological elite." This second warning, combined with an eloquent expression of his disappointment over the lack of progress on disarmament, suggests Eisenhower's frustration with his inability to conclude a nuclear test-ban agreement and the forces that opposed his efforts. This book examines the test-ban debate within the Eisenhower administration, focusing on the centrality of scientific counsel for determining the course that the president pursued. It argues that Eisenhower, for part of his presidency, allowed his policy on nuclear testing to become the captive of those who controlled the presentation of scientific advice within his administration.

Eisenhower's efforts to reach a nuclear test-ban accord with the Soviet Union continue to be a source of historical dispute. According to a leading Eisenhower revisionist, biographer Stephen Ambrose, the test ban became the major goal of Eisenhower's presidency. In Ambrose's view, the test ban for Eisenhower was to be "the capstone to his half century of public service, his greatest memorial, his final and most lasting gift to his country."[1] Subsequent analyses of the test ban, however, question Eisenhower's commitment to reach an agreement with the Soviet Union.

The most recent full-length examination of the test-ban debate during the Eisenhower presidency concludes that "the administration never seriously pursued an accord to ban nuclear testing."[2] Two conflicting truths suggest an explanation for such contradictory conclusions. Eisenhower spoke passionately, publicly and privately, about banning nuclear tests, but often moved indecisively and inflexibly toward a goal he ultimately failed to achieve. Yet the explanation for such sharply contrasting conclusions lies deeper than the differences between words and actions and between desires and decisions. Scholars examining the test-ban debate within the Eisenhower administration encounter a confused historical record rife with official government secrecy, clever public dissembling, bitter personal conflicts, vigorous bureaucratic infighting, sharp partisan politics, tense allied negotiations, and complex technical problems that often defied scientific understanding and solutions. Participant's efforts to settle old scores and recast their own role in the most favorable circumstances have only clouded rather than clarified the historical record.

Initial accounts of the pursuit of a test-ban agreement assess only the final years of the Eisenhower presidency, minimize Eisenhower's interest in a ban, and fault the president for his poor leadership on the issue.[3] Since the mid-1970s, three important studies of the test-ban debate throughout the Eisenhower presidency have appeared, each differing from this study in scope, analysis, and interpretation. Robert A. Divine assesses Eisenhower's commitment to a test ban more favorably, yet he too faults the president's leadership for failing to achieve the results that he desired. Writing when many of the salient documents on the test-ban issue remained classified, Divine speculates, correctly as it turns out, that Eisenhower considered pursuing a test ban much earlier in his presidency. With only limited access to the relevant documents, Divine focuses on the public test-ban debate, providing what remains as its most comprehensive account.[4]

Richard G. Hewlett and Jack M. Holl's official history of the Atomic Energy Commission (AEC) during the Eisenhower administration views Eisenhower's leadership and his interest in the test ban even more favorably. According to them, Eisenhower developed a deep moral commitment to reach a verifiable test-ban agreement as a step toward his "cardinal objective" of nuclear disarmament. In their view, the complex issues related to inspection and control prevented Eisenhower from achieving his cherished goal. Their important study, with access to many documents that remain classified, uncovers a great deal about the internal test-ban debate. The test ban, however, is just one of many atomic energy

issues that they explore. As a result, they are not able to focus sharply on the test-ban issue or venture far beyond those scientists affiliated with the AEC.[5]

Martha Smith-Norris, in her doctoral thesis and an essay in *Diplomatic History*, reverses the historiographical trend portraying Eisenhower as genuinely committed to the pursuit of a test ban. She faults Eisenhower for failing to resolve the bureaucratic divisions within his administration or to use his popularity to build public and congressional support for a comprehensive test ban. In her view, Eisenhower did not take a decisive stand on the issue because he never seriously desired a test ban. Smith-Norris's study, which draws upon a substantial number of British sources, underscores the international implications of the Eisenhower administration's test policy, focusing on its impact on relations with Great Britain and Japan. Her conclusions, however, often rely perilously upon contemporary British interpretations of the secretive debate within the Eisenhower administration.[6]

This study combines extensive research in government archival sources with several untapped collections of private papers to shed new light on the test-ban debate. While recent scholarship questions the sincerity of Eisenhower's efforts to ban nuclear testing, this study concludes that Eisenhower since 1954 was favorably inclined to accept a test-ban agreement.[7] Several contributing factors explain why Eisenhower's decisions, which were at times deferred, tentative, or both, often failed to support an objective that he strongly desired, but failed to achieve. Eisenhower's leadership style, which sought a consensus among his closest advisors, inhibited him from overruling the strong internal opposition to a test ban. The absence of pressures from Congress, key allies, and the American people for a test ban permitted the administration to delay continuously its policy decisions. Eisenhower's mistrust of the Soviet Union made him unwilling to accept a test-ban agreement that did not include adequate safeguards against Soviet evasion. Most importantly, Eisenhower's understandable confusion with the complex technical issues, such as the seismic detection of underground testing, compelled him to rely heavily on his scientific counsel, which was strictly limited to those who opposed a test ban for the first half of his presidency.

As one or more of these factors faded in significance, others rose at critical junctures during internal policy debates and international negotiations to inhibit the president's actions and frustrate his goals. In sum, they combine to explain why Eisenhower failed to secure an accord to cease testing and consequently why he felt compelled to confess in his

farewell address that he ended his presidency "with a definite sense of disappointment."[8] For Eisenhower, the test ban was an essential first step toward significant progress on disarmament and an initial move toward a lasting peace.

While examining the test-ban debate over the course of the Eisenhower presidency, this study also illuminates several broader themes. To place the debate in the proper context, this study explores Eisenhower's attempts to grapple with the implications of nuclear weapons, which inspired his efforts at arms control.[9] Previous scholarship focuses on Eisenhower's "Chance for Peace" speech and his "Atoms for Peace" and "Open Skies" proposals during his first term as his main arms control initiatives.[10] Less emphasized are the secret considerations in 1954 and 1956 of a test ban. An examination of those episodes reveals that Eisenhower in his first term had already begun to consider a test ban as a means of controlling the nuclear arms race.[11]

Much of the scholarship on the test-ban debate identifies a lack of presidential leadership as a principal reason for the administration's failure to achieve a test-ban agreement.[12] This study examines and evaluates Eisenhower's leadership and decision-making style. Although revisionists might be correct to portray the president as a strong, decisive leader in times of crises, this image is often inaccurate on less pressing matters, as this study reveals, where Eisenhower sought a consensus among his most trusted advisors.[13] For him, the testing of nuclear weapons that fueled the spiraling arms race was a central anxiety, but never a crisis. Despite his own inclinations, he allowed his administration to remain divided over disarmament in general, and a test ban specifically, for much of his presidency.[14]

Yet contrary to a recent post-revisionist interpretation, Eisenhower did act increasingly without a consensus beginning in 1956.[15] His first decisions provided goals rather than actions, but in 1958 Eisenhower overruled the staunch internal opposition to separate a test ban from general disarmament, to unilaterally declare a test moratorium, and to pursue negotiations toward a comprehensive test ban. His willingness to overrule his dissenting advisors on these occasions suggests that Eisenhower's tentative leadership provides an appropriate explanation of the failure to pursue a test-ban agreement only for the first four years of his presidency. Moreover, this study reveals that Eisenhower's hesitance to seek a ban during the first part of his presidency was at times less a reflection of his leadership style than it was an illustration of Eisenhower's reliance upon a narrow range of scientific advice.

Previous studies identify the powerful opposition of key figures within the AEC and the Department of Defense (DOD) as a second prominent reason why the Eisenhower administration failed to conclude a test-ban accord.[16] This study examines the bureaucratic opposition in greater depth, exploring the hidden tactics of test-ban opponents within the administration to convince Eisenhower, Congress, and the American public that a test cessation would perilously threatened the nation's security. Lewis L. Strauss, Eisenhower's powerful AEC chairman, was the administration's most vehement test-ban opponent. Strauss effectively filtered until 1957 the technical advice on nuclear matters that reached the president. A staunch cold warrior, Strauss was convinced that the nation's survival depended upon its ability to maintain its nuclear superiority through continuous testing. He successfully delayed serious negotiations toward a test-ban agreement by presenting powerful scientific conclusions to Eisenhower that undermined the president's reasons for pursuing a ban. Strauss repeatedly insisted that atmospheric testing did not pose any significant health hazards. Moreover, the AEC chairman often depicted scientists that argued to the contrary as dupes of a worldwide communist propaganda campaign to cease testing. Most importantly, Strauss maintained that that there was no foolproof means to enforce a test-ban agreement. In his view, the Soviet Union would certainly clandestinely test during a ban and surpass the United States in advanced nuclear weaponry.

Such arguments succeeded for several years in delaying Eisenhower's pursuit of a test ban because they drew upon the president's mistrust of the Soviet Union. Eisenhower shared Strauss's fear that the Soviet Union would secretly continue testing. Yet contrary to Strauss and other test-ban opponents, the president did not consider a foolproof monitoring and inspection system as a prerequisite for signing a test-ban treaty. Eisenhower was willing to accept a system that provided sufficient controls and safeguards to deter the Soviet Union from attempting to test clandestinely. Nevertheless, the president's willingness to accept an accord to cease testing hinged upon a technical assessment that stated a high probability of detecting Soviet nuclear detonations. As much as Eisenhower worried about the lasting implications of the arms race, these concerns never completely overcame his immediate fear of Soviet deceitfulness.

Although Eisenhower was slow to realize Strauss's monopolization of scientific advice, he increasingly expressed apprehension about the grow-

ing influence of the AEC's scientists on his public policy. Frustrated that the AEC's incessant demands for additional testing conflicted with his efforts to slow the arms race, Eisenhower lamented that his "statecraft was becoming a prisoner of scientists." Curiously, he ignored calls for the use of scientific expertise from outside of the administration until the launch of *Sputnik*.[17]

The creation in 1957 of a Special Assistant for Science and Technology and the formation of the President's Science Advisory Committee (PSAC) became crucial for broadening the range of the president's scientific counsel. Both of Eisenhower's science advisors, James R. Killian, Jr. and George B. Kistiakowsky, as well as a vast majority of PSAC members shared Eisenhower's desire for a test ban. PSAC served as a powerful counterweight to Strauss and the test-ban opponents within the AEC, convincing Eisenhower that a test-ban agreement would be strategically advantageous and technically feasible to enforce. The powerful technical arguments of this new body of scientific expertise finally provided the president with the confidence to act upon his inclination to overrule Strauss's arguments and pursue a test-ban agreement.

Although PSAC propelled Eisenhower to open talks with the nuclear powers toward a test-cessation agreement, negotiations quickly bogged down over several political and technical disputes. In fact, the technical questions were so complex that some of the nation's top science advisors reversed their positions on the test-ban issue as the debate raged within the administration and the scientific community.[18] With the issues confounding the leading scientists in the country, it is not surprising that Eisenhower became confused on the matters and relied heavily upon his technical counsel.

The source of scientific advice was the central variable that explained Eisenhower's decisions during his second term in office and a critical factor for understanding the evolution of his approach to a test ban throughout his presidency. The central theme of this study is Eisenhower's dependence on scientific advice and the pivotal role of scientists inside and outside of government in shaping the test-ban debate. Although several previous accounts address Eisenhower's approach to science at specific stages and his relationship with his science advisors, none focuses on the implications of these issues for the test-ban debate and traces them throughout his presidency.[19]

Finally, and to a lesser extent, this study also examines the influence of foreign and domestic public opinion, domestic politics, and alliance diplomacy on the course and the outcome of the test-ban debate. None of

these ever became the prevailing factor that barred a test-ban agreement, but each served to reinforce more dominant factors to inhibit Eisenhower's actions. Although public opinion in Great Britain strongly favored a test ban, the British government privately opposed a cessation of testing for much of the Eisenhower presidency.[20] The British sought to prevent a ban until Congress amended the Atomic Energy Act in 1958 to allow greater sharing of nuclear information. The tension between the domestic political pressure in favor of a test ban and the private opposition of the British government strained the Anglo-American relationship. Private British opposition to a test cessation, however, was not as decisive as Eisenhower once suggested in blocking an earlier test-ban initiative.[21]

Although public pressure to cease testing was lower in the United States than in Great Britain, public opinion and domestic politics in the United States still played an important role in the test-ban debate.[22] Democrat Adlai Stevenson made the test ban a dominant theme of his presidential campaign in 1956, prompting the Eisenhower administration to respond with heated rhetoric, clever arguments, and disingenuous statements that further confused the American people about the issues and concealed from them Eisenhower's own commitment to pursue a test-ban agreement. Criticism of the administration's national security posture and its handling of complicated scientific matters after the launch of *Sputnik* led to increased skepticism in the Democratic-controlled Congress about the ability to verify a test ban. Domestic politics thus played an important role in the congressional hearings in 1960 that cast doubt on the Senate's willingness to ratify a comprehensive test-ban agreement as Eisenhower prepared for the Paris summit and the test-ban discussions at Geneva reached a critical stage.

At the close of his presidency, these final factors increased the challenges confronting Eisenhower, but did not prove decisive for his inability to reach a test ban. In the end, Eisenhower's mistrust of the Soviet Union and the complex technical matters related to detection undermined an accord to cease testing. Despite their efforts, negotiators failed to agree on an inspection and control system that eased both the Soviet Union's fears of foreign intrusion and Eisenhower's concerns with Soviet evasion. The technical uncertainties of the adequate control system defied agreed upon scientific solutions. The lack of conclusive scientific data on these complex issues prompted many scientists on both sides of the debate to use their scholarly credentials to advance exaggerated political arguments rather than sober technical assessments. After the scientific debate on an inspection and control system spread from the White House to

Congress to the American public, Eisenhower became deeply troubled that scientists could not agree.

As the test ban talks stalled and the end of his presidency approached, Eisenhower lamented that his science advisors had failed him. Eisenhower clearly assigned partial blame for his failure to make significant progress on disarmament to the opposition of powerful scientists. It is one of the great ironies of the Eisenhower presidency that the twentieth century president with the greatest amount of military experience became so dependent upon scientific advice to determine a major component of his national security strategy. Eisenhower painfully and belatedly realized that scientific expertise often trumped military experience in the nuclear age.