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The Soviet *Sputniks* and American Fears about the Militarization of Outer Space

Tom Wilkinson

Abstract: The publication of the U.S. Department of Defense's 2020 Defense Space Strategy and its recognition of outer space as a "distinct warfighting domain," along with recent media discussion regarding the militarization of outer space by powers such as Russia and China, seems to portend a new era of outer space relations. The so-called "final frontier" that has for years been treated as a realm of scientific and civilian exploration with a spirit of cooperation appears poised to transform into a domain of military competition. The early fears centered around three key themes: the possible terrestrial impact of rocket technology capable of launching a satellite, the unknown applications of satellite technology, and the assumption that the launch of the Sputniks had opened up a new frontier, one that the United States had failed to reach at the time of the Soviet achievements. An examination of these themes and how Americans discussed the Sputniks reveals that while the domain of space looks incredibly different in the twenty-first century, discussion surrounding the militarization of outer space has a longer history that could offer insights for contemporary discussion. Keywords: Sputnik, Cold War history, space history, Dwight D. Eisenhower, disarmament

Since the end of the Cold War, outer space has typically been understood as a place of international science and cooperation. The *International Space Station*, continuously occupied since 2000, stands as one of the most obvious symbols of this cooperative spirit. Yet the 2020s is shaping up to

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Tom Wilkinson is a graduate student based in the Department of History at the University of Auckland. Currently, he is working on a PhD examining the varying ways in which the Space Race was constructed from 1957 to the mid-1960s. Previously, he has written a master of arts thesis entitled "Who Wants to Go to the Moon Anyway?: American Responses to the Launch of Sputnik, 1957" and an honor's dissertation on the early years of Radio Free Europe and Radio Liberty exploring the establishment of these stations and their time as potential broadcasters of "gray propaganda."

be a watershed moment for human activity in outer space. Increasing tensions and antagonism between the great powers appears set to extend into humanity's "final frontier." Antisatellite weapons tests, the United States' establishment of a national space power strategy, and even alleged Russian plans to deploy nuclear weapons in planetary orbit all seem to portend a new era of military competition, one in which outer space becomes heavily militarized. While it may be tempting to view this contemporary moment as a new development, the military implications of this frontier have been discussed since the first satellite launches of 1957.

This article provides a historical overview of some of the fears and anxieties that emerged at the dawn of the Space Age, when the United States was understood to be behind in matters of outer space technology and policy. Broadly speaking, the fears that emerged in the post-*Sputnik* period centered on three key themes: the possible terrestrial impact of advanced rocket technology, the unknown applications of satellite technology, and the assumption that the launch of the *Sputniks* had opened a new frontier in the wider Cold War that the United States seemed ill-equipped to deal with. While the administration of Dwight D. Eisenhower sought to allay some of these fears and resolve some of the tensions that emerged, the perspectives offered throughout late 1957 demonstrate alternative paths left unfollowed.

Debate over the impact of new Soviet technologies played out across the media landscape of 1950s America. Throughout this article, the author focuses predominantly on analysis and commentary appearing in print culture; magazines such as the defense weekly *Aviation Week*, popular culture and current affairs magazine *Life*, and discussion from various newspapers—the *Atlanta Constitution*, the *New York Times*, the *Los Angeles Times*, the *Chicago Daily Tribune*, and the *Washington Post and Times Herald*—including articles, editorials, and letters to the editor throughout the United States. These sources provide insight into media and popular perceptions of the early years of the Space Race, and the construction of "outer space" as a new domain of military competition in the minds of American media and the public.

Focusing on these sources, rather than those produced through American governmental or defense institutions, reveals a multiplicity of perspectives and narratives. While this article predominantly examines sources that contributed to the well-documented "master narrative" of a crisis in the post-*Sputnik* period, it is important to note that there was not one unified narrative as is commonly remembered.¹ Americans who wrote to their local newspapers or national magazines drew attention to other aspects of the *Sputnik* launches or contemporary events to explain or justify American "loss" on this front, or to push back against the wider narrative of a crisis through their support of the Eisenhower administration or admonishment of other commentators for what they perceived to be unfair critiques.² This complexity in the past reminds us to seek out multiple perspectives on the threat posed by the militarization in the present. Furthermore, it is worth noting that scholars often characterize these sources as limited in terms of the media and especially the public's understandings of the early Space Race, American progress in military missile programs, and general knowledge regarding outer space science. Historian Walter McDougall notes that regarding matters of outer space, "The public learned as if from a rookie professor, who kept one chapter ahead in the textbook. The uses to which satellites might be put went unreported, the real connections between satellite and missile forces were lost on the reporters, the fact that Sputnik was far more an engineering triumph than a scientific one was an especially fateful misapprehension."³ Responses from the Americans who wrote to media outlets can reflect and highlight these misapprehensions, which contributed to the wider concern of a "Sputnik crisis." While these concerns may not be factually accurate, they offer a snapshot of the mindset expressed by these individual Americans at critical junctures.

Throughout the early years of the Cold War, the Soviet Union had often been perceived as a technological backwater compared to the United States. However, with the launch of Sputnik 1 in October of 1957, the Communist superpower seemed to prove this assumption wrong. The Soviet launches of Sputnik 1 and Sputnik 2 led to a sense of crisis in the United States, with various media outlets lambasting the Eisenhower administration, the military establishment, and even the American people and their apparent complacency as they sought to explain the Soviet achievement or what many perceived as an American loss. These events came to be called the "Sputnik crisis" and has seen much written on it already.⁴ While the crisis itself was in many ways created and propagated by American media outlets, it should not be understated just how seriously some individuals within the American upper echelon viewed the Soviet achievement. One dialogue cited in Aviation Week reported that Budget Director Percival Brundage dismissed Sputnik's importance. Brundage stated the satellite would be forgotten within six months, to which former minister to Luxembourg, Perle Mesta, responded "and in six months we may all be dead."5 The danger that many assigned to the Soviet success was clear-on some level, it posed an existential threat to the United States. By no means was this fear universal, nor was it necessarily an accurate reflection of the military reality, but it was a widely held perspective among members of the public, media commentators, and even congressional officials. Those Americans who were concerned by the Sputniks offered varied perspectives on the exact nature of the threat: was it the power of Soviet rocketry, the implications of satellite technology, or the emergence of outer space as an entirely new domain of conflict?

Fear of the Recognizable: Rocket Technologies

For many Americans, *Sputnik 1* (and a month later, *Sputnik 2*) quickly came to symbolize Soviet military capabilities. Media outlets made it abundantly clear that *Sputnik 1* was not just a scientific success for the Soviets; it was a military success as well. The successful launching of a satellite more than 500 miles above the planet's surface required a powerful rocket—one that could also func-

tion as an intercontinental ballistic missile (ICBM).⁶ The *Chicago Daily Tribune* used the satellite's launch as evidence of the existence of a Russian ICBM, as did the *Los Angeles Times.*⁷ Ralph McGill, the editor of the *Atlanta Constitu-tion*, went even further in his front page column on 7 October 1957, when he directly compared the status of the American and Russian missile programs—and found the American three-stage rocket program, crucial in his view to an ICBM, to be lacking.⁸ *Sputnik 1*'s launch proved, seemingly, that there existed a serious technological gap between the two superpowers.

To the public's knowledge, the United States did not possess a functional ICBM, while the Russians did. Ralph McGill quoted an unnamed "missile man" about the implications of *Sputnik* and its rocket: "It scares the —— out of me."⁹ An unnamed official from Project Vanguard—the American satellite program underway at this time—was cited by another article in the *Atlanta Constitution*, claiming that "if they can do that [launch a satellite] they can drop ICBMs on us."¹⁰ With many articles of this sort situated on the front page of newspapers throughout the nation, American audiences were bombarded in the days following *Sputnik 1* by claims that the Russians could drop the bomb at any time. Within 48 hours of *Sputnik 1*'s launch, American media had positioned the satellite as evidence of Soviet missile superiority.

While mainstream media commentators spent the days after Sputnik 1's launch vacillating between articles that were near hysterical with fear, and articles that actually praised the Soviet Union for its achievement, defense commentators promptly demanded a response from the government. Perhaps the most vocal was Robert Hotz, editor of defense magazine Aviation Week. To Hotz, the launch of Sputnik made it clear that the two superpowers were engaged in a technical competition, and in October 1957 the Soviet Union had matched, if not overtaken, the United States in this "technological race."11 Hotz echoed the calls already emerging from political figures for a congressional investigation into the state of America's military missile programs, writing, "They [the American people] have a right to find out why a nation with our vastly superior scientific, economic and military potential is being at the very least equaled and perhaps being surpassed by a country that less than two decades ago couldn't even play in the same scientific ball park."12 Such an investigation, he believed, was critical for the "future safety and security of this nation and the rest of the free world."13 Furthermore, Hotz demanded a major reappraisal of American research, development, and production programs by the nation's top political leaders, particularly because Sputnik 1 came after "a long chain of Russian surprises in the development of atomic-airpower weapons ranging all the way from jet bombers, supersonic fighters, both intermediate and intercontinental ballistic missiles, and hydrogen warheads."14 The launch of Sputnik 1, dismissed by some in Eisenhower's administration as a scientific bauble or a matter of little consequence, seemed instead to Hotz a serious military and scientific challenge.

Politicians in the following weeks also emphasized the apparent disparity marked by *Sputnik 1*'s launch. Senator Styles Bridges (R-NH) outlined the significance of the satellite launch: "The mere fact that the Soviets have been successful in launching their satellite indicates clearly that they possess the same type of technical knowledge that is required to project an intercontinental ballistic missile. Military implications of such technical knowledge in the hands of a potential enemy to the U.S. are tremendous in scope."¹⁵ Senator Richard Russell (D-GA) held a similar stance, telling Congress two weeks earlier, "We now know beyond a doubt that the Russians have the ultimate weapons—a long-range missile capable of delivering atomic and hydrogen explosives across continents and oceans. "¹⁶ The launch of *Sputnik 1* proved, it seemed, that the Soviet Union could strike the United States at any time. America's relative geographical isolation, which had served to insulate the mainland from the severity of conflict wrought upon Europe in the twentieth century's major wars, could no longer be relied upon for defense.

Adding to these anxieties over rocket technology were boastful comments made by Soviet premier Nikita Khrushchev to reporters. In an interview given to New York Times reporter James Reston, Khrushchev stated that if a "rocket war" broke out, the United States-and, by association, capitalism-would be destroyed.¹⁷ While many Americans would ordinarily dismiss Khrushchev's claims as bluster, comments from military officials during this time served to reinforce his assertion. Captain H. L. Miller of the U.S. Navy, for example, confirmed to media that all American and allied bases in Western Europe were under threat from Soviet missile attack.¹⁸ While Miller made it clear that the United States possessed countermeasures at this point-tactical bomber strikes launched from American aircraft carriers, for example-not every media outlet noted this fact.¹⁹ Meanwhile, General Thomas S. Power, the head of Strategic Air Command, warned an Air Force Association audience that the Soviet Union would launch a devastating attack as soon as the nation possessed a sizable missile stockpile, something observers believed would occur in late 1960.²⁰ Power's speech drew heavily on Cold Warrior mentality, noting that the United States was the "major obstacle" to the Soviet Union and its leaderships' goals. Therefore, logic dictated the Soviet Union would act to remove said obstacle as soon as "they believe they have attained—the capability of doing so with impunity."21

The emergence of the alleged "missile gap," reinforced through media interpretation of contemporary defense studies, contributed further to these fears of Soviet military domination. The "Gaither Report," for example, confirmed Miller's and Power's claims. Calling the evaluation "grim," Claude Witze of *Aviation Week* told readers that this report stated American Strategic Air Command (SAC) bases throughout the world—the cornerstone of American nuclear policy—stood at risk of being wiped out by Soviet missiles until 1960.²² A defense study undertaken by the Rand Corporation, reported on by *Aviation Week* and cited in the *Chicago Daily Tribune*, confirmed even the worst possible fears.²³ A defense system against Soviet missiles would not be feasible for some time, unless the priority was assigned solely to American strategic bomber bases. To defend American cities would simply cost too much.²⁴ The opening of the Space Age, or rather, the successful use of a large Soviet missile to orbit *Sputnik 1*, had apparently altered the military balance of the Cold War.

Finally, inflaming these fears was the culture of secrecy surrounding developments on both Soviet and American rocket technologies. In particular, the realization that Sputnik 1's launch did not mark the first successful test of a Soviet ICBM shook public faith in the Eisenhower administration. One editorial in the Atlanta Constitution noted that the Soviets had successfully tested a missile a few weeks prior, but that fact had been minimized in the United States.²⁵ Writers at Aviation Week, meanwhile, took it upon themselves to reveal that not only had the Eisenhower administration been fully aware of Soviet missile development, but they had taken little action to counter it. On 21 October 1957, the magazine published a long-form story detailing the existence of American radar stations in Turkey which, for two years, had been tracking Russian missile launches.²⁶ Editor Robert Hotz was furious, claiming the existence of these stations was not a secret to anybody except "the vast bulk of American people who are most vitally affected by it."27 In a period when many had assumed the Soviet Union was far behind the United States, the revelation that they had not been-and the government had known this-was shocking. In fact, Aviation Week claimed that the Soviet Union had possessed ICBM technologies since at least 1956.28 Thus, it appeared that the Soviet Union possessed the ultimate weapon, while the United States lacked it: Sputnik directly challenged American national security. Other American media outlets that ran with this story in the following days were similarly angered: "But the essential fact, which the forthcoming congressional investigation is certain to establish, is simply this: the Administration reacted to hard intelligence of Soviet technological progress, especially in the missile field, by sharply cutting back on our own efforts in that field."29 In light of this revelation, Aviation Week and others propagated a firm belief that not only had there been a race underway in this sphere, but that the United States had willingly allowed itself to be overtaken. Worse, the Eisenhower administration had done so unbeknownst to the American people.

Meanwhile, Americans had little-to-no accurate knowledge of what was occurring in their own military missile programs. Prior to *Sputnik 1*'s launch, missile launches were (supposed to be) classified affairs. Despite this, missile launch days from the Patrick Air Force Base Cape Canaveral complex were treated as an open secret. As Evert Clark noted for *Aviation Week*, "There is no hot war, and talk is looser than it might be in other circumstances."³⁰ Americans regularly turned out to watch test launches of the Atlas I ICBM and other missiles, while businesses in the region capitalized on the excitement of test launches using names like "Missile Bar B-Q" or "Sea Missile Motel."³¹ However, members of the public and the mainstream media were limited in the information they could access, thus having little way of knowing whether a test was successful or not—evident in media articles that called tests "failures" in direct contradiction of official statements.³² This culture of secrecy excluded American audiences

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from having a full understanding of the state of their nation's missile programs, driving some of this fear over Soviet developments.

Among the various congressional investigations following *Sputnik*'s launch was an investigation by the House Government Information Subcommittee, chaired by John Moss (D-CA), which found that the White House had maintained a policy of complete secrecy on information regarding the nation's missile programs. In his testimony to the subcommittee, Dr. Clifford Furnas, former assistant secretary of defense for research and development, revealed his belief that the extreme secrecy was unnecessary. In his eyes, more information would have meant that "the American people would have had more confidence" in their own missile programs.³³ Congressman Moss agreed with this view, noting that the policy of secrecy meant "the American people are to be denied the facts affecting national survival."³⁴ Although the issue of national security was cited in response to the *Sputniks*, for these current and former government officials, national security was not strengthened through secrecy but instead weakened. They believed if the American people had a greater understanding of their own missile programs their fears of Soviet superiority could be assuaged.

One solution promoted in the immediate post-*Sputnik* period was, then, rather simple: provide the American people with more information on the state of the nation's missile programs. Going forward, it was decreed that more information regarding America's missile programs would be disseminated so that the nation was aware of its supposed deficiencies vis-à-vis the Soviet Union. The Department of Defense initially altered its security policies to allow more openness within weeks of *Sputnik 1* and started to provide the American people with (some) results of missile tests.³⁵ Likewise, Murray Snyder, assistant secretary of defense for public affairs, promised that there would be a greater loosening of information, including an invite to the American press to witness the launch of "the 20-inch earth satellite planned for March."³⁶ The openness of the American space program relative to the Soviet Union's would later be touted as one of the program's major strengths, but at this stage it was a prompt and simple counter to the military crisis gripping the minds of the nation.

This gap in knowledge between the general public and members of the Eisenhower administration was undoubtedly one of the greatest drivers of some post-*Sputnik* anxieties and can help explain some of the fear over the terrestrial impact of the *Sputniks*. Media understandings of the Soviet program, which combined military missile testing and the satellite program, treated the American *Vanguard* program in the same way. Eisenhower had been quick to emphasize that this was not the case but met limited success. In his first press conference following the Soviet success, the long history of the American satellite program and its inception as a project for the International Geophysical Year was outlined. Included was the simple fact that America's missile program and its satellite program had been intentionally separated from one another early in the process, for fear that merging the two would actually be detrimental

to scientific goals as well as military progress.³⁷ Following the launch of *Sputnik* 2, Eisenhower continued to emphasize that Earth satellites themselves were in no way a reflection of military strength; "Earth satellites, in themselves, have no direct present effect upon the nation's security."³⁸ However, this is not to say he completely dismissed concerns over military strength; the president acknowl-edged, as he had in his first press conference, that the thrust capacity required to launch a satellite to orbit did help indicate the state of Soviet military technology.³⁹ America's lack of a satellite, however, did not represent the state of its military missile program.

On historical reflection, Eisenhower's perspectives can be seen to be well-justified. In a report to Eisenhower dated 28 December 1957, James Killian Jr., special assistant to the president for science and technology, updated the president on the American satellite and missile programs, and his conclusions found little to worry about. Killian believed that American missile development was proceeding at a satisfactory pace, even going so far as to call U.S. progress in the missile field "impressive."40 While the United States was likely behind the Soviet Union at the time, Killian noted that this was largely "because we started much later and not because of inferior technology."41 The "missile gap" also ceased to be an issue in a relatively short period, similar in some ways to the earlier "bomber gap" of the mid-1950s. By 1963, American officials were asking "Where did the missile gap go?," reaching the conclusion that while a serious missile gap had been a possible future phenomenon, it had never become established in the ways feared.⁴² A 1981 retrospective study, furthermore, concluded that the "missile gap" debate was in part "the product of uncertainty and disagreement concerning Soviet deployment activities and intentions that spilled over from the intelligence community into the public arena."43

Fear of the New: Unknown Applications of Satellite Technology

The threat that seemed to be posed by Soviet space achievements was not, however, limited to terrestrial uses of the launch vehicle. Satellites themselves were a new and relatively unfamiliar technology, and the applications to which they could be put generated fears of their own. Media attention to the *Sputniks* often heightened these fears, in part due to the limitations in knowledge of both reporters and readers. One particular misinterpretation of the science made its way to *Aviation Week*. A letter to the magazine, from an Alfred Machado Jr. of New Bedford, Massachusetts, outlined its author's worries. Machado believed that Russian satellites could be used to broadcast "transmutation beams," which would cause U.S. nuclear materials to decay, leaving America's atomic arsenal "no more explosive than lumps of iron."⁴⁴ Although later letters to *Aviation Week* made clear that other readers considered his fears overblown and that he misunderstood the science he cited, Machado's letter reflected the fear of the unknown that had gripped some Americans.

These anxieties over the unknown often reflected the lived experiences of

Americans, many of whom held memories of the attack on Pearl Harbor in 1941. The prospect of a new and more devastating surprise attack, launched from outer space, was a common fear throughout letters to the media and in editorials themselves. One editorial in the Los Angeles Times inferred that a "new Pearl Harbor" had already occurred.⁴⁵ The satellite, as well as the Soviet ICBM, may not have been a "tables-turning" event but its psychological impact was the same.⁴⁶ James A. Broadhead, a reader of the Los Angeles Times, believed that Sputnik proved Soviet missile claims accurate, and thus the prospect of a missile attack with hydrogen-bomb warheads existed. Broadhead noted that if the Soviets had one missile, they could have many, meaning "a mass attack on many targets might well make possible another Pearl Harbor, only a million times worse."47 Sylvan Gotshal, a reader of the New York Times, penned a letter to that outlet in which he argued that Sputnik was "more dangerous in its implications for the future of our country than ever was Pearl Harbor."48 For Gotshal, Sputnik was one of the greatest threats to the United States to ever exist. Gotshal justified his argument by noting that Sputnik was not just a hit to American prestige; a satellite of its kind could be easily fitted with an atomic warhead.⁴⁹

Atomic attacks from outer space were not the only feared use of satellite technology. Allen Klein, a reader of the *Washington Post and Times Herald*, perhaps presciently in the context of the twenty-first century, questioned what could happen if the Soviet Union outfitted its satellites for espionage.⁵⁰ Even worse, reflecting once more the unknown nature of space science, what if the Soviet Union equipped future satellites for chemical warfare?⁵¹ Fear even gripped some political figures. Congressman James T. Patterson (R-CT) predicted that Russian satellites would be used against the United States as soon as it was possible. Patterson not only believed that future satellites could be used as weapons platforms, but that a whole raft of measures could be deployed from space.⁵² Patterson told an American Legion Post audience that "Sputnik V" would weigh more than a ton, include television receivers and transmitters, and be able to jam radars, radios, and televisions.⁵³ Furthermore, such a satellite would be able to broadcast Soviet propaganda anywhere in the world—a direct threat to one leg of America's "containment" policy.

These public discussions over the possibilities of satellite technology also reveal that even in the wake of the Soviet launches, there were believed to be multiple paths forward. Gotshal, for example, pushed for a militarized response to outer space technologies, arguing that the United States ought to "throw off the bonds of lethargy and complacency" and urgently develop satellite and missile technologies to rebalance the situation.⁵⁴ Klein, however, urged that efforts to achieve global disarmament should be increased.⁵⁵ A similar attitude was held by one Michael Caroe, who wrote to the *New York Times.* Caroe was fearful of how satellites, and the science they acquired, could be used to further the development of military technologies such as the ICBM. Much like Klein, he appealed to the idea of international cooperation, calling for "strict control of this newly acquired use of the heavens."⁵⁶ This divide in public opinion re-

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flects discussions already ongoing in media commentary and the political world at this time. The necessity of reevaluating and reorganizing American defense efforts, advocated for by individuals like Robert Hotz, occurred simultaneously with American efforts to push through stronger disarmament legislation at the United Nations. In particular, a new American proposal had already called for international control of "outer space missiles" and urged the peaceful use of space.⁵⁷

Military officials also voiced their concerns over the potential applications of satellite technology. Brigadier General Robert M. Woodward, the civil defense director for Illinois, believed satellites such as *Sputnik* would provide military advantages to the Soviet Union and enhance future targeting.⁵⁸ In his eyes, "The soviet man made satellite has thrust back the curtain of a previous obscure future to reveal a new panorama of dangers and the accompanying need for heightened vigilance on the home front."⁵⁹ Retired Major General John L. Homer shared such a view. Homer believed that *Sputnik* signified the beginning of a new era in which it would be impossible to maintain defense secrets.⁶⁰ The Soviet satellite would nullify all American defense weapons (except missiles), while also being able to survey the entire planet multiple times a day.⁶¹ To these men, the launch of *Sputnik 1* made the United States more vulnerable to attack than ever before.

Outer Space: A New Frontier

Finally, the launch of the *Sputniks* in late 1957 led to the prompt acknowledgment of outer space as a new frontier. The military balance of the Cold War seemed to be tipping against the United States with the opening of a new domain, and fear abounded over what Communist domination of this region could mean. In early 1958, North American Aviation ran an advertisement in *Aviation Week* that reflected the rhetoric politicians and military officials were deploying:

Today, our soldiers and sailors and airmen stand guard on the ramparts of the free world, but at the same time our civilian and military scientists and engineers are hard at work building our defenses on a new fronter. That frontier is Outer Space. There, someday soon, will lie the power to keep the world free—or enslave it.⁶²

The Space Age had, it seemed, created a situation in which outer space itself was a new frontier, a region where American military strength would be required in order "to keep the world free."⁶³ This reinforcement of Cold War rhetoric—that is, only a world in which the United States controlled the new frontier was a world in which freedom reigned—was a common theme in discussion of "control" over outer space. In Congress, for example, Senator Lyndon Johnson (D-TX) opened 1958 stating that the human race had "multiplied its capabilities to infinity," but "the exploitation of these capabilities by men of selfish purpose holds the awful threat of a world in subjugation.... The mastery

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of such capabilities by men wholly dedicated to freedom presents instead, the prospect of a world at last liberated from tyranny, liberated in fact from fear of war."⁶⁴ Military officials were already putting forward plans on how to best exploit this new frontier.

Outer space and its use as a new domain of conflict offered various possibilities for tactical advantages or disadvantages. One possibility advanced was the use of the Moon as a new "high ground" in case of terrestrial conflict. Such a view was promoted by Brigadier General Homer Bousher, deputy for research and development in the U.S. Air Force Directorate of Development. The Moon had a number of benefits, he pointed out: low gravity could allow warheads to be "catapulted" toward the planet without large rockets, but crucially it provided a retaliation base "of unequaled advantage."⁶⁵ If the United States had a lunar base, for example, the Soviet Union would either have to target the Moon first—giving 48 hours of detection and preparation—or strike the continental United States, only to receive massive destruction 48 hours later.⁶⁶ Another perspective, advanced by the retired Lieutenant General James M. Gavin, was that within eight years, the era of missiles and satellites

will have shrunk the world to such an extent that militarily the earth itself will be a tactical theatre. Manned space flight will be here. We will truly live in a "balance of terror." The very nature of strategy will change, leaving the realm of physical combat to go into full-scale psychological warfare and leaving the earth's environment to go into space.⁶⁷

Gavin believed that from 1965 onwards, space-based weapons would threaten operations on land, while defending against reconnaissance would become increasingly challenging. As such, terrestrial military policy would have to change—for example, the use of railroads, tunnels, and canyons for missile launches to prevent targeting from space-based weapons.⁶⁸

While both men planned for conflict in this new realm, this did not mean they necessarily believed outer space needed to be militarized. Much like the debate occurring in the pages of American newspapers, both military officials saw the militarization of space as a last resort. Bousher, on the one hand, made clear that an armed space force would only be necessary if international agreement to keep space peaceful could not be reached, and even then it would be necessary solely as part of a deterrent force.⁶⁹ Gavin, on the other, took a much more apocalyptic view:

If this planet is to remain inhabitable by man, a space program must be developed under the United Nations. We should establish as a matter of priority a United States space command directly under the Department of Defense and put it at the service of the United Nations. We should ask that our allies and the Soviets also contribute to such a U.N. program. If the exploration and control of space can be carried out under the auspices of the United Nations, we will not have to concern ourselves with space war. Instead, the exploration of space can be conducted for the peaceful purposes of mankind. 70

The emergence of a new frontier in space led to prompt debates on the roles of each Armed Service and their suitability to control the new technologies associated with outer space. Each of the branches of the Armed Services were already engaged in their own missile research, and the close relationship between missiles and rockets meant each branch could possess the means to achieve outer space milestones. Pre-Sputnik, questions already existed over which branch should actually oversee these technologies. Post-Sputnik, this competition was cited on multiple occasions as damaging to the overarching field of American research and development. According to Senator Lyndon Johnson, "It may be true that this country was in no race to produce the satellite. But certainly the Armed Services were engaged in a race with each other to control the guided missile. And we cannot afford many more races like that."71 At this stage, Johnson had seemingly accepted the administration's insistence regarding the lack of a space race, but still recognized the uncertainties that had characterized American missile research. In the House of Representatives, another Texan Democrat, George McMahon, stated regarding inter-Service competition:

The sad fact is that today the armed services appear to be more interested in out-doing each other than in getting ahead of the Soviet Union. \ldots First, the Army came to us and said they could do the (satellite) job best. Then the Navy came. We left the administrative decision to the Defense Department. But it appears there was little spirit of cooperation. \ldots There appear to be far more compelling reasons now for a merger of the Air Force and the Army than there ever were for separating them.⁷²

The most concise explanation of the problems with American missile development was provided by *Time* magazine three weeks after *Sputnik 1*'s launch. According to Time, missiles had upset the balance among American Armed Services, with each branch seeing specific applications for them. The Army saw missiles as artillery; the Air Force, as unmanned planes; the Navy, as modifications of carrier planes and battleship guns.⁷³ As such, each branch involved itself in missile development, with the result being duplicate programs. American military branches were now competing for the same brainpower, researching and utilizing the same technology, and keeping secrets from one another. By 1950, there were more than 40 separate missiles being developed among the three branches, many for the same purpose.⁷⁴ While several of these projects were canceled in the early years of the decade by Secretary of Defense George C. Marshall, the problem had reemerged by 1957. Time pointed to the Navy's Sidewinder missile and the Air Force's Falcon as an example: both missiles were designed for air-to-air combat, with similar operational distance.75 Time noted that allowing these rivalries to continue was the easy way out; instead, hard

choices needed to be made.⁷⁶ Yet despite all the critiques, both the Air Force and the Army continued to jostle for prime position.

Both branches believed that they ought to possess the powers of missile and space technology and were willing to use the fears stoked by assertions of a "space race" to justify their claims to new weapons and greater funding. For example, Lieutenant General Clarence S. Irvine of the U.S. Air Force argued that the Air Force needed both manned aircraft and missiles in its inventory, citing the "mixed forces" concept as the right path forward. Irvine noted "the mixed forces concept is correct because we cannot sacrifice clearly proved systems for relatively unproved ones."77 In a further attempt to assert its responsibility for the new field of aerospace matters, Air Force officials even directed the establishment of a "Directorate of Astronautics," to which they would assign their own space research, including the proposed Pied Piper surveillance satellite.⁷⁸ This initiative quickly ran afoul of the Department of Defense, and within a week an order was issued to withdraw the establishment of this group.⁷⁹ Despite this, Assistant Secretary of Air Force for Research and Development Richard Horner tried to plead his branch's case to the Senate Preparedness Subcommittee, telling them that a small investment could quickly turn Air Force facilities to "the problems of conquering space."80

However, the Army refused to back down, pressing forward with their own claim to be the primary space agency. Following Sputnik 1's launch, Army experts openly criticized the Eisenhower administration. They claimed that their missile teams were unfairly overlooked when they already had rockets that could have been used to "launch a crude satellite in order to win the 'race' with Russia."81 Two days after the Air Force had announced its Directorate of Astronautics, deputy commander of the Army Ballistic Missile Agency (ABMA) Brigadier General J. A. Barclay told a Washington audience that "we are now at the threshold of what Dr. Wernher von Braun has termed man's greatest adventure-the exploration of outer space. The scientific importance of satellite projects is uppermost in our minds at the moment. But larger carriers, propelled into orbit by larger rockets, have tremendous military significance also."82 In Barclay's mind, his team was the one best positioned for space exploration, although unlike Air Force officials he argued that scientific knowledge was the critical mission of ABMA. Further enhancing the Army's argument was the claim of officials that "he who controls the land will control the space above it," highlighting the perceived importance of the ground-based military branch.83 Predictably, the Air Force took umbrage to this statement, with Lieutenant General Irvine calling it a "twist of words" and that control of air, or space, was necessary to protect the land below.⁸⁴ While these two branches continued to argue over which was better equipped for this new frontier, they functioned under the key assumption that military outer space technology would fall under their purview. Newly appointed Secretary of Defense Neil McElroy had other plans.

McElroy's solution, supported by government policy groups, was a relatively

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straightforward one. He would take the responsibility for research and development away from each branch of the military, instead placing it with a new agency within the Department of Defense: the Advanced Research Projects Agency (ARPA).⁸⁵ ARPA's role at the time, as outlined in Aviation Week, was thus: "AR-PA's function will be to proceed with research and development of weapon systems and military requirements for an indefinite period, and space projects authorized by the President for one year."86 By the time this first year was up, it was expected that Congress would have formulated a wider space policy and either established an independent space agency, or vested those powers in an already-existing agency.⁸⁷ McElroy and the groups that supported this proposal believed this was the appropriate longer-term response to both the Space Race, and the inter-Service competition, that they understood to be underway. Taking military research and development away from the disparate branches was hoped to put an end to the squabbles between branches over funding and jurisdiction for space-related technologies; instead, these new technologies would be developed by ARPA and assigned to the appropriate branches as the agency saw fit. Likewise, this gave the Eisenhower administration time to organize its own, clearer policy regarding outer space, and whether power should be vested in a military or civilian agency. In this process, the administration possibly delayed the "arms race" for weaponized satellites and space stations that many feared could emerge, but also paved the way for the transformation of the National Advisory Committee for Aeronautics into the National Aeronautical and Space Administration later that same year.

This did not mean the Eisenhower administration ignored the value that militarized applications of outer space technology could bring. Rather, Eisenhower's approach was to ensure that the American space program would be primarily civilian in nature. It was his belief that doing so "will emphasize the concern of our Nation that outer space be devoted to peaceful and scientific purposes."⁸⁸ During his tenure, the United States still pursued military reconnaissance satellites such as the Corona program, in part due to concerns over Lockheed U-2 overflights of the Soviet Union and the potential for an international incident (a fear that did come true with the downing of pilot Gary Powers in 1960).⁸⁹ However, with the establishment of NASA and this attempt to ensure that the bulk of the American space program would appear civilian and scientific in nature, Eisenhower managed to avoid engaging in a full-scale competition for the weaponized satellites and space stations that members of the public had feared.

Conclusion

The launch of the first Soviet *Sputniks* in 1957 caused a great deal of anxiety among members of the American public. The satellites stood as a symbol of a technical brilliance that many had assumed the Soviet Union incapable of at that particular moment, and America's apparent inability to launch a satellite before, or even shortly after, the first *Sputnik* led to a great deal of speculation on just what this new technology could mean. Americans imbued the *Sputniks* with fear and caused them to ask questions. What did their launch mean for Soviet missile technology and America's relative position in the military competition of the Cold War? Could satellites be utilized as weapons of war, in what ways, and how could this be prevented? How was the United States supposed to engage in this entirely new frontier: an arms race, or disarmament? While the Eisenhower administration implemented some policies that sought to allay the ongoing crisis and prevent the nation from undertaking an immediate outer space "arms race," many of the underlying worries were not resolved through solutions offered by military commentators or members of the public.

Apprehension over the militarization of outer space was not solely an American concern, nor did it dissipate in the 1950s. The launch of the first TIROS satellite in 1960, intended by NASA as a weather observation satellite, drew prompt criticism from the Soviet Union for the clarity of images that could suggest a secondary use as a military observation satellite.⁹⁰ While the two superpowers were able to work together on the Outer Space Treaty of 1967 to ban weapons of mass destruction, this does not necessarily prevent other space-based military activities. Evidence suggests, for example, that the 1974 Soviet space station *Salyut 3* had a "defensive cannon" installed in order to intercept any American spacecraft if necessary.⁹¹ Furthermore, a recent report from the *New York Times* suggested that Russia plans to deploy nuclear weapons in space in flagrant violation of this agreement.⁹² The modern reemergence of this discussion can thus be understood as a continuation of an older question: To what extent will we allow outer space to become a military domain?

Modern public-facing discussion regarding the militarization of outer space has not yet reached the same level of "crisis" commentary that we see following the launch of the *Sputniks* in 1957. A Pew Research Center poll from 2023 found that only 44 percent of Americans believed that the United States would have engaged in military conflict in outer space by the year 2073.⁹³ Readers' comments left on recent articles from the *New York Times* regarding Russian deployment of a nuclear antisatellite weapons system demonstrate more concern over domestic politics and the leaking of classified information from members of Congress than the predictions of space-based weaponry—a departure from the praise outlets such as *Aviation Week* received following their own revelations of classified material in 1957.⁹⁴ While popular opinion may not reflect the same concerns as the post-*Sputnik* period, institutions with greater knowledge of the situation are beginning to raise the alarm.

In some ways, the concerns being voiced today are reminiscent of those expressed in the 1950s. The U.S. Department of Defense's 2020 *Defense Space Strategy* addressed the challenges posed by orbital-based weapons and the deployment of nuclear weapons technologies in space. Likewise, concern over the technical advancements of potential adversaries is a reminder of the feared "missile gap" and technical prowess of a post-*Sputnik* Soviet Union, while apprehension over the public's level of knowledge remains a factor that policy makers

have to contend with.⁹⁵ The Center for Strategic and International Studies, in their 2023 *Space Assessment Threat*, concluded that counterspace weapons have become part of a broader tool kit for national militaries and are already on the way to being integrated into wider military planning.⁹⁶ The responses advocated in the past may not necessarily be fitting for the modern context, but examining them and the diverse perspectives offered in 1957 can help inform the conversation about militarization today.

Certainly, the domain of outer space today is significantly more complex than that of 1957. Twenty-first century societies, economies, and militaries rely heavily on satellite technologies developed over the course of the Space Race. The outright militarization of space as feared in 1957, such as nuclear launch sites on the Moon or orbital weapons platforms targeting the Earth, never quite came to pass. At the same time, proposals for ensuring lasting peace in space, such as Bousher's hopes for an international agreement on disarmament or Gavin's vestment of power in the United Nations, have also failed to appear. While outer space has to some degree already been militarized through the use and deployment of surveillance satellites, as one example, it has primarily functioned as a realm of scientific, commercial, communicative, and predominantly peaceful activities. The proliferation of national space programs, as well as of private space companies, has created an environment fraught with non-military targets, whose accidental or intentional destruction comes with great risk to all of us reliant upon them. In this age, then, it is perhaps more critical than ever to explore alternative ways to contain or limit the militarization of outer space, and to do so requires examining all perspectives possible. We successfully avoided the worst of the post-Sputnik fears decades ago; it would be a mistake to make them a reality today.

Endnotes

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