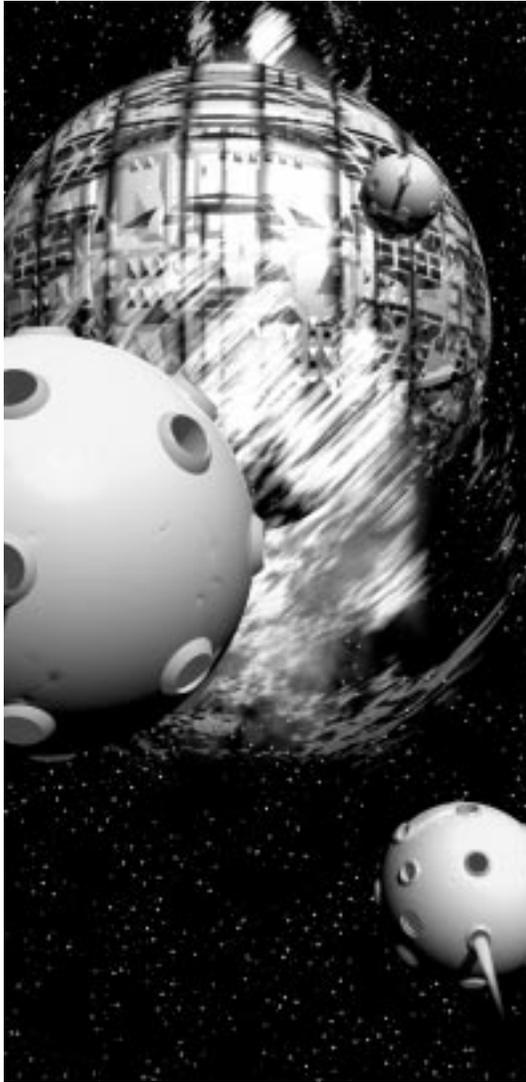


The Weaponization of Space

It Doesn't Happen in a Vacuum

MAJ HOWARD D. BELOTE, USAF*



IN THE LATE 1950s, President Dwight D. Eisenhower set United States space policy on a vector it has sustained to this day. Despite the public outcry over the Soviet Union's launching of *Sputnik I*, Eisenhower crafted a space program that provided the national leadership with what it craved—information—while limiting government expenditures and preserving civilian control of national assets. Realizing that “first and foremost, space was about spying, not because the United States was aggressive, but because the USSR was secretive,” the president finessed “a policy subtle in conception and delicate in execution. The United States [became] the champion of ‘freedom of space,’ . . . ‘space for peace’ and ‘space for all mankind,’ a thread in American policy that stemmed from traditional idealism and respect for the rule of law on the one hand and from Cold War competition for prestige on the other.”¹ Quite simply, Eisenhower deeply believed that space without weapons was in his country's self-interest.

Almost immediately, however, the fledgling Air Force began to look for ways to extend its institutional prerogatives into the new medium. Although early attempts to come to grips with space focused mainly on nuts-and-bolts issues of international law and the limits of sovereignty,² airmen soon developed visions of space that were at odds with those of their political leaders. In fact, Air Force leaders pushed for dual-use research and development programs for space—witness the Dyna-Soar program cancelled by Secretary of Defense Robert S. McNamara—and

*I would like to thank three former and current faculty members of the School of Advanced Airpower Studies for their helpful criticism of early drafts of this article: Lt Col Roy F. Houchin II, who also suggested the article's format, Dr. Harold R. Winton, and Dr. David R. Mets.

some of them soon called for the weaponization of space.³

By no means did all airmen rush to advocate deployment of weapons in space. To the Air Force's credit, the service fostered a lively and wide-ranging space debate in the pages of its professional journals. Indeed, articles in the Spring 1999 *Airpower Journal* by Gen Thomas Moorman, Maj Shawn Rife, and Sen. Bob Smith (R-N.H.) show that the debate is alive and well.⁴ A small but representative sample of that debate—five articles published between 1968 and 1998 in *Airpower Journal* and its predecessor, *Air University Review*—sketches the arguments of both proponents and opponents of space weaponization and provides a historical foundation for continued discussion. Significantly, the context in which the articles were written, their common themes, and their respective strengths and weaknesses suggest a viable space policy for the near future.

Early Steps toward Weaponization

In late 1968, Maj Gen Oris B. Johnson, commander of the 9th Aerospace Defense Division, wrote an article that helped open the door for weaponization advocates. In "Space: Today's Front Line of Defense," General Johnson emphasized the "continuity of the air/space medium" and the inevitable nature of the Air Force's growth into space. "Both physically and conceptually," he argued, "the extension of military systems beyond the lower atmosphere has turned out to be natural and evolutionary."⁵ The general then struck a chord that would resonate in the space debate for the next 20 years: "The demonstrated space accomplishments of the U.S.S.R., together with their avowed intention of ruling the world, leave no room for complacency. Regardless of our intent and desire to use space for peaceful purposes, the fact remains that the Soviets are deeply committed to their space program and that it is conducted under military management."⁶ Although General Johnson acknowledged Amer-

ica's avowed intention for peace in space, he used Soviet testing of a fractional orbit bombardment system and antiballistic missile (ABM) system to argue that "the necessity for effective space defense weapons is both obvious and urgent."⁷

Having emphasized the threat from the "Bear," General Johnson outlined the basics of aerospace defense. He described the four functions of detection, identification, interception, and destruction, and explained how each applies to both defense against intercontinental ballistic missiles (ICBM) and space defense. Regarding ICBMs, General Johnson noted the hows and whys of quick detection and then analyzed the technical difficulties of boost-, midcourse-, and reentry-phase interception. He acknowledged "formidable development problems" with any of the three, but posited an operational anti-ICBM system by the early 1970s.⁸ Finally, he described the nation's nascent ability to track objects in space—at the time, the only existent aerospace defense capability.

Ill at ease with such a gap in defense, General Johnson concluded that the national strategy "depends primarily on the ability of our strategic forces to survive and react" and that "the nation which first deploys a cost-effective space defense system will enjoy a military advantage."⁹ However—perhaps out of understanding the political restraints on space weapons—he danced around an explicit call for weaponization. Although in favor of "deployment of defense weapons against the existing space threat just as rapidly as cost-effective systems become available," he cited explicit requirements only for detection, tracking, and identification systems—not for destructive systems.¹⁰ The general avoided stepping into a political no-man's-land but certainly pointed the way for later weaponization advocates to follow.

Overt Advocacy

In the 1970s, reflecting perhaps Vietnam weariness or the idealist nature of the Carter administration, *Air University Review* pub-

lished little concerning the weaponization of space. However, in the 1980s, an era framed by cold war “evil empire” rhetoric and mass-media nuclear fear,¹¹ the journal renewed the debate with intensity. One of the first authors to pick up General Johnson’s threat-based line of reasoning was Maj Steven E. Cady, a B-52 electronic warfare officer who contributed “Beam Weapons in Space: A Reality We Must Confront.”¹² Major Cady started off with estimates from the Office of Technology Assessment suggesting 70–160 million deaths immediately following a nuclear attack, with millions more to die later. He combined this vision with a warning that “the nation’s deterrent power derived from its nuclear and other military arsenals is, however, probably much lower than most American military personnel assume it to be.” Due to organizational, political, and behavioral factors, Cady argued, “the Soviet perception of America’s deterrent capability is likely to be much less favorable than that of the leaders of the United States.”¹³ To finish his description of the threat, Cady listed a number of Soviet achievements to demonstrate that “the United States is no longer the strongest nation in the world on land, at sea, or in the air” and that “*in terms of space weapons capability, they [the Soviets] are ahead and are likely to continue in the lead for the next several years*” (emphasis in original).¹⁴

Fortunately for those frightened by his alarmism, Major Cady provided the remedy: “satellites firing laser [or particle] beams across thousands of miles to destroy enemy satellites, or ground-based enemy missiles immediately after their launch, or selected enemy targets on earth.” Betraying a fundamental misunderstanding of classical deterrence theory, Cady argued that such directed-energy weapons “offer a remarkable potential for restoring America’s deterrent power.”¹⁵ He brushed aside questions of legality with the observation that “preoccupation with the niceties of law would be appropriate in a utopian world” and conceded that deployment of such weapons might be difficult and costly.¹⁶ However, he believed that such de-

ployment need not lead to a space arms race: “The record of the Soviet Union in its foreign and military policy has never been one of rashness. . . . It is reasonable to assume that the Soviets would act with similar prudence if the United States opted for directed-energy weapons.” Furthermore, because “the Soviet Union may well be ahead of the United States in developing such a system, the United States would be establishing parity only by also developing a system.” Therefore, America “has no choice but to begin an urgent national crash program surpassing anything since the Manhattan Project.”¹⁷ In short, Major Cady used some commonly held but now discredited assumptions to demand overt weaponization of space.

Arms Control Counterargument

To be sure, it is unfair to ridicule Cady’s suppositions in the light of post-cold-war hindsight; he was by no means alone in his beliefs. One must therefore note the existence of an equally vociferous and one-sided anti-weaponization faction, and *Air University Review* included such voices in its published debate. Reacting specifically against Ronald Reagan’s Strategic Defense Initiative (SDI), Dr. Robert M. Bowman railed against those who would destabilize the international situation with ill-advised deployments of antisatellite (ASAT) weapons or space-based ballistic missile defense (BMD).¹⁸ The author—a retired Air Force officer with a PhD from the California Institute of Technology, a long history of space- and engineering-related jobs, and (in 1985) the presidency of a space and security issues think tank—based his argument on an accurate reading of Schellingesque deterrence theory. First-strike capability was bad; survivability and transparency were good; ASATs—developed only because the Soviets were working on one—threatened “to negate the beneficial stabilizing influence of [vulnerable] surveillance and warning satellites.”¹⁹ Combined with the first-strike capability of the new MX missile, Bowman opined, an operational ASAT might drive the Soviets

to a launch-on-warning posture, making the survival of the United States “dependent on the reliability of Russian computers.” Even worse, he asked, “What happens if a Soviet warning satellite is struck by a meteor or suffers a catastrophic electrical failure?”²⁰

Leaving that image behind, Bowman turned to his real target: Reagan’s “Star Wars” BMD system. Citing the technological similarities between ASATs and BMD, he declared that “from an operational military point of view, as well as an arms control point of view, space weapons must be dealt with as a whole”; he then noted that “the decision about whether to proceed [with ASAT and then BMD development] is time-urgent. . . . If Star Wars weapons . . . are either infeasible, unaffordable, or detrimental to our security, then we should attempt to negotiate a comprehensive and verifiable ban on all space weapons.”²¹ Unsurprisingly, Dr. Bowman cited the dangers of a less than completely effective BMD shield, listed a number of cheap counters to BMD, and concluded that “there is no way to get [a viable BMD] capability without, along the way, getting the capability to complete a first-strike posture.”²² Therefore, “Star Wars is far more than is required to enhance deterrence and far less than is required to replace it,” and “the best way for the administration to show . . . that it is sincere . . . would be to join the Soviet moratorium on ASAT testing.”²³ In sum, although his conclusion was certainly in line with Eisenhower’s original “space for peace” vision, Bowman was as guilty of zealotry and single-mindedness as the weaponization advocates. His deterrence theory was sound, but he made far too large an inferential leap from “ASATs destabilize” to “no Star Wars.”

Chicken Little

In 1989 the Berlin Wall crumbled, and the context of the space weaponization debate changed radically. Deprived of the monolithic Soviet bogeyman, proweaponizers needed a new threat to prod their audience into action—so they more or less created one. To illustrate

the dangers still inherent in the post-cold-war world, Lt Col Michael E. Baum, a B-52 pilot and systems analyst with a PhD, wrote “Defiling the Altar: The Weaponization of Space.”²⁴ Employing a fictional scenario, the article described the “worst intelligence failure in 70 years,” when, on 7 December 2011, the Chinese executed a Pearl Harbor-like assault from space and crippled the United States with a series of devastating attacks from above.²⁵ The new enemy used ASATs and on-orbit kinetic energy weapons to destroy a wide range of American space-based command, control, intelligence, surveillance, and reconnaissance assets; uplink/downlink systems; launch systems; and even sink a carrier and *Aegis*-class destroyer. Simultaneously, the Chinese attacked the US-UN peacekeeping force in the Spratly Islands, which the international community promptly ceded to Chinese control.

To highlight the lessons of 2011’s Pearl Harbor, the chairman of the Joint Chiefs of Staff testified before Congress on April Fools’ Day, 2012. Gen William Smith, Baum’s fictional chairman, admitted that “the US took from [the Gulf War] the wrong lesson—that we would *always* own the high ground of space and be able to *depend* upon our assets” (emphasis in original).²⁶ The post-cold-war military followed a procurement strategy incongruent with developing space doctrine, blindly failed to admit that space would become weaponized, and institutionalized a number of single-point vulnerabilities that the Chinese were able to exploit. Therefore, Smith/Baum suggested ways to overcome those vulnerabilities and recommended a three-part weapons program with space-to-ground kinetic energy weapons, active and passive on-orbit protection, and ASATs. As Major Cady had done 12 years earlier, Colonel Baum rejected the Eisenhower-era vision, cried out for space-based weapons, and implied that “freedom of space” adherents had their heads in the sand—but without a clear threat, he had to spin quite a yarn to do so.

Back to the Future

Finally, by 1998 the argument had come full circle to Eisenhower's original ideal of "free space," as evidenced by Lt Col Bruce M. DeBlois's "Space Sanctuary: A Viable National Strategy."²⁷ DeBlois, a former professor at both the Air Force Academy and the School of Advanced Airpower Studies, highlighted a piece of the puzzle omitted by Johnson, Cady, Bowman, and Baum: the historical, cultural, and political context in which the weaponization debate took place. "The immediate military advantages of being the first nation to weaponize space are undeniable," he conceded, "but must be weighed against long-term military costs, as well as against broader social, political, and economic costs."²⁸ Echoing the cold war writers, DeBlois outlined the history of deterrence and then took the contextual description much farther. He traced the background of Eisenhower's (and subsequent administrations') open-skies space tradition and stressed the political realities that support sanctuary, such as lack of a real threat, technological limitations, cultural impediments (Americans do not see themselves as aggressors), and the phenomenal opportunity costs of space-weapon investment. Wrapping up a 10-point refutation of weaponization strategies, the colonel concluded that "what can be done with space weapons can also be done from the air, without the political baggage of weaponizing space."²⁹

To support his call for space sanctuary, DeBlois included a number of recommendations for promulgating a peaceful "space vision" and outlawing space weapons by treaty. Although he clearly opposed overt weaponization, DeBlois did not allow critics to accuse him of putting his head in the sand. On the contrary, he called for vigilance: "The other historical trend in US space policy has been to hedge our sanctuary bets with investments in space-weapons research and development. Pursuing space-sanctuary policy does not preclude being prepared to do otherwise; in fact, one can make strong arguments that such preparedness encourages other actors to follow the sanctuary policy, since they could gain

no advantage by challenging that policy."³⁰ Along those lines, DeBlois stressed that space was not in itself a center of gravity; rather, space systems contain critical vulnerabilities that must be eliminated or protected. In any case, DeBlois argued, far better strategies exist for protecting national assets and capabilities than a space arms race: strategies that continue "the 40-year pursuit of a secure space environment and global stability, and . . . [project] several paths for cooperatively using space to seek US national interests: long-term national security, economic well-being, and world-wide legitimacy of US constitutional values."³¹

Conclusion

Through five articles culled from 30 years of *Air University Review* and *Airpower Journal*, an as-yet-unresolved debate over the merits of weaponizing space emerges. Moving away from President Eisenhower's foundation of free space, an aerospace defense specialist during the race to the Moon advocated the deployment of advanced surveillance and tracking satellites, and implied that defensive weapons should follow. Fourteen years later, at the height of ICBM and medium-range ballistic missile escalation during the cold war, an Air Force major cried "Bear!" and called for the immediate and overt weaponization of space. In response to similar calls—especially to President Reagan's SDI program—a retired Air Force officer and think-tank leader countered that space weapons were inherently destabilizing and must be avoided at all costs. Of course, the Soviet threat went away, but the space weapons enthusiasts did not—they prophesied doom at the hands of the Chinese unless America were to rapidly develop and deploy new space capabilities. Finally, an active-duty academic brought the argument back to its starting point, pointing out the excesses of the advocates' positions and suggesting pragmatic yet nonthreatening policy choices for the future.

What lessons can be gained from this tour of the Air Force's space weaponization de-

bate? Examining the common themes of the debate, one finds tendencies for the participants to ignore context and lapse into zealotry. The proweapon faction made a Hobbesian assumption that if people can create a new weapon, they will, and overemphasized the threat to create momentum for change. In so doing, they ignored history, culture, and economics. One cannot fault Major Cady too much for his early 1980s alarmism, but he overlooked Americans' unwillingness to appear aggressive, and his proweapon successor, Colonel Baum, completely missed the fact that SDI had bankrupted the Soviet Union! Why should China's economy be able to create a space weapon system able to cripple the United States at a single stroke? Moreover, all of the "weaponizers," including General Johnson, forgot the Clausewitzian primacy of politics. Every administration in the last 40 years has validated Eisenhower's original position; there exists no political will to break the "space for peace" paradigm. To paraphrase Walter McDougall, there is no "escape velocity" that will take one beyond the political realities of this country.³² Finally, Dr. Bowman—this sample's single representative of the arms control lobby—also failed to create a balanced, context-based argument. He asked the reader to accept his lumping together of all space weapons and dismissed potential counterarguments without conceding the existence of genuine threats to protect against and desirable space capabilities at least to explore. As a result, his call to join a Soviet testing moratorium proved as unim-

pressive as the others' cries of "the sky is falling."

Taken together, the first four articles suggest that zealots tend to miss the big contextual picture; they frame their arguments vividly but make poor bases for policy. By focusing specifically on contextual issues, Colonel DeBlois's article avoided that trap and pragmatically crafted desirable and achievable policy recommendations. DeBlois rejected the Hobbesian notion that space weaponization is inevitable, leaning more toward the Kantian suggestion that realist international attitudes can change, and that the United States can ensure security without costly space weapon systems. More importantly, he advocated continuing a policy that has worked for over 40 years. Eisenhower once told his Cabinet that "we have got to meet the [Soviet threat] by keeping our economy absolutely healthy. Without the health and expansion of our economy, nothing we can do in the long run, domestically or in the foreign field, can help."³³ To facilitate that strategy—and firmly believing that space sanctuary served American self-interest—Eisenhower preserved space for peace and prevented a space arms race. It took 30 more years, but the end of the cold war proved the value of such an economic-based security policy. Today, with American technologies probably ahead of those of the rest of the world by an order of magnitude, the nonweaponization of space may be even more in the national interest than in Eisenhower's day. Why fix something that is not broken? □

Notes

1. Walter A. McDougall, *The Heavens and the Earth: A Political History of the Space Age* (Baltimore: Johns Hopkins University Press, 1985), 194.

2. See, for example, Col Martin B. Schofield, "Control of Outer Space," *Air University Quarterly Review* 10, no. 1 (Spring 1958): 93–104; and Maj Charles A. Roberts, "Outer Space and National Sovereignty," *Air University Quarterly Review* 12, no. 1 (Spring 1960): 53–65.

3. Dyna-Soar was a hypersonic, reusable, boost-glide, manned space platform designed specifically for several types of military space missions. For more on the manned military space program, see Roy F. Houchin II, "Hypersonic Technology and Aerospace Doctrine," *Air Power History* 46, no. 3 (Fall 1999): 4–17.

4. Gen Thomas S. Moorman Jr., "The Explosion of Commercial Space and the Implications for National Security," Maj Shawn P. Rife, "On Space-Power Separatism," and Sen. Bob Smith, "The Challenge of Space Power," *Airpower Journal* 13, no. 1 (Spring 1999): 6–39.

5. Maj Gen Oris B. Johnson, "Space: Today's First Line of Defense," *Air University Review* 20, no. 1 (November–December 1968): 96.

6. *Ibid.*, 97.

7. *Ibid.*, 96.

8. *Ibid.*, 99.

9. *Ibid.*, 101–2.

10. *Ibid.*, 102.

11. Recall the high television ratings enjoyed by "The Day After," a miniseries depicting postapocalyptic life; Mel Gibson's roles in the *Mad Max* movies; and the popular movie *WarGames*, among other examples.

12. Maj Steven E. Cady, "Beam Weapons in Space: A Reality We Must Confront," *Air University Review* 33, no. 4 (May-June 1982): 33-39. For another representative proweaponization article, see Dr. Barry J. Smernoff, "The Strategic Value of Space-Based Laser Weapons," *Air University Review* 33, no. 3 (March-April 1982): 2-17.

13. Cady, 34. As support, Cady cites Roger D. Speed, *Strategic Deterrence in the 1980s* (Stanford: Hoover Institution Press, 1979); the argument echoes the more familiar work of political scientists Graham Allison and Robert Jervis.

14. Cady, 35.

15. *Ibid.*, 36. As explained by political scientist Karl Mueller, professor of international relations at the School of Advanced Airpower Studies, classical deterrence theory postulates that threatening people is good but threatening weapons is bad, as that suggests an aggressive first-strike posture.

16. *Ibid.*

17. *Ibid.*, 38.

18. Dr. Robert M. Bowman, "Arms Control in Space: Preserving Critical Strategic Space Systems without Weapons in Space," *Air University Review* 37, no. 1 (November-December 1985): 58-72.

19. *Ibid.*, 62.

20. *Ibid.*, 63.

21. *Ibid.*, 65-66.

22. *Ibid.*, 70.

23. *Ibid.*, 71, 72.

24. Lt Col Michael E. Baum, "Defiling the Altar: The Weaponization of Space," *Airpower Journal* 8, no. 1 (Spring 1994): 52-62. For a similar futuristic threat scenario, see Capt Fred Kennedy, Capt Rory Welch, and Capt Bryon Fessler, "A Failure of Vision: Retrospective," *Airpower Journal* 12, no. 2 (Summer 1998): 84-94, wherein the North Koreans, Iranians, Iraqis, and "several multinational corporate concerns" join the space-threat coalition.

25. Baum, 53.

26. *Ibid.*, 59.

27. Lt Col Bruce M. DeBlois, "Space Sanctuary: A Viable National Strategy," *Airpower Journal* 12, no. 4 (Winter 1998): 41-57.

28. *Ibid.*, 41.

29. *Ibid.*, 52.

30. *Ibid.*, 57, note 43.

31. *Ibid.*, 55-56.

32. Describing an early RAND study on the political implications of the space age, McDougall writes, "Despite the flights of fancy of some space law theorists, there was no escape velocity that took one beyond the political rivalries of this world" (178).

33. *Ibid.*, 138.

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