China in Space: Implications for U.S. Military Strategy

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China's January 11, 2007, launch of an antisatellite (ASAT) weapon against a low Earth orbit satellite heralded the end of a self-imposed 20-year period in which the United States and Russia had refrained from using destructive weapons in space. In addition to highlighting a growing capacity to limit the use of space by others, China's demonstration has generated demands for the United States to review its space policy and establish agreements to prevent the use of space for military purposes. Others have called for the opposite: a renewed space race and the deployment of space-based weapons. One thing is clear, however: China's growing space capability has profound implications for U.S. military strategy and, ultimately, national policy.

China in Space

China has made great progress in its space program. Since 1984, it has come from having no geostationary satellites to launching Shenzhou VI for a 5-day orbit of the earth, joining the ranks of Russia and the United States as the only nations with a manned space capability.

China's January ASAT test was an ascending orbit shot. As the satellite passed overhead, the Chinese intercepted it. Launching a rocket at a satellite in low Earth orbit

One who has few must prepare against the enemy.
One who has many makes the enemy prepare against him.

—Sun Tzu

By P. Gregory Metzler, USN, wrote this essay while a student at the Industrial College of the Armed Forces. It won the Strategic Article category of the 2007 Chairman of the Joint Chiefs of Staff Strategic Essay Competition.
directly overhead is one thing; hitting a satellite in a high, geostationary orbit in another part of the sky is something else. In short, while China has made great progress, we must be careful to characterize the threat accurately. It is real. It is growing. But it is not all-powerful.

What would motivate China to pour resources into its space program instead of other challenges? China's space program is a source of national pride at a time when the Communist Party's performance is being criticized by a burgeoning Chinese middle class. However, pride is not the only driver. The space program provides a mechanism for research and scientific exploration that will undoubtedly advance China's education and high-tech industrial base much as the Apollo program did in the United States.\(^5\)

Mongolia, Pakistan, Peru, and Thailand) were granted access to Chinese weather and Earth resources satellites, including training of ground station operators. Such a move to provide partners in regions of interest is reminiscent of the U.S. approach to sharing its satellite resources with its friends.\(^7\) In sum, China's space program has graduated from a research and development tool to one of diplomacy.

**Implications for the United States**

Beijing's entry into the ASAT club has numerous implications for Washington. First, China's successful launch is a not-so-subtle message to the United States and other powers of its capacity for denying space to those who rely on it for commerce, intelligence, and communications. Numerous open sources have illustrated Chinese military thinkers' recognition of American reliance on technology and the need to counter the U.S. space-based infrastructure.\(^4\) Additionally, China's ability to hit space-based targets speaks to a growing technological sophistication that could be translated to other weapons and serves as an overt demonstration of China's desire to dominate its battlespace.

Then there is the practical matter of China adding to the "space junk" problem. The ASAT test created approximately 2 million pieces of space debris (adding to 140 million already estimated to be in orbit). Given that it is difficult to protect satellites against particles larger than 1 centimeter and to detect particles smaller than 10 centimeters, the use of kinetic weapons in space poses a serious and lasting risk of collateral damage.\(^6\)

Ultimately, however, China's demonstrated ASAT capability should serve as a warning to U.S. Armed Forces who have come to rely on space-based assets in virtually every aspect of their method of warfare. Have we, as a nation, worked through potential responses to either hard or soft kills of our satellites? How would our operations change absent communications or intelligence satellites? Such scenarios must become an integral component of our doctrine, development, and training.

**Next Moves**

There are several things the United States should consider undertaking in order to communicate its expectations regarding appropriate international behavior in space.

**Clarify U.S. Space Policy.** The 2006 Space Policy has received substantial international criticism for its assertion that the United States has the right to "deny, if necessary, adversaries the use of space" and simultaneously "dissuade or deter others" from developing similar capabilities to deny U.S. access.\(^10\) One cannot help but wonder if Beijing's ASAT shot was intended to demonstrate unambiguously that it is impossible for Washington to prevent the development of ASAT technology. The United States should realign its policy with existing agreements and reassert the tenets of "free access" to, and 'freedom of passage' in, space . . . enshrined in the 1967 Outer Space Treaty."\(^11\)

Unfortunately, history repeatedly has demonstrated the disdain with which rogue leaders treat international agreements. As a nation, we must avoid establishing agreements that unreasonably limit our capacity to use space from a defensive perspective. Clearly, the deployment of weapons of mass destruction into space would be fundamentally destabilizing. Likewise, unrestricted testing of destructive antisatellite weapons would only increase the risk of collateral damage to friendly satellites. However, in addition to economic development, China's space program will likely become a political bargaining chip in negotiations with the West.

In addition to economic development, China's space program will likely become a political bargaining chip in negotiations with the West.\(^4\) Advances in the ASAT program could be used to trade against concessions on other issues of importance to Beijing. Political benefit is not limited to East-West negotiations. In March 2006, seven countries (Bangladesh, Indonesia, Iran, and to detect particles smaller than 10 centimeters, the use of kinetic weapons in space poses a serious and lasting risk of collateral damage.\(^6\)

Ultimately, however, China's demonstrated ASAT capability should serve as a warning to U.S. Armed Forces who have come to rely on space-based assets in virtually every aspect of their method of warfare. Have we, as a nation, worked through potential responses to either hard or soft kills of our satellites? How would our operations change absent communications or intelligence satellites? Such scenarios must become the costs and timeline associated with the deployment of defensive space technology in response to a rogue state's weaponization of space should underscore a decision to proactively manage, rather than cede through inaction, the ultimate high ground of space.

**Avoid a Space Race.** We must avoid a space race. Instead of trying to beat the Chinese to the Moon, as some have implied,\(^12\) we should remain focused on our own space program (both civilian and military) and remind those pressing for our return to the Moon ahead of China that we have already been there—several times. By focusing on...
our own space strategy and directing our resources accordingly, we can more efficiently minimize the risk China’s capabilities pose to U.S. interests.

Seek Opportunities for Engagement. China’s progress in space is an opportunity for engagement. Just as the United States is putting instruments on a lunar orbiter to be launched by India,13 there may be opportunities for cooperation with China in future space missions. Perhaps a U.S.-China Moon mission or international mission to Mars could serve as a vehicle for promoting international cooperation and shaping China’s behavior, prompting Beijing to demonstrate self-restraint of Russia and the United States during the Cold War.

Improve Survivability. However, we must prepare for the possibility that China’s intentions are hostile. We must provide our space warfare commanders the same level of situational awareness that is available to our “air breather” warfare commanders to include survivable sensing, targeting, and command and control. We must improve our capacity to replace damaged satellites as well as rapidly deploy defensive systems and decoys. We must develop, build, and train with replacement technology such as meshed unmanned aerial systems or other communications and surveillance aircraft that will enable U.S. forces to dominate the battlefield even if our satellites are disrupted.

Improve Intelligence Capability. We must sort fact from fiction. Open source writings by Chinese military professionals have called for the covert development and deployment of antisatellite weaponry for use in a surprise attack against U.S. space assets.14 Our failure to detect the deployment of such weapons could result in catastrophic consequences for the United States. In addition to understanding the capabilities and vulnerabilities of potential adversary space programs, we must also understand their intended use.

China’s emergence as a power in space reflects its emergence as an economic power and its desire to advance its international prowess, further its political agenda, and expand its capabilities in science and technology. Washington should engage Beijing as a respected partner in space—not solely for the aim of “containing China,” but to reinforce international norms against which all users of space must be assessed, including the United States.

However, we must not ignore China’s progress. We must candidly recognize the threat to our ability to conduct operations and address vulnerabilities in such a way as to complicate the military problem for potential adversaries. Defense in-depth, improved survivability, redundancy, and our capacity to destroy an adversary’s space infrastructure must be improved. We must recognize that U.S. military superiority in space cannot be assured and adapt our strategy, doctrine, operations, acquisition, and training to reflect that reality. JFQ

NOTES

5  Ibid.
6  Ibid.
7  Ibid.
8  Qiao Liang and Wang Xiansui, Unrestricted Warfare (Beijing: PLA Literature and Arts Publishing House, February 1999).
11  Hitchens.
12  Westlake.
13  Ibid.