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SEEKING THE STRATEGIC HIGH GROUND

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CHINA'S ASAT TEST

Seeking the Strategic High Ground

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The unusual delay in either announcing or noticing the Chinese anti-satellite (ASAT) test of 11 January seems to have evaded the attention of the strategic community. China made it public on the 21st, while the United States announced it on the 18th after a military journal, *Aviation Week & Space Technology*, broke the story on the 17th. Why this coyness by both countries? In the usual course of events a test of this nature would have led both countries to give it early and sustained publicity. But the reticence in bragging (China) or admitting the test's success (United States) suggests that both countries were waiting for the other to reveal more details and, in a sense, laid their cards on the table.

THE ARMS CONTROL ASPECT

And, what are those cards? China owed an explanation to the world for demonstrating an ability which threatens the weather, reconnaissance and communication satellites orbiting in space, and belonging to several nations. Establishing these capabilities threatens to unravel 'national technical means' i.e. the methodology on which the entire edifice of nuclear arms control is currently founded. On site inspections of nuclear arsenals to verify the numbers of their missiles and warheads is not politically feasible. Hence, nuclear arms control regimes have accepted 'national technical means' as the modality for this purpose, connoting that reconnaissance satellites, using photographic and electronic means, and/or other sensors, would be used to verify nuclear arsenals. For that matter, these technical abilities have also been used to detect clandestine nuclear proliferation activities.

Only a very few nations, prominently the United States and Russia, possess credible 'national technical means'. An unwritten rule

obtains here. Accepting 'national technical means' to verify adherence to an arms control agreement requires that reconnaissance satellites will not be interfered with by adversary nations. Otherwise, the lack of mutual assurance and suspicions of cheating could destroy the confidence on which the fabric of nuclear arms control rests. By displaying its capability to attack and destroy satellites in space China has highlighted the danger it can present to 'national technical means' and subsisting nuclear arms control agreements. The United States and Russia have displayed this ASAT capability earlier; so China is the third power to join this ASAT-capable club. Earlier, China had also used a ground-based laser to "paint" or illuminate an American satellite, which could be the forerunner to its developing laser weapons to attack space-based assets in future. China has, therefore, been pursuing an ASAT capability to serve its strategic purposes.

This aspect of the ASAT threat viz. its potential dangers to the 'national technical means' mechanism, has not yet entered the



The Chinese Feng Yun 1C (FY-1C) weather satellite that was blasted during the ASAT test on 11 January 2007.

Source: www.fas.org

debate, which has focused almost exclusively on whether China has militarized space requiring appropriate counter-measures to be devised, or

whether China is signaling that the United States should join it at the negotiating table to evolve a modality to preclude the militarization of space. Apropos, China, alongside Russia, has been in the forefront to prevent the militarization of space. Not for merely altruistic reasons. Both former allies know that an arms race in space will seriously deflect their attention and resources from the more urgent task of addressing their internal development and economic growth issues to meet the rising expectations of their population, instead of frittering them away on esoteric defense measures.

China recently declared in its recent White Paper on defense that "outer space is the



It is speculated that the DF-21 / CSS-5 medium range ballistic missile, with a range of 1800 km carrying a 600 kg warhead, was the missile that was used in the ASAT test
Source: <http://www.globalsecurity.org/space/world/china/asat.htm>

common wealth of mankind." Its persistence in trying to prevent the militarization of space has, in fact, not allowed the Conference on Disarmament in Geneva to finalize an agenda, which has disrupted its

functioning for years. On the other hand, the Bush administration is clear that it will not accept any constraints on its freedom of action in space. It declared a new national space policy in August 2006 holding that the United States would "deny, if necessary, adversaries the use of space capabilities hostile to U.S. national interests." Votaries of this unilateral policy in the United States view the Chinese ASAT test as being designed to militarize space, which is a hostile act; hence a confrontation between the two countries is fairly enjoined.

MILITARIZING SPACE?

However, both China and the United States are exaggerating this issue. Space is already militarized. Scores of satellites are circling the earth. An estimate by the New York Times placed their number at 845 active satellites. More than half belong to the United States, and the others to over two dozen nations. Being dual-purpose in nature a large number of these satellites provide intelligence data and communications facilities to the armed forces of different nations. Further, satellites used for civil or military purposes are generally integrated systems; disruption of even a segment could disrupt the entire system. Do satellites provide countries with a defensive or offensive capability? This is essentially a philosophical question. Technology being Janus-faced, satellites can be armed to possess either or both defensive and offensive capabilities. For instance, satellites could be used to detect a ballistic missile launch and track its flight to permit its interception and destruction by a ground-based missile. This could be identified as a defensive capability. But it could be armed with a laser to permit it to attack the ballistic missile that would provide offensive capabilities.

Possession of satellites with both defensive and offensive capabilities could, in theory, enable the nation possessing them to acquire virtual invulnerability to counterattack by the adversary's missiles.

In other words, the ability to intercept a ballistic missile attack, using information acquired by reconnaissance and communication satellites, could ensure an invulnerable first strike capability, untrammelled by the angst that the adversary would be able to launch a second strike and inflict unacceptable damage on the aggressor. Disrupting a putative detection and interception capability by ASAT means could, arguably, restore the balance, and ensure that second-strike capabilities remain robust; thereby, the nuclear deterrent relationship between adversaries would also remain stable.

Unfortunately, this scenario is unlikely to obtain in the real world. A nation which discovers that its space-based assets have become vulnerable to attack would, most likely, either enlarge their numbers or equip them with self-protecting equipment possessing both defensive and offensive capabilities. It could also place its other nuclear forces on hair-trigger alert to attack the aggressor if it finds its space-based assets being targeted or attacked. This not implausible scenario might very well spell the initiation of a nuclear Armageddon.

Proceeding further, the national judgment of when, how and in what manner it would determine that its space-based assets have been attacked to launch its counter-attack from space or earth would be made by computers. Given the reality that computers do malfunction and the well-recognized maxims of Murphy's Law, the transfer of decision-making on such vital national security issues to computers and machines is hardly reassuring. Stated differently, the chances of accident, misunderstanding and misperception will increase should decision-

making be largely premised on mechanical instruments, which is inevitable when satellites are equipped and empowered to launch attacks and defend themselves in space. This dispensation is, intrinsically, conducive to great instability and tensions in bilateral relations.

THE ASAT TEST

Available details of the Chinese ASAT test inform that an aging Feng Yun (FY-1C) weather satellite, orbiting in a sun-synchronous orbit, was attacked by a kinetic energy vehicle launched from a small ballistic missile some 537 miles above the earth's surface. The FY-1C satellite had a 5-ft-square main body and solar panels spanning 27 ft. A direct hit was scored, and the resulting debris from the destroyed satellite has been scattered and would litter space for decades until they burn out. A consequent danger will be posed to other satellites in orbit, which shall also disrupt the use of space for positioning future satellites. This is for the reason that the debris will be orbiting at supersonic speeds in the vacuum of space; at this velocity, the momentum available to even small pieces of debris could

seriously damage, if not destroy, satellites by colliding into them.

China seems to have highlighted this particular threat to accentuate the need to seek a modus vivendi for regulating the militarization of space. It could also be conveying a message that the space-based components of missile defense programs are vulnerable to warn off Japan and Taiwan, and obliquely, the United States Analyses portraying China's ASAT test as being designed to throw the gauntlet and invite the United States to enter an arms race in space seem, therefore, to be off the

The disconcerting fact, however, is that the Chinese test will increase pressures on other nations, especially Japan, Taiwan and South Korea, to emulate China and enhance their space surveillance and control measures, and also develop ASAT capabilities.

mark. Both the U.S. and the Soviet Union, incidentally, maintained ASAT programs during the 80s. The U.S. still has a Counterspace Technology squadron to undertake defensive and offensive operations that can also jam enemy satellite communications.

The disconcerting fact, however, is that the Chinese test will increase pressures on other nations, especially Japan, Taiwan and South Korea, to emulate China and enhance their space surveillance and control measures, and also develop ASAT capabilities. Overcoming the technical problems of lofting an armed satellite into space, getting it within range of the target, and ensuring that the armament used intercepts the target, does represent a considerable technological feat. But there are easier technological means available to achieve this objective. The use of



Debris from the Chinese ASAT test, as presented in a preliminary analysis by Geoffrey Forden, Research Associate, MIT
Source: www.armscontrolwonk.com/file_download/74

ground-based lasers has been referred to above. Lasers could also be mounted on ASAT satellites. Besides the path of a target satellite could be 'mined' in space with ball bearings, for instance, to damage or destroy the satellite by impact. The essential point being made here is that recalcitrant nations, and those of concern, could, in time, develop ASAT capabilities to

heighten their dangers for the international security system.

CONCLUSIONS

The need, consequently, to establish a dialogue and address these dangers inherent within an arms race in space cannot be overstated. Naturally, there will be domestic constituencies opposed to dialogue, which is apparent from the current debate in the United States. These elements are fervently hoping that the Chinese ASAT test would invigorate weapons programs to defend satellites against attacking missiles, destroying missiles on the ground or in mid-flight, and developing countervailing capabilities to deter ASAT attack. Several of these programs are already embedded in the national and theatre missile defense programs. Steps to develop satellite-based defensive/ offensive weaponry derived from laser and other esoteric technologies could be invigorated. Indeed, there is a hopeful expectation that the research and development activities entailed to research and develop these weapons, based on new and emerging technologies, would ensure budgets running into billions of dollars, and on a sustained basis.

It can reasonably be expected that the related constituencies in India that represent these vested interests will argue similarly, using the Chinese ASAT test to highlight its inherent dangers to the Indian space program, to urge for deploying relevant anti-ASAT and missile defense systems. The huge budgets entailed would naturally be of great interest to the vested interests involved—weapons laboratories, arms manufacturers, procurement agencies in the armed forces, and, of course, the inevitable wheeler dealers.

Hopefully, however, the Chinese ASAT test will also invigorate the dialogue to address its dangers to unraveling the existing nuclear arms control treaties and creating an environmental problem in space. The alternative would be to extend the arms

race on earth into space. What are the agenda issues in this dialogue?

- First, the problem of littering space brooks no further delay. Unaddressed, it could lead to a 'pollution' of space, making it unavailable for the safe orbiting of satellites for military, but also civil, purposes. So dependent is civil society now on satellites for scientific exploration, communications, entertainment and so on that the unavailability of space for these purposes would be a tragedy of Shakespearean proportions. Could a Code of Conduct be established to achieve this objective? Can technical means be devised to undertake a clean-up of space? This issue must engage the attention of governments, environmental groups and think-tank communities.

- Second, credible assurances need being provided by states to ensure that all satellites in space are not attacked, since it is neither possible nor practicable to distinguish satellites having civil and/or military applications. During the Cold War an unwritten rule obtained that, if a particular missile was flight-tested by a country, the reasonable presumption could be drawn that it would be deployed. In other words, it was deemed unrealistic to believe that a country would develop a missile, have the confidence to test it, and then decide that it would not be deployed. On this analogy, the United States, Russia and China must be deemed to possess ASAT capabilities. Clearly, they need to take the lead in evolving positive assurances that satellites in space would not be attacked. But the

international community owes it to itself to bring pressure on them to initiate this dialogue.

- Third, an international regime needs being negotiated to ensure that satellites in space remain safe to serve the needs of civil society, without being endangered either by the littering of space or the use of ASAT weaponry against them. What form this governing regime would take—a Convention to ensure the Peaceful Uses of Space suggests itself--requires further deliberation, but the initiation of dialogue in

appropriate international forums like the UN General Assembly brooks no further delay.

India should take the lead in this regard. Not only does it possess space technology of considerable sophistication, but it has historically been in the forefront of nations seeking general and complete disarmament. What better objective could there be for India to regain its élan than to spur disarmament efforts to promote a Convention for preventing space from becoming the next battlefield? Should the high frontier of space get further militarized with ASAT weaponry, measures and countermeasures, there are other frontiers waiting to be militarized like the ocean beds, and celestial objects like the Moon. Sci-fi? Some years ago, it would be recollected, speaking of war in space was only a refrain in Star Trek episodes.

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