

Space Power and Deterrence: Are We Serious?

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It is commonplace, if not universal, for defense officials and punditry to acknowledge the vital role of satellites in the maintenance and execution of U.S. national security across the entire spectrum of war. Certainly, very few would argue — and argue plausibly — that the plethora of satellites at the disposal of the U.S. government is of marginal importance. Given this widespread acknowledgement of the vital role of U.S. national security space systems, it might be thought that the assurance of the U.S. national security space mission, such as measures to defend vulnerable satellite systems, would not only be a priority of the national security community, but would in fact be well under way.

Alas, talk is cheap. Despite the continuing integration of space throughout the U.S. military, as well as the recognition abroad of the vital strategic utility of space for a growing number of countries, U.S. national security space systems remain vulnerable to disruption and attack.

More recently, however, policy makers have been considering the possibility of deterring attacks against U.S. satellites, a development that would be encouraging except for the yawning gap between the intention to deter and the continuing vulnerability of U.S. satellite systems. Deterring attacks against U.S. satellite systems is a perfectly good idea, but the intention lacks credibility so long as key vulnerabilities remain unaddressed.

Deterrence Is Back

Of course, deterrence never really went away, but it is certainly back in vogue. It is sad, but true, that concepts such as deterrence are always rediscovered by those easily captured by fads, much as the wheel is continually rediscovered in our goldfish-bowl media age. This said, a brief overview of deterrence is provided.

Deterrence is the attempt to persuade an adversary by the threat of force (and other measures) not to pursue an undesirable course of action. As a result, to be deterred is a state of mind, something that is not easily quantifiable for measuring success in attempts to deter. Given that deterrence is essentially an exercise in psychological manipulation in order to modify, or prevent, modes of behavior, it is fraught with uncertainty. Deterrence fails — and throughout strategic history, has failed often — because the object of deterring measures fails to notice them, does not find the measures credible, or is pursuing an agenda sufficiently important enough to its interests that it is prepared to ignore the deterrence attempt.

Because deterrence fails it has been much maligned in recent times. The task of deterring apocalyptic terrorism and WMD-armed rogue states certainly pose significant challenges for deterrence. Instead, preemptive and preventive force has been

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identified as a means of dealing with these threats. The problem, as Colin S. Gray points out, is that the use of preemptive and preventive force is similarly encumbered with uncertainty, and entails much risk of military failure and damaged reputation. Similarly, diplomatic inducements — such as offers of arms control negotiations — are equally uncertain in their prospect for success.² The problem for U.S. policy makers immersed in a distinctive American strategic culture is that whatever approach to security is adopted, it carries a significant risk of failure. The military historian John Shy argues convincingly that American strategic culture has become accustomed to a large degree of certainty in its security affairs, thanks in part to the unique geographical position of the United States and a large measure of fortune.³ The United States is unique in enjoying this degree of certainty in its defense arrangements. As a result, the inherent uncertainties of strategy continue to be a source of profound discomfiture for an American strategic culture that strives for certainty beyond doubt.

This inherent uncertainty of deterrence seems at first glance to contradict the widely held belief that deterrence during the Cold War was a resounding success. After all, this line of thinking goes, nuclear annihilation never took place so obviously deterrence worked. Perhaps it did, or maybe we just got lucky. Perhaps the Soviets had little or no intention of starting a Third World War, despite U.S. attempts at deterring Moscow. The wider point is that we just do not know, and any notion that we can rest on our laurels because we have tried and tested ways to deter any adversary should be treated with deep skepticism and profound caution. In deterrence, we can only do our best and hope that the adversary is deterred and the only way of mitigating the inherent uncertainty is to prepare for deterrence failure.

If it is to be successful (and remember, we can never really know whether deterrence is really successful) deterrence needs all the help

it can get. Among the measures required to assist the prospects for deterrence success are the following:

Deterrent threats must be credible: if a deterrent strategy rests on military threats then well-equipped, trained and organized military forces are required to back up such threats. Furthermore, those military forces should be enabled by plausible doctrine, robust and comprehensible command and control arrangements, and their use authorized by policy. Similarly, if a deterrent strategy rests on the threat of some form of diplomatic or economic sanction, then the appropriate means, authorities, and allies are required to back up and enable such threats. The absence of any of these measures can undermine deterrence credibility.

Common agreement within political, policy, and military circles as to who needs to be deterred and how. Deterrence must also be politically credible, and if doubts about the policy or means of deterrence exist substantially within the leadership of a polity, then the object of deterrence may be forgiven for assuming that the polity in question is not entirely serious. Talking deterrence down — or even a fundamental misunderstanding of what deterrence is supposed to achieve — can be fatal to successful deterrence.

Seeing beyond deterrence: even if all diplomatic and military measures are in place, and political and policy consensus is achieved, deterrence can still fail. The issue then becomes one of survival. Can diplomatic resources and military forces still be marshaled to defend interests and continue operations? If the security strategy of a government rests solely on the maintenance of successful deterrence then all is lost when deterrence proves to be less than perfect.

Deterring Attacks on U.S. Satellite Systems

If U.S. policy makers are serious about deterring attacks on U.S. space systems, what might the requirements for an effective deter-

rence strategy look like? Furthermore, given the fact that under current political and geo-strategic circumstances the U.S. weaponization of space is highly unlikely, how can U.S. policy makers deter attacks on U.S. satellite systems when the very satellites in question have little, if any, coercive capability?

In fact there are a number of measures that can be undertaken that can both deny the ability of an adversary to cause catastrophic damage to U.S. space power, and also lend credibility to any U.S. threat to respond to an attack on U.S. satellite systems using military and diplomatic means. These measures are as follows:

1. Deny the adversary the benefits of attacking U.S. satellite systems by installing whenever possible passive defenses on satellites, such as hardening against electromagnetic pulse attacks, measures to make jamming more difficult, and ablative shielding to help satellites both withstand attacks and survive space debris impacts. Eventually, as individual threats become more defined, active defenses should also be seriously considered.
2. In tandem with passive defenses, develop and accelerate programs for rapid launch of satellites to reconstitute lost systems, and to bolster constellations in times of crisis. Also needed are spare satellites in storage that can be launched at short notice. While the Operationally Responsive Space (ORS) program is seeking to address these issues with the use of small satellites, efforts should also be made to speed-up the time it takes to place large satellites in orbit.
3. Prioritize space situational awareness programs in order to build as quickly as possible a comprehensive picture of the space environment. If policy makers and commanders possess the ability to differentiate between purposeful attacks and natural environmental hazards then the potential for misperception and miscalculation is dramatically reduced. Furthermore, effective deterrence is strengthened by the fact that space situational awareness could potentially indicate the nature and origins of any attempted attack on a satellite.
4. More and more U.S. allies are developing significant national security space capabilities that, if properly integrated, can spread the risk of adversary attacks against satellite systems. For example, the benefits for an adversary of attacking U.S. satellite systems are substantially reduced if U.S. policy makers and commanders are able to seamlessly access the space capabilities of allies such as Germany, Italy, and the U.K. This measure could only work, of course, if allies had similarly seamless access to U.S. satellite systems — something that will require a substantial change in the secretive culture of the U.S. national security space community. Just as important, partnerships in space will only work if they reflect genuine partnerships on Earth. Several proposals arguing for greater collaboration with allies gloss over, or are ignorant of, the important nuances of alliance politics. If successful, however, this kind of international cooperation can complicate adversary plans and intentions, and creates more stakeholders in the orderly use of the space environment. Deterrence can be greatly reinforced if an adversary has to contend not only with a U.S. response, but with an international response also.
5. If the measures described above (all of which can be said to constitute a deterrence by denial strategy) fail, or are not sufficient in response to more gratuitous attacks against satellite systems, then a deterrence by punishment strategy can

be exercised. At this juncture it is useful to note that a retaliatory deterrence strategy for the U.S. has little credibility given that, for the foreseeable future at least, the U.S. is the most space-reliant country today. Threatening to attack adversary satellites in response to attacks on our own may prove fruitless if the adversary in question does not leverage significant military, diplomatic and economic power through such systems. This is not to say that the U.S. should not target adversary satellite systems — it is not too difficult to envision circumstances where, for example, an adversary reconnaissance satellite poses a threat to deployed U.S. forces and therefore must be neutralized. This issue aside, a deterrence by punishment strategy can utilize terrestrial military forces, as well as economic and diplomatic tools (and probably a combination of all of these) to punish the adversary striking counter-value targets. Land, sea, air, and cyber forces can all be used individually or in combination to strike targets of value to the adversary. Similarly, economic and diplomatic sanctions can also be applied to appropriate adversary entities. Politically, the U.S. should maintain absolute flexibility in how it wields its deterrence by punishment instrument (if it chooses to wield it at all), but measures can be taken now that would signal to any adversary considering U.S. space systems as a legitimate target that the U.S. has the means and resolve to respond if it so chooses. For starters, the dysfunctional command and control arrangements between U.S. Strategic Command, Air Force Space Command, and the 14th Air Force must be modified so that the roles and missions of these organizations are unambiguously understood. The command and control arrangements between

the commanders of these organizations today are tenuous and subject to debate and varying interpretations — something the U.S. should not have to contend with at the moment space systems are attacked. Once these command and control arrangements are fixed, further arrangements should be made between U.S. Strategic Command and the Combatant Commands and the individual services so that forces can be identified and notionally assigned to U.S. Strategic Command in order to carry out missions in support of a deterrence by punishment strategy. Additionally, resolve can be conveyed to potential adversaries by conducting realistic exercises involving senior executive leadership that tests these command and control arrangements. It must be stressed that a deterrence by punishment strategy need not involve space-based weapons, or indeed the targeting of satellites using terrestrial military forces.

These measures are by no means exhaustive, and are merely set out here as a springboard for further discussion and consideration. It must be noted that many of these measures would contribute to what Patrick M. Morgan calls a condition of general deterrence, whereby the measures are not aimed at any particular adversary.⁴ When threats to space systems from individual adversaries become defined, then tailored deterrence strategies can be developed including the identification of suitable counter-value targets in case a deterrence by punishment strategy should be pursued. In these cases, threats by individual adversaries can be deterred by signaling the capability to punish the adversary should it choose to carry out attacks against U.S. satellite systems. Dissuasion is possible before this situation even arises if the U.S. is able to unambiguously demonstrate clear and robust command and control arrangements that are able to not only assure

the critical U.S. national security space mission, but can also be supported at short notice by the other Combatant Commands, the individual services, and other agencies.

Finally, and this bears repetition, deterrence is inherently uncertain and will *probably* fail at some point. This said, it poses less of a political and intelligence burden than its alternatives — preemption and prevention. These latter approaches can never be disavowed, as there will be occasions when they are of critical necessity, but these occasions should be rare. Ultimately, however, Clausewitzian friction alone will impede attempts at deterrence just as much as it will impede the plans and intentions of the adversary. No amount of capability, organizational restructuring, or diplomatic skills can overcome friction entirely, but they can go a long way to mitigating its worst effects. Doing nothing while hoping for the best, however, will only court catastrophe and failure. There is no free-ride if U.S. policy makers are serious about deterring space attacks. Resources are required, and a modicum of political capital will probably have to be expended. The current financial crisis will have severe budget implications for many years to come, and the protection of U.S. satellite systems may fall victim to such cuts, but only to the detriment of U.S. national security. If

U.S. national security space is truly as important as many of us are saying, then the political will should be there to secure the necessary funding for what must be done. Anything less than this is just hot air.

Notes

1. The views expressed here are those of the author alone, and do not necessarily represent those of the School of Advanced Air and Space Studies, Air University, the U.S. Air Force, Department of Defense, or the U.S. Government.
2. See Colin S. Gray, *Maintaining Effective Deterrence* (Carlisle, PA: U.S. Army War College Strategic Studies Institute, 2003), *passim*.
3. See John Shy, *A People Numerous and Armed: Reflections on the Military Struggle for American Independence*, Revised Edition (Ann Arbor, MI: The University of Michigan Press, 1990), pp. 265-294.
4. See Patrick M. Morgan, *Deterrence Now* (Cambridge, UK: Cambridge University Press, 2003), pp. 80-115. It should be noted that Morgan is not much taken with the concept of general deterrence, but he does acknowledge that U.S. policy makers are.