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**SPACE CONTROL POLICY:
A CASE FOR "REACHING OUT AND TOUCHING"**

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Introduction

The United States needs a contemporary space policy which protects our space assets and preserves our freedom to act in pursuit of our national interests and objectives. This monograph argues that the US prohibitions against using force on a space asset are based largely upon Cold War biases and also upon elements of the 1967 Outer Space and 1972 Anti-Ballistic Missile Treaties which are no longer applicable or no longer serve our interests. US space policy must change with the new uses of space, introduction of new actors, and evolved geopolitical context. The US must assure space superiority by having a declaratory policy, capability, and the will to deny a spectrum of potential adversaries the freedom of using space assets and space-derived data.

National Imperatives

President Clinton issued his National Space Policy on 19 September 1996 stating "Access to and use of space is central for preserving peace and protecting US national security as well as civil, commercial interests."¹ President Clinton clearly considers space as vital to our national and economic interests and directs the Department of Defense and the Central Intelligence Agency to "assur[e] that hostile forces cannot prevent our own use of space"² but carefully eschews specific offense language in deference to interagency infighting over roles and missions.³ The White House recognizes the need to achieve space superiority. It is both an economic and military imperative.

¹ The White House National Science and Technology Council, *Fact Sheet: National Space Policy* (Washington DC GPO, 19 September 1996), 1.

² White House, *Fact Sheet: National Space Policy*, 4.

³ In fact one of the principal differences between the 1989 and 1996 National Space Policies is the notable absence of presidential support for an anti-satellite program which became so hotly contested by the SecDef and DCI that the

One need not wonder long as to why Mr Bill Gates, CEO of Microsoft Corporation has joined with McCaw Cellular to create Teledesic Corporation, a space-based commercial telecommunications service or why World View Corporation is competing in the global commercial high-resolution, space-based imagery marketplace Profits, forecasted to measure in the billions, provide strong incentives Both the technology revolution which makes access to space feasible and changes in national priorities to wit Executive Order 12333 which allows commercial entities to conduct space-based imagery, have caused a virtual gold rush mentality in space The President was motivated to pursue policy changes as a result of international economic pressure other space-faring nations were reaping the technological and economic benefits of privatizing space The President also understands his obligation to protect such US assets in space

So does USCINCSpace General Howell M Estes III With more than 200 US satellites in orbit worth in excess of \$100 Billion and General Estes states “ as a military commander, [I] have to say that somebody is going to threaten them And when they do, we [should] have armed forces to protect them ”⁴

General John M Shalikashvili, Chairman JCS, is also counting on space control to implement Joint Vision 2010⁵ In order to achieve dominant maneuver and precision engagement around the world, space assets figure prominently in the future architecture Preservation of capability and denial of similar key assets to adversaries remains a tenant of military operations creating an imperative for CINCSpace to husband and operate a space control capability

language was removed This is not to say that there are not technical problems and treaty issues associated with fielding such a capability but that our bureaucratic process subordinated a declaratory space control policy to competing agency interests Source Executive Office of the President, Office of Science and Technology Policy Office officials, interviewed by author, 3 December 1996

In sum, the private sector and national security agencies understand the increasingly vital role of space in pursuing their agendas and missions in support of national security and economic objectives and goals. With the increased use of space comes a reliance and commensurate vulnerability which demands mitigation. Conversely, other spacefaring nations who act inconsistent with US interests are subject to the same vicissitudes providing the US opportunity and avenue for action.⁶ Thus the issue—why can't the US “reach out and touch” someone's satellite if it wants to?

Reaching Out and Touching

For the US, “reaching out and touching” a satellite is not an issue of ways and means but of will. Indeed, launching, positioning, and maintaining a constellation requires routine and frequent communication. Accomplished space strategists such as Mike Mantz and James “Sam” Lee already offer a cogent space control doctrine as well as operations, missions, tactics, practices and procedures able to prosecute potentially successful space campaigns.^{7,8} Nor is it a matter of capability. The Air Force and to a lesser extent the Army, have conducted robust research and development efforts which have resulted in a serious, albeit largely classified, ability to conduct offensive space operations. Most capabilities have been classified mostly due to their “silver bullet” status, i.e. first use preserves their effectiveness and use opens US satellites up to counter attacks not yet mitigated. The remainder, however, suffer from an

⁴ William B. Scott, “Pentagon Considers Space as New Area Of Responsibility,” *Aviation Week and Space Technology*, 24 March 1997, 54

⁵ The Joint Chiefs of Staff, *Joint Vision 2010*, (Washington DC: Pentagon Joint Staff, 1996)

⁶ I define spacefaring nations as those having an indigenous space capability and attendant infrastructure to use space products in pursuit of national objectives. Included are those who may not have a resident space capability, but rely on space-derived products and have processes to use them for economic, political, and military purposes.

⁷ Michael R. Mantz, *The New Sword: A Theory of Space Combat Power*, (Maxwell AFB, AL: Air University Press, 1995), 1-89

⁸ James G. Lee, *Counterspace Operations For Information Dominance*, (Maxwell AFB, AL: Air University Press, October 1994), 1-43

aversion to use brought about our Cold War heritage as codified in the 1967 Outer Space and 1972 ABM Treaties

The satellite systems the US operates today are legacies of the Cold War against the communist Soviet Union where space was used exclusively for force enhancement, namely, navigation, weather data, surveillance and reconnaissance, and communications. Space assets watched and listened to assure one another's conventional and nuclear parity, ascertain disposition and location of forces, discern intent (capability and will) and as a trip-wire to action. In short, space matured through a national security strategy of nuclear deterrence and containment. As such, the Outer Space and ABM Treaties have continued today to prohibit and/or constrain the following activities in space^{9,10,11}

- 1 Appropriating by claim of sovereignty, use, or occupation, or any other means, of any portion of outer space to include the moon and celestial bodies (i.e. no keep-out zones)
- 2 Threatening or using force against the territorial integrity and political independence of another state¹²
- 3 Placing in earth orbit, installing on celestial bodies, or stationing in space in any other manner weapons of mass destruction (generally defined as nuclear, chemical, or biological)^{13,14}
- 4 Building military bases, installations, or fortifications on the moon or other celestial bodies
- 5 Testing weapons of any kind on the moon or other celestial bodies
- 6 Developing, testing, or deploying space-based anti-ballistic missile systems or components

⁹ United Nations, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies*, Number 610, 1967

¹⁰ United States of America, *Treaty on the Limitation of Anti-Ballistic Missile Systems*, signed in Moscow USSR, 26 May 1972, in force 3 October 1972

¹¹ Dana J. Johnson, Ph.D., "International Treaties Affecting Space Control: A Preliminary Assessment," unpublished work of General Research Corporation in support of a defense contract by Rockwell International Satellite Systems Division, Seal Beach, CA. Contract SDOPS 87-042, CDRL AC05-9 2, Subtask 009, 15 June 1987

¹² See also The Hague, *Convention Relative to the Opening of Hostilities*, signed 18 October 1907, in force 16 January 1910, and United Nations, *Charter of the United Nations with the Statute of the International Court of Justice* annexed thereto, 24 October 1945

¹³ See also Geneva Convention, *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and Bacteriological Methods of Warfare*, Geneva, signed 17 Jun 1925, in force 29 April 1975

¹⁴ See also United States, *The Limited Test Ban Treaties*, between the US and USSR of 3 July 1974 (not ratified) and 28 May 1976 (not ratified) which further prohibit testing nuclear weapons or other nuclear explosive devices, even "peaceful" nuclear devices

- 7 Conducting military maneuvers of any kind on the moon or other celestial bodies
- 8 Interfering with Soviet national technical means of verification provided such systems are operating in accordance with generally recognized principles of international law and are, in fact, being used to verify provisions of the ABM Treaty, SALT 1 (now expired), the Threshold Test Ban Treaty, and the Peaceful Nuclear Explosions Treaty (the last two being not ratified by the US Senate)
- 9 Initiating activities that could cause harmful interference with the activities of other states without first consulting with those states
- 10 Causing harmful contamination of the moon or other celestial bodies ¹⁵
11. Using environmental modification techniques to destroy, damage, or injure another state ¹⁶
- 12 Interfering with Soviet missile warning systems or with related communications systems, if such occurrences could increase the risk of outbreak of nuclear war between the US and USSR ¹⁷
- 13 Interfering with the radio services or communications of other states ¹⁸

Many jurists would have the strategist believe these constraints prohibit any and all offensive space control actions, particularly in peace, save those in narrowly defined instances. Yet, all treaties, while they are binding upon the signatories and usually form the bases for international law, can and are abrogated and renewed when situations dictate. Additionally, they can fall from effect when the signatories cease to exist e.g. the USSR versus Russia, or show by declaration or deed that they will (or can) no longer honor the terms. More compelling however, is that if an act is not specifically prohibited by treaty or international law, it is then permitted ¹⁹. Ergo, acts prohibited include using WMDs in space, using the moon for military basing and testing, using space for basing ABM systems, interfering with Soviet national technical means of treaty verification or their warning systems and, using debris-causing anti-satellite systems which alter the space environment. These constraints notwithstanding, still allow the US to reach out

¹⁵ See also Geneva Convention, *The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques*, signed 18 May 1977, in force 17 January 1980

¹⁶ Ibid

¹⁷ United States, *Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War Between the United States of America and the Union of Soviet Socialist Republics*, signed at Washington DC, 30 September 1971

¹⁸ International Telecommunications Convention, with Annexes and Protocols, signed at Malaga-Torremolinos, 25 October 1973, in force 7 April 1976, abrogated and replaced by the International Telecommunications Convention adopted at Nairobi, 6 November 1982

¹⁹ W D Reed, "Legal Aspects of Military Peaceful Uses of Space," *The Reporter*, Volume 7, (December 1978), 13

and affect the performance of space systems through recent advances in space control techniques, tools and procedures. Prohibitions nine and thirteen, causing harmful interference with activities of states and interfering with the radio services or communications of other states, are so general as to allow numerous modalities and techniques to be exercised without restraint and strain to be enforceable. For example, general, routine diplomacy can be viewed by some as harmful interference with the activities of states. As for interfering with the radio and communications services, Iran currently prohibits the sale and possession of satellite dishes designed to collect the direct broadcast satellite transmissions under the guise of protecting its populace from the ubiquity of western influence carried over the airwaves.

In short, the treaties fail to cordon off all actions involved in conducting offensive space operations. The current policy needs to fall into line to facilitate successful implementation but must account for the new uses of space, new actors in space, and for the evolved or changed geopolitical context.

The Case for the Offense

It is important to clarify at this point, that space control is fairly well ^{understood} in the context of war. *Jus in Bello* guidelines, The Law of Armed Conflict, established doctrine, and operational and tactical strategies serve the National Command Authorities and joint and combined arms well enough in deciding and executing denial, disruption, and destruction operations against space-based assets. In such cases, it has also been more effective and efficient to apply force upon a space system's ground-based centers of gravity e.g. command and control centers and data downlink sites, than upon the satellites themselves. The more stressing case for space control lies in those nether regions outside the bounds of open conflict and hostility. It is here I will continue to focus because the US has said little about how it intends to apply effects on

satellites given the changed geopolitical context, the new actors in space, and the new uses of space

The end of the Cold War has changed the geopolitical context of every region. The threat to the US has moved from the monolithic to the fissiparous. Threats are also increasingly non-military, being economic and cultural in nature. Actors who will likely have the greatest effect upon US intentions and actions will be niche and regional having potentially peer status in only certain areas. In order to maximize their influence, their actions will be asymmetric and could be either low-tech or high-tech. The low-tech and high-tech niche and regional competitor will likely understand the enhancing benefits of space systems which are becoming increasingly affordable and accessible. Their understanding will both alert them to the strategic implications of affecting US space systems as well as open up the opportunity for the US to effect their actions. US space control policy, therefore needs to preserve the freedom to actively protect its satellites and employ its capability to disrupt, deny, and/or destroy space assets in pursuing its objectives and its relationships with a regional, niche or peer competitors. The current space policy already states this as a principal but misses the opportunity to put teeth to it. A declaratory stance, not outlining possible responses in detail, but promoting a space control program, and supporting the fielding and exercise of systems would be effective in deterrence, improved readiness, and opening options to political and military decision makers.

A space control policy need also consider the emergence of new actors finding new uses for space. The past decade has witnessed new traditional nation-state actors such as the China, India and Japan as well as private corporations such as Space Imaging Inc. which is a commercial high resolution imaging company and Iridium a space-based telecommunications provider. Banded nation-states such as western Europe's European Telecommunications Satellite (EUTELSAT), and international business partnerships represent a new class of

consortia satellites in space. While it is true that new nation-state actors typically launch a communications or reconnaissance and surveillance satellite as their first, the private and business consortia satellites are there for profit. The US has experience in dealing with the state and private assets of another nation-state but in “reaching out and touching” another nation’s commercial satellite or that of an international business or nation-state consortia bird, the US is on new ground. Distinct treaty language, international law, and convention fail to prohibit action but neither does it guide. What then, guides the policy which will justify US ways and means in controlling space?

Space Control Policy Considerations

US interests will continue to drive space control policy in the same fashion as the other policies of this nation. The calculation of US interests, and objectives, the role the belligerent plays in threats and opportunities, and the ways and means of achieving goals still holds. What is new is that space capability is now a necessary part of the equation as well as a potential way to influence the behavior of an actor through negative incentives (for belligerents), and positive rewards (for allies). Ways and means will vary by situation and circumstance.

For a privately owned satellite belonging to the US whose customers behave contrary to the interests of the US, nationalization of the space asset under executive order may be appropriate in extremis. Prohibitions against certain uses or for certain customers under penalty of law may be more appropriate as may be the case when Teledesic is approached by Iran, for example, for communications service. Privately-owned satellites belonging to an allied nation and assisting belligerent actors necessitates first a diplomatic dialogue with the host nation. The dialogue will likely be carried along classic lines beginning with a simple request to deny service, to bargaining with incentives, to coercion. Coercion may involve disruption of the data or service provided to disruption of the command and control elements of the satellite.

jeopardizing its ability to stay in a functional orbit. Extreme coercion may mean destruction of the asset. Lethal and non-lethal means are currently available to prosecute this spectrum of responses, as are attributable and non-attributable implementations depending on the desired objective. A demonstration of US resolve favors a course of action involving non-lethal, attributable means to affect a belligerent's behavior while preserving flexibility for future escalation. Non-attributable, lethal means may be salient in calculations involving covert or clandestine operations.²⁰

An effective illustration of this can be found in the Gulf War experience involving the French. France's state-sponsored, privately-operated SPOT satellite²¹ was being tasked by Iraq and sympathetic actors to provide imagery of the Saudi Arabian Peninsula. At US request, the French Government agreed to deny Iraqi requests for tasking as well as archived imagery but failed to honor US requests to deny other customers. The US was able to prosecute the Desert Storm campaign at such a rate and otherwise frustrate transport of imagery into Iraq so as to prevent the French position from becoming an issue. Had the conflict protracted and US and coalition lives been lost because of SPOT imagery assisting Iraqi forces, then the US would have had to implement a space control strategy against the French satellite.

A similar exigency is necessary in determining the policy considerations of performing offensive space control on satellites belonging to nation-state and/or business consortia such as the International Maritime Satellite INMARSAT and ARABSAT. The complicating factor is that a single entity's action or collusion can effect the other participants. In this calculus the costs of the objective or end-state is compounded by the potential repercussions among the

²⁰ For this calculus, W. Michael Reisman, and James E. Baker, *Regulating Covert Action: Practices, Contexts, and Policies of Covert Coercion Abroad in International American Law*, (New Haven/London: Yale University Press, 1992), offer a contemporary and complete discussion. While their treatment fails to consider the space element it is nevertheless easily incorporated by the reader.

²¹ *Satellite Pour l'observation de la Terre*

consortia as a result of unilateral US action. This is the down-side. On the up-side, the other players can be co-opted into condemning and norming the behavior of the belligerent in absence of US action. Participants may even volunteer to temporarily effect the satellite's performance in sympathy for the US cause. In the absence of such assistance and assuming, at best, a non-position by the others and, at worst, a collusion with the belligerent the US stands to implement aforementioned spectrum of means with potentially multiple possible outcomes. While determining the preferred course of action is difficult, it should not drive US policy making (or in this case re-making) into apoplexy. US resolve will increasingly be tested and action is necessary to preserve our ability to deter and our global leadership role. A vital assist in assessing a policy specifically the cost of doing space control in this way and at all, is understanding the possible responses by an adversary.

Responses to "Being Touched"

Obviously, the preferred and hoped for response on behalf of any of the actors is compliance. The sooner and at the earlier stages of coercion the better. There will be those who will test us and as General Estes reminds, we need to be able to protect and respond.²² The US reaction is measured by the intensity, frequency and duration of the adversary test. This can cover the spectrum of elevated rhetoric to the initiation of hostilities (more on this in a moment). In terms of contemporary capability, few adversaries have the ability to respond in kind and if so, not to any depth. The US currently retains overwhelming superiority in space. If the belligerent test/response is against a terrestrial US space asset, the calculus comes less favorably. US launch facilities, critical to resupplying our space armada, are amazingly soft and vulnerable.

A final response available to an adversarial space actor is the option of initiating hostilities. Jurists and strategist alike are quick to use maritime analogies referring to attacks on

²² William B. Scott, "Pentagon Considers Space as New Area Of Responsibility," 55

spaceship are *prima facie* similar to attacks on ships in international waters and ergo attacks on sovereignty. Indeed, the 1996 National Space Policy makes this specific claim as well.²³ I argue, however, that this relationship is mythical and that there is a qualitative difference between space and surface ships. Perhaps this is best articulated by one of the Air Force's senior space officers, Lieutenant General Roger G. DeKok, who oft reminds that "satellites do not have mothers." He is referring to the fact that while attacks on surface ships have direct consequences in terms of human life, attacks on satellites do not share the same trait. Our Cold War biases perpetuate this myth. This is not to discount, however, that perceived hostile intent or a hostile act against a satellite cannot stimulate either the US or an adversary to arms. Indeed these secondary effects require diligent consideration in selecting a course of action. New initiators to the spacefaring arena have often sunk considerable treasure into their nascent space capability. The particular service or function provided by the satellite may be considered vital to the nation's security e.g. an early warning satellite such as the US's Defense Satellite Program. Blinding it or rendering a command and control satellite ineffective either temporarily or permanently may be sufficiently destabilizing in peace or heightened tensions as to provoke a nation to hostilities. Some satellites may directly support state infrastructures such that loss of the asset may result in loss of life. For example, if commercial airline traffic is dependent upon GPS navigation which is interrupted or denied during a particularly bad storm resulting in airline crashes. Another consideration is blurring of commercial and military uses of satellites. To date, only the USSR and the US have had the luxury of fielding specifically commercial and military space assets. For many countries, especially the new actors, imaging and communications satellites are dual use. A new space policy and contemplated courses of action must consider and weigh this as well. Clearly, this brief treatment of potential responses to

²³ White House, *Fact Sheet. National Space Policy*, 2

offensive space operations only adds to complexity of what a new space policy must consider
No one said this was going to be easy, neither does it argue well that it should not be done

Conclusion

The 1996 National Space Policy needs to fully incorporate the actors, new economic uses, and current geopolitics of this decade in order to have a chance of preparing us, even serving us in the new millennium. Forsaking Cold War biases and challenging overly restrictive, out-dated treaty and convention constructs is a major part of the task and solution. If US leadership feels compelled to proceed more slowly and carefully in addressing current myths and prohibitions, there remains sufficient latitude and avenue for the national security strategist to contemplate and conduct offensive space operations. In the business of global leadership and national security “reaching out and touching” satellites, like other related matters, calls for vision not timidity, and able strategists to navigate our world’s final frontier.

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