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SPACE DEBRIS SYMPOSIUM (A6)
Political, Economic and Institutional Aspects of Space Debris Mitigation and Removal (Joint with Space Security Committee) (6)

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INVESTIGATION OF NATIONAL POLICY SHIFTS TO IMPACT ORBITAL DEBRIS ENVIRONMENTS

Abstract

Low earth orbit has become increasingly congested as the satellite population has grown over the past few decades, making orbital debris a major concern for the operational stability of space assets. This congestion was highlighted by the collision of the Iridium 33 and Cosmos 2251 satellites in 2009. This paper, completed as part of a graduate course in Space Policy at the University of Alabama in Huntsville, addresses the current state of orbital debris regulation in the United States and asks what might be done through policy change to better control the orbital debris environment. A brief discussion of the nature of orbital debris addresses the major contributing factors including size classes, locations of population concentrations, projected satellite populations, and current challenges presented in using post-mission active debris removal to mitigate orbital debris.

An overview of the current orbital debris regulatory structure of the United States reveals the fragmented nature of having 6 regulating bodies providing varying levels of oversight to their markets. A closer look into the regulatory policy of these agencies shows that, while they all take direction from The U.S. Government Orbital Debris Mitigation Standard Practices, this policy is a guideline with no real penalty for non-compliance. Various policy solutions to the orbital debris problem are presented, ranging from a business and usual approach to a much stricter regulation and penalty system which would require spacecraft operator compliance.

In a recent article on AOLDefense.com, Dr. Joan Johnson-Freese introduced a new approach to address select issues of international policy she calls the Nike Doctrine. In this new policy approach, Dr. Johnson-Freese suggests that sometimes the best way to enact international change is to take a strong, unilateral stance on the issue and let the international community follow. She goes on to reference orbital debris as an issue that may be well served by this approach. This paper will outline a policy option for U.S. orbital debris mitigation that relies on a more actively involved, centralized space operations regulatory body operating with a clear set of regulations and penalties that could potentially be executed under a Nike Doctrine approach. It is recognized that such an approach, especially one that is implemented unilaterally, may have adverse impacts to the United States space industry's competitive stance in a global market. Potential economic and physical limitations to this policy approach are also addressed.