

53rd COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
The Current Status of the Rule of Law with Regard to Space Activities (4)

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NON-COOPERATIVE SPACE DEBRIS MITIGATION

Abstract

Unrestrained growth in the amount of space debris is leading to alarming safety of flight consequences for the global space community. Velocities for space objects are significant, especially in low earth orbit, so even small objects, some as small as a paint chip, can impart significant damage to objects they impact. Given the threat, space traffic growth and management is both a challenge and a significant concern to those who hope to peacefully leverage the benefits of the capabilities enabled by space systems. These threats must be monitored and addressed.

Several nations are exploring technologies for space tugs. A space tug is robotic spacecraft designed to rendezvous and dock with a space object; make an assessment of its position, orientation, and operational status; and then either stabilize the object in its current orbit or move it to a new orbit. A potential important application includes clearing increasingly crowded orbital corridors, especially satellites located in low Earth or geosynchronous orbits that are no longer functioning but pose a danger of adding to the population of in-orbit debris via destructive collision with other objects. This repositioning may be desirable as a means to retire of satellites into “graveyard” orbits or to de-orbit them.

This paper will examine the legal aspects of employing the space tug concept to reduce the potential for space collisions, especially dealing with circumstances where feckless and irresponsible states refuse to avail themselves of the opportunities to move satellites that pose dangers to other operational space systems.

According to Article VIII of the Outer Space Treaty, a state retains jurisdiction and control over its space objects. Unless this right is relinquished, some argue that peacetime retrieval, alteration of orbit, or any other form of interference with foreign space objects would be unlawful without prior consent under treaty and customary international law, no matter how desirable the end result. Even though Article VI provides that states bear international responsibility for government and private space activities and must supervise and regulate national activities in space, they argue there is no effective lawful enforcement mechanism for failure by a state to perform actions consistent with these responsibilities.

This paper will examine arguments for and against movement or disposal of satellites without consent. It will suggest that such mitigation actions could be taken by another state or entity consistent with international law, but also highlight limits and dangers associated with asserting this right.