Paper ID: 27751
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58th IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)
Legal Issues of Space Traffic Management (4)

Author: Mr. Nathan Johnson
University of Nebraska, College of Law, United States

RIGHT OF WAY FOR ON-ORBIT SPACE TRAFFIC MANAGEMENT

Abstract

Outer Space is a different environment, both from an operational and legal perspective, than Air Space. While the Chicago Convention recognizes that "every state has complete and exclusive sovereignty over airspace above its territory", the Outer Space Treaty explicitly recognizes Outer Space as "the province of all mankind," with no sovereign jurisdiction.

So, from a legal perspective, there is currently no single binding authority to issue instructions for two satellites on a collision course to take evasive maneuvers. Satellite operators are under the authorization and continuing supervision of their separate launching states, whose authority to direct their satellite operators is defined by their own national legislation. But each state is guided by self-interest to oversee satellites launched from their jurisdiction because of a unique provision of Space Law, which holds the launching state, and not the private operator, directly liable for damage caused by a satellite. And as a practical matter, each satellite operator is also presumably guided by their own commercial self-interest to preserve the usefulness of their satellite.

And in the event that two actively operated space vehicles were to cross paths, there are also no clear right-of-way rules to tell those operators who should move first. They would be motivated to preserve their vehicles, and avoid any need to trigger the need for fault determination of in-space damage under the Liability Convention. But they would also be motivated to preserve the usefulness of their vehicle, and expend as little fuel as possible, and move as little as necessary out of their operating parameters.

Multiple groups have conducted studies of possible approaches to Space Traffic Management. The ISU in particular concluded that the best rules would "provide the spacecraft owner-operators with the information and tools to help make educate choice and to improve satellite safety." But in the end, every study has stopped short of promoting how owner-operators facing a conjunction should determine who has the right-of-way.

This paper will outline different suggestions for right-of-way rules for space objects, as a "set of technical and regulatory provisions," based on a limited history of practice, and on rules in comparative transportation regimes. And for each suggestion, further outline the implications for space operations, fault-based liability, and effectiveness in "promoting safe... operations in outer space... free of physical or radio-frequency interference."