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NATIONAL LAWS AND THE DELIMITATION OF OUTER SPACE: CONVERGING ON CONSENSUS?

Abstract

A series of publications and events in 2018 and 2019 has created unprecedented momentum toward resolving the 60-year controversy regarding the altitude at which outer space begins.

Many states very much prefer to have clearly established limit to their sovereignty; however, the United States has remained steadfast in its opposition to the adoption of an international legal delimitation of outer space. Many organizations around the world have relied on the Karman line, which the Federation Aeronautique Internationale set at 100 kilometers (62 miles) circa 1960. Also, a few national space laws specifically reference the 100-kilometer altitude. Several agencies of the United States government, beginning with the Air Force in 1962, have adopted the 50-mile (80-kilometer) altitude mark for awarding astronaut badges.

Several scholarly publications in 2018 questioned the technical basis for the 100-kilometer Karman line as well as analyzed the history and the inadvertent misrepresentations of Theodore von Karman's analyses, concluding that 80 kilometers is the more technically correct delimitation altitude. This in turn led the Federation Aeronautique Internationale to propose that an international workshop be held to fully explore this issue. Furthermore, this debate, which had long been limited to academic and diplomatic venues, spilled into the mainstream media as the issue began to be seen as impinging on the approaching dawn of suborbital tourism being ushered in by Blue Origin's New Shepard and Virgin Galactic's SpaceShipTwo.

This paper presents an overview of the delimitation issue in national space law, and explores how national laws may affect the business decisions of commercial suborbital carriers to operate from locations around the world. It also presents the technical rationale for delimiting outer space at 80 kilometers.