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## Chapter 8

# The Launch of *Sputnik* as the Catalyst for International Space Law Making\*

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### Abstract

The launch of *Sputnik*, the first satellite orbiting Earth, in 1957, followed by the US satellite, *Explorer 1*, in early 1958, triggered what we call the space race. Of course, there had already been space activities undertaken before that date on both sides of the Iron Curtain. The launch of *Sputnik*, however, was the catalyst for the developments in the following decades with respect to technology as well as science. But the “Sputnik shock” also triggered new developments in law and policy. The beginning of the space race also considered a new front in the Cold War became a concern for the UN. The UN therefore set up the Committee on the Peaceful Uses of Outer Space. The Committee, especially its Legal Subcommittee, soon became instrumental in international space law making. The Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space was passed by the UN General Assembly in 1963. This resolution further evolved into the 1967 Outer Space Treaty. This treaty was later followed by other treaties such as the Astronaut Rescue Agreement, the Liability Convention, the Registration Convention and the Moon Agreement. Sev-

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eral further UN resolutions on outer space were also worked out in the Committee. These developments have to be seen in the context of the Cold War and the East-West confrontation. Especially the space race between the United States and the Soviet Union as well as their respective allies led to the space law framework as we know it today.

## I. The Beginning of the Space Race

When the Soviet Union launched *Sputnik*, the first artificial satellite, on October 4, 1957, it triggered a development commonly known as the space race. As is pointed out by Alexander Soucek, however, this did not appear out of nowhere.<sup>1</sup> Mathematical, scientific, technological, and even legal foundations for spaceflight were laid in the first third of the 20th century and even before.<sup>2</sup>

Pioneering theoretical and practical steps were taken. Rocket technology that had existed for centuries was developed to levels of quality that had not been seen before. A culmination of that development was the German A4/V-2 rocket developed by Wernher von Braun. Developed as a ballistic missile, it reportedly reached outer space in a 1942 test flight.<sup>3</sup> Further US developments of the V-2, such as the first two-stage Bumper rocket, continued the foray into outer space after World War II, also taking the first photos from outer space.<sup>4</sup>

Development of larger rockets that would one day be capable of lifting cargo to Earth orbit continued on both sides of the Iron Curtain resulting in the likes of the US Redstone rocket.<sup>5</sup>

On October 4, 1957, the Soviet Union launched *Sputnik*, the first artificial satellite to orbit Earth. Its launch opened a new chapter in the history of space exploration and spaceflight.<sup>6</sup>

This technological and astronomical success earned the Soviet Union a lot of additional prestige in the eyes of the world. In the meantime, people in the Western world, especially in the United States, were shocked: the words *Sputnik shock* continue to reverberate to this day.<sup>7</sup>

American confidence was further shattered when the rocket launching the satellite Vanguard 1 exploded only seconds after liftoff. It took until February 1, 1958, that American honor was regained, when Wernher von Braun's team of the Army Ballistic Missile Agency successfully launched *Explorer 1* on a Juno rocket. *Explorer 1* was a small satellite with a mass of 8.2kg equipped with a magnetometer and a Geiger counter. The data collected by the satellite led to the discovery of the Van Allen radiation belt.<sup>8</sup>

Development continued on both sides of the Iron Curtain. In November 1957, the Soviet Union launched the spacecraft *Sputnik 2* carrying the dog

Laika.<sup>9</sup> The United States also conducted experiments with animals, mainly rhesus-monkeys and chimpanzees.<sup>10</sup>

## **II. Legal and Political Considerations**

These developments in the second half of the 1950s, at the height of the Cold War, gave said conflict a new dynamic. It had suddenly become clear that the superpowers were capable of reaching every point on our planet via outer space. Other countries such as the United Kingdom had rocket development programs of their own (e.g., Blue Streak). Numerous young Americans decided to enlist in the Armed Forces to keep the Russians off the new front.<sup>11</sup> Legal concerns such as the question to overfly a state's territory suddenly became evident.<sup>12</sup> It became visible that something had to be done on the political level and thereby also on the legal terms after initial considerations on space law had already been undertaken by Emile Laude, V. A. Zarzar, and Vladimir Mandl.<sup>13</sup>

Among the early proponents were John Cobb Cooper, first director of the Institute of International Air Law at McGill University in Montreal, Canada, and Alex Mayer of the Institute of Space Law at the University of Cologne, Germany.<sup>14</sup> Some other scholars argued that the regulation of spaceflight should depend on the nature of the activity rather than its location. Nicolas M. Matte, who would later become director of McGill's Institute of Air and Space Law, promoted a single legal aerospace regime.<sup>15</sup>

## **III. Calling-in of the UN**

The first direct result of the so-called Sputnik shock was the establishment of a special body within the United Nations, the Committee on the Peaceful Uses of Outer Space (UNCOPUOS) as an ad hoc committee in 1958. In 1959 UNCOPUOS became a permanent committee. Two subcommittees, the Scientific and Technical Subcommittee and the Legal Subcommittee, were established in order to consider specific proposals made by the member states. UNCOPUOS reached an important conclusion concerning decision making: all decisions should be made in consensus without a formal vote.<sup>16</sup>

## **IV. International Space Law Making**

One first major achievement of UNCOPUOS was the adoption of the UN Declaration of Legal Principles Governing Activities of States in the Exploration

and Use of Outer Space by the UN General Assembly on December 13, 1963.<sup>17</sup> It was not a treaty, but it contained a number of fundamental principles that would later be transformed into a legally binding instrument and that led, eventually, to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (Outer Space Treaty—OST). The Outer Space Treaty was signed simultaneously in London, Washington, and Moscow on January 27, 1967.<sup>18</sup> The Outer Space Treaty has since become the main legally binding instrument of international space law<sup>19</sup> with 105 States Parties, while another 89 have signed the treaty but have not completed ratification.<sup>20</sup>

The Outer Space Treaty's structure largely follows the Legal Principles Declaration.

Art. I OST incorporates the principle declaring, for the benefit and in the interest of all countries, freedom of exploration and use of outer space, the Moon and other celestial bodies by all states; and the freedom of scientific investigation.<sup>21</sup>

Art. II kept the formulation of the 1963 declaration. It prohibits national appropriation of outer space, the Moon and other celestial bodies, by claims of sovereignty, by means of use or occupation, or by any other means, in one brief but comprehensive sentence.<sup>22</sup>

Art. III restates the obligation to conduct space activities in accordance with international law, including the UN Charter.<sup>23</sup>

Art. IV is often mentioned in the context of demilitarization of space but confers only certain limitations on military activities in outer space. Restrictions are stricter concerning military activities on the Moon and other celestial bodies.<sup>24</sup>

Art. V contains basic principles concerning assistance to astronauts in the event of accidents, distress, or emergency landings on the territory of foreign states or the high seas.<sup>25</sup>

Art. VI incorporates the principle of international responsibility of states for national space activities, whether they are carried out by governmental agencies or nongovernmental entities. When the treaty was negotiated, the parties involved agreed to include private subjects in this article although at the time only states/government agencies carried out space activities. This paved the way for private entities and nonstate actors to conduct space activities side by side with states and intergovernmental organizations. But at the same time, states assumed responsibility not only for their own activities but for space activities of private legal persons of their country. These activities require authorization and supervision by the state.<sup>26</sup>

Art. VII deals with liability for damage caused to another state or its nationals by space objects. This is a special category of responsibility for activities that may cause compensable damage due to their hazardous nature, although they are not prohibited by law and do not violate any rules of international law.<sup>27</sup>

Art. VIII reflects the principle of retaining jurisdiction of the state on whose registry an object launched into outer space is carried and control over the object and any personnel thereof, while it is in outer space or on a celestial body. Art. VIII provides a basis for registration of space objects and establishes a link between registration and the exercise of jurisdiction.<sup>28</sup>

Some provisions of the Outer Space Treaty show limits that the drafters of the treaty did not want to cross. For example, Art. IX providing for international consultations before undertaking activities that could harmfully interfere with the activities of another party. But these consultations or their outcome have not been made obligatory. Further, there is no dispute settlement mechanism.<sup>29</sup>

The Outer Space Treaty did not bring any principles regulating economic activities, the exploitation of resources or the production of energy.<sup>30</sup> This was either not on the agenda in the 1960s or deliberately left out by the drafters of the treaty.

In the twelve years that followed the entry into force of the Outer Space Treaty, four other UN space treaties were concluded.

The agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space was concluded in 1968.<sup>31</sup> It deals with accidents in the territories under and outside the jurisdiction of States Parties and with the return of personnel and space objects.<sup>32</sup>

The Convention on International Liability for Damage caused by Space Objects of 1972 established interstate settlement of disputes.<sup>33</sup>

The Convention on Registration of Objects Launched into Outer Space of 1975 established national and international registries of space objects.<sup>34</sup>

The 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies elaborated further on some principles of the Outer Space Treaty and provided some more specific provisions. The Agreement also contains specific provisions on economic activities, which, however, led to controversy and a rather small number of ratifications,<sup>35</sup> seventeen in 2016.<sup>36</sup>

This reluctance was one of the factors led to a halt in treaty making and a shift to space law making via UN General Assembly resolutions and soft law regulations.<sup>37</sup>

In 2012, the Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets or short the UNIDROIT Space Protocol was adopted. It is in a sense the first space law treaty since 1979.

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- <sup>11</sup> Marchis, 61.
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