

will return your money to you. However, there is every present indication that we should proceed and I hope that we will have a nice success in this enterprise . . . I would very much like to receive a diagram from you covering the subject matter of my article, namely, Earth Jurisdiction, and also your own concept of the field covered by Sanger.”

Letter from Andrew G Haley to Frank J Malina, October 17 1956

This short excerpt reports a successful sale of stock and records the meeting of the board approving of the sale.

“NDRC has definitely decided to sell you \$2000 worth of stock. Please send your check payable to the order of National Design and Research Corporation, and I will have the stock issued to you. This action was taken at the meeting of the Board of Directors on Friday evening, October 12, 1956. I am glad you are now to become a fellow stockholder.”

REFLECTIONS ON SPACE LAW AND GOVERNMENT

*William J. Potts, Jr.**

*Space Law and Government*¹ was, first and foremost, the product of the mind of a remarkable person who brought to the task his broad experience in the law, in industry, and particularly, his keen knowledge of the physical sciences. It was also the product of a number of other minds and hands over a period of several years. The story of why and how it was written is an illustration of the fact that the knowledge and experience of persons who are specialists in known areas of the arts and sciences are essential to their ability to function in new areas of activity where there are no charted pathways.

By the time the actual writing of *Space Law and Government* had begun, a number of nations were already well into the Space Age to the extent that they had launched vehicles capable of traveling into outer space or had commenced plans to do so. A major problem with such efforts and plans was that there were no established definitions of what body of law would cover activities beyond the Earth's atmosphere. It was indeed questionable whether time-tested rules governing Aeronautical flight within the earth's atmosphere would serve as an adequate guide to future activities in outer space. But it would be incorrect to conclude that *Space Law and Government* was Haley's reaction to Sputnik. The seeds, and many of the major concepts espoused in the book, are the product of decades of thought, dialog, and writing by Haley and the team he put together to help chart the course for space law. The story of *Space Law and Government* actually begins some three decades earlier, in the early 1930's.

* Bill Potts joined Andrew G. Haley's firm in 1957, and the firm eventually become known as Haley, Bader & Potts. Bill remained at Haley, Bader & Potts until his retirement in 1995.

¹ ANDREW G. HALEY, *SPACE LAW AND GOVERNMENT* (1963).

Andrew G. Haley was by profession an attorney, who beginning in the late 1920s, had practiced in Washington, D.C., first on Capitol Hill as a legal assistant to Senator C.C. Dill of the State of Washington, where Haley was born in 1904. Senator Dill was a long time member and eventually the Chairman of the Senate Commerce Committee. As his legal aide, Haley worked on the drafting and enactment of what became known as the Communications Act of 1934². Having the benefit of his experience with Senator Dill, Mr. Haley became one of the original staff of the Office of Legal Counsel of the Federal Communications Commission, which was created by the 1934 Act. While in that position, Haley took particular interest in the administrative problems related to the international regulation of radio communications, the functions of the United States as a member of the International Telecommunications Union and, overall, on issues involving the need to base legal standards on the realities of physical laws. Mr. Haley had come to learn that progress in international radio and telecommunications very much depended on creating harmony between the realms of the law and the sciences. For all the political differences that fragmented the world prior to World War II, the fact was that the laws of physics applied equally to democratic, communist, or fascist regimes. Radio signals propagate the same, whether the messages carried on those radio waves call for peace or for war. It was on the early stage of ITU negotiations, as part of the FCC's team, that Haley saw first-hand the workings of international diplomacy, and the time it took to accomplish even the most mundane tasks for international regulations. This experience colored his approach to space law. He fundamentally understood that space law was by definition part of international law, and no amount of superpower bullying was going to establish norms for space law, even something as simple as "where does space begin?"

Late in the 1930s, Mr. Haley left the FCC to form his own private law firm in Washington, D.C., specializing in what has come to be known as Administrative Law, including communi-

² Communications Act of 1934, Pub. L. No. 73-416, 48 Stat. 1064 (1934).

cations and related governmental and intergovernmental issues. It was then that he first met the noted Hungarian physicist Dr. Theodore Von Karman, a recently arrived refugee from Hitler's Europe in need of advice on immigration and other legal issues. Through his pioneering work on the practical application of the power of jet propulsion, Dr. Von Karman soon became active in the exploitation of small external rocket engines as a means for assisting aircraft in the use of short runways. With the entry of the United States into the Second World War, Dr. Von Karman's patents, skills and experience were noticed by Army General (and future first commander of the U.S. Air Force) Henry H. (Hap) Arnold.³ Arnold convinced the army to provide the basic procurement contracts through which the newly formed Aerojet Corporation was able to mass produce jet-assist take-off (JATO) modules for use by the United States' military air forces, principally in the Pacific theater of operations, where they allowed cargo planes to take off from the short, rough runways with far greater payloads. Mr. Haley, who had enlisted in the Army Judge Advocate General's Corps at the beginning of the war, became the first President and eventually General Counsel of Aerojet with which he served until peace came and he returned to his Washington practice. Von Karman went on to found the Jet Propulsion Lab (JPL), and he and Haley remained lifelong friends.⁴ While working day to day with the specific legal problems at Aerojet, Mr. Haley had to give serious thought to the post-war era in which that corporation would certainly look to the further development of technologies for faster air-flight, and eventually, spaceflight. In planning for such a future, the unanswered questions of where terrestrial aeronautical law ended, what would be the international and domestic legal status of objects placed into orbit and eventually deep space, all demanded answers. It was then that Haley foresaw

³ Walter J. Boyne, *Von Karman's Way*, 87(1) AIR FORCE MAG. (Jan. 2004), <http://www.airforcemag.com/MagazineArchive/Pages/2004/January%202004/0104vonkarman.aspx> (for an excellent article on the relationship between von Karman and Arnold).

⁴ It is interesting to note that 2013 represents not only the 50th anniversary of *Space Law and Government*, but also the 50th anniversary of the death of von Karman, who died in May of 1963, as *Space Law and Government* was undergoing its final edits.

the need for the formulation and study of a new legal system which he called Space Law.

International interest in future travel beyond the limits of the Earth's atmosphere and other uses of outer space was growing throughout the late 1940s. Older organizations such as the American Rocket Society (ARS) (which Haley served as General Counsel from 1955 to 1963, and president in 1954) and similar groups in Europe and elsewhere had begun focusing on the scientific aspects of the peaceful uses of rocketry. In London in 1951, the International Astronautical Federation (IAF) was founded under United Nations auspices from among the world's larger rocket-centered organizations such as the ARS. During the time leading up to the formation of the IAF, Mr. Haley had been active through articles submitted to ARS meetings and his travels abroad, in emphasizing that the legal problems presented by the future uses of outer space were just as grave and complex as those of the science involved.

Here again, Haley understood that while space technology was evolving at an almost unbelievable pace (President Kennedy handed down the famous Moon challenge in 1961 just a few years into the space age!), it was going to take the international legal community far longer to agree to any legal norms for space activities. Haley tried to harness the laws of physics to hasten the process, at least in regard to one issue: where outer space begins. Working with von Karman, Haley came up with what became known as "The von Karman Line," which is actually not a single line, but rather a set of equations that bound an area whereby any body travelling through this regime loses the ability to continue using aerodynamic lift, and must instead rely on propulsion alone to not fall back to Earth. The "line" averages out to be about 52 miles.⁵ Haley formally introduced The von Karman Line as a practical answer to the vexing question of where national sovereignty to airspace ends at the VIIIth Annual Congress of the International Astronautical Federation in October, 1957, at Barcelona, Spain. Much to his chagrin, what he thought to be a completely logical and supportable

⁵ See SPACE LAW AND GOVERNMENT, *supra* note 1, at 78 (for a visual depiction and explanation of the von Karman line).

definition of the beginning of outer space was met with derision from the international legal and engineering community. He took out his frustration in *Space Law and Government*:

In arriving at a level-headed statement of the jurisdiction of space law, the lawyer must obtain help from the physicist to determine just where 'airspace' ends. We must ascertain this outer boundary because hundreds of local laws of more than a hundred nations, and the restrictions of a score of international treaties, are bound tightly to the physical concept of airspace. And, as C. Wilfred Jenks has stated, 'no lawyer should indulge in abstract speculation on the subject without first familiarizing himself with the scientific background and outlook.'

Ironically enough, the lawyer finds the main crackpots and nuisances among engineers and sociologists who assume the role of amateur lawyers and give vent to rather silly if harmless rhapsodies in a field wholly unfamiliar to them. To them the very real task of delimiting airspace is wholly unnecessary. The sound scientist, on the other hand, avoids legal interpretation while at the same time making an essential contribution by staying within his technical expertise and keeping the lawyer well advised on appropriate physical phenomena. Such was the most helpful role of Dr. Theodore von Karman.⁶

It is a testament to both Haley's analysis and frustration that 50 years after the publication of *Space Law and Government*, there still is no official demarcation of space, yet most agree that outer space begins somewhere around 50 miles (very close to the mean equations that make up the von Karman Line).⁷

With the successful launch of the Soviet Union's *Sputnik* satellite in 1957, the concerns with the legal status of such objects and the need to study the legal aspects of their utilization

⁶ *Id.* at 97, quoting C. Wilfred Jenks, *The International Control of Outer Space*, in 3rd PROC. COLLOQ. L. OUTER SPACE 3, 7 (Stockholm: Swedish Astronautical Society, 1961).

⁷ See, e.g., John Schwartz, *Now Earning Wings, a New Kind of Astronaut*, N.Y. TIMES (Oct. 12, 2004), http://www.nytimes.com/2004/10/12/science/space/12astr.html?_r=0 (describing how the Federal Aviation Administration had special commemorative "wings" created to be awarded to any pilot or co-pilot that flew higher than 50 miles).

had become obvious to all. Equally obvious at that time was the tension between the United States and the Soviet Union, and a palpable fear that outer space could become “the high ground” of the next world war, with each of the superpowers placing nuclear weapons into outer space. The militarization of space was a very real possibility at the time, and Sputnik generated the so-called “missile gap” that plagued the remaining years of the Eisenhower administration, and gripped the nation in fear. Because of his position in a number of prestigious international organizations such as the International Astronautics Federation (IAF), International Academy of Astronautics (IAA), and ultimately the International Institute of Space Law (IISL), Haley was able to travel to parts of the world, especially within the Soviet Block, where most westerners were not welcome. Whenever he travelled, Haley would speak of the need to reserve outer space for peaceful purposes only. His travels also gave him some hope that the Soviets were just as fearful of the militarization of space as were Americans, and that, ultimately, cooler heads would prevail. Haley knew, however, that just below the surface of any discussion of establishing international norms for space operations the “bombs in orbit” issue lurked, and dominated any discussions of a global treaty on space law.

By the late spring of 1957, Haley had already completed drafts of several chapters for a proposed book on space law. When I joined Mr. Haley’s law firm in the summer of that year, it consisted of Haley, his nephew Michael Haley Bader (who went on to help found MCI and be instrumental in the breakup of the AT&T telephone monopoly), J. Roger Wollenberg and Edward F. Kenneham. Obviously, we were a very small shop, and at that point, Haley was in the midst of a tour of 30 U.S. and 13 European universities, speaking on the issue of outer space law with his friend and jurist Welf Heinrich, Prince of Hanover.

One of my initial assignments was to prepare a paper on the legal status of *Sputnik* and, in particular, the lawfulness of the Soviet use of the radio frequency of 20.0 MHz which had been specifically reserved by the rules of the UN’s International Telecommunications Union (ITU) for emergency uses only. Within the staff of Mr. Haley’s firm, my paper was greeted as an

initiation to the “Team.” It was clear to me that many hands had worked on “The Book” under Mr. Haley’s close supervision

Over the next few years after my initial introduction in 1957 to what is now termed Space Law, Mr. Haley and the team continued to work on *Space Law and Government*. That team was comprised not only of lawyers but of physicists and engineers, the steady stream of whom became a common feature of our small offices, library and conference room. Actually, *Space Law and Government* wasn’t even Haley’s first book. During my early years at Haley’s firm, he was writing *Rocketry and Space Exploration: the International Story* a historical and technical look at the development of rocketry.⁸

On the legal side of the Team, much of the subsequent work was led by Steven Doyle, who, at the time was an attorney with the firm, and who had the difficult task of whipping a growing pile of draft materials into a coherent volume. In the next section of this preface, Steve will describe how that task proceeded. For myself and my longtime friend and partner Mike Bader, we were left to manage the day-to-day operations of the firm and make sure that our work in telecommunications regulation was bringing in the revenues necessary to support the firm, and Haley’s quest to provide a legal framework for future human activities in space.

⁸ ANDREW G. HALEY, *ROCKETRY AND SPACE EXPLORATION: THE INTERNATIONAL STORY*, (Van Nostrand 1958).

BRAVE NEW WORLD OF HOSTED PAYLOADS

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Arguments in favor of flying government-sponsored hosted payloads aboard commercial satellites have gained significant traction in recent years. The space community seeks to satisfy the increasing demand for space-based information with robust systems and also reduce the costs of supplying that capacity. Hosted payload solutions can fill the programmatic seams between flagship and small size satellites system and hold great potential to enhance the resilience of US national security space systems architectures and achieve desired cost savings. Integrating these capabilities with existing commercial systems will present significant challenges and involve accepting new programmatic risks. Despite the advantages, integrating national security and intelligence hosted payloads aboard commercial satellites raises unique contracting, policy, and Law of Armed Conflict issues.

MULTIPLE FORCES ARE WORKING TO DESTABILIZE THE US AND ITS SPACE SYSTEMS ADVANTAGES

Over the last 20 years, systems relaying data and providing information from space have become critical to the conduct of wars and peacekeeping, not just in our everyday life. Very simply, space has become an integral part of modern life and all

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