Preface

While there is a well-recognized lack of will to (over)regulate the space industry for fear of stunting the growth of this highly risky sector, it is necessary to provide an appropriate level of oversight and regulation in this field, both for legal (under the international space law regime) and policy reasons. The primary purpose of this book is to provide an innovative approach to a possible next phase of development in governance of the space industry: insurer mandated and/or incentivized standards acting as regulations to protect the sustainability and financial viability of the industry moving forward. While I recognize that this method is likely less effective than carefully implemented governmental regulation, it is my view that in the right phase of development, it can serve a promising stopgap function in the interim, and assist to develop the standards that will later be implemented in governmental regulations. By using a comprehensive “insurance as governance” approach that has slowly emerged over the last two decades and by analyzing the unique legal and policy implications in international space law and US domestic space law, this book provides guidance to policy-makers, academics, space entrepreneurs, and insurers to assist in the continuing development of this industry. Notably, this book provides a unique case study, comparing the development of steam boiler insurance to possibilities that may be available for the development of the space insurance industry. This book also briefly addresses opportunities that may be available to combine or supplement space insurance policies with other forms of insurance to increase affordability and industry viability, as well as to solidify the relationship between insurer and insured.

This preface contains a description of those projects that have contributed to the development of this book. An article bearing substantial similarity to Chapter 5 of this book was produced as “The Definition and Delimitation of Outer Space” in the *Annals of Air and Space Law*,¹ originally written upon request from the International Association for the Advancement of Space Safety to be presented at the UN COPUOS Legal Subcommittee. Editorial assistance on that article was provided by: Prof. Ram S. Jakhu, Prof. Paul

¹ Andrea J. DiPaolo, “The Definition and Delimitation of Outer Space: The Present Need to Determine Where ‘Space Activities’ Begin” (2014) XXXIX *Ann Air & Sp L* 623.

Dempsey, Dr. Yaw Nyampong, Mr. Tommaso Sgobba, Dr. Joseph Pelton and Prof. Sa'id Mosteshar, though I served as the only author.

I also authored a short piece entitled "Legal Considerations for Commercial Space: An Overview" in the *New Space* journal,² which has been significantly adapted for inclusion in this book, though not in one contiguous section. In addition, I supplied a chapter entitled "State Spaceflight Liability and Immunity Acts in Context" in the edited volume *Commercial Uses of Space and Space Tourism*,³ which served as the basis for the relevant sections of this book, particularly the section of Chapter 8 addressing such acts. That chapter was based on a presentation I delivered under the heading of "Legal and Policy Aspects of Commercial Use of Space, including Space Tourism" in Leuven, Belgium in September 2013.

Several of my otherwise unpublished papers have also served as building blocks for sections of this book, such as: "Risk Management in the Intermediate Frontier," presented in Montreal in March 2015; "Leveraging Insurance for Commercial Space: Managing Legal and Regulatory Challenges," presented in Colorado Springs in April 2015; "Debris Mitigation as an Insurance Imperative," presented at the International Astronautical Congress in Jerusalem in October 2015; "Insurers as Regulators of Space Safety and Sustainability," presented at the FAA Commercial Space Transportation Center of Excellence Annual Technical Meeting in Washington, DC in October 2015; "Innovations for Insurers in Space Traffic Management and Weather Forecasting," presented in Daytona Beach, FL in November 2015; and "The Role of Sovereignty in Remote Sensing and Customary International Law," presented at the International Astronautical Congress in Guadalajara in September 2016. An article incorporating elements of several such papers, entitled "Legal and Regulatory Challenges to Leveraging Insurance For Commercial Space" has been published in the *Journal of Space Law*⁴ and serves as the basis for sections of this book.

The only publication that is a collaborative work that factors into this book is a chapter that I co-authored with Ram Jakhu and Diane Howard for *Private Law, Public Law, Metalaw and Public Policy in Space*.⁵ As this was a piece

² Andrea J. Harrington, "Legal Considerations for Commercial Space: An Overview" (2015) *New Space* 82.

³ Andrea J. Harrington, "State Spaceflight Liability and Immunity Acts in Context" in Jan Wouters & Philip De Man eds, *Commercial Uses of Space and Space Tourism: Legal and Policy Aspects* (Cheltenham: Elgar, 2017) 115.

⁴ Andrea J. Harrington, "Legal and Regulatory Challenges to Leveraging Insurance for Commercial Space" (2017) 41:1 *J Space L* 29.

⁵ Ram S. Jakhu, Diane Howard, & Andrea J. Harrington, "Legal Aspects of Solar Power Satellites" in Patricia Margaret Sterns & Leslie I. Tennen eds, *Private Law,*

specifically on the topic of space-based solar power, it only plays a very minimal role in this book (regarding innovative space technologies and their legal, regulatory, and insurance challenges). The research behind this work only comprises less than four total pages of this book (the original published article is thirty-four pages in length). For the purpose of this book, I have focused on the portion of the text that I drafted. I have carefully verified and independently analyzed any additional research utilized that was provided by my co-authors. I also delivered the presentation of the original paper as the sole presenter in Kobe, Japan in 2014.

Of course, my space law research has been built on a foundation that includes the work I performed as a DCL candidate at McGill, but began with my coursework and research in the LLM program and my participation the Manfred Lachs Space Law Moot Court Competition. My article “Preserving Humanity’s Heritage in Space: 50 Years after Apollo 11 and Beyond” published in the *Journal of Air Law and Commerce*⁶ and the research performed during the course of the moot court competition served as the basis for some of the underlying space law research and analysis that I have brought forward as relevant to this book. Professors Ram Jakhu and Jiefang Huang provided a solid foundation through their teaching and reading assignments, as well as my moot court coach and team members (Isabella Vasilogeorgi, Sarah Mountin, and Charles Stotler), as we cooperatively learned to hone our space law research skills and produced a foundational set of research upon which to build.

This book represents the culmination of several years of effort, including a range of projects within the space law field, many (but not all) focused on space insurance. I hope readers are able to benefit from that effort and that the contents of this book provide a new and interesting perspective for those who are interested in the future development of commercial space activities.

Disclaimer: *The views expressed in this book are the views of the author in her individual capacity. This book does not represent the views or policy of the U.S. Space Force, U.S. Air Force, U.S. Department of Defense, or the U.S. Government.*

Public Law, Metalaw and Public Policy in Space: A Liber Amicorum in Honor of Ernst Fasan (New York: Springer, 2016).

⁶ Andrea J. Harrington, “Preserving Humanity’s Heritage in Space: Fifty Years After Apollo 11 and Beyond” (2019) 84:3 *J Air L & Comm* 299.