Chapter 3
Space Launchers: Legal Aspects

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ABSTRACT

This chapter outlines certain core legal topics that arise in connection with the delivery of a separated payload into or beyond Earth orbit. The first part deals with some of the established approaches to procuring launch services, as well as some of the common features of launch service agreements that balance the interests of the launch service provider and its customer. The second part of the chapter looks at governmental authorization required to carry out a launch. While safety standards and success rates continually improve, launching a space object is still the riskiest part of most space missions and is therefore a carefully regulated aspect of space activity, with participants having to obtain prior authorization from a competent national authority. Finally, the third part explores some of the legal consequences in international law of launching a space object, including the maintenance of a register of space objects launched, and the burden of liability that is placed on “launching states.”

INTRODUCTION

From the outset of the space age, it was clear that a regulatory framework was urgently needed in order to ensure the peaceful development of outer space activities. Both Cold War superpowers were willing to cooperate with one another and with other States, under the auspices of the United Nations, and sought to create a legal framework which could be capable of broad acceptance by both the US and Soviet Union and the wider international community.

In 1967, the United Nations Committee on Peaceful Uses of Outer Space (UN COPUOS) adopted the very first space treaty, the ‘Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies’; commonly known as Outer Space Treaty (OST). Under Article I of the OST the exploration and use of outer space, including celestial bodies, are fundamental freedoms guaranteed to all States. To be free to use and explore outer space it follows that States must first be free to access outer space. Mankind has struggled bravely and

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creatively to exercise this freedom: in the 1960s and 1970s scientists experimented with ballistics in an ultimately unsuccessful attempt to develop a supergun (Park, 2016); high altitude balloons have reached near space altitudes in the Earth’s atmosphere (Yamagami, 2003); and there are those who are proponents of the space elevator and other non-rocket concepts (ISEC, 2018). However, launch (in the sense of rocket launch) remains the only proven means of access to space. Launch is thus critical to exercising the freedoms accorded under the Outer Space Treaty.

Yet, launching a space object is still the riskiest part of most space missions. In 2015, five out of a total of 87 orbital launches were reported as a partial or total failure, about 6%. (Skyrocket & Spaceflight, 2015) A launch failure can result in the destruction of property, damage to the environment, and tragic loss of life, and can precipitate the loss of confidence between the launch service provider and the customer, thus impairing future contracts.

It should therefore come as no surprise that launching a space object is an activity in which law and regulation have a significant role to play. This chapter does not address the legal issues of specific relevance to the launch of manned suborbital vehicles. The scope of this chapter is instead confined to an examination of certain legal issues that arise in connection with the delivery of a separated payload into or beyond Earth orbit. These issues can be divided into the legal topics detailed in each of the subsequent paragraphs.

**THE LAUNCH SERVICE AGREEMENT**

A launch service agreement (LSA) is a contract for the provision of certain services directed towards the launch of a payload into or beyond Earth orbit. Two important observations should be made at the outset:

- A contract is an agreement between two or more natural or legal persons (the ‘parties’) intended to be legally binding and enforceable. Contracts are instruments of private law, not international space law (as explained below). An LSA is no different: typically, the parties involved are a launch service provider (LSP) and a customer who may be a commercial satellite owner/operator, a space agency, a research body, or other private or public entity. LSAs are enforceable in national courts in accordance with the national law chosen by the parties.

- An LSA is a contract for services, not for goods. The customer does not acquire any ownership rights in the launch vehicle. Instead the customer pays for certain associated services including the assembly, integration, and testing of the payload and launch vehicle; transport of the assembled launch vehicle to the launch pad; fuelling; launch; and delivery and separation of the spacecraft to the proper orbit.

**Government Launch Procurement**

In the case of the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA), a baseline or framework agreement is negotiated setting out the major terms and conditions under which launch services shall be provided. Thereafter mission-specific launch requests can be made (replicating the typical repeat procurement model of Contract plus Purchase Orders).