Recent years have proved such a splendid success for aeronautics that it really seems justifiable for law to begin to take its share in the aerial labour.”

—Johanna Francina Lycklama á Nijeholt

The national airspace of the United States is undergoing a major revolution, one it has not seen in many decades. For the first time in history, unmanned aircraft are penetrating the nation’s airspace in significant numbers, flying in the same airspace that has been traditionally reserved for manned aircraft. While unmanned aircraft have been in existence since the founding days of aviation, their use had not been perfected for widespread commercial, academic, government, and recreational applications like it is today. Yet, this is only the beginning. With the advent of inexpensive, easy-to-operate unmanned aircraft, the field of aviation is opening up to everyone who has a desire to control an aircraft in the skies.

Unmanned aircraft technology is advancing rapidly and precipitously, with advanced sensing, imaging, and operational payloads becoming accessible to virtually any potential operator with an interest in aerial applications. The sky is truly the limit with the
myriad uses of these innovative and relatively inexpensive aircraft. In fact, their use is becoming so pervasive that the lines are becoming increasingly blurred between the application of these aerial vehicles as toys, models, and professional aerial instruments. What can be thought of as a model or hobby aircraft taking pictures for the personal photo album of its operator, for example, can suddenly be classified as a commercial aerial application if one of the photographs is sold for a profit. The legal complexities of unmanned aircraft law are thus increasing as their use becomes more widespread and diverse.

Figure 1.1

An Airborne Sentry Unmanned Aircraft (Photo courtesy of Donna Dulo)

The area of unmanned aircraft law is highly dynamic. The Federal Aviation Administration (FAA), NASA, and the Federal Communications Commission (FCC), as well as various authorized working groups across the country, are currently developing and honing the details of unmanned aircraft regulations that will supplement the current FAA and FCC regulations. While FAA regulations govern the operation of aircraft through the Federal Aviation Regulations, the FCC regulations govern the use of communication systems including satellite communication systems, and they are currently being tailored to accommodate unmanned aircraft command, control, and communications traffic. The Federal Aviation Regulations, as well as current FCC regulations in general, were not intended for unmanned aircraft and in many ways will not apply to their operations. Therefore, a new body of regulations is evolving to encompass the growing spectrum of unmanned aircraft operations and communications. Unmanned aviation laws overall are being developed and designed to regulate the national airspace, to regulate the manufacturing and design of unmanned aircraft, and to facilitate the complex communication schemes of airborne systems.
Unmanned aircraft integration into the national airspace opens up a variety of legal issues that must be addressed. Myriad legal issues range from aircraft certification and airspace integration issues, to insurance issues, safety and reliability regulations, privacy and trespass issues, and security issues, such as information security and physical security. Constitutional issues also arise with the use of unmanned aircraft, such as Second Amendment issues of weapons as an extension of gun rights, Fourth Amendment issues of unreasonable search and seizure, Fifth and Fourteenth Amendment issues of Due Process, Tenth Amendment issues of states’ rights to regulate unmanned aircraft activities, as well as First Amendment free speech issues regarding unmanned aircraft use for both the media and the public.

Extending from these legal issues are the complex issues of liability; who will be ultimately responsible in the event of an accident or incident is a central question. This question advances the issues of criminal culpability and civil liability as well as product liability issues, creating a wide-ranging set of legal challenges to owners, operators, manufacturers, and distributors of unmanned aircraft. Stemming directly from and intertwining with these liability issues are the laws of insurance and the regulation of the unmanned aviation insurance industry. Since the ingestion of a small, unmanned aircraft into the engine of a passenger airliner can result in a complete hull and passenger loss, the legal and financial stakes are high for insurance holders and the aviation insurance industry in general. The resolution of liability issues is therefore paramount to create a more predictable, holistic, aerial-operations legal domain.