Introduction

The military dimensions of drones grab most of the headlines as the innovation of autonomous and automated weapons raises unprecedented legal issues. But the emergence of civil and commercial drone operations on an international scale offers an equally compelling story line, too. The global demand for drones in private and public spaces across a wide range of activities is enormous, from agriculture to search and rescue to sports videography to environmental conservation to antipoaching and pizza delivery.

Worldwide interest in drones has as much to do with advances in miniaturization, engineering, and nanotechnology as with a revolution in data collection and analytics. As transformational information devices, drones are “smart” airborne platforms armed with ever-sophisticated sensor suites and software solutions. Now, using high-resolution, multispectral, thermal, and hyperspectral sensors on drones, farmers use precision agriculture to assess yield and crop health from the air—a data-driven approach that is far more efficient than manual, ground-based processes reliant on the naked eye. Meanwhile, small drones offer journalists, law enforcement, railroad and insurance (and many other types of) companies an asset whose agility is superior to that of traditional airplanes and rotorcraft, maximizing information gathering and surveillance capabilities while minimizing the human costs associated with low-altitude, close-proximity missions. Indeed, the abilities of drones to gather intelligence, surveillance, and reconnaissance (ISR) are apparently limitless—constrained perhaps only by the law. But so, too, is the technology’s potential for invading and degrading longstanding legal principles protecting personal and societal privacy and property rights seemingly unbounded.

As ownership, operation, and interest in unmanned and optionally manned aircraft increases in commercial spaces, a consistent and predictable regulatory framework at every level of government is both needed and wanting. In this context, this book sets out to answer a fundamental question for operators, regulators, private citizens, and anybody who is or wants to be a part of the drone revolution—what exactly is the law?