

Can We Shoot Down That Drone? An Examination of International Law Issues Associated with the Use of Territorially Intrusive Aerial and Maritime Surveillance Drones in Peacetime

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States are increasingly using drones to conduct surveillance across land and maritime borders and in other sensitive locations leading to protests, seizures, and intentional destruction of the intruding drones. This Article first examines international law applicable to the surveilling state: (1) the extent of the obligation to respect the air and maritime sovereignty of the surveilled state; (2) the relevance of an ongoing debate over the lawfulness of military operations in the exclusive economic zone (EEZ) to drone operations; (3) the obligation to operate with “due regard” to safety of other craft; (4) the relevance of rules and legal theories that govern peacetime espionage; and finally (5) an assessment of whether territorially intrusive drone surveillance violates Article 2(4) of the UN Charter’s prohibition on the use of force. The analysis then shifts to the target state and the international law that governs responses to territorial intrusion. This section examines: (1) the use of force rules under the UN Charter; (2) the use of sovereign police powers against drones; (3) the sovereign immunity of drones; (4) the rules governing the amount of permissible force; and (5) an assessment of when deadly force can be used against humans to protect a drone. By removing the human from the equation, drones lower the perceived political and escalatory risk associated with engaging in potentially provocative actions. This dynamic in turn reduces a key practical incentive to comply with governing international law, potentially weakening the normative force of rules designed to maintain peace and international order. From a policy perspective, it is far from clear whether reduced compliance and associated degradation of these norms is wise or safe. To make this assessment and prompt appropriate debate about these practices, it is first necessary to recognize what states are actually doing and to understand how international law currently applies to these practices.

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Introduction

In high tension and disputed areas from Eastern Europe to the East China Sea, states are increasingly sending surveillance drones across both *de jure* and *de facto* borders to gather intelligence and challenge the status quo. In response, the surveilled states have used force and threatened to use force against these drones, prompting escalated rhetoric and heightened tensions. Since 2005, there have been over twenty publicly reported surveillance drone incidents outside of active conflict zones involving the United States, China, Japan, South Korea, North Korea, Russia, Georgia, Turkey, Iran, India, Pakistan, and Israel. Although the major powers dur-

ing the Cold War engaged in some territorially intrusive intelligence gathering from manned and even unmanned platforms, the current frequency of the practice, number of states involved, and the diversity of their motivations is unprecedented.

Writing about territorially intruding manned aircraft in 1953, Professor Oliver Lissitzyn proposed a series of questions about the then relatively new phenomenon, including most notably: “Is the territorial sovereign . . . entitled to attack without warning any intruding aircraft?”¹ This and other significant questions involving sovereignty and the use of force associated with intruding aircraft and vessels have remained unsettled.

Writing in 2016, three prominent drone scholars noted that “the rules of engagement for responding to drone incursions—whether and when to shoot down a drone that transgresses a state’s borders—are currently ambiguous.”² This ambiguity reflects the modern challenge of applying a body of international law designed to protect humans to a transformative technology that has removed the human from the equation as well as the enduring challenge of regulating state intelligence gathering in peacetime and the associated balancing of conflicting sovereign rights and interests. This Article seeks to reduce the ambiguity, providing some clarity about how international law applies to the most controversial aspects of drone surveillance and forceful responses to surveilling drones. To this end, the Article is organized as follows. First, there is a brief description of the history and capabilities of the technology to explain why drone surveillance has proliferated since the early 2000s and how states will likely use drones in the future. This section is followed by an account of how states are currently using surveillance drones, how other states are responding, and what both sides are saying about it, providing the factual background for the legal analysis. The legal analysis is split into two sections. The first section focuses on the state that is operating the drone and the international law relevant to these operations. Particularly, it examines: (1) the extent of the obligation to respect the air and maritime sovereignty of the surveilled state; (2) relevance of an ongoing debate over the lawfulness of military operations in the exclusive economic zone (EEZ) to drone operations; (3) the obligation to operate with “due regard” to safety of other craft; (4) relevance of rules and legal theories that govern peacetime espionage; and finally (5) an assessment of whether territorially intrusive drone surveillance violates Article 2(4) of the UN Charter’s prohibition on the use of force. The analysis then shifts to the target state and the international law that governs responses to territorial intrusion. This section examines: (1) the use of force rules under the UN Charter; (2) the use of sovereign police powers against drones; (3) the sovereign immunity of drones; (4) the rules governing the amount of permissible force; and (5) an

1. Oliver J. Lissitzyn, *The Treatment of Aerial Intruders in Recent Practice and International Law*, 47 AM. J. INT’L L. 559, 559 (1953).

2. Michael C. Horowitz, Sara E. Kreps, & Matthew Fuhrmann, *Separating Fact from Fiction in the Debate over Drone Proliferation*, INT’L SECURITY, Fall 2016, at 28.

assessment of when deadly force can be used against humans to protect a drone.

By removing the human from the equation, drones lower the perceived political and escalatory risk associated with engaging in potentially provocative actions. This dynamic in turn reduces a key practical incentive to comply with governing international law, potentially weakening the normative force of rules designed to maintain peace and international order. From a legal and sociological perspective, this is very interesting.

From a policy perspective, it is far from clear whether reduced compliance and associated degradation of these norms is wise or safe. To make this assessment and prompt appropriate debate about these practices, it is first necessary to recognize what states are actually doing and to understand how international law currently applies to these practices.

I. Background

A. Terminology (Drones and Surveillance)

There is a wide divergence in the terminology used to refer to machines that transit through the air and sea under remote or preprogrammed human guidance. For aviation, government agencies and industry alternately use the terms “unmanned aircraft system” (UAS), “unmanned aerial vehicles” (UAV), “remotely-piloted aircraft” (RPA), “unmanned combat aerial systems” (UCAS), and “remotely-piloted aircraft systems” (RPAS).³

In the maritime context, the terms “unmanned underwater vehicle” (UUV), “autonomous underwater vehicle” (AUV), “remotely operated vehicle” (ROV), “autonomous marine vehicles” (AMV), and “unmanned surface vessel” (USV) are used.⁴ For simplicity, this Article uses the term “drone,” distinguishing where necessary between aviation and maritime drones. Drone is the most common term utilized in the media and academic scholarship to describe these systems, what it lacks in precision it makes up for in clarity.

For simplicity, this Article also uses the term “surveillance” to describe the intentional action of a drone gathering information for intelligence purposes or a drone built or utilized for this purpose. This usage is consistent with the US Department of Defense’s definition of surveillance as “the systematic observation of aerospace, cyberspace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means.”⁵ Other terms such as reconnaissance, spying,

3. *Quick Reference Guide to Drone Technology*, AIR DRONE CRAZE (2019), <https://airdronecraze.com/quick-reference-guide-of-drone-terminology> [https://perma.cc/RM6R-VCG7].

4. See e.g., Andrew H. Henderson, *Murky Waters: The Legal Status of Unmanned Undersea Vehicles*, 53 NAVAL L. REV. 55, 56 (2006).

5. Office of the Chairman of the Joint Chiefs of Staff, *DOD Dictionary of Military and Associated Terms*, 209 (July 2019), <http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf> [https://perma.cc/A4TN-9ALU].

espionage, and intelligence gathering are also used in academic literature to describe similar activities.⁶

Finally, this Article focuses exclusively on the legal aspects of the operations of surveillance drones. It does not consider issues associated with use of drones for attacking targets, a topic that is extensively studied in other literature.

B. Aerial Drones (History and Capabilities)

Drones were first used in warfare in the 1849 Italian War of Independence when Austrian forces released nearly 200 explosive laden balloons controlled by long copper wires to attack Venice.⁷ Ninety years later, WWII spurred German and American innovation in unmanned aviation technology, most notably in the development of V-1 rockets and target drones for air-to-air and ground-to-air weapons practice.⁸ With the onset of the Cold War, the US invested significantly in developing a surveillance capability that could gather intelligence on the Soviet nuclear weapons program.⁹ This investment most famously produced the manned U-2 spy plane, which could operate at above 70,000 feet, beyond the known capabilities of the Soviet anti-aircraft missile systems.¹⁰ Starting in July 1956, U-2 aircraft regularly flew missions over Soviet territory.¹¹ These missions stopped abruptly on 1 May 1960, when Soviet forces shot down a U-2 during a CIA spy mission deep in Soviet airspace and captured the pilot, former Air Force officer Francis Gary Powers.¹² The incident and Powers' subsequent Soviet trial for espionage dominated domestic media coverage for months and made future manned flights over Soviet territory politically impossible.¹³ The U-2's vulnerability was further highlighted in October 1962 when Cuba, using a Soviet missile system, shot down a U-2 on a surveillance mission in its territorial airspace.¹⁴

To overcome the pilot problem, the US Government invested in satellite and surveillance drone technology overseen by the highly classified National Reconnaissance Office (NRO) which coordinated use of the resulting platforms.¹⁵ By 1964, the NRO had developed its first operational surveillance drone, the Lightning Bug.¹⁶ On 20 August 1964, the drone flew its first cross-border surveillance mission over China, launching

6. Beom-Seok Oh, Xin Guo & Zhiping Lin, *A UAV Classification System Based on FMCW Radar Micro-Doppler Signature Analysis*, 132 EXPERT SYSTEMS WITH APPLICATIONS 239, 239 (2019).

7. SARAH E. KREPS, DRONES: WHAT EVERYONE NEEDS TO KNOW 9 (2016).

8. *Id.* at 10-11.

9. NORMAN POLMAR, SPYPLANE: THE U-2 HISTORY DECLASSIFIED 2, 3, 50 (2001).

10. Thomas P. Ehrhard, *Air Force UAVs: The Secret History*, MITCHELL INST. 6 (July 2010), <https://apps.dtic.mil/dtic/tr/fulltext/u2/a526045.pdf> [<https://perma.cc/XEN7-CQSP>].

11. *Id.*

12. *Id.*

13. *Id.*

14. POLMAR, *supra* note 9, at 192-93.

15. Ehrhard, *supra* note 10, at 5-6.

16. *Id.*

from a US airbase on Okinawa, Japan.¹⁷ US surveillance in China was aimed at gathering information on the Chinese nuclear weapons program, air defenses, and troop locations, all items of significance as the US was steadily increasing its involvement in Vietnam on China's southeastern border.¹⁸ Four months after this first flight, a front page story in the New York Times published a statement from China claiming that "a pilotless high-altitude reconnaissance military plane of US imperialism, intruding into China's territorial airspace over the area of south central China on November 15, was shot down by the Air Force of the Chinese People's Liberation Army."¹⁹ With no domestic political fallout from the loss of the drone, the surveillance program continued.²⁰ The US flew 160 sorties over China between 1965 and 1966 alone.²¹ Reconnaissance drone flights of increasing sophistication continued routinely over China until replaced by satellite technology in 1975, which had the advantage of not violating international law.²² With the exception of limited media coverage following Chinese complaints, this highly classified drone program never became the subject of significant contemporary public debate or scholarly legal analysis.

Over a thousand reconnaissance drones were built for the Vietnam War and over two hundred were lost in combat.²³ Although they comprised only a small percentage of the total surveillance flights, these drones provided the US military useful intelligence obtained in operations that were often too dangerous to risk a pilot's life.²⁴ After the Vietnam War, the US continued to invest in drone technology and utilized surveillance drones to support the first Iraq War and US operations in Bosnia and Kosovo.²⁵ Globally, Israel developed the only other significant drone program during this time frame.²⁶ Israel used the drones in a variety of military engagements and became the leading commercial exporter of the technology.²⁷

The 9/11 attacks and subsequent global efforts to reduce the threat of terrorism dramatically enhanced the role and relative importance of drones to the US military.²⁸ In October 2001, the US had fewer than fifty opera-

17. *Id.* at 9.

18. *Id.* (discussing intelligence that was relevant to the growing conflict in Vietnam).

19. *Pilotless U.S. Plane Downed, China Says*, N.Y. TIMES (Nov. 17, 1964), <https://www.nytimes.com/1964/11/17/pilotless-us-plane-downed-china-says.html> [<https://perma.cc/3RL4-5QBW>].

20. Ehrhard, *supra* note 10, at 9.

21. *Id.*

22. *Id.* at 10.

23. *Id.* at 28.

24. *Id.* at 28-29.

25. KREPS, *supra* note 7, at 12.

26. *Id.*

27. *Id.*

28. Peter L. Bergen & Jennifer Rowland, *World of Drones: The Global Proliferation of Drone Technology*, in *DRONE WARS: TRANSFORMING CONFLICT, LAW, AND POLICY* 300, 300 (Peter L. Bergen & Daniel Rothenberg eds., 2015).

tional drones and had never used an armed drone in combat.²⁹ By 2014, the US arsenal included nearly 10,000 drones, 900 of which were capable of long range surveillance or targeted killing.³⁰

The high-profile US adoption of aerial drones prompted global proliferation of the technology.³¹ In 2001, only the US and a few advanced militaries possessed any drone technology.³² By 2015, over ninety state and non-state actors had some type of drone in their arsenals.³³ There is significant variation in the sophistication and expense of current drone technology. A June 2015 report on the global proliferation of drones from the Center for a New American Security divides the technology into four categories based upon: “(1) the degree to which they are accessible to any given actor; and (2) the technology base and infrastructure required to produce and/or operate them.”³⁴ These categories include stealth combat drones,³⁵ large military-specific drones,³⁶ midsize military and commercial drones,³⁷ and hobbyist drones^{38,39}. Prices range from a few thousand dollars for a low end militarized hobbyist drone to over \$200 million for a

29. *Id.*

30. *Pentagon Plans for Cuts to Drone Budgets*, MILITARY.COM (Jan. 2, 2014), <https://www.military.com/dodbuzz/2014/01/02/pentagon-plans-for-cuts-to-drone-budgets> [<https://perma.cc/TX7T-GW54>].

31. Bergen & Rowland, *supra* note 28, at 300–328.

32. *Id.* at 300.

33. Kelley Saylor, *A World of Proliferated Drones: A Technology Primer*, CENTER FOR A NEW AM. SECURITY 3 (2015), drones.cnas.org/wp-content/uploads/2016/03/CNAS-World-of-Drones_052115.pdf [<https://perma.cc/2MRZ-BXXF>].

34. *Id.* at 5.

35. “Stealth combat drones include those that contain highly sophisticated technologies, such as low-observable features, and are not accessible to nonindigenous producers. While several countries are developing stealth combat drones, the United States is the only known operator of such systems at this time.” *Id.* at 8.

36. “Large military-specific drones—often including armed drones—require substantial military infrastructure to operate and are not generally accessible to or operable by actors beyond major militaries.” US Predator and Reaper drones fall into this category. *Id.*

37. “Midsize commercial and military drones, ranging in cost from tens of thousands of dollars to no more than a couple million dollars, are widely available for purchase by states and industry. They may also be procured and operated by more established or well-organized non-state actors with limited supporting infrastructure.” *Id.* at 18. This class of drone has mostly been used for reconnaissance, although terrorist groups like Hezbollah have weaponized them in the past by packing them with explosives to be used as a “kamikaze” type weapon. *Id.*

38. “Hobbyist drones include those that are readily available for purchase—generally for no more than a few thousand dollars—by any interested party. These systems may either be pre-assembled or assembled from component parts and do not require formal infrastructure or training to operate . . .” *Id.* at 8.

The Ukrainian military has made extensive use of commercial systems, including modified DJI Phantoms and other reconfigured hobbyist drones, in its conflict with the self-declared Donetsk People’s Republic, a rebel group backed by Russia. Reports indicate that ISIS has also used a commercial drone, the DJI Phantom FC40, for surveillance purposes.

Id. at 12 (internal citations omitted).

39. Horowitz et al. *supra* note 2, at 35.

high-end US RQ-4 Global Hawk surveillance drone.⁴⁰ Despite the dramatic price and capabilities differences, each of these drones possess the capability of crossing an international border, conducting surveillance, being shot down by foreign military forces, and potentially escalating interstate tensions.⁴¹

C. Maritime Drones (History and Capabilities)

Throughout the Cold War, states used manned submarines to conduct covert surveillance in the territorial waters of adversaries.⁴² This practice continues through the present.⁴³ Unlike with manned surveillance aircraft, detection and deterrence capabilities have not yet advanced to a level to effectively deter the practice. To complement and supplement this maritime surveillance capacity, states have recently begun to significantly invest in maritime drone programs. For example, between 2014 and 2018, the US Department of Defense invested nearly \$2 billion in maritime drone programs.⁴⁴ Although this investment is only a tenth of what was spent on aerial programs, it reflects a growing confidence in the value of drones in the maritime environment.⁴⁵ Speaking to reporters in advance of an April 2016 tour of a US warship in the South China Sea, US Secretary of Defense Ashton Carter emphasized (in a message certainly aimed at China) that the US is investing in “new undersea drones in multiple sizes and diverse payloads that can, importantly, operate in shallow water, where manned submarines can’t.”⁴⁶ In response to or in coordination with the US, other countries with sophisticated militaries, including China, Russia, Israel, Japan, France, and the United Kingdom are also developing maritime drones with capacities for intelligence gathering, finding and tracking foreign submarines, and mine warfare.⁴⁷

40. Saylor, *supra* note 33, at 12; U.S. GOV'T ACCOUNTABILITY OFF., GAO-13-294SP, DEFENSE ACQUISITIONS ASSESSMENT OF SELECTED WEAPONS PROGRAMS 167 (2013), <https://www.gao.gov/assets/660/653379.pdf> [<https://perma.cc/5E6L-NCF6>] [hereinafter GAO-13-294SP].

41. GAO-13-294SP, *supra* note 40, at 1-2.

42. See James Kraska, *Putting Your Head in the Tiger's Mouth: Submarine Espionage in Territorial Waters*, 54 COLUM. J. TRANSNAT'L L. 164, 170 (2015).

43. *Id.* at 247.

44. KREPS, *supra* note 7, at 83.

45. *Id.*

46. Dan Lamothe, *Tensions on the South China Sea Draws Concerns: So Should Submarine Warfare Underneath*, WASH. POST (Apr. 13, 2016, 2:56 PM), https://www.washingtonpost.com/news/checkpoint/wp/2016/04/13/tension-on-the-south-china-sea-draws-concerns-so-should-submarine-warfare-underneath/?utm_term=.29f871c24b13 [<https://perma.cc/ZT9B-HATL>].

47. MICHAEL S. CHASE ET AL., EMERGING TRENDS IN CHINA'S DEVELOPMENT OF UNMANNED SYSTEMS 1 (2015), https://www.rand.org/content/dam/rand/pubs/research_reports/RR900/RR990/RAND_RR990.pdf [<https://perma.cc/94HW-LUSG>]; Kelsey D. Atherton, *UK And France Are Building Robots To Fight Underwater Explosives*, POPULAR SCI. (Mar. 31, 2015), <https://www.popsci.com/uk-and-france-want-robots-fight-underwater-explosives> [<https://perma.cc/SSC8-JZBE>]; Dianne Depra, *Japan, U.S. Partner to Develop Fuel-Celled, Unmanned Patrol Submarine*, TECH TIMES (Aug. 10, 2014), <https://www.techtimes.com/articles/12611/20140810/japan-u-s-partner-to-develop-fuel-celled-unmanned-patrol-submarine.htm> [<https://perma.cc/KLJ4-GVU7>]; Franz-Stefan Gady,

The US Navy, in an unclassified Unmanned Undersea Vehicle (UUV) Master Plan, identified nine primary missions for maritime drones,⁴⁸ including two that are particularly relevant for the purposes of this Article: (1) intelligence, surveillance, and reconnaissance (ISR) and (2) anti-submarine warfare.⁴⁹ These two missions are pursued in times of both peace and war. In peacetime, militaries seek to develop an understanding of a potential adversary's proficiency, technological capabilities, and strategies to ensure that they are prepared to defeat the adversary if necessary in war.⁵⁰ Simply put, the more you know about a potential adversary, the better prepared you will be to face the adversary in a conflict setting. According to the US Navy's plan:

UUVs are uniquely suited for information collection due to their ability to operate at long standoff distances, operate in shallow water areas, operate autonomously, and provide a level of clandestine capability not available with other systems. UUVs extend the reach of their host platforms into inaccessible or contested areas There are many applications, particularly of a military nature, where UUVs would be the preferred means of persistently and clandestinely gathering desired information. UUVs can operate in otherwise denied areas, and provide information without undue risk to personnel or high value assets. Possible ISR UUV missions include: [1] Persistent and tactical intelligence collection: Signal, Electronic, Measurement, and Imaging Intelligence, Meteorology and Oceanography, etc. (above and/or below ocean surface), [2] Chemical, Biological, Nuclear, Radiological, and Explosive detection and localization (both above and below the ocean surface), [3] Near-Land and Harbor Monitoring, [4] Deployment of leave-behind surveillance sensors or sensor arrays, and [5] Specialized mapping and object detection and localization.⁵¹

It is obvious from this list of desired capabilities that the US Navy envisions that maritime drones, like their aerial counterparts, will be used more liberally and closer to adversary coastlines than manned submarines. The Navy study goes on to detail how maritime drones could be used to wait near the submarine bases of a potential adversary to monitor submarine departures and potentially track them while at sea.⁵² While these

Russia Tests Nuclear-Capable Underwater Drone, DIPLOMAT (Dec. 14, 2016), <https://thediplomat.com/2016/12/russia-tests-nuclear-capable-underwater-drone/> [<https://perma.cc/6V3K-VF8E>]; Yotam Gutman & Ami Rojkes Dombé, *UUV Protection: Meet the Autonomous Monsters of the Deep*, ISRAEL DEFENSE (June 15, 2017), <http://www.israeldefense.co.il/en/node/29993> [<https://perma.cc/WV5A-JJST>]; Lamothe, *supra* note 46.

48. 1. Intelligence, Surveillance, and Reconnaissance; 2. Mine Countermeasures; 3. Anti-Submarine Warfare; 4. Inspection/Identification; 5. Oceanography; 6. Communication/Navigation Network Node; 7. Payload Delivery 8. Information Operations; 9. Time Critical Strike. U.S. DEP'T OF THE NAVY, THE NAVY UNMANNED UNDERSEA VEHICLE (UUV) MASTER PLAN XVI (Nov. 9, 2004), www.navy.mil/navydata/technology/uuvmp.pdf [<https://perma.cc/2UCV-3B5D>].

49. *Id.*

50. See generally JOINT CHIEFS OF STAFF, JP 5-0, at II-9 (June 16, 2017), http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0_20171606.pdf [<https://perma.cc/QH78-Q9DD>].

51. UNMANNED UNDERSEA VEHICLE (UUV) MASTER PLAN, *supra* note 48.

52. *Id.*

maritime drones could add valuable capabilities, it is foreseeable that a global proliferation of this technology will increase the risk of peacetime territorial violations and unintended escalation of tensions in a variety of settings around the globe. Indeed, eight months after Secretary Carter gave his speech, China seized a US drone in the South China Sea (see Section III (K) for details).⁵³

II. Modern State Practice

This section sets forth the relevant details of twenty-two inter-state interactions involving surveillance drones since drones began to proliferate globally in the early 2000s. The surveyed interactions involve North and South Korea, Russia, Georgia (Abkhazia region), Turkey, China, Japan, US, Iran, India, and Pakistan. Since this Article is focused on international law that governs surveillance drones during peacetime, incidents occurring in armed conflicts are excluded (particularly Syria, Ukraine, Iraq, Afghanistan, Libya, and Yemen) as well as drones operated by non-state actors (e.g., ISIS and Hezbollah). Developing a record of these incidents serves four purposes. First, the facts provide insight into how states actually use surveillance drones and will likely continue to use them in the future. Next, the facts provide a basis for analysis of the legality of state practices under international law. Third, understanding state practice provides insight into the potential development of customary international law in this area. Customary international law is “international custom, as evidence of a general practice accepted as law”⁵⁴ and is developed through a combination of state practice and *opinio juris* (“a belief that this practice is rendered obligatory by the existence of a rule of law requiring it.”⁵⁵). Finally, a similar record of inter-state drone incidents does not currently exist. This absence stands in stark contrast to significant literature that examines incidents involving territorial incursions by manned aircraft and submarines.⁵⁶ This record seeks to fill that gap and serve as a reference for

53. Jane Perlez & Matthew Rosenberg, *China Agrees to Return Seized Drone, Ending Standoff, Pentagon Says*, N.Y. TIMES (Dec. 17, 2016), <https://www.nytimes.com/2016/12/17/world/asia/china-us-drone.html> [https://perma.cc/2Y3D-WR7J]. See also Kristina Daugirdas & Julian D. Mortenson, *The United States Confronts China Over the Seizure of Unmanned Drone in the South China Sea*, 111 AM. J. INT'L L. 513 (2017).

54. Statute of the International Court of Justice art. 38, June 26, 1945, 59 Stat. 1031, 33 U.N.T.S. 993.

55. North Sea Continental Shelf Cases (W. Ger. v. Den., W. Ger. v. Neth.), Judgment, 1969 I.C.J. 3, 44 (Feb. 20); YORAM DINSTEIN, WAR AGGRESSION AND SELF-DEFENCE 98-99 (6th ed. 2017).

56. See e.g., Romana Sadurska, *Foreign Submarines in Swedish Waters: The Erosion of an International Norm.*, in INTERNATIONAL INCIDENTS THE LAW THAT COUNTS IN WORLD POLITICS 40 (W. Michael Reisman & Andrew R. Willard eds., 1988) (submarines); Ingrid Delupis, *Foreign Warships and Immunity for Espionage*, 78 AM. J. INT'L L. 53, 53 (1984) (submarines); James Kraska, *Putting Your Head in the Tiger's Mouth: Submarine Espionage in Territorial Waters*, 54 COLUM. J. TRANSNAT'L L. 164 (2015) (submarines); Lissitzyn, *supra* note 1 (aircraft); Oliver J. Lissitzyn, *Some Legal Implications of the U-2 and RB-47 Incidents*, 56 AM. J. INT'L L. 135 (1962) (aircraft); John T. Phelps II, *Aerial Intrusions by Civil and Military Aircraft in Time of Peace*, 107 MIL. L. REV. 255 (1985) (aircraft); Tom Ruys, *The Meaning of “Force” and the Boundaries of the Jus Ad Bellum: Are “Minimal” Uses*

future scholarship in this area.

A. US Surveillance Drones in Iran: July and August 2005, December 2011

In October 2005, Iran sent a letter to the UN Secretary General, for circulation to the Security Council, to protest two alleged US drone intrusions.⁵⁷ Iran claimed that on 4 July 2005 a US RQ-7 surveillance drone crashed sixty kilometers inside its border with southern Iraq.⁵⁸ On 25 August 2005, a US Hermes surveillance drone allegedly crashed 200 kilometers from the same border.⁵⁹ Iran stated in the letter that it “strongly protests against such unlawful acts and emphasizes the necessity to observe the principles of international law concerning the sanctity of the sovereignty and territorial integrity of States.”⁶⁰ The Washington Post reported that US officials acknowledged “such flights had been going on since April 2004 as part of an effort to gather evidence of Iranian nuclear weapons programs and spot weaknesses in its air defenses.”⁶¹

Much more is publicly known about a December 2011 CIA operated Lockheed Martin RQ-170 stealth surveillance drone crash in Northwestern Iran, near the town of Kashmar, approximately 140 miles from the border with Afghanistan.⁶² According to contemporary reporting, the CIA flew the drone from a US airbase in eastern Afghanistan as part of a campaign to surveil Iranian nuclear sites.⁶³ The drone, which could fly at 50,000 feet and linger on targets much longer than surveillance satellites, was reportedly the most capable stealth platform in the US drone arsenal at the time.⁶⁴

In the immediate aftermath of the crash, the US considered sending aircraft to destroy the drone or special forces to retrieve or blow it up. It was ultimately decided that these operations were too risky.⁶⁵ A US offi-

of Force Excluded from Un Charter Article 2(4)?, 108 AM. J. INT'L L. 159, 210 (2014) (aircraft).

57. Chargé d'affaires of the Permanent Mission of the Islamic Republic of Iran to the U.N., Letter dated Oct. 26, 2005 from the Chargé d'affaires of the Permanent Mission of the Islamic Republic of Iran to the United Nations addressed to the U.N. Secretary-General, U.N. Doc S/2005/692 (Oct. 26, 2005).

58. *Id.*

59. *Id.*

60. *Id.*

61. Ann Scott Tyson, *Iran Protests U.S. Aerial Drones*, WASH. POST (Nov. 8, 2005), <http://www.washingtonpost.com/wp-dyn/content/article/2005/11/07/AR2005110701450.html> [<https://perma.cc/3ZPM-VHJS>].

62. Scott Shane & David E. Sanger, *Drone Crash in Iran Reveals Secret US Surveillance Bid*, N.Y. TIMES (Dec. 7, 2011), <https://www.nytimes.com/2011/12/08/world/middleeast/drone-crash-in-iran-reveals-secret-us-surveillance-bid.html> [<https://perma.cc/5MNR-XM3S>].

63. *Id.*

64. *Id.*

65. Brad Kinckerbocker, *US Considered Missions to Destroy RQ-170 Sentinel Drone Lost in Iran*, CHRISTIAN SCI. MONITOR (Dec. 7, 2011), <https://www.csmonitor.com/USA/Military/2011/1207/US-considered-missions-to-destroy-RQ-170-Sentinel-drone-lost-in-Iran> [<https://perma.cc/2QBL-J3R6>].

cial speaking anonymously to the Wall Street Journal reported that “no one warmed up to the option of recovering it or destroying it because of the potential it could become a larger incident,” and there was concern that the US “could be accused of an act of war.”⁶⁶ In media commentary, former Vice-President Dick Cheney criticized the Obama administration’s restraint.⁶⁷ He argued that “the right response to that would be to go in immediately after it had gone down and destroy it.”⁶⁸ This recovery / destruction planning highlights the potential for unforeseen escalation risk associated with drone surveillance.

Instead of recovering or destroying the drone, the US requested that Iran return it.⁶⁹ In describing the request, then Secretary of State Hillary Clinton stated “we submitted a formal request for the return of our lost equipment, as we would in any situation. Given Iran’s behavior to date we do not expect them to reply.”⁷⁰ As predicted, a senior Iranian military leader replied that “no nation welcomes other countries’ spy drones in its territory, and no one sends back the spying equipment and its information back to the country of origin.”⁷¹ Instead, Iran featured the drone in propaganda videos, and in 2014, released footage of a domestically produced version of the drone that they claimed was superior to the US original.⁷² On 10 February 2018, one of these Iranian produced copies was flown across the Israel-Syria border before being shot down over Israel.⁷³

It is not publicly known if Iran took down the US drone in 2011 through a cyberattack/electronic jamming or if the drone simply malfunctioned and ran out of fuel.⁷⁴ In an 8 December 2011 letter to the UN Secretary General, the President of the General Assembly, and the President of the Security Council, Iran claimed the drone “flew 250 kilometers deep into Iranian territory up to the northern region of the city of Tabas, where it faced prompt and forceful action by the Armed Forces of the Islamic

66. *Id.*

67. *Obama Says U.S. Has Asked Iran to Return Drone Aircraft*, CNN (Dec. 12, 2011, 9:37 PM), <http://www.cnn.com/2011/12/12/world/meast/iran-us-drone/index.html> [<https://perma.cc/ND6W-A3QS>].

68. *Id.*

69. *US Asks Iran to Give Back Drone*, BBC NEWS (Dec. 12, 2011), <http://www.bbc.com/news/world-middle-east-16150384> [<https://perma.cc/2JNK-X7N4>].

70. *Id.*

71. *Obama Says U.S. Has Asked Iran to Return Drone Aircraft*, *supra* note 67.

72. Scott Peterson, *Iranians Fly Knock-off of US Stealth Drone. Did They Get It Right?*, CHRISTIAN SCI. MONITOR (Nov. 13, 2014), <https://www.csmonitor.com/World/Middle-East/2014/1113/Iranians-fly-knock-off-of-US-stealth-drone.-Did-they-get-it-right> [<https://perma.cc/J5FN-KBEA>].

73. Loveday Morris & Ruth Eglash, *The Drone Shot Down by Israel Was an Iranian Copy of a U.S. Craft, Israel Says*, WASH. POST (Feb. 11, 2018), https://www.washingtonpost.com/world/israel-confirms-downed-jet-was-hit-by-syrian-antiaircraft-fire/2018/02/11/bd42a0b2-0f13-11e8-8ea1-c1d91fcec3fe_story.html [<https://perma.cc/ETL3-JX9U>] (This intrusion prompted significant retaliatory Israeli airstrikes in Syria against Iranian backed forces.).

74. Adam C. Estes, *The Pentagon Denies Iran Shot Down a Drone*, ATLANTIC (Dec. 5, 2011), <https://www.theatlantic.com/international/archive/2011/12/pentagon-denies-iran-shot-down-drone/334732/> [<https://perma.cc/TQR6-58P4>].

Republic of Iran.”⁷⁵ Shortly after the incident, an Iranian engineer described in detail to reporters from the Christian Science Monitor how Iran allegedly electronically jammed the drone’s communication system and then sent a corrupted GPS signal to the drone directing it to land in Iran.⁷⁶ The then deputy commander of the Islamic Revolutionary Guard Corps, General Hossein Salami stated publicly that “technologically, our distance from the Americans, the Zionists, and other advanced countries is not so far to make the downing of this plane seem like a dream for us . . . but it could be amazing for others[.]”⁷⁷ A US Department of Defense spokesman disputed the Iranian claim that they brought down the drone, stating “we don’t have any indication that the UAV that we know we no longer have was brought down by hostile activity of any kind.”⁷⁸ Another senior Pentagon official stated “if this happened, it is a 95 percent chance that it just malfunctioned [T]here are a lot of things that can fail.”⁷⁹ These competing narratives highlight two reoccurring themes in inter-state drone incidents. First, drones are readily susceptible to technical malfunctions of a nature that makes the US claim completely plausible.⁸⁰ Second, the state that uses force against a surveillance drone often does so with a bold confidence that they were exercising a legitimate right. The permissibility of the use of the force in this context is discussed in detail in Sections IV(C)(1) and IV(C)(2).

The differing US and Iranian responses to the drone’s territorial incursion highlight divergent state opinion on the permissibility of such incursions. Iran sharply condemned the alleged violation of its sovereign airspace.⁸¹ In its letter to the UN, Iran argued:

[T]his blatant and unprovoked air violation by the United States Government is tantamount to an act of hostility against the Islamic Republic of Iran in clear contravention of international law, in particular the basic tenets of the Charter of the United Nations. The Iranian Government expresses its strong protest over these violations and acts of aggression and warns against the destructive consequences of the recurrence of such acts. The Islamic

75. Permanent Rep. of the Islamic Republic of Iran to the U.N., Letter dated Dec 9, 2011 from Permanent Rep. of the Islamic Republic of Iran to the United Nations addressed to the U.N. Secretary-General, the President of the General Assembly & the President of the Security Council, U.N. Doc. A/66/599 (Dec. 9, 2011), <http://undocs.org/A/66/599> [<https://perma.cc/M5ZT-AJSZ>].

76. Scott Peterson & Payam Faramarzi, *Exclusive: Iran Hijacked US Drone, Says Iranian Engineer*, CHRISTIAN SCI. MONITOR (Dec. 15, 2011), <https://www.csmonitor.com/World/Middle-East/2011/1215/Exclusive-Iran-hijacked-US-drone-says-Iranian-engineer> [<https://perma.cc/9CW5-VU8W>].

77. *Id.*

78. Estes, *supra* note 74.

79. Greg Jaffe & Thomas Erdbrink, *Iran Says It Downed US Stealth Drone; Pentagon Acknowledges Aircraft Downing*, (Dec. 4, 2011) WASH. POST, https://www.washingtonpost.com/world/national-security/iran-says-it-downed-us-stealth-drone-pentagon-acknowledges-aircraft-downing/2011/12/04/gIQAyxa8TO_story.html [<https://perma.cc/YT4Q-FUSJ>].

80. *Drone Crash Database*, DRONEWARS.NET, <https://dronewars.net/drone-crash-database/> (last visited Apr. 5, 2018) [<https://perma.cc/9NCR-GEKC>].

81. Permanent Rep. of the Islamic Republic of Iran to the U.N., *supra* note 75.

Republic of Iran reserves its legitimate rights to take all necessary measures to protect its national sovereignty.⁸²

From a US perspective, the then Secretary of Defense Leon Panetta noted that the program reflected efforts “to defend our country involv[ing] important intelligence operations which we will continue to pursue.”⁸³ The incident occurred during a period of increased tension over advances in Iran’s nuclear program, including the nearly contemporaneous imposition of increased sanctions.⁸⁴ Ultimately, the US never presented a public legal justification or defense of its use of surveillance drones over Iran, and the UN took no action in response to Iran’s complaint.

B. Iran Shoots at US Surveillance Drone in the Persian Gulf: November 2012

On 1 November 2012, two manned Iranian military aircraft approached a US military Predator drone conducting surveillance in the Persian Gulf within 16 miles of the Iranian coastline.⁸⁵ One of the Iranian planes unsuccessfully attempted to shoot down the Predator by firing its gun at it in three separate passes.⁸⁶ After trailing the drone for several miles, the Iranian jets eventually broke off contact as the drone moved farther away from the Iranian coastline.⁸⁷ Reports at the time described how the event “underlined the risk of US–Iranian tensions escalating into a military clash.”⁸⁸ Iran claimed that their jets were responding to the drone’s violation of their territorial airspace.⁸⁹ The Iranian Defense Minister, Brigadier General Ahmed Vahidi, alleged that an “unidentified plane entered the airspace above the territorial waters of the Islamic Republic of Iran in the Persian Gulf which, due to the timely, quick and decisive action of the Iranian Armed Forces, was forced to flee.”⁹⁰ General Vahidi asserted

82. *Id.*

83. Donna Miles, U.S. Dept. of Defense, *Panetta Defends Intelligence Operations*, DoD NEWS (Dec. 14, 2011), <http://archive.defense.gov/news/newsarticle.aspx?id=66477> [<https://perma.cc/6P7M-VCQJ>].

84. Andrea Shalal-Esa & David Alexander, *Malfunction Likely Put US Drone in Iranian Hands*, REUTERS (Dec. 7, 2011, 1:39 AM), <https://www.reuters.com/article/us-iran-usa-drone/malfunction-likely-put-u-s-drone-in-iranian-hands-idUSTRE7B60BP20111207> [<https://perma.cc/R8G9-XVR9>].

85. Thom Shanker & Rick Gladstone, *Iran Fired on Military Drone In First Such Attack*, US SAYS, N.Y. TIMES (Nov. 8, 2012), <https://www.nytimes.com/2012/11/09/world/middleeast/pentagon-says-iran-fired-at-surveillance-drone-last-week.html> [<https://perma.cc/4EFE-XJH6>].

86. LEON PANETTA & JIM NEWTON, *WORTHY FIGHTS: A MEMOIR OF LEADERSHIP IN WAR AND PEACE* 435 (2014).

87. Phil Stewart & David Alexander, *Iran Says Repelled Unidentified Plane From Its Airspace*, REUTERS (Nov. 8, 2012, 9:03 PM), <https://www.reuters.com/article/us-usa-iran-drone/iran-says-repelled-unidentified-plane-from-its-airspace-idUSBRE8A71C520121109> [<https://perma.cc/M6QM-ERK2>].

88. *Id.*

89. *Id.* Territorial airspace includes all airspace over the territorial sea, typically 12 nm from the coast line. Chicago Convention on Civil Aviation art. 2, Apr. 4, 1947, 15 U.N.T.S. 295 [hereinafter Chicago Convention].

90. *Iran says repelled unidentified plane from its airspace*, *supra* note 87.

that he would investigate the incident and pursue the claim via international channels.⁹¹ Unlike the 2005 and 2011 incidents, however, Iran never protested to the UN.

To the US military, Iran's actions were "a clear act of hostility—an Iranian fighter trying to shoot down a US-flagged military airplane operating in international airspace over international waters."⁹² The Chairman of the Joint Chiefs of Staff, General Martin Dempsey, and the Commander of US Central Command, General James Mattis, personally briefed the Secretary of Defense, Leon Panetta, on the incident.⁹³ Secretary Panetta, in his memoir, recalled the White House and Department of Defense struggling with two important questions. First, whether this "was a deliberate act of war by Iran or the foolish work of a rogue pilot."⁹⁴ Second, should they regard the US drone "as the equivalent of an American airplane or ship, and thus defend it as [they] would any other military asset? Or, recognizing that it's an unmanned device, should [they] treat it as something less vital and less in need of defense?"⁹⁵ Ultimately, the White House approved a plan to protest Iran's shooting in a *démarche*, stating clearly "we are going to fly this mission tomorrow. If you come near us, we are going to shoot you down."⁹⁶ They also sent the drone back on its "regular surveillance run under escort by two F-16s, pilots in the cockpits. The escorts were there to defend American property and [American] rights to fly in international airspace, and they were under orders to shoot down any aircraft that threatened [the drone]."⁹⁷ Iran backed down. In his concluding assessment, Secretary Panetta recognized "there's something mind-boggling about the idea that we'd send manned aircraft to defend an unmanned vehicle, since the whole point of unmanned aircraft is to allow us to conduct operations without risking danger to our people. Now, instead of robots protecting people, we had two pilots defending a robot."⁹⁸

This incident highlighted three issues of broader significance. First, drone surveillance along borders, particularly maritime borders, can foreseeably lead to legitimate disagreements about whether borders were crossed. Next, Secretary Panetta's classification of the Iranian attack as a clear "act of hostility"⁹⁹ and potential "act of war"¹⁰⁰ demonstrates that drones are more than expendable robots. They are also a symbol of sovereignty, and their destruction in times of already elevated tension could lead to escalation. Finally, this event highlights the challenges of applying traditional self-defense rules to drones. For example, would the US fighter air-

91. *Id.*

92. PANETTA & NEWTON, *supra* note 86.

93. *Id.* at 434.

94. PANETTA & NEWTON, *supra* note 86.

95. *Id.* at 436.

96. *Id.*

97. *Id.*

98. *Id.*

99. *Id.* at 435.

100. *Id.*

craft escorting the drone have been justified under international law in using deadly force against a manned Iranian pilot to defend the drone?

C. Iran Shoots Down Israeli Surveillance Drone: August 2014

On 23 August 2014, Iran claimed that it shot down an unarmed Israeli surveillance drone above their Natanz uranium enrichment complex with a surface-to-air missile.¹⁰¹ The enrichment facility, roughly in the center of Iran, is over 900 miles from Tel Aviv.¹⁰² The Israeli military would not comment on the allegation.¹⁰³ In a subsequent letter of protest to the UN Secretary General, Iran complained that the drone:

violated . . . Iranian airspace in an attempt to conduct a spy mission This act, following the repeated rhetoric by the Israeli regime's authorities threatening the Islamic Republic of Iran, constitutes a flagrant violation of the territorial integrity and national sovereignty of the Islamic Republic of Iran in contravention of the principles of international law and the provisions of the Charter of the United Nations. It would also threaten regional peace and security, and it requires that the international community, including the Security Council, condemn in the strongest terms such an act of hostility. The Islamic Republic of Iran reiterates once again its position that it reserves the right to undertake all legitimate necessary measures to defend its territory and warns against such provocative acts, which would result in serious consequences for the aggressor.¹⁰⁴

Separately, a senior Iranian military official stated in Iranian media that "we will accelerate arming the West Bank and we think that we are entitled to give any response [to the drone] which we deem appropriate."¹⁰⁵ The UN again took no action on Iran's complaint.

Although Israel provided no comment on the allegation, the alleged airspace incursion occurred at a time of high tensions between Israel and

101. *Iran 'Shoots Down Israeli Drone' Near Natanz Nuclear Site*, BBC NEWS (Aug. 24, 2014), <http://www.bbc.com/news/world-middle-east-28920361> [<https://perma.cc/X7NK-E4TF>]; Ariel B. Solomon, *Iran Vows to Send Arms to West Bank in Response to Drone*, JERUSALEM POST (Aug. 25, 2014), <http://www.jpost.com/Arab-Israeli-Conflict/WATCH-Iran-displays-Israeli-drone-allegedly-shot-down-near-nuclear-facility-372206> [<https://perma.cc/546V-SNV5>].

102. *Iran Says It Shot Down Israeli Drone*, ALJAZEERA (Aug. 24, 2014), <http://www.aljazeera.com/news/middleeast/2014/08/iran-israeli-drone-2014824132116380133.html> [<https://perma.cc/EQA3-YVDN>]; Steven Emerson, *Israeli Military Held Large-scale Exercise in May*, FOX NEWS (June 20, 2008), <https://www.investigativeproject.org/693/israeli-military-held-large-scale-exercise-in-may> [<https://perma.cc/NMY4-DGRU>]; Jay Solomon & Yochi J. Dreazen, *Israeli Maneuvers Demonstrate Unease Over Iran*, WALL ST. J. (June 21, 2008), <https://www.wsj.com/articles/SB121400981473293813> [<https://perma.cc/GL8M-VRUS>].

103. *Id.*

104. U.N. SCOR, Chargé d'affaires of the Permanent Mission of the Islamic Republic of Iran to the U.N., Letter dated Aug. 28, 2014 from the Chargé d'affaires of the Permanent Mission of the Islamic Republic of Iran to the United Nations addressed to the U.N. Secretary-General, U.N. Doc S/2014/641 (Aug. 28, 2014), https://digitallibrary.un.org/record/778550/files/S_2014_641-EN.pdf [<https://perma.cc/8YZJ-FVZH>].

105. Solomon & Dreazen, *supra* note 102.

Iran.¹⁰⁶ At that time, Israeli officials publicly declared that Iran's nuclear program constituted a serious threat to Israel and allegedly engaged in cross-border covert action to delay its progress.¹⁰⁷

This incident highlights state willingness to utilize drones in a manner that violates sovereignty in pursuit of broader national security objectives. Further, the muted international reaction outside of Iran reflected both Iran's international isolation at that time as well as a calculation that the violated rules or norms did not cross any significant thresholds. Presumably, this would have been a much larger international issue had the drone been a manned aircraft.

D. Iran Flies Surveillance Drones Near US Aircraft Carrier: August 2017

In August 2017, Iran sent drones to observe US aircraft carrier operations in the Persian Gulf.¹⁰⁸ In a series of incidents, the Iranian-made QOM-1 drones came dangerously close to US Navy jets operating from the USS Nimitz in international waters, approximately 40 miles from Iranian coast.¹⁰⁹ In the most dangerous incident, an Iranian drone came within 100 feet of a US jet as it was preparing to land on the Nimitz.¹¹⁰ The US aircraft successfully maneuvered out of the way, narrowly avoiding a collision.¹¹¹ A US Navy spokesman related that this was the first time Iran used drones in an unsafe and unprofessional manner against US Navy assets in the gulf, noting that "this type of behavior is not in accordance with international maritime customs, norms and laws. Each instance creates an unnecessary risk of escalation."¹¹² The US Admiral in charge of the Nimitz stated that the Iranian drone tactics had generated a lot of discussion and were an increasing issue of concern.¹¹³ He stated that it was his responsibility to shoot down the drones if they possessed a threat that could not be mitigated through lesser means.¹¹⁴ The General in charge of

106. Natan Sachs, *Israel and Iran's Role in the Middle East*, BROOKINGS (July 16, 2014), <https://www.brookings.edu/testimonies/israel-and-irans-role-in-the-middle-east/> [<https://perma.cc/JLL7-U25C>].

107. Somini Sengupta & David E. Sanger, *Netanyahu Links Hamas With ISIS, and Equates ISIS With Iran*, N.Y. TIMES (Sept. 29, 2014), <https://www.nytimes.com/news/un-general-assembly/2014/09/29/netanyahu-links-hamas-with-isis-and-equates-isis-with-iran/> [<https://perma.cc/JDV6-3RE4>]; Kim Zetter, *An Unprecedented Look at Stuxnet, the World's First Digital Weapon*, WIRED (Nov. 3, 2014), <https://www.wired.com/2014/11/countdown-to-zero-day-stuxnet/> [<https://perma.cc/57AX-ZBS5>].

108. Dan Lamothe, *Iranian Drone Approaches Navy Aircraft Carrier in Second Dangerous Encounter in a Week*, WASH. POST (Aug. 14, 2017), <https://www.washingtonpost.com/news/checkpoint/wp/2017/08/14/iranian-drone-approaches-navy-aircraft-carrier-in-second-dangerous-encounter-in-a-week/> [<https://perma.cc/LT68-J5WC>].

109. *Id.*

110. *Id.*

111. *Id.*

112. *Id.*

113. Lolita C. Baldor, *Iran Is Flying Unarmed Drones Over US Navy Ships in the Persian Gulf*, CHI. TRIB. (Aug. 25, 2017), <http://www.chicagotribune.com/news/nationworld/ct-iran-drones-persian-gulf-20170825-story.html> [<https://perma.cc/38RK-ESHJ>].

114. *Id.*

US Central Command, Joseph Votel, noted that “the proliferation of drones [in the Middle East] is a real challenge . . . [and] it’s grown exponentially.”¹¹⁵

This incident again highlights that drones increase the risk of escalation since states are willing to utilize them far more provocatively than they would manned aircraft. For example, if a drone were to cause a collision leading to loss of pilot life or aircraft, how would the aggrieved state likely respond and what responses would be permissible under international law? This incident also highlights state obligation under international law to operate drones with due regard to the safety of other aircraft and how drone technology complicates this requirement (see Section IV(A)(2)(a).) Finally, the episode demonstrates the challenges of determining the hostile character of drones as well as the difficulty of taking steps to deescalate, both important factors in determining when force can be used in self-defense.

E. Pakistan Shoots Down Iranian Drone: June 2017

In June 2017, a Pakistani fighter jet shot down an Iranian drone in Pakistani airspace while allegedly on a covert surveillance mission.¹¹⁶ Few details of the incident are publicly available, and the respective Governments made no public statements.¹¹⁷ The incident occurred in the broader context of an ongoing dispute between the countries over militants’ alleged use of safe havens in Pakistan to attack targets in Iran.¹¹⁸

F. Japan Warns China Against Operating Drones Near the Senkaku / Diaoyu Islands: September 2013 and May 2017

On 9 September 2013, China flew a drone in disputed airspace over the Senkaku (Japan) / Diaoyu (China) islets in the East China Sea for the first time.¹¹⁹ In response, Japan scrambled an F-15 fighter jet to escort the drone out of Japanese claimed airspace.¹²⁰ Japan considered China’s unexpected move to be a significant violation of the status quo and escalation of tension between the two countries.¹²¹ Following the incident, Japan liberalized their national rules of engagement to allow the Japanese Self-Defense Force to shoot down unauthorized drones in their territorial

115. *Id.*

116. Zara Khan, *Officials: Pakistan Shoots Down Iranian Drone Near Border*, FOX NEWS (June 20, 2017), <http://www.foxnews.com/world/2017/06/20/officials-pakistan-shoots-down-iranian-drone-near-border.html> [<https://perma.cc/6YR6-XWDW>].

117. *Id.*

118. *Id.*

119. China claims indisputable sovereignty over the rocky outcroppings; however, Japan administers the islets and considers them to be part of Japanese territory. AVERY PLAW, MATTHEW S. FRICKER & CARLOS COLON, *THE DRONE DEBATE: A PRIMER ON THE U.S. USE OF UNMANNED AIRCRAFT OUTSIDE CONVENTIONAL BATTLEFIELDS* 292 (2016); Dan Gettinger, ‘An Act of War’: *Drones Are Testing China-Japan Relations*, CENTER FOR THE STUDY OF THE DRONE (Nov. 8, 2013), <http://dronecenter.bard.edu/act-war-drones-testing-china-japan-relations/> [<https://perma.cc/2CZK-K3L8>].

120. Gettinger, *supra* note 119.

121. *Id.*

airspace if the drones refuse to leave following a warning.¹²² This new standard provides a lower bar for the use of force than Japan applies to manned aircraft, which must also present a threat prior to engagement.¹²³

China responded to the initial complaint about the alleged incursion with a brief statement asserting, “China enjoys freedom of navigation in relevant waters . . . [and] the Chinese military will organize similar routine activities in the future.”¹²⁴ In response to reports of Japan’s modification of its rules of engagement, a Chinese Defense Ministry spokesman warned:

We advise relevant parties not to underestimate the Chinese army’s resolute will and determination to protect China’s territorial sovereignty [I]f Japan does what it says and resorts to enforcement measures like shooting down aircraft, that is a serious provocation to us, it is an act of war. We will surely undertake decisive action to strike back.¹²⁵

A *Foreign Policy* editorial in the aftermath of the incident noted the historic and potentially destabilizing significance of this flight.¹²⁶ The authors argued that “the introduction of indigenous drones into Asia’s strategic environment—now made official by China’s maiden unmanned provocation—will bring with it additional sources of instability and escalation to the fiercely contested South and East China Seas.”¹²⁷

Despite China’s tough rhetoric, it does not appear to have flown any follow-on military drone missions in the disputed airspace. On the morning of 18 May 2017, four Chinese Coast Guard cutters entered the disputed territorial seas, a common practice in the standoff over the islands.¹²⁸ During this incursion, however, Japan noticed a drone like object operating from one of the cutters.¹²⁹ Japan scrambled two F-15 fighter jets, one E-2C early warning aircraft and an AWACS surveillance plane to investigate.¹³⁰ After confirming it was a drone, the Japanese Defense Minister held a press

122. PLAW ET AL., *supra* note 119, at 292. See also Dan Gettinger, *supra* note 119. The Japan Times reported that the Japanese Government determined that Chinese drones were capable of detecting warnings with their high-performance cameras and radar. *Japan to Shoot Down Foreign Drones That Invade Its Airspace*, JAPAN TIMES (Oct. 20, 2013), <https://www.japantimes.co.jp/news/2013/10/20/national/japan-to-shoot-down-foreign-drones-that-invade-its-airspace/#.WfyquWhSzcv> [https://perma.cc/348P-PFHV].

123. Gettinger, *supra* note 119.

124. PLAW ET AL., *supra* note 119, at ch. 6, note 98.

125. Mark Willacy, *Japan, China in War of Words Amid Regional Tensions Text*, AUS. BROADCAST CORP. NEWS (Oct. 28, 2013), <http://www.abc.net.au/news/2013-10-28/japan-china-war-of-words-erupts-regional-tensions/5048744> [https://perma.cc/CPJ9-5CHV].

126. Shawn Brimley, Ben Fitzgerald, & Ely Ratner, *The Drone Wars Come to Asia*, FOREIGN POL’Y (Sept. 17, 2013), <http://foreignpolicy.com/2013/09/17/the-drone-war-comes-to-asia/> [https://perma.cc/6554-HA48].

127. *Id.*

128. *Japan Scrambles Jets Over China Drone Flight Near Disputed Islets*, REUTERS (May 18, 2017, 8:46 AM), <https://www.reuters.com/article/us-japan-china-drone/japan-scrambles-jets-over-china-drone-flight-near-disputed-islets-idUSKCN18E1Q9> [https://perma.cc/VAN4-Y3HK]; *Records of Intrusions of Chinese Government and Other Vessels into Japan’s Territorial Sea*, MINISTRY OF FOREIGN AFF. OF JAPAN (Oct. 4, 2019), https://www.mofa.go.jp/region/page23e_000021.html [https://perma.cc/TB9L-NBDV].

129. *Japan Scrambles Jets Over China Drone Flight Near Disputed Islets*, *supra* note 128.

130. *Id.*

conference where she stated that “this is escalating the situation and absolutely unacceptable We regard this as a serious infringement of Japan’s sovereignty.”¹³¹ The foreign minister sent a stern protest to the Chinese embassy, complaining that “the Senkaku islands are Japan’s inherent territory and the entry into the territorial waters by the Chinese government ships is absolutely unacceptable, . . . [and] on top of that, there appears to have been a flight of a drone.”¹³² The Chinese Foreign Ministry responded that the drone was a small media drone operating from the Coast Guard ship. “This is not a military action as has been hyped up by some media As for the so-called representations or protest by the Japanese side, of course we can’t accept it.”¹³³ They concluded by noting that the islands are Chinese territory and China has every right to carry out normal patrols there.¹³⁴

These incidents highlight the explosive escalatory potential of drone use in nationalist disputes over even insignificant territory. Although drones offer a tempting low cost way to modify the status quo, their destruction (when viewed through a nationalistic lens) can quickly become an act of war.

G. Pakistan Shoots Down Indian Surveillance Drones: 2015, 2016, and 2017

In separate incidents in July 2015, November 2016, and October 2017, Pakistan shot down alleged Indian surveillance drones on the Pakistani side of the line of control in the disputed region of Kashmir.¹³⁵ Each of the downed drones were small commercially available models with high resolution photographic capabilities, but limited speed and range.¹³⁶ Given these technical limitations, the drones were capable of little more than gathering tactical information about Pakistani troop locations in the immediate vicinity of the line of control.¹³⁷ New Delhi denied that it was responsible for the 2015 and 2016 incursions and did not comment on the 2017 incident.¹³⁸ Since at least 2013, Pakistan is also believed to use

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*

135. Katharine Houreld, *Pakistan Says It Shot Down Indian Drone Near Disputed Border*, REUTERS (Jul. 15, 2015), <http://www.reuters.com/article/us-pakistan-drone/pakistan-says-it-shot-down-indian-drone-near-disputed-border-idUSKCN0PP1O620150715> [<https://perma.cc/R6V3-YXN5>]; *Indian Drone Spying Across LoC Shot Down by Pakistan Army*, GEO NEWS (Oct. 27, 2017), <https://www.geo.tv/latest/164775-indian-drone-spying-across-loc-shot-down-by-pakistan-army> [<https://perma.cc/SQC8-PYRQ>]; *Pakistan Army Claims It Shot Down Indian Drone Along LoC*, HINDUSTAN TIMES (Nov. 20, 2016), <http://www.hindustantimes.com/india-news/pakistan-army-claims-it-shot-down-indian-drone-along-loc/story-UjMXgMIBkGb2c9SfGJqSGJ.html> [<https://perma.cc/WG2F-Z84U>].

136. Houreld, *supra* note 135.

137. *Id.*

138. *Drone Shot Down by Pakistan Appears to Be of Chinese Origin: Jaishankar*, TIMES OF INDIA (Nov. 4, 2017), <http://timesofindia.indiatimes.com/india/Drone-shot-down-by->

drones to monitor the Indian side of the line of control in Kashmir.¹³⁹

However, the Pakistani military (utilizing more sophisticated US drone technology¹⁴⁰ capable of monitoring 25 to 30 kilometers across the border) has not been publicly accused of crossing the line of control.¹⁴¹

Pakistan's public response to these alleged drone territorial incursions was relatively muted. Cross border raids, gun fights, and fatal artillery exchanges are still relatively common in this disputed territory and have marred the peace there for decades.¹⁴² In such an environment, the destruction of a small unarmed surveilling drone is relatively insignificant, yet still important enough to make international news.

H. North Korea Flies Surveillance Drones Over South Korea: 2014, 2016, and 2017

Since 2014, there have been six publicly reported incidents of North Korean surveillance drones intruding into South Korean airspace south of the Demilitarized Zone (DMZ).¹⁴³ In March and April 2014, South Korea recovered three crashed drones inside South Korea.¹⁴⁴ The recovered machines were unsophisticated commercially available drones painted sky blue for camouflage and modified to take surveillance photographs with a consumer variety digital camera.¹⁴⁵ The drones were programed to fly over South Korean military bases as well as the South Korean executive mansion.¹⁴⁶ The South Korean Defense Ministry claimed that the drone intrusions violated the 1953 Armistice Agreement and would warn Pyongyang via the UN.¹⁴⁷

In January 2016 and May 2017, South Korean troops guarding the DMZ fired multiple machine gun rounds at suspected intruding drones; in

Pakistan-appears-to-be-of-Chinese-origin-Jaishankar/articleshow/48105815.cms [https://perma.cc/K645-DZCG].

139. *Id.*

140. Shared to assist in Pakistan's assistance with the fight against the Al Qaeda and the Taliban. Vimal Bhatial, *Pakistan Keeping Eye on India with UAVs*, TIMES INDIA (Mar. 19, 2013), <http://timesofindia.indiatimes.com/city/jaipur/Pakistan-keeping-eye-on-India-with-UAVs/articleshow/19052794.cms> [https://perma.cc/A28E-Z2A4].

141. *Id.*

142. *Pakistan Army Claims It Shot Down Indian Drone Along LoC*, *supra* note 135.

143. *Intruding North Korean Drone Gets Back on Its Side of Border After South Korea Fires Warning Shots*, JAPAN TIMES (Jan. 14, 2016), <https://www.japantimes.co.jp/news/2016/01/14/asia-pacific/intruding-north-korean-drone-gets-back-side-border-south-korea-fires-warning-shots/#.Wf2c0WhSzcs> [https://perma.cc/5PB3-CHWK]; *South Korea Fires at North 'Object'*, BBC NEWS (May 23, 2017), <http://www.bbc.com/news/world-asia-40012499> [https://perma.cc/L2C2-N4HZ]; Ben Brumfield & K.J. Kwon, *3 Found Drones Came From North Korea, South's Defense Ministry Says*, CNN (May 9, 2014), <http://www.cnn.com/2014/05/09/world/asia/koreas-drones/index.html> [https://perma.cc/QQ3X-LDSR]; Tom O'Connor, *North Korea Is Invading South With Spy Drones, But They Keep Crashing*, NEWSWEEK (June 21, 2017, 3:40 PM), <http://www.newsweek.com/north-korea-spy-us-missiles-consequences-south-628045> [https://perma.cc/5SCR-WZDV].

144. BRUMFIELD & KWON, *supra* note 143.

145. *Id.*

146. *Id.*

147. *Id.*

both instances the drones returned back to North Korea after the firing started.¹⁴⁸

In May 2017, South Korea also discovered a crashed drone near the DMZ.¹⁴⁹ Subsequent forensics uncovered that the drone had flown over 165 miles into South Korea, taking 551 photographs including 10 low quality images of a US Terminal High Altitude Area Defense System (THAAD) that had recently been brought online to defend against the threat from the North's ballistic missile system.¹⁵⁰ The South Korean military assessed that "North Korea's act this time is a clear military provocation violating the [1953] Armistice Agreement and the [1992] bilateral nonaggression pact . . . and we will take appropriate measures in accordance with the results of its investigation."¹⁵¹ The South Korean government also reported the incidents prior to 2015 to the UN Security Council as a violation of prior Security Council resolutions.¹⁵² A UN Panel of Experts, established under Resolution 1874 (2009) to investigate and make recommendations concerning alleged North Korean violations of Security Council resolutions,¹⁵³ substantiated the North's misuse of the drones and recommended that existing sanctions lists be updated to prohibit the sale of commercial drone and drone components.¹⁵⁴

As with drone use in Kashmir, North Korea's drone incursions are a relatively minor sideshow in the context of the larger decades-long conflict between the two Koreas marked by threats of nuclear annihilation, kidnappings, raids, and cross border artillery and gunfire exchanges. Given North Korea's current status as the world's premier pariah state, it is unlikely that international law or norms play a dominate role in their strategic calculations.

I. Turkey Shoots Down Russian Drone: October 2015

On 16 October 2015, Turkish military jets shot down an unarmed surveillance drone that crossed from Syria, penetrating approximately two miles into Turkish airspace.¹⁵⁵ Turkish officials claimed that the drone

148. *Intruding North Korean Drone Gets Back on Its Side of Border After South Korea Fires Warning Shots*, *supra* note 143; see also *South Korea Fires at North 'Object'*, *supra* note 143.

149. O'Connor, *supra* note 143.

150. *Id.*

151. *Id.*

152. The Panel of Experts Established Pursuant to Resolution 1874 (2009) to the U.N., Letter dated Feb. 23, 2015 from the Panel of Experts established pursuant to resolution 1874 (2009) addressed to the President of the Security Council, U.N. Doc S/2015/131 (Feb.23, 2015), http://www.un.org/ga/search/view_doc.asp?symbol=S/2015/131 [<https://perma.cc/9TNT-27R8>].

153. *Id.*

154. The Panel of Experts Established Pursuant to Resolution 1874 (2009) to the U.N., *supra* note 152.

155. *Turkey Would Shoot Down Planes Violating Its Air Space: PM*, REUTERS (Oct. 17, 2015, 8:53 PM), <https://www.reuters.com/article/us-mideast-crisis-syria-turkey-air-space/turkey-would-shoot-down-planes-violating-its-air-space-pm-idUSKCN0SBOQX20151018> [<https://perma.cc/EU7P-YX94>].

was warned three times in accordance with their publicly declared rules of engagement before force was used.¹⁵⁶ The Turkish Prime Minister, Ahmet Davtogul, announced, “We downed a drone yesterday. If it was a plane we’d do the same. Our rules of engagement are known. Whoever violates our borders, we will give them the necessary answer.”¹⁵⁷ Several news sources reported that US officials believed the drone was Russian.¹⁵⁸ The Russian Defense Ministry denied the accusation, stating that all of its drones in Syria were operating “as planned.”¹⁵⁹

Lingering questions about this drone incident were significantly overshadowed the following month when a Turkish military jet shot down a manned Russian jet which allegedly briefly crossed a little over a mile into Turkish airspace on 24 November.¹⁶⁰ The pilot as well as a Russian soldier sent to rescue the crew were killed by Syrian insurgents.¹⁶¹ Turkish authorities alleged that the aircraft ignored ten warnings to leave the airspace prior to the use of force.¹⁶² The Russian Defense Ministry claimed that the plane never left Syrian airspace and never received warnings.¹⁶³

After convening an emergency meeting about the incident, the NATO Secretary-General Jens Stoltenberg declared, “We stand in solidarity with Turkey and support the territorial integrity of our NATO ally.”¹⁶⁴ The Turkish President added that “everyone should respect the right of Turkey to defend its borders.”¹⁶⁵ The Russian response was swift and significant. President Putin declared the action to be “a stab in the back by the accomplices of terrorists”¹⁶⁶ and deployed a number of advanced weapons with regional offensive capabilities to Syria, imposed a variety of significant eco-

156. *Id.*

157. *Id.*

158. *Id.*

159. *Id.* Conclusive information about the nationality of the drone has not been publicly released. In the absence of any compelling public information to the contrary, the author assumes the US assessment that Russia owned the drone was correct. The drone was indisputably in Turkish territory and Russia was using drones in the Syrian/Turkey border region. Further, photographic depictions of the drone closely match photos of Orland drones that Russia was routinely using in Ukraine in the same timeframe. Finally, under the Putin Presidency, Russian leadership has regularly resorted to self-serving deceptive statements and activities to support their controversial foreign military activities (Ukraine, Georgia, Syria, etc.). See e.g., *Ukraine Downs Russian Drone Near Donetsk*, DIGITAL FORENSIC RESEARCH LAB (May 4, 2017), <https://medium.com/dfrlab/ukraine-downs-russian-drone-near-donetsk-2fb5c0789f63> [<https://perma.cc/5GE4-KUUQ>].

160. *Turkey’s Downing of Russian Warplane—What We Know*, BBC News, (Dec. 1, 2015), <http://www.bbc.com/news/world-middle-east-34912581> [<https://perma.cc/V3P5-HNBJ>]. At the time of the incident, the Russian plane was taking part in Russia’s campaign to destroy Syrian rebel forces in an effort to support the government of Syrian President Bashar al-Assad. In this campaign, Russia was not engaging in hostilities with Turkey. However, Turkey had been previously accused Russia of brief airspace incursions. *Id.*

161. *Id.*

162. *Id.*

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

conomic sanctions, and froze diplomatic relations.¹⁶⁷

The contrast in the Russian reactions to the loss of manned and unmanned aircraft in almost identical circumstances provides the clearest existing example of how drones modify the strategic calculus of the use of aircraft in high risk settings. Russia was able to deny and ignore the loss of the drone because it was in its strategic interest not to be seen to have accidentally violated Turkish airspace. The loss of the manned aircraft, however, was undeniable and became a major international incident that raised tensions between Russia and Turkey, as well as Russia and NATO.¹⁶⁸ From the perspective of the lawfulness of the use of force, it is significant that the focus of the dispute between the two countries was not whether Turkey had authority to shoot down aircraft that briefly intruded into its airspace, but rather, did the Russian jet actually intrude into the airspace and ignore warnings to leave?

J. Russia Shoots Down Georgian Surveillance Drone Over Abkhazia, Georgia: April 2008

On 20 April 2008, a Georgian military surveillance drone was shot down in the airspace of the disputed Georgian region of Abkhazia.¹⁶⁹ A subsequent investigation by the United Nations Observer Mission in Georgia (UNOMIG) determined that a Russian military jet shot down the Georgian drone with an air-to-air missile after the drone crossed into Abkhaz airspace.¹⁷⁰ Although large scale hostilities did not break out in the Russo-Georgian war for another three months, the destruction of this drone turned out to be the first shot fired in the broader conflict. This was the first time in the history of warfare where a drone was the first casualty.¹⁷¹

The UNOMIG report on the drone incident (released prior to outbreak of hostilities) determined that Russia's actions were "fundamentally inconsistent with the [ceasefire agreement] and, aside from possible considera-

167. *Id.*

168. Neil MacFarquhar & Steven Erlanger, *NATO-Russia Tensions Rise After Turkey Downes Jet*, N.Y. TIMES (Nov. 24, 2015), <https://www.nytimes.com/2015/11/25/world/europe/turkey-syria-russia-military-plane.html> [<https://perma.cc/7ZET-3JAL>].

169. Following its independence from Russia in 1991, the Georgian regions of Russian-aligned South Ossetia and Abkhazia fought with the Georgian Government for independence. A 1993 ceasefire agreement stipulated *inter alia* that both sides "shall scrupulously observe the ceasefire on land, at sea and in the air and shall refrain from all military actions against each other." Abkhaz authorities argued that repeated Georgian drone surveillance flights constituted "military actions" in contravention of this agreement. The United Nation Observer Mission in Georgia, established to monitor and investigate violations of the cease fire agreement, found the Georgian activities violated the agreement. See RONALD D. ASMUS, *A LITTLE WAR THAT SHOOK THE WORLD: GEORGIA, RUSSIA, AND THE FUTURE OF THE WEST* 63–69 (2010); U.N. Observer Mission in Georgia, Rep. of UNOMIG on the Incident of 20 April Involving the Downing of a Georgian Unmanned Aerial Vehicle Over the Zone of Conflict (May 26, 2008), <http://www.securitycouncilreport.org/atf/cf/%7B65BF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/Georgia%20UNOMIG%20Report%20on%20Drone.pdf> [<https://perma.cc/5YEW-FP2D>].

170. U.N. Observer Mission in Georgia, *supra* note 169.

171. ASMUS, *supra* note 169, at 148.

tions under international law, undercut[] the ceasefire and separation of forces regime.”¹⁷² It further noted the following regarding Georgian use of drones:

[T]o conduct reconnaissance of Abkhaz military formations and movements north of the Ceasefire line[,] [h]owever legitimate this purpose may seem to the Georgian side, it stands to reason that this kind of military intelligence-gathering is bound to be interpreted by the Abkhaz side as a precursor to a military operation, particularly in a period of tense relations between the sides A ceasefire regime has a major advantage—preventing war. It does however impose, in return, limitations on the freedom of the sides, including the undertaking by one side of measures that can and will be perceived as threats by the other side.¹⁷³

This assessment highlights a paradox of pre-hostilities surveillance. The act of cross-border surveillance to determine a potential adversary’s hostile intentions has the effect of increasing the very tensions the surveillance is aimed at assessing. Drone use is particularly susceptible to this trap, given prevailing state willingness to use them to conduct surveillance. Following the incident, Georgia’s ambassador to the UN announced that his country would refrain from further drone flights over Abkhazia.¹⁷⁴

K. China Seizes US drone in the South China Sea: December 2016

On 15 December 2016, a Chinese naval vessel seized a US Navy maritime drone operating in the South China Sea approximately 50 miles west of central Luzon in the Philippines, within the Philippines EEZ.¹⁷⁵ At the time of the seizure, a US Navy oceanographic survey ship, the USNS Bowditch, was in the process of recovering the drone,¹⁷⁶ which had been gathering environmental information such as salinity, water temperature, and sound speed reportedly in support of US Navy efforts to find and track foreign submarines.¹⁷⁷ According to a spokesman for the US Department of Defense, a Chinese Navy Dalang-III class submarine rescue vessel launched a small boat and seized the drone within 500 yards of the USNS

172. U.N. Observer Mission in Georgia, *supra* note 169

173. *Id.*

174. ASMUS, *supra* note 169, at 150.

175. Jane Perlez & Matthew Rosenberg, *China Agrees to Return Seized Drone, Ending Standoff, Pentagon Says*, N.Y. TIMES (Dec. 17, 2016), <https://www.nytimes.com/2016/12/17/world/asia/china-us-drone.html> [<https://perma.cc/6C4L-PW6W>]. See also Kristina Daugirdas & Julian D. Mortenson, *The United States Confronts China Over the Seizure of Unmanned Drone in the South China Sea*, 111 AM. J. INT’L L. 513 (2017).

176. An unclassified commercially available Slocum G2 Glider (a 5-foot-long metal tube with fins). See Anthony Kuhn, *In China’s Drone Seizure and Return, A Strategic Message to US*, NPR (Dec. 21, 2016, 5:06 AM), <http://www.npr.org/sections/parallels/2016/12/21/506401491/in-chinas-drone-seizure-and-return-a-strategic-message-to-u-s> [<https://perma.cc/4KSF-W7FM>].

177. Sam LaGrone, *Navy Deploying Unmanned Gliders from Destroyers to Help ASW Mission*, USNI NEWS (Nov. 16, 2016, 8:48 PM), <https://news.usni.org/2016/11/16/navy-deploying-unmanned-gilders-destroyers> [<https://perma.cc/Y3WZ-6NKZ>]; Terri Moon Cook, *Chinese Seize US Navy Underwater Drone in South China Sea*, DOD NEWS (Dec. 16, 2016), <https://www.defense.gov/News/Article/Article/1032823/chinese-seize-us-navy-underwater-drone-in-south-china-sea/> [<https://perma.cc/759G-949M>].

Bowditch.¹⁷⁸ Immediately following the seizure, the US ship radioed the Chinese ship and demanded they return the drone.¹⁷⁹ The Chinese ship communicated with USNS Bowditch but ignored the demands.¹⁸⁰

The US condemned the seizure as a clear violation of international law.¹⁸¹ A Department of Defense spokesman asserted that the “UUV is a sovereign immune vessel of the United States. We call upon China to return our UUV immediately and to comply with all of its obligations under international law.”¹⁸² The Pentagon issued a statement asserting that the incident was “inconsistent with both international law and standards of professionalism for conduct between navies at sea . . . [and] called on Chinese authorities to comply with their obligations under international law and to refrain from further efforts to impede lawful US activities.”¹⁸³ President-elect Trump tweeted, “China steals United States Navy research drone in international waters—rips it out of water and takes it to China in unprecedented act.”¹⁸⁴ And later, “We should tell China that we don’t want the drone they stole back—let them keep it!”¹⁸⁵

China’s Foreign Ministry played down the controversy, claiming that they located a misplaced object that was a hazard to navigation.¹⁸⁶ A foreign ministry spokeswoman stated, “We don’t like the word ‘steal’—the word is absolutely inaccurate This is just like you found a thing on the street, and you have to take a look and investigate it to see if the thing belongs to one who wants it back.”¹⁸⁷ After announcing that they would return the drone, the Chinese Defense Ministry added:

It is worth emphasizing that for a long time, the US military has frequently dispatched vessels and aircraft to carry out close-in reconnaissance and military surveys within Chinese waters China resolutely opposes these activities, and demands that the US side should stop such activities. China will continue to be vigilant against the relevant activities on the US side, and

178. Cook, *supra* note 177.

179. *Id.*

180. *Id.*

181. *Id.*

182. Press Release, U.S. Dep’t of Defense, Statement by Pentagon Press Secretary Peter Cook on Incident in South China Sea (Dec. 16, 2016), <https://www.defense.gov/Newsroom/Releases/Release/Article/1032611/statement-by-pentagon-press-secretary-peter-cook-on-incident-in-south-china-sea/> [<https://perma.cc/3LKL-KK2J>]; Camila Domonoske, *China Seizes U.S. Underwater Drone From International Waters*, *Pentagon Says*, NPR News (Dec. 16, 2016, 12:43 PM), <https://www.npr.org/sections/thetwo-way/2016/12/16/505850933/china-seizes-unmanned-u-s-underwater-vehicle-in-international-waters> [<https://perma.cc/7HWS-WETW>].

183. Emily Rauhala, *China Returns Seized US Naval Drone despite Trump’s Call to ‘Keep It’*, WASH. POST (Dec. 20, 2016), https://www.washingtonpost.com/world/china-returns-seized-us-naval-drone/2016/12/20/4dde17b2-c633-11e6-acda-59924caa2450_story.html [<https://perma.cc/34T5-ZZZL>].

184. *Id.*

185. *Id.*

186. *Id.*

187. *Id.*

will take necessary measures in response.¹⁸⁸

China returned the drone on 20 December 2016 near where it was seized, 500 miles from the mainland coast of China.¹⁸⁹

This seizure occurred within the broader context of the strategic military and political competition of the world's two largest economies. The New York Times' China correspondent, Chris Buckley, noted at the time that:

China's opaque policy making, especially on military issues, has left outsiders guessing about who authorized the seizure, whether the act was meant to send a message and, if so, whether that message was aimed at Mr. Trump. But the way in which the Chinese ship fished out the drone with a United States Navy ship nearby suggested a calibrated action.¹⁹⁰

The People's Daily, the Communist Party's flagship newspaper, noted that China's seizure was legal because the rules regarding drones are unclear, "If the US military can send the drone, surely China can seize it."¹⁹¹ This incident raises important legal questions that will be addressed later in the Article.

Are drones sovereign immune vessels? Does international law permit military drone surveillance within the territorial sea or EEZ of another state? Can force be used to protect a drone? Can force be used to seize or destroy a surveilling maritime drone? Overall, the incident demonstrates that in the maritime context, as in aviation, drones significantly lower the threshold for the use of force.

L. Indian Drone Crashes on Chinese Side of a Disputed Border: December 2017

In early December 2017, an Indian military surveillance drone crashed after crossing the line of control that separates Chinese and Bhutanese controlled areas in the disputed Himalayan Doklam plateau.¹⁹² Indian military forces are present in Bhutan to support the Bhutanese territorial claim in a region marked by simmering tensions associated with multiple unresolved border disputes.¹⁹³ Small border incidents have occurred periodically since China and India fought a brief war over their disputed Himalayan borders in 1962.¹⁹⁴

188. *China to Hand Over Underwater Drone to US in Appropriate Manner*, XINHUA (Dec. 17, 2016), http://eng.mod.gov.cn/TopNews/2016-12/18/content_4767099.htm [<https://perma.cc/2LWD-UD6A>].

189. Chris Buckley, *Chinese Navy Returns Seized Underwater Drone to US*, N.Y. TIMES (Dec. 20, 2016), <https://www.nytimes.com/2016/12/20/world/asia/china-returns-us-drone.html> [<https://perma.cc/KTP4-ZQBC>].

190. *Id.*

191. Perlez & Rosenberg, *supra* note 175.

192. *China Claims Indian Drone 'Invaded Airspace in Crash'*, BBC NEWS (Dec. 7, 2017) <http://www.bbc.com/news/world-asia-china-42261725> [<https://perma.cc/6YU2-N6MJ>].

193. *Id.*

194. *Id.*

A Chinese military official in the region claimed that the drone had “violated China’s territorial sovereignty” and noted that China would “steadfastly protect the country’s rights and safety.”¹⁹⁵ An Indian Army spokesman stated that the Indian Army lost control of the drone before it crossed into Chinese airspace and the Chinese counterparts were notified soon after.¹⁹⁶

Although this incident was peacefully resolved, it highlights the escalatory risk associated with imperfect drone technology. A simple navigational error or technical glitch in a disputed region can quickly become a highly visible violation of sovereignty, which could be misinterpreted as a hostile action, intentional infringement of sovereignty, or a bad faith disruption of a tenuous status-quo.

III. Analysis

The previous section detailed how states use surveillance drones, how target states respond, and the public pronouncements (or lack thereof) that both sides make to justify their actions. This state practice provides the basis for the legal analysis in this section of the Article. This analysis focuses first on the international law relevant to the surveilling state and then shifts to an assessment of the target state. The analysis proceeds by proposing and then seeking to answer a series of questions that could reasonably arise as states or the international community assess how international law applies to various aspects of aerial and maritime drone surveillance.

The first series of questions involve the obligation to respect the territorial sovereignty of surveilled states: (1) Does international law prohibit surveillance from land areas adjacent to the target state? (2) Does international law prohibit drone surveillance from sea areas adjacent to the target state’s territorial sea (specifically, drone surveillance in the EEZ and the “due regard” requirement)? (3) Does international law prohibit aerial drone incursions into the territorial airspace of the target state? (4) Does international law prohibit maritime drone surveillance within the territorial sea? (5) Can territorially intrusive peacetime drone surveillance be justified as permissible espionage under international law? Finally, moving from sovereignty to the use of force, (6) Do territorial incursions by aerial and maritime surveillance drones constitute a use force in violation of Article 2(4) of the UN Charter?

The second series of questions assesses the actions of the responding state under international law: (1) When can force be used under the UN Charter against a trespassing drone? (2) Can states use force against intruding drones pursuant to their sovereign police powers? (3) Can a state shoot down an intruding drone? (If so, what level of force is necessary and proportional?) (4) Can deadly force be used against humans to protect a surveillance drone?

195. *Id.*

196. *Id.*

A. International Law Applicable to the Drone Operating State (Sovereignty)

The requirement to respect territorial sovereignty of other states is a fundamental principal of international law. As the Permanent Court of International Justice recognized in the 1949 *Corfu Channel* case, “between independent States, respect for territorial sovereignty is an essential foundation of international relations.”¹⁹⁷ However, violations of this principle are very common. The questions below explore the extent and strength of this norm, as well as the practical consequences of its violation with drones.

1. Does International Law Prohibit Surveillance from Land Areas Adjacent to the Target State?

Under the principle of territorial sovereignty, a state is generally free to utilize its territory in whatever manner it chooses, so long as doing so does not interfere with its international obligations or the sovereign rights of other states.¹⁹⁸ For example, a state has an obligation to prevent pollution or terrorist activity within its own territory that could foreseeably impact other states.¹⁹⁹ According to professor Rudolf Bernhardt, the prevailing global view is that surveillance, including the use of “radar, long range cameras, highly-sensitive listening devices, located with the surveying State to monitor activities in the neighboring State” does not constitute a prohibited violation of the neighboring state’s sovereignty.²⁰⁰ US Air Force doctrine shares this position, noting in a legal manual for air operations:

While a state has broad rights to prevent any physical intrusion of its national airspace by military aircraft of another state, the United States has maintained the view that a state has no right to prevent the use of international airspace for purposes of surveillance or observation of its airspace or territory. It is common practice for military aircraft to fly in the international airspace adjacent to the national airspace of other states for purposes of photographing and otherwise observing activities within the national airspace or territory.²⁰¹

This position is logical. It is a fundamental responsibility of government to protect a state from external aggression, and an attack is most likely to proceed from across a land border. All states are interested in knowing as much as possible about potential threats in the immediate vicinity of their borders. This practice is also consistent with how states use drones. As detailed above, states, like Pakistan, use drones to peer

197. *Corfu Channel* (U.K. v. Alb.), Judgment, 1949 I.C.J. Rep. 4, 35 (April 9) [hereinafter *Corfu Channel Case*].

198. 3 ENCYCLOPEDIA INT’L L. (A-M), *Use of Force: War and Neutrality Peace Treaties*, 280 (Max Planck Institute & Rudolf Bernhardt, 1982).

199. *Id.*

200. *Id.*

201. U.S. DEPT. OF THE AIR FORCE, AIR FORCE PAMPHLET 110-31: INTERNATIONAL LAW—THE CONDUCT OF ARMED CONFLICT AND AIR OPERATIONS 2-6 (1976).

across borders.²⁰² It is only when drones cross borders that complaints begin.²⁰³

Professor Bernhardt also noted that unless other indications of aggression are present, the simple act of collecting intelligence along a border should not be considered a threat of armed force in violation of Article 2(4) of the UN Charter against the neighboring state because collection of this information can be solely defensive in nature.²⁰⁴ Since this type of surveillance is not inherently threatening and does not violate the sovereignty of the surveilled state, states will likely increasingly use drones to patrol international borders, particularly in high tension areas. Improved drone-derived intelligence of threats possessed by neighbors could theoretically lower tensions in some border conflicts (like Kashmir)²⁰⁵ by providing better mutual understanding of intentions.

However, drones are also prone to navigational errors and crash at much higher rates than manned aircraft.²⁰⁶ In already tense circumstances, an unintentional territorial intrusion (such the December 2017 India/China incident) can escalate tensions.

2. *Does International Law Prohibit Drone Surveillance from Sea Areas Adjacent to the Target State's Territorial Sea?*

Although this question mirrors the question addressed above, surveillance from the sea is far more complex and controversial than surveillance from a neighboring land territory. To address this question, it is first necessary to lay out the rules that govern military activity in the territorial sea and oceans areas beyond the territorial sea.

a. The Territorial Sea

The United Nations Convention on the Law of the Sea (UNCLOS) establishes that coastal states have sovereignty over an area that extends 12 nautical miles (nm) from a state's established baseline, which is generally the coastline.²⁰⁷ The water, seabed, and airspace of this territorial sea is the sovereign territory of the coastal state.²⁰⁸ The Convention on International Civil Aviation (Chicago Convention) also affirms that the coastal state "has complete and exclusive sovereignty over the airspace above its

202. See, e.g., Bhatial, *supra* note 140.

203. For example, India is aware that Pakistan patrols the Pakistani side of Kashmir line of control with drones but has made no accusation of wrong doing against Pakistan because Pakistan's drones have not yet crossed the border. See Bhatial, *supra* note 140.

204. See *Use of Force: War and Neutrality Peace Treaties*, *supra* note 198, at 280.

205. See, e.g., Boyle et al., *Debating Drone Proliferation*, INT'L SEC., Winter 2017/18, at 178, 181 (2018).

206. See Craig Whitlock, *When Drones Fall From the Sky*, WASH. POST (June 20, 2014), http://www.washingtonpost.com/sf/investigative/2014/06/20/when-drones-fall-from-the-sky/?utm_term=.979bfe8b4950 [https://perma.cc/MH4S-9V9C].

207. See United Nations Convention on the Law of the Sea art. 2, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS]. See also UNCLOS articles 5 through 16 for a more thorough explanation of how coastal state bases lines are established.

208. *Id.* at art. 2.

territory,” which includes its territorial waters.²⁰⁹ Foreign ships, including warships, have a right of innocent passage through the territorial sea, however, this right does not extend to aircraft in the airspace above the territorial sea.²¹⁰

b. Sovereign Rights Beyond the Territorial Sea

Beyond the 12 nm territorial sea, UNCLOS establishes that coastal states have a contiguous zone that extends to 24 nm from the baseline and an EEZ that extends to 200 nm.²¹¹ The sea area beyond 200 nm is the “high seas” and, like Antarctica or outer space, is not subject to the sovereignty of any state.²¹² The airspace beyond the 12 nm territorial sea is international airspace open to all civilian and military aircraft.²¹³

Neither UNCLOS nor Chicago Convention distinguish between airspace over the EEZ or high seas.²¹⁴ Unlike the water below, it is all international airspace of the same legal character.²¹⁵

c. Military Activities in the EEZ

There are two prevailing international views about the permissibility of conducting military activities, including surveillance of the coastal state, from the EEZ. The majority position, represented most prominently by the United States, holds a very permissive view that there are no restrictions on the conduct of military activities inside the EEZ so long as the military activities are conducted with “due regard” for the safety of other actors in the EEZ, and the activities do not constitute a threat or use of force against the territorial integrity or political independence of the coastal state in violation of the UN Charter.²¹⁶ The minority position, although never clearly defined, rejects the idea that the coastal state has no authority to regulate

209. See Chicago Convention, *supra* note 89, arts. 1-2.

210. See UNCLOS, *supra* note 207, arts. 17-18; Chicago Convention, *supra* note 89, art. 3.

211. See UNCLOS, *supra* note 207, arts. 33, 57.

212. See *id.* at art. 89; The Antarctic Treaty, art. IV, para. 2, Dec. 1 1959, 5778 U.N.T.S. 72; Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, art. 2, Jan. 27, 1967, 8843 U.N.T.S. 206.

213. Raul (Pete) Pedrozo, *Military Activities in the Exclusive Economic Zone: East Asia Focus*, 90 INT'L L. STUD. 514, 520 (2014).

214. *Id.* at 519-20.

215. *Id.*

216. See *id.* at 534-35; see also U.S. NAVY, THE COMMANDER'S HANDBOOK ON THE LAW OF NAVAL OPERATIONS 2-9, (2007); Jing Geng, *The Legality of Foreign Military Activities in the Exclusive Economic Zone under UNCLOS*, 28 MERKOURIOS 22, 24 (2012); Stuart Kaye, *Freedom of Navigation, Surveillance and Security: Legal Issues Surrounding the Collection of Intelligence from Beyond the Littoral*, 24 AUSTL. Y.B. INT'L L. 93, 94 (2005); Ivan Shearer, *Military Activities in the Exclusive Economic Zone: The Case of Aerial Surveillance*, 17 OCEAN Y.B. 548, 560 (2003); Brian Wilson, *An Avoidable Maritime Conflict: Disputes Regarding Military Activities in the Exclusive Economic Zone*, 41 J. MAR. L. & COM. 421, 429 (2010);); FLETCHER SCHOOL, *Military Activities in an Exclusive Economic Zone (EEZ)*, in LAW OF THE SEA (last updated Apr. 7, 2018), <https://sites.tufts.edu/lawofthesea/chapter-4/> [<https://perma.cc/G5HB-3VQZ>].

or restrict military activities in the EEZ.²¹⁷

A lack of clarity in the UNCLOS text provides room for plausible arguments to support the divergent views.²¹⁸ In setting forth the freedoms and responsibilities of states in the EEZ and high seas, UNCLOS does not overtly recognize a right to conduct military activities.²¹⁹ The UNCLOS text only specifically lists rights of “navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms”²²⁰ as protected freedoms in the EEZ and high seas. Creating further ambiguity, UNCLOS requires states acting in the EEZ to “have due regard to the rights and duties of the coastal State and . . . comply with the laws and regulations adopted by the coastal State in accordance with the provisions of this Convention and other rules of international law in so far as they are not incompatible with this Part.”²²¹ Finally, Article 88 establishes that the EEZ and high seas are “reserved for peaceful purposes.”²²² On their face, these provisions taken together could support a coastal state’s assertion of a right to regulate foreign military activities in the EEZ.

However, when the UNCLOS text is read in the context of both state practice and the understanding of the provisions at the time of the drafting, it does not appear that UNCLOS was intended to grant coastal states authority to regulate foreign military activity in the EEZ.²²³ Prior to the development of the concept of the EEZ, the coastal state had no authority in this zone and militaries regularly conducted military operations and exercises within 200 nm of coastal states as they had throughout the history of naval warfare.²²⁴ This practice has continued uninterrupted to the present. The *travaux préparatoires* also demonstrate that the drafters did not intend the EEZ to limit these rights. In a study of UNCLOS drafting history, United States Navy Captains George Galdorisi and Alan Kaufman note that the United States foreclosed any discussion of the regulation of military activities in order to avoid turning UNCLOS into an arms control agreement that would “quickly bring to an end to current efforts to negotiate a law of the sea convention.”²²⁵ In another study of these provisions and their drafting history, Professor Alan Shearer notes that “most publicists support the view that the Convention does not prohibit military activities in and over the [EEZ] or allow coastal States to regulate such

217. Shearer, *supra* note 216, at 560.

218. George V. Galdorisi & Alan G. Kaufman, *Military Activities in the Exclusive Economic Zone: Preventing Uncertainty and Defusing Conflict*, 32 CAL. W. INT’L L.J. 253, 274-75 (2002).

219. UNCLOS, *supra* note 207, art. 58, 87.

220. *Id.*

221. *Id.* at art. 58.

222. *Id.* at art. 88.

223. Shearer, *supra* note 216, at 557.

224. Galdorisi & Kaufman, *supra* note 218, at 289.

225. *Id.* at 276 (quoting Peaceful Uses of Ocean Space: Zones of Peace and Security, Third United Nations Conference on the Law of the Sea, 4th Sess., 67th mtg. at 62, U.N. Doc. A/CONF.62/SR.57-70 (1976) (Comments of US Delegate, T. Vincent Learson)).

activities.”²²⁶ During the law of the sea convention, however, several smaller states, including Brazil and Iran, persistently advocated for coastal state regulatory authority.²²⁷

Regardless of the drafter’s intent and contemporary practice, leading commentators have also noted that the textual ambiguity in such a politically significant provision of UNCLOS will lead to divergent interpretation and practice.²²⁸ Professor D. P. O’Connell noted during the drafting of UNCLOS that “since the [the Convention] thus oscillates between alternative inferences as to the status of the EEZ, its actual status is likely to come to depend less upon textual exegesis than on the outcome of the free play of political forces over a span of time.”²²⁹ In an assessment of the EEZ provisions, Professor Boleslaw Boczek added that “even when the Convention enters into effect, its gaps and ambiguities will not prevent conflicts between coastal and other states regarding the rights to military uses in the EEZ.”²³⁰

There is also divergent state opinion regarding the permissibility of conducting military surveys in the EEZ of a foreign coastal state.²³¹ UNCLOS grants the coastal state jurisdiction to regulate “marine scientific research,” which can only occur with coastal state consent but does not define what “marine scientific research” entails.²³² A minority of coastal states argue that their authority to regulate “marine scientific research” also includes military surveys and have protested unilateral surveys in their EEZs.²³³ Military surveys gather scientific data relevant for military operations including oceanographic, hydrographic, marine geological, geophysical, chemical, biological, acoustic, and related data.²³⁴ The US drone that

226. Shearer, *supra* note 216, at 557. To further emphasize this point, Professor Shearer quoted prominent UNCLOS commentator Barbara Kwiatkowska’s clear endorsement of the view that the legislative history supported military freedom in the EEZ. Specifically,

as regards military activities, in view of the legislative history of Article 58, uses such as naval maneuvers, weapons practice, the employment of sensor arrays, aerial reconnaissance, or collection of military intelligence regarding foreign activities at sea, are clearly internationally lawful uses of the sea ‘associated with the operation of ships, aircraft and submarine cables and pipelines’, which are related to the exercise and protection of the freedoms enjoyed by all States in the EEZ.

Id. at 557–58; see also BARBARA KWIATKOWSKA, *THE 200 MILE EXCLUSIVE ECONOMIC ZONE IN THE NEW LAW OF THE SEA* 216 (1989).

227. Galdorisi & Kaufman, *supra* note 218, at 255.

228. Boleslaw A. Boczek, *Peacetime Military Activities in the Exclusive Economic Zone of Third Countries*, 19 OCEAN DEV. & INT’L. L. 445, 447 (1988); Galdorisi & Kaufman, *supra* note 218, at 274.

229. Shearer, *supra* note 216, at 558.

230. Galdorisi & Kaufman, *supra* note 218, at 274 (quoting Boczek, *supra* note 228, at 448).

231. *Id.* at 295.

232. UNCLOS, *supra* note 207, arts. 56, 246.

233. Galdorisi & Kaufman, *supra* note 218, at 294; Pedrozo, *supra* note 213, at 527.

234. DEP’T OF THE NAVY, NWP 1-14M: THE COMMANDER’S HANDBOOK ON THE LAW OF NAVAL OPERATIONS § 2.6.2.2 (2007) [hereinafter NWP 1-14M].

China seized in December 2016 in the South China Sea was allegedly gathering this type of data.²³⁵ The US Navy's position set forth in the Commander's Handbook on the Law of the Sea reflects the global majority view that "although coastal nation consent must be obtained in order to conduct marine scientific research in its EEZ, the coastal nation cannot regulate hydrographic surveys or military surveys conducted beyond its territorial sea, nor can it require notification of such activities."²³⁶

Disagreements regarding the permissibility of military activities, including military surveys, in the EEZ are not purely academic. There are thirty states with domestic legislation or declared policy that seek to restrict or regulate foreign military activities beyond their territorial sea.²³⁷ Professor Pete Pedrozo noted in a study of military activities in the EEZ that of these thirty countries at least three have used force or engaged in unsafe or unprofessional behavior to assert their claims.²³⁸ For example, in 1968, North Korea seized the USS Pueblo while it was collecting intelligence just outside of North Korean territorial waters and held the crew captive for nearly a year.²³⁹ A year later, North Korea shot down a US surveillance plane in international airspace over the Sea of Japan killing all thirty-one personnel on board.²⁴⁰ China routinely interferes with US ships and aircraft operating in the EEZ.²⁴¹ Pedrozo noted that between 2001 and 2014, there were ten separate US / China EEZ incidents that received widespread media coverage, including an April 2001 collision between a US Navy surveillance plane and a Chinese fighter aircraft in which the Chinese pilot died.²⁴²

d. Drone Surveillance in the EEZ

With the conflicting opinions and state practice surrounding military activities in the EEZ established, let's now return to the introductory question of this section, does international law prohibit drone surveillance from the EEZ? The answer, of course, depends on whether the country assessing the activity holds the majority or minority position. State practice has shown that states holding the majority position will send manned aircraft and vessels to conduct surveillance over the objection of the coastal state and that coastal states holding the minority position will intentionally

235. See *Pentagon Says China Will Return the US Underwater Drone It Seized*, CNBC, (Dec. 17, 2016, 4:08 PM), <https://www.cnbc.com/2016/12/17/china-captures-us-underwater-drone.html> [<https://perma.cc/45GA-B5YG>].

236. NWP 1-14M, *supra* note 234, § 2.6.2.2.

237. See Pedrozo, *supra* note 213, at 527 for a comprehensive discussion of these restrictions.

238. *Id.* at 522.

239. *Id.* at 523.

240. Michael S. Rosenwald, *The U.S. Did Nothing After North Korea Shot Down A Navy Spy Plane in 1969. Trump Vows That Won't Happen Again.*, WASH. POST (Nov. 7, 2017), <https://www.washingtonpost.com/news/retropolis/wp/2017/11/07/north-korea-shot-down-a-u-s-spy-plane-in-1969-trump-might-be-appalled-by-the-response/> [<https://perma.cc/P2AW-2LWY>].

241. See Pedrozo, *supra* note 213, at 522-23 n. 26.

242. See *id.*

interfere with these actions.²⁴³ Expanded drone use risks exacerbating the underlying tensions. Without having to put human lives at risk, surveilling states will be more likely to send drones into particularly sensitive and high risk EEZ areas (such as within North Korea's Military Exclusion Zone)²⁴⁴ to both gather the valuable intelligence information available in the zone as well as to send the message that they are exercising their right to operate in these areas. Surveilled states will similarly have a new opportunity to protest perceived violations of their sovereignty. With humans removed, protesting states will be far more likely to resort to force. Lowered inhibitions on both sides risk significant escalation.

Elements of this dynamic were at play in China's 2016 seizure of the US maritime drone in the South China Sea,²⁴⁵ Iran's November 2012 firing on a US aerial drone in the Persian Gulf,²⁴⁶ and Iran's dangerous surveillance / interference with a US aircraft carrier in August 2017.²⁴⁷ In the South China Sea incident, it is very likely that China wanted to signal their displeasure with US maritime surveillance and military surveys in their sphere of influence. The absence of humans on the platform made use of force against the drone a strategically acceptable way to convey this message. Similarly, it is far less likely that Iran would have used force against a manned aircraft surveilling its coastline or that it would have flown a manned aircraft dangerously close to a US aircraft carrier conducting nighttime flight operations.

The 2012 Iran incident also highlights the fact that maritime boundaries increase the risk of miscalculation. Maritime boundaries are always invisible, there are no rivers, mountains, or border guards to notify a surveilling craft or drone that they are approaching or have crossed a border. Without physical guides, the surveilling state and the target state rely on technological aides such as radar or GPS to determine the drone's geographic position.²⁴⁸ Technology, of course, can fail or be misinterpreted,

243. See, e.g., Pedrozo, *supra* note 218, at 522-23 n. 26-28.

244. North Korea asserts a 50nm military boundary zone on both of its coasts for the purpose of "defending its national interest and sovereignty." Jin-Hyun Paik, *East Asia and the Law of the Sea*, in *THE LAW OF THE SEA IN THE ASIAN PACIFIC REGION: DEVELOPMENTS AND PROSPECTS* 9 (James Crawford & David R. Rothwell eds., 1995).

245. Emily Tamkin & Paul McLeary, *China Seizes U.S. Navy Drone in In [sic] South China Sea*, *FOREIGN POLY* (Dec. 16, 2016, 2:28 AM), <https://foreignpolicy.com/2016/12/16/china-seizes-u-s-navy-drone-in-in-south-china-sea-raising-stakes-president-trump> [<https://perma.cc/ZVB3-A5PG>].

246. Thom Shanker & Rick Gladstone, *Iran Fired on Military Drone in First Such Attack*, *U.S. SAYS*, *N.Y. TIMES* (Nov. 8, 2012), <https://nytimes.com/2012/11/09/world/middleeast/pentagon-says-iran-fired-at-surveillance-drone-last-week.html> [<https://perma.cc/3KWE-A6C7>].

247. Dan Lamothe, *Iranian Drone Approaches Navy Aircraft Carrier in Second Dangerous Encounter in a Week*, *WASH. POST*, Aug. 14, 2017, <https://www.washingtonpost.com/news/checkpoint/wp/2017/08/14/iranian-drone-approaches-navy-aircraft-carrier-in-second-dangerous-encounter-in-a-week/> [<https://perma.cc/7MNJ-C89H>].

248. Ismail Guvenc et al., *Detection, Localization, and Tracking of Unauthorized UAS and Jammers*, *NASA 2* (2017), <https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20170009465.pdf> [<https://perma.cc/QBP5-4BHC>].

especially in time-sensitive and high-pressure situations.²⁴⁹ Thus, there is always risk of legitimate disagreement about whether a boundary was crossed, particularly when the boundary itself is subject to dispute. Concerningly, the US / Iranian dispute over a crossed maritime boundary escalated, in a matter of hours, to the point where US Secretary of Defense claimed Iran's actions were a potential act of war and sent manned aircraft back to shoot down Iranian pilots if they again threatened the US drone.²⁵⁰

e. Due Regard Requirement

With heightened tensions associated with the EEZ disputes, compliance with the Chicago Convention's obligation that states operate their aircraft with "due regard" for the safety of other aircraft is especially significant.²⁵¹ The due regard standard is only one of two restrictions that the Chicago Convention places on military aircraft and is intended to reduce the risk of collisions or miscalculation by mandating a basic, although undefined, level of professionalism and safety for all aircraft operations in international airspace.²⁵² Inherent technological limitations on a drone operator's situational awareness, makes compliance with this standard more challenging.²⁵³

A lack of craft responsiveness/situational awareness, combined with a willingness to use drones in situations that would be too risky for manned aircraft, could lead to accidents as well as situations in which it is difficult to determine the hostile intent of a drone. For example, it is reasonable to assume that the US Navy was trying to determine if the Iranian drone that came within 100 feet of the US manned fighter jet in August 2017 was intentionally trying to collide with the jet or was just operating negligently in violation of the due regard standard.²⁵⁴ In a similar high-pressure environment, it is foreseeable that a pilot may make the decision to use force against a drone in a perceived need for self-defense. A collision is similarly foreseeable. Close proximity drone/piloted aircraft interactions in contested airspace, particularly in the EEZ near the territorial sea boundary will likely be an increasing source of escalatory risk.

249. A tragic example of this type of human / technology interface failure occurred in 1988 when the U.S. warship the USS *Vincennes* fired two anti-aircraft missiles at a civilian Iranian airliner, destroying the plane and killing all 290 passengers on board. In a high-tension environment with little time to react, the USS *Vincennes* mistook the airliner for an attacking Iranian fighter jet. David Evans, *Vincennes: A Case Study*, NAVAL INST.: PROCEEDINGS, Aug. 1993, at 49.

250. PANETTA & NEWTON, *supra* note 86, at 435.

251. Chicago Convention, *supra* note 89, art. 3(d) ("The contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft").

252. *Due Regard*, SKYBRARY, https://www.skybrary.aero/index.php/Due_Regard [<https://perma.cc/KE5Z-FTV5>] (last visited Nov. 2, 2019).

253. Daniel Brunstetter & Megan Braun, *The Implications of Drones on the Just War Tradition*, 25 ETHICS & INT'L AFF. 337, 347 (2011).

254. Barbara Starr & Ryan Browne, *Iranian Drone Flies 'Dangerously' Close to US Aircraft Carrier*, CNN (Aug. 4, 2017, 1:03 PM), <https://www.cnn.com/2017/08/14/politics/iran-drone-nimitz-us-navy/index.html> [<https://perma.cc/9CKN-4PKC>].

The open dispute about the permissibility of military surveillance from the EEZ will remain a source of risk. If this type of maritime surveillance continues to increase (perhaps between China and Vietnam,²⁵⁵ India and Pakistan,²⁵⁶ Saudi Arabia and Iran,²⁵⁷ or Russia and its Baltic neighbors²⁵⁸), there may be value in pursuing a bilateral or even multi-lateral agreement to establish procedures to mitigate the associated risk, similar to the US / Russia Incidents at Sea Agreement.²⁵⁹

3. Does International Law Prohibit Aerial Surveillance Drone Incursions into the Territorial Airspace of the Target State?

So far, this Article has examined the rules regarding surveilling a state from neighboring land territory and adjacent EEZs. This section now examines the rules regarding the permissibility of sending aerial drones across land and maritime borders to conduct surveillance within the foreign territory.

Unlike the EEZ provisions in UNCLOS, the applicable provisions in the treaty that governs this situation are quite clear; states are not permitted to overfly the territory of another state without permission.²⁶⁰ The 1944 Chicago Convention, which has 191 state parties²⁶¹ and applies to both manned and unmanned aircraft,²⁶² establishes in its first two articles

255. See Jacques deLisle, *Troubled Waters: China's Claims and the South China Sea*, 56 ORBIS 608, 628 (2012), <https://reader.elsevier.com/reader/sd/pii/S0030438712000658?token=9ABB168A87BB9325985321C10CFB8963324C4D2F636432CA510BF84B1893BA4C33BE0F234972D75B048E8F8A48D9D6A4> [<https://perma.cc/6RVJ-KCAA>].

256. See Rahul Roy-Chaudhury, *Trends in the Delimitations of India's Maritime Boundaries*, 22 STRATEGIC ANALYSIS 1513, 1520-21 (1999), <https://www.tandfonline.com/doi/abs/10.1080/09700169908458900> [<https://perma.cc/WV4F-DRCJ>].

257. See Stephen Kalin et al., *Tanker Attacks Near UAE Expose Weaknesses in Gulf Arab Security*, REUTERS (May 15, 2019, 7:26 AM), <https://www.reuters.com/article/us-saudi-oil-usa-iran-security-analysis/tanker-attacks-near-uae-expose-weaknesses-in-gulf-arab-security-idUSKCN1SLIBD> [<https://perma.cc/SAA4-RY4T>].

258. See Yun-Da Tsai, *Russia Announces Missile Tests in Latvia's Baltic Sea Exclusive Economic Zone*, IR INSIDER (Apr. 2, 2018), <https://www.irinsider.org/easterncentral-europe/2018/4/2/russia-announces-missile-tests-in-latvias-baltic-sea-exclusive-economic-zone> [<https://perma.cc/D5UK-ZTX6>].

259. Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on the Prevention of Incidents On and Over the High Seas, U.S.-U.S.S.R., May 25, 1972, 23 U.S.T. 1168.

260. See Chicago Convention, *supra* note 89, art. 8.

261. INT'L CIVIL AVIATION ORG., *Member States* (Nov. 18, 2017), INT'L CIVIL AVIATION ORG., <https://www.icao.int/MemberStates/Member%20States.Multilingual.pdf> [<https://perma.cc/GPN9-TD5N>].

262. Chicago Convention, *supra* note 89, Annex 8 (defining "aircraft" as any "machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface."). Thus, the defining characteristic is a method of locomotion rather than control. Aviation law commentators agree that drones are included in this definition. "Even unmanned aerial vehicles (UAVs) are to be regarded as subject to the legal regime of aircraft, also in time of war or armed conflict On the other hand, the Chicago definition appears to exclude objects more properly viewed as projectiles which do not derive support from reactions with the air, such as rockets or missiles." Marco Gestri, *The Chicago Convention and Civilian Aircraft in Time of War*, in THE LAW OF AIR WARFARE: CONTEMPORARY ISSUES 138 (Natalino Ronzitti

that:

The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory. . . .

For the purposes of this Convention the territory of a State shall be deemed to be the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State.²⁶³

Article 3(b) defines state aircraft as “aircraft used in military, customs and police services”²⁶⁴ and then establishes in Article 3(c) that “no state aircraft of a contracting State shall fly over the territory of another State or land thereon without authorization by special agreement or otherwise, and in accordance with the terms thereof.”²⁶⁵

Most commentators agree that Articles 2 and 3 of the Chicago Convention reflect customary international law that recognizes that a state has complete and exclusive control over its airspace.²⁶⁶ The ICJ in *Military and Paramilitary Activities in and Against Nicaragua (Nicaragua)* added a judicial imprimatur to this norm. In its complaint to the ICJ, Nicaragua accused the US of unlawfully using force against Nicaragua in violation of Article 2(4) of the UN Charter and violating Nicaraguan sovereignty through incursions into Nicaraguan land territory, territorial waters, and airspace.²⁶⁷ Addressing the alleged US surveillance in Nicaraguan airspace, the ICJ found:

The principle of respect for territorial sovereignty is also directly infringed by the unauthorized overflight of a State’s territory by aircraft belonging to or under the control of the government of another State. The Court has found above that such overflights were in fact made (paragraph 91 above) Accordingly, such actions constitute violations of Nicaragua’s sovereignty under customary international law.²⁶⁸

Although the practice is prohibited in both treaty law and customary international law, in practice states regularly intentionally intrude into the airspace of other states.

Following the U-2 incident in 1960, Spencer Beresford, a lawyer for the US House Committee on Science and Astronautics, noted that there are

& Gabriella Venturini ed., 2006). See also, Ian Henderson & Bryan Cavanagh, *Unmanned Aerial Vehicles: Do They Pose Legal Challenges?*, in *NEW TECHNOLOGIES AND THE LAW OF ARMED CONFLICT* 193, 197 (Hitoshi Nasu & Robert McLaughlin eds., 2014).

263. Chicago Convention, *supra* note 89, art. 1, 2.

264. *Id.* at art. 3(b).

265. *Id.* at art. 3(c).

266. See, e.g., Roncveert Almond, *Clearing the Air Above the East China Sea: The Primary Elements of Aircraft Defense Identification Zones*, 7 *HARV. NAT’L SEC. J.* 126, 148 (2016); Tare C. Brisibe, *State Sovereignty and Aeronautical Public Correspondence by Satellite*, 69 *J. AIR L. & COM.* 649, 662 (2004); Note, *Legal Aspects of Reconnaissance in Airspace and Outer Space*, 61 *COLUM. L. REV.* 1074, 1077 (1961).

267. Although the US refused to recognize the ICJ’s jurisdiction over the case it communicated to the Court that it was acting in the collective self-defense of Costa Rica, Guatemala, and El Salvador against whom Nicaragua was allegedly supporting insurgent activity. *Military and Paramilitary Activities in and Against Nicaragua (Nicar. v. U.S.)*, Judgment, 1986 *I.C.J. Rep.* 14 para. 238 (June 27) [hereinafter *Nicaragua Case*].

268. *Id.* at para. 251-52.

several objections to the view that violation of another state's airspace violates customary international law.²⁶⁹ Most significantly, "it is doubtful if a year has passed since 1944 (the date of the Chicago Convention) without an intrusion into the airspace above a sovereign State."²⁷⁰ One of the key attractions of modern drone technology is that it gives states the strategic flexibility to fly these intrusive missions more frequently.²⁷¹

Although state practice does not provide strong support for the recognition of the exclusive sovereign authority over airspace as a customary international law norm, *opinio juris* certainly does. In each of the aerial drone cases surveyed above, the chief protests of the surveilled states were that that drone intruded into their sovereign airspace in violation of international law.²⁷² Similarly, the states accused of violating territorial sovereignty do not challenge the validity of the principle of territorial sovereignty in justifying their actions. In the drone cases examined in this study, states ignored or denied the accusations (Russia,²⁷³ Israel,²⁷⁴ North Korea,²⁷⁵ and India [vis-à-vis Pakistan]²⁷⁶), disputed who had sovereignty over the territory in question (US and China²⁷⁷), claimed drone malfunction (US and India),²⁷⁸ or self-defense (Georgia²⁷⁹), but never disputed

269. See Spencer M. Beresford, *Surveillance Aircraft and Satellites: A Problem of International Law*, 27 J. AIR L. & COM. 107, 112-13 (1960).

270. *Id.* at 112.

271. See Shawn Brimley et al., *The Drone War Comes to Asia*, FOREIGN POL'Y (Sept. 17, 2013), <https://foreignpolicy.com/2013/09/17/the-drone-war-comes-to-asia/> [<https://perma.cc/AKF6-KKEH>].

272. See Zarar Khan, *Officials: Pakistan Shoots Down Iranian Drone Near Border*, FOX NEWS (June 20, 2017), <https://www.foxnews.com/world/officials-pakistan-shoots-down-iranian-drone-near-border> [<https://perma.cc/HLU7-PN2M>].

273. Asli Kandemir, *Turkey would shoot down planes violating its airspace: PM*, REUTERS (Oct. 17, 2015, 8:53 PM), <https://www.reuters.com/article/us-mideast-crisis-syria-turkey-airsp. .-shoot-down-planes-violating-its-air-space-pm-idUSKCN0SB0QX20151018> [<https://perma.cc/6893-HJDT>].

274. *Iran Says It Shot Down Israeli Drone*, *supra* note 102.

275. James Pearson, *North Korea denies spy drones, labels South's president a 'prostitute'*, REUTERS (May 11, 2014, 11:21 PM), <https://www.reuters.com/article/us-north-korea-drones-denial/north-k. .y-drones-labels-souths-president-a-prostitute-idUSBREA4B00Y20140512> [<https://perma.cc/3W8F-7Q7G>].

276. *India's Stand Vindicated, Chinese Media Says Drone Shot Down by Pakistan Made in China*, NEWS 18 (July 18, 2015, 7:06 PM), <https://www.news18.com/news/world/indias-stand-vindicated-chinese-media-says-drone-shot-down-by-pakistan-made-in-china-1022190.html> [<https://perma.cc/9TYX-GJ8K>].

277. Jane Perlez & Matthew Rosenberg, *China Agrees to Return Seized Drone, Ending Standoff, Pentagon Says*, N.Y. TIMES (Dec. 17, 2016), <https://www.nytimes.com/2016/12/17/world/asia/china-us-drone.html> [<https://perma.cc/4M3D-97DF>].

278. Zheping Huang, *China and India Are Now Arguing Over a Crashed Drone Near Their Disputed Border*, QUARTZ INDIA (Dec. 7, 2017), <https://qz.com/india/1150951/china-and-india-are-now-arguing-over-a-crashed-drone-near-their-disputed-border/> [<https://perma.cc/2HZB-UHSZ>]; Andrea Shalal-Esa & David Alexander, *Malfunction Likely Put U.S. Drone in Iranian Hands*, REUTERS (Dec. 7, 2011), <https://www.reuters.com/article/us-iran-usa-drone/malfunction-likely-put-u-s-drone-in-iranian-hands-idUSTRE7B60BP20111207> [<https://perma.cc/SK49-663P>].

279. *Georgia Accuses Russia of Shooting Down Drone*, FRANCE 24 (Apr. 22, 2008, 2:29 PM), <https://www.france24.com/en/20080422-georgia-accuses-russia-shooting-down-drone-spy-plane-georgia> [<https://perma.cc/N6XJ-JDMV>].

that the surveilled state had the right to exclude their drone from its undisputed airspace. This significant contradiction between state practice and *opinio juris* is entirely rational. To gather perceived important intelligence, states will knowingly risk destruction of their drone and even international rebuke. However, no rational state would attempt to justify these violations by attacking the validity of the norm itself because this norm also protects their own sovereign airspace against similar intrusions. Because of the fundamental importance of the norm to individual states and the practical fact that the Chicago Convention explicitly recognizes this right, there is little chance that contrary state practice, even at current levels, will modify the principle of exclusive sovereign authority over territorial airspace.

4. *Does International Law Prohibit Maritime Drone Surveillance within the Territorial Sea?*

Although states have complete and exclusive sovereignty over the airspace above their land territory and territorial sea, their sovereign authority to exclude foreign vessels from their territorial sea is more limited. UNCLOS limits coastal state sovereignty in the territorial sea through the codification of a right of innocent passage, which establishes that civilian and military vessels (including maritime drones)²⁸⁰ from all states have a right to transit in a continuous and expeditious manner through the territorial sea, “so long as [the transit] is not prejudicial to the peace, good order or security of the coastal State.”²⁸¹ The right of innocent passage only applies to vessels conducting surface transit. Thus, there is no right of innocent passage in the air above or water below the territorial sea. Submarines and submersibles must transit surfaced with their national flag flying.²⁸² Similar passage rules apply for foreign vessels transiting through the archipelagic waters and archipelagic sea lanes of archipelagic states as well as vessels transiting through foreign territorial seas that are part of international straits.²⁸³

280. The US Navy specifically interprets these rules to extend to maritime drones as well as manned warships. Although UNCLOS does not define the term vessel, its extension to maritime drones is reasonable. UNCLOS provides broad guidelines for maritime navigation; it would not make sense to exclude a maritime craft from this regime based solely on the presence of a human on board. See generally Henderson, *supra* note 4. The US Navy’s Commander’s Handbook on the Law of the Sea states that:

customary international law as reflected in the 1982 LOS Convention gives vessels of all nations the right to engage in innocent passage as well as in transit passage and archipelagic sea lanes passage. The size, purpose, or type of cargo is irrelevant. The same rules apply to USV and UUV transit and navigation. USVs and UUVs retain independent navigation rights and may be deployed by larger vessels as long as their employment complies with the navigational regimes of innocent passage, transit passage, archipelagic sea lanes passage as applicable.

NWP 1-14M *supra* note 234, ¶ 2.5.2.5.

281. UNCLOS, *supra* note 207, art. 18.

282. *Id.* at art. 19, 20.

283. *Id.* at art. 39-42, 52 (Aircraft can be flown when transiting through a strait and submarines can transit submerged. All ships and aircraft must refrain from any activi-

UNCLOS Article 19(2) lists twelve activities that “shall be considered to be prejudicial to the peace, good order or security of the coastal state,” including the following that are relevant to potential drone missions:

- (a) any threat or use of force against the sovereignty, territorial integrity or political independence of the coastal State, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations;
- (b) any exercise or practice with weapons of any kind;
- (c) any act aimed at collecting information to the prejudice of the defense or security of the coastal State;
- (d) any act of propaganda aimed at affecting the defense or security of the coastal State;
- (e) the launching, landing or taking on board of any aircraft;
- (f) the launching, landing or taking on board of any military device; . . .
- (j) the carrying out of research or survey activities;
- (k) any act aimed at interfering with any systems of communication or any other facilities or installations of the coastal State; [and]
- (l) any other activity not having a direct bearing on passage.²⁸⁴

Thus, *inter alia*, conducting surveillance or survey activities with drones in the territorial sea of a foreign state is explicitly not consistent with innocent passage.

Naval activities that are inconsistent with innocent passage, such as surveillance in the territorial sea, violate the sovereignty of the coastal state but not necessarily UNCLOS. The US Navy, in the Commander’s Handbook on the Law of the Sea, notes that while “UNCLOS does not prohibit non-innocent passage, such as overflight of or submerged transit in the territorial sea, the coastal state may take affirmative actions in and over its territorial sea to prevent passage that is not innocent.”²⁸⁵ In a 2015 study of peacetime submarine surveillance within the territorial sea, Professor James Kraska noted that several senior US officials in testimony about the potential US accession to UNCLOS asserted that UNCLOS does not “prohibit or otherwise affect activities or conduct that is inconsistent with [innocent passage] and therefore not entitled to that right.”²⁸⁶ Practically, however, the fact that UNCLOS does not specifically proscribe non-innocent passage does not make non-innocent passage legally permissible because, as the ICJ held in *Corfu Channel*, non-innocent passage violates the sovereignty of the coastal state.²⁸⁷ The Court found that “between

ties other than those incident to their normal modes of continuous and expeditious transit).

284. *Id.* at art. 19(2).

285. NWP 1-14M, *supra* note 234, § 2.5.2.1.

286. Kraska, *supra* note 56, at 228.

287. The 1946 ICJ case involved a dispute between Britain and Albania regarding Albania’s ability to shut off an international strait to navigation in peacetime. Albania placed naval mines in the Corfu Channel in response to the passage of British warships through the channel. After British warships struck the mines, British Navy minesweepers returned to clear the channel. The ICJ held that Britain had a right of innocent passage through the channel, however, sweeping the mines from the channel violated Albania’s sovereignty even though Albania failed in its duty to remove the mines. *Corfu Channel Case*, *supra* note 197.

independent States, respect for territorial sovereignty is an essential foundation of international relations [and] . . . to ensure respect for international law, of which it is the organ, the Court must declare that the action of the British Navy [minesweeping in territorial waters] constituted a violation of Albanian sovereignty.”²⁸⁸ Writing during the drafting of UNCLOS, Professor D. P. O’Connell noted that “the only legal difference between the territorial sea and internal waters is the right of innocent passage, so that a ship in the territorial sea which is not exercising that right is in the same legal conditions as a ship in internal waters.”²⁸⁹ With some limited exceptions, coastal states exercise the same sovereign rights over their internal waters and corresponding airspace as they do over their territory on land.²⁹⁰ Thus, any drone operations that are inconsistent with innocent passage clearly violate the sovereignty of the coastal state.

Similar to aerial intrusions into sovereign airspace, states have frequently sent submarines on surveillance missions within the territorial waters of other states in knowing disregard of innocent passage rules.²⁹¹ In his study of submarine surveillance within the territorial sea, Professor Kraska provides a comprehensive account of open source submarine surveillance since the beginning of the Cold War. He notes that, during the Cold War, both US and Soviet Navies regularly engaged in this practice throughout the world.²⁹² In the post-Cold War era, US, Russian, Chinese, and North Korean submarines have similarly been accused of intelligence collection in foreign territorial seas.²⁹³ The covert and highly classified nature of this type of intelligence gathering precludes a comprehensive assessment of the scope and frequency of the practice; however, it will likely continue as long as the surveilling states consider it to be in their best interests. Although there are no publicly known incidents of drones being utilized for this purpose (the US maritime drone that China seized was conducting operations 500 miles from China’s coastline),²⁹⁴ it is likely that as countries develop sufficiently reliable and capable drones, states will use them to replace or supplement far more expensive and politically sensitive manned submarine missions into territorial and internal waters.

Indeed, as noted earlier, many of the surveillance capabilities that the US Navy is seeking to develop in new drone systems would be best utilized within close proximity to a foreign coastline. Thus, even though surveillance in the territorial sea violates the sovereignty of the coastal state, the

288. *Id.*

289. 1 D. P. O’CONNELL, *THE INTERNATIONAL LAW OF THE SEA* 273 (1st ed. 1982).

290. See UNCLOS, *supra* note 207, art. 25; NWP 1-14M *supra* note 234, § 2.5 (Coastal nations exercise the same jurisdiction and control over their internal waters and superjacent airspace as they do over their land territory.).

291. See Kraska, *supra* note 56 at 193-213.

292. *Id.*

293. *Id.* at 193.

294. Chris Buckley, *Chinese Navy Returns Seized Underwater Drone to US*, N.Y. TIMES (Dec. 20, 2016), <https://www.nytimes.com/2016/12/20/world/asia/china-returns-us-drone.html> [https://perma.cc/LA8E-2836].

practice will likely proliferate as more states gain access to better and cheaper technology.

5. *Can Territorially Intrusive Peacetime Drone Surveillance be Justified as Permissible Espionage Under International Law?*

State willingness to conduct peacetime surveillance in clear violation of the territorial sovereignty of a target state is rational and not inherently aggressive. In many cases, surveillance is self-defense oriented, reflecting a basic desire to understand the intentions and capabilities of a potential adversary or competitor to protect national security.²⁹⁵ At the same time, the practice is inherently hypocritical. No state permits espionage within their own borders, yet most, if not all, states conduct espionage within the borders of other states.²⁹⁶ Functionally, territorially intrusive surveillance also erodes global respect for sovereignty and the rule of law and negatively impacts both the surveilling state and the surveilled state as members of an international community governed by law derived from state practice.²⁹⁷ Not surprisingly, the underlying competing policies and diversity of actual state practice have led to significant differences of opinion about whether and under what circumstances peacetime espionage violates international law.²⁹⁸ The below paragraphs set forth the predominant positions and arguments and ultimately conclude that territorially intrusive drone surveillance falls clearly outside the scope of espionage activities that may be permissible (or at least not illegal) under international law.

Academic opinion on peacetime espionage falls generally into three camps: (1) those who believe it is legal (or not illegal); (2) those who believe that it is illegal; and (3) those who believe it is circumstance dependent.²⁹⁹ The first camp emphasizes that the lawfulness of territorially intrusive peacetime espionage is evidenced by the fact that such espionage is widely practiced and there has been no systematic attempt to outlaw the practice internationally.³⁰⁰ Professors Myers McDougal, Harold Lassen, and W. Michael Reisman of Yale's New Haven School were the most prominent proponents of this position. Writing in 1973, in the midst of the Cold War, they argued that even though every state prohibits espionage in its own territory, the "gathering of intelligence within the territorial confines of another state is not, in and of itself, contrary to international law unless it contravenes policies of world constitutive process affording support to

295. See Roger D. Scott, *Territorially Intrusive Intelligence Collection and International Law*, 46 A.F. L. REV. 217, 224 (1999).

296. *Id.* at 226.

297. *Id.* at 219–21.

298. Dieter Fleck, *Individual and State Responsibility for Intelligence Gathering*, 28 MICH. J. INT'L L. 687, 690 (2007).

299. This is a slightly modified version of the categorization Professor A. John Radsan proposed. A. John Radsan, *The Unresolved Equation of Espionage and International Law*, 28 MICH. J. INT'L L. 595, 602 (2007).

300. See e.g., *Legal Aspects of Reconnaissance in Airspace and Outer Space*, *supra* note 266, at 1074; Geoffrey B. Demarest, *Espionage in International Law*, 24 DENV. J. INT'L L. & POL'Y 321, 347 (1996); Myers S. McDougal et al., *The Intelligence Function and World Public Order*, 46 TEMP. L.Q. 365, 394–95 (1973); Scott, *supra* note 295.

protected features of internal public order.”³⁰¹ This policy-based approach was inextricably linked to the ongoing Cold War, in which surveillance and espionage were perceived to be necessary tools to prevent the spread of communism and even nuclear war.³⁰² The position, however, survived the Cold War, finding new life in support of cyber espionage.³⁰³ A number of modern commentators have cited similar propositions, that states commonly practice cyber espionage and that there is no international movement towards proscribing the practice, as justification for its permissibility.³⁰⁴ Indeed, President Obama, in a 2014 speech to the National Security Agency, noted that “few [doubt] the legitimacy of spying on hostile states.”³⁰⁵

Many scholars (composing the second camp) take the opposite position which Professor McDougal labeled the “traditional doctrinal view.”³⁰⁶ Representing this view, Professor Quincy Wright wrote in 1962 that:

In time of peace . . . espionage and, in fact, any penetration of the territory of a state by agents of another state in violation of the local law, is also a violation of the rule of international law imposing a duty upon states to respect the territorial integrity and political independence of other states.³⁰⁷

In a 1995 comprehensive study of international law and espionage, Professor John Kish argued that “no State is entitled to carry out strategic observation in the national territory of another State without specific agreement.”³⁰⁸ In Kish’s view, such observation would impede on the surveilled state’s right to control its national territory to the exclusion of all other states.³⁰⁹ Professor Dieter Fleck, writing in 2006, argued in even stronger terms that “such activities can never be justified under customary law because they are gross violations of commonly accepted legal principles . . . it is unacceptable to conclude, as many have, that legal arguments can neither condemn nor justify covert action in peacetime.”³¹⁰

The final approach to peacetime espionage takes a more nuanced view, attempting to deal with the reality that every state both engages in

301. McDougal et al., *supra* note 300, at 395.

302. See *Legal Aspects of Reconnaissance in Airspace and Outer Space*, *supra* note 266, at 1098.

303. See Ashley Deeks, *An International Legal Framework for Surveillance*, 55 VA. J. INT’L L. 291, 301-02 (2015).

304. *Id.*

305. *Id.* at 303 (quoting President Barack Obama, *Remarks by the President on Review of Signals Intelligence* (Jan. 17, 2014), <https://obamawhitehouse.archives.gov/the-press-office/2014/01/17/remarks-president-review-signals-intelligence> [<https://perma.cc/9KF5-FCJ6>]).

306. McDougal et al., *supra* note 300, at 394. See e.g., Fleck, *supra* note 298; Quincy Wright, *Espionage and the Doctrine of Non-Intervention in Internal Affairs*, in *ESSAYS ON ESPIONAGE AND INTERNATIONAL LAW* 3 (Roland J. Stranger ed., 1962); see Simon Chesterman, *The Spy Who Came in from the Cold War: Intelligence and International Law*, 27 MICH. J. INT’L L. 1071, 1073 (2006); Delupis, *supra* note 56, at 67; Kraska, *supra* note 42, at 175.

307. Wright, *supra* note 306.

308. JOHN KISH, *INTERNATIONAL LAW AND ESPIONAGE* 83 (1995).

309. *Id.*

310. Fleck, *supra* note 298, at 693.

espionage yet proscribes it domestically.³¹¹ Advocating for this position, Professor Ashley Deeks proposes a norm-balancing test in an attempt to provide “objective guidelines to states as they structure their intelligence activities with an eye toward international law.”³¹² With a pragmatic understanding that simply labeling a practice as “illegal” will not stop peacetime espionage, this approach seeks to strategically insert the restraint of international law into aspects of espionage that are normatively more harmful. For example, practices that violate individual rights such as privacy and practices that violate specific treaty obligations such as the Chicago Convention are directly contrary to important norms and thus would weigh in favor of finding the practice illegal.³¹³ In contrast, espionage conducted for an overtly acceptable purpose (such as WMD suppression) would weigh in favor of legality.³¹⁴

Concerns about potentially violating international law have not prevented modern states (including at least the US, Russia, North Korea, Iran, India, and Israel) from engaging in territorially intrusive peacetime drone surveillance. In this same timeframe, it is reasonable to assume that these states and many others have also engaged in other forms of espionage, including cross-border cyber espionage as well as more traditional intelligence gathering with human agents sent covertly across borders. All of these activities, to varying degrees, violate the sovereignty of the target state because they involve the unauthorized exercise of spying state authority within the territory of the target state.³¹⁵ Aerial and maritime intrusions, however, stand apart from other common forms of espionage because these intrusions occur in direct violation of treaty commitments.³¹⁶ As discussed in Sections IV(A)(3) and IV(A)(4) above, the Chicago Convention and UNCLOS both reflect clear commitments to respect territorial sovereignty. In the author’s opinion, the commitments made in these treaties pull intrusive surveillance out of the murky debate about how effectively concepts of sovereignty and territorial integrity limit or proscribe the universal and ancient practice of espionage. There is no treaty prohibiting human spies from crossing borders or government hackers from gaining access to sensitive electronic information in a target state; however, nearly all states have made a *pacta sunt servanda* commitment to follow UNCLOS and the Chicago Convention.³¹⁷ For those few that have not, the relevant principles are binding as clear customary international law.³¹⁸

Although modern state practice demonstrates that states do intentionally disregard their obligations to respect the territorial airspace of other

311. See e.g., Ashley S. Deeks, *Confronting and Adapting: Intelligence Agencies and International Law*, 102 VA. L. REV. 599, 668 (2016); Craig Forcese, *Spies Without Borders: International Law and Intelligence Collection*, 5 J. NAT’L SEC. L & POL’Y 179, 198 (2011).

312. Deeks, *supra* note 303, at 671.

313. *Id.* at 670–75.

314. *Id.* at 675.

315. *Id.* at 641, 643–44.

316. See UNCLOS, *supra* note 207, art. 2; Chicago Convention, *supra* note 89, art. 1.

317. Chicago Convention, *supra* note 89; UNCLOS, *supra* note 207, at 397 n. 1.

318. UNCLOS, *supra* note 207, at 398.

states in order to conduct surveillance, the responses and justifications that the violating states give suggest an understanding that the activity is wrongful. When confronted with allegations about violations of territorial sovereignty, none of the violating states described in Section III attempted to justify their actions as lawful. Israel, Russia, North Korea, and India did not publicly respond to the allegations.³¹⁹ China claimed a right to conduct surveillance because they alleged that surveilled territory in East China Sea was Chinese territory.³²⁰

The US denied that their drones violated Chinese or Iranian sovereignty in the South China Sea and Persian Gulf and claimed that their stealth drone malfunctioned when it flew over Iran.³²¹ Only Georgia publicly admitted that it had intentionally used a drone to conduct surveillance, but they were surveilling separatist forces in a disputed territory within Georgia in violation of a ceasefire agreement rather than the sovereignty of another state.³²² Of course, the guarded responses of the spying states may also reflect the embarrassment of committing a politically unfriendly act or mere tactical calculation rather than an acknowledgment of violating international law.

During the Cold War, the US and Soviet Union justified their territorial intrusions as necessary to support their respective side of a global existential struggle. For example, the US argued that its territorially intrusive surveillance flights over Cuba during the Cuban missile crisis were necessary acts of self-defense³²³ given the stakes involved in the conflict. After the end of the Cold War, it was not a given that states would continue to engage in such visible and intrusive forms of espionage. In the short time that states have had the technological capacity to violate each other's sovereignty with drones, however, it has become very clear that the bar for violating sovereignty is relatively low, as are the associated international consequences for doing so.³²⁴ Although the norms encouraging compliance with international law in this area are not particularly compelling, international law nonetheless proscribes the intentional violation of another state's sovereignty to engage in espionage.³²⁵

319. *Iran Says It Shot Down Israeli Drone*, *supra* note 102. See *Turkey Would Shoot Down Planes Violating Its Air Space*, *supra* note 155; *Intruding North Korean Drone Gets Back on Its Side of Border After South Korea Fires Warning Shots*, *supra* note 143; Houreld, *supra* note 135.

320. *Japan Scrambles Jets Over China Drone Flight Near Disputed Islets*, *supra* note 129.

321. Domonoske, *supra* note 182; Miles, *supra* note 83; Shalal-Esa & Alexander, *supra* note 84; Shanker & Gladstone, *supra* note 85.

322. See ASMUS, *supra* note 169, at 150.

323. See DINSTEIN, *supra* note 55, at 226.

324. See Inaki Navarrete & Russell Buchan, *Out of the Legal Wilderness: Peacetime Espionage, International Law and the Existence of Customary Exceptions*, 51 CORNELL INT'L L.J. 897, 913 (2019).

325. *Id.* at 905.

B. International Law Applicable to the Drone Operating State (Use of Force)

1. *Do Territorial Incursions by Aerial and Maritime Surveillance Drones Constitute a Use of Force in Violation of Article 2(4) of the UN Charter?*

Article 2(4) of the UN Charter requires that “all Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations.”³²⁶ While prohibiting the use of force, the UN Charter does not define the term “force,” which is problematic when one attempts to assess the extent of the application of the prohibition to very low-intensity military activities such as routine drone surveillance.³²⁷ It is clear that a large-scale attack, such as the Japanese assault on Pearl Harbor, would be prohibited as well as surveillance conducted in active preparation for such an attack. On the other end of the continuum of coercion, activities such as psychological or economic pressure (i.e. sanctions) are not considered to constitute prohibited acts of “force.”³²⁸ Although there is no authoritative test or definition to determine when coercive or unfriendly actions cross the Article 2(4) threshold, scholars and international organizations have proposed various frameworks that assess the scope and intent of the action to determine if the threshold is met.³²⁹ An examination of relevant ICJ cases and state

326. U.N. Charter art. 2, ¶ 4.

327. For in depth scholarship on this particular issue see IAN BROWNLIE, *INTERNATIONAL LAW AND THE USE OF FORCE BY STATES* (1981); OLIVER CORTEN, *THE PROHIBITION ON THE USE OF FORCE IN CONTEMPORARY INTERNATIONAL LAW* 50, 61–65 (2010); Ruys, *supra* note 56, at 210.

328. Although, there has been significant debate about this point. CORTEN, *supra* note 327; DINSTEIN, *supra* note 55, at 90.

329. The Independent International Fact-Finding Mission on the Conflict in Georgia found that “only very small incidents lie below this threshold, for instance the targeted killing of single individuals, forcible abductions of individual persons, or the interception of a single aircraft.” COUNCIL OF THE EUROPEAN UNION, *INDEPENDENT INTERNATIONAL FACT-FINDING MISSION ON THE CONFLICT IN GEORGIA REPORT, VOLUME II*, at 242 n. 49 (Sept. 2009), http://www.mpil.de/en/pub/publications/archive/independent_international_fact.cfm [<https://perma.cc/7CEM-ZDXN>] (noted in Ruys, *supra* note 56, at 210). Professor Olivier Corten applies a fact dependent two part test to determine “the threshold above which a situation can be characterized as a use of force The first is objective and pertains to the gravity of the action. The second is more subjective and assumes that a State wishes to compel another State to do or refrain from doing something.” CORTEN, *supra* note 327, at 66-67. Professor Ian Brownlie separated activities where the use of force was debatable in to activities into four categories. Activities that undertaken to (1) support a larger armed attack or (2) “acts of self-help which will be carried out in such a manner that the territorial sovereign is powerless to prevent it constitute uses of force.” However, activities that (3) “may be deliberate and illegal but not form a part of any resort to force: military intelligence flights and tactics of ‘psychological warfare’ come within this category” and (4) “violations of territorial airspace and waters may be the result of negligence or inevitable accident” do not reach the use of force threshold. IAN BROWNLIE, *INTERNATIONAL LAW AND THE USE OF FORCE BY STATES* 364 (1981).

practice suggests that routine³³⁰ territorially intrusive drone surveillance alone does not constitute a prohibited use of force as currently understood by the international community.

The ICJ, in *Corfu Channel* and *Nicaragua* respectively, examined allegations of violations of territorial waters and airspace.³³¹ The Court in *Corfu Channel* held that British minesweeping in Albanian territorial waters violated Albania's sovereignty; however, it did not "consider that the actions of the British Navy was a demonstration of force for the purpose of exercising political pressure on Albania."³³² Professor Olivier Corten notes that this assertion suggests "that the British operation was not serious enough to come under the prohibition of the use of force set out in the UN Charter."³³³ If overt minesweeping in foreign territorial waters in violation of innocent passage rules and the sovereignty of the coastal state is not sufficient to cross the use of force threshold, it is unlikely that covert territorially intrusive maritime drone surveillance would constitute a prohibited use of force.

In its decision in *Nicaragua*, the ICJ again suggested that mere territorial violations do not rise to the level of the use of force. In its complaint to the ICJ, Nicaragua alleged, *inter alia*, that US aerial surveillance intrusions violated the prohibition on the use of force.³³⁴ However, the Court ultimately did not include aerial intrusions in its analysis of the activities that it concluded violated the use of force prohibition, including laying naval mines as well as arming and supporting anti-government forces.³³⁵ Instead, the Court separated the surveillance flights from the other more aggressive conduct, concluding that the flights violated Nicaraguan sovereignty.³³⁶ This decision to intentionally separate out territorially intrusive surveillance from the group of more aggressive activities strongly suggests that the Court believed that the offending surveillance did not qualify as a violation of the prohibition of the use of force. If territorially intrusive aircraft surveillance does not qualify as a use of force in this conflict setting, it is very unlikely that isolated drone surveillance would violate Article 2(4).

a. State Practice (Manned Aircraft)

State practice in the Cold War also generally supports the proposition that territorially intrusive surveillance does not constitute an unlawful use

330. Surveillance that is not conducted in preparation for in anticipation of an imminent use of kinetic force.

331. *Corfu Channel Case*, *supra* note 197, § 35; *Nicaragua Case*, *supra* note 267, § 87.

332. *Corfu Channel Case*, *supra* note 197, § 35.

333. CORTEN, *supra* note 327, at 69. *But see* Ruys, *supra* note 56, at 210. Ruys critiques the Court's ambiguity with respect to holdings regarding the British use of force, concluding "one should probably refrain from reading too much into the *Corfu Channel* judgement."

334. Ruys, *supra* note 56, at 189 (analyzing *Nicaragua Case*, *supra* note 267, at 216-25).

335. Ruys, *supra* note 56, at 188.

336. *Nicaragua Case*, *supra* note 267, at 213, 214, 227, 228, 250.

of force. As discussed earlier, the 1960 U-2 incident was the most dramatic and highly publicized of the many aerial territorial intrusion cases in this period.³³⁷ Following the incident in May 1960, the Soviet Union sent a cable to the President of the Security Council seeking a resolution that condemned “[a]ggressive acts by the Air Force of the United States of America against the Soviet Union; creating a threat to universal peace.”³³⁸ In Security Council debate, the Soviet Ambassador noted that the aggressive nature of the territorial incursion in part reflected the omnipresent Cold War concern that “in this day and age even one lone aircraft can carry weapons of colossal power capable of producing hundreds of thousands of victims and causing monstrous destruction.”³³⁹ Nevertheless, the proposed Soviet resolution was rejected in a 7-2 vote with support only from the USSR and their close ally Poland.³⁴⁰ Professor Lissitzyn concluded that the Security Council’s rejection of the Soviet charge suggests that “deliberate intrusions of single unarmed aircraft for reconnaissance purposes need not be regarded in all cases as aggressive acts.”³⁴¹ In an assessment of other similar contemporaneous Cold War aerial intrusion incidents, Professor Tom Ruys notes that the “parties typically did not invoke Article 2(4).”³⁴² Similarly, in protesting Cold War drone surveillance, China only complained about the violation of its sovereignty and not any threat associated with the surveillance.³⁴³

b. State Practice (Submarines)

Given the covert nature of submarine espionage, there are fewer historic examples of state responses to submarine territorial intrusions and there has been no relevant international tribunal action. Generally, a submarine is a far more dangerous weapon than an airplane with the capacity to carry significant quantities of conventional and nuclear weapons capable of attacking targets on land and at sea. Moreover, unlike an airplane, it is very difficult to determine the hostile intent of a submerged submarine.³⁴⁴ In most situations, a coastal state will not be able to reasonably know if a trespassing submarine is present in its waters to carry out an attack or simply to collect intelligence.³⁴⁵ Given this inherent threat, Pro-

337. Ruys, *supra* note 56, at 174.

338. U.N. SCOR, Cable dated 19 May 1960 from the Minister for Foreign Affairs of the U.S.S.R. to the President of the Security Council at 1, U.N. Doc. S/4315 (May 19, 1960).

339. U.N. SCOR, 15th Sess., 857th mtg. at 13, U.N. Doc. S/PV.857 (May 23, 1960) (quoted by Ruys, *supra* note 56, at 210).

340. *Id.*; U.N. SCOR, 15th Sess., 860th mtg. at 16, U.N. Doc. S/PV.860 (May 26, 1960).

341. Lissitzyn, *supra* note 56, at 135-42.

342. Ruys, *supra* note 56, at 183; *see also*, CORTEN, *supra* note 327, at 63.

343. *Pilotless U.S. Plane Downed, China Says*, *supra* note 19.

344. *See* J.D. Miller, *Aggressive Defense: Defense Force Protection From a Submarine Perspective*, UNDERSEA WARFARE MAG. (Fall 2001), https://www.public.navy.mil/subfor/underseawarfaremagazine/Issues/Archives/issue_13/defense.htm [<https://perma.cc/KEX4-6SV6>].

345. *Id.*

essor Yoram Dinstein argues that an intrusion by a “submerged submarine maybe regarded as an incipient armed attack and the coastal state is allowed, therefore, to employ forcible counter-measures by way of self-defense.”³⁴⁶ Implicit in this analysis is a belief that submarine intrusions *ipso facto* violate Article 2(4). Professor Kraska takes a more a conservative approach, asserting that “jurisprudence on the use of force at the ICJ suggests that it is unlikely that the Court would consider a peacetime submarine intrusion for purposes of espionage as tantamount to an ‘armed attack’ at all, and certainly not one with sufficient gravity to justify resort to the use of force in self-defense.”³⁴⁷ Without additional intelligence to suggest that the intruding submarine constituted a threat, it does indeed seem unreasonable for a state to destroy the submarine under a claim of self-defense. Thus, it is far from clear that the act of trespassing alone would constitute a proscribed “use of force.”

Given the relative paucity of historic examples and the dramatic capability differences between modern maritime drones and submarines, historic state reaction to submarine intrusions is probably not especially illuminating as to how states will respond to surveillance drone intrusions in their territorial sea. At present, maritime drone platforms are primarily designed to collect information and assist with defensive missions (e.g. mine sweeping, surveillance, etc.).³⁴⁸ So long as the technology does not develop a significant strike capacity or otherwise become an offensive weapon, states will likely condemn an intrusion as a violation of sovereignty rather than as a violation of Article 2(4).

c. Modern Practice (Drones)

State responses to modern drone intrusions generally support a conclusion that while these activities violate the territorial sovereignty of the target state, they do not constitute a prohibited use of force. Most significantly, states who have been subject to drone intrusions have not expressly asserted Article 2(4) violations.³⁴⁹ Iran classified both the US and Israeli drone intrusions as acts of “hostility”³⁵⁰ in its complaints to the UN; how-

346. DINSTEIN, *supra* note 55, at 214-15.

347. Kraska, *supra* note 42, at 193-213, 235. In support of this general position, Professor Kraska surveys recorded state responses to submarine intrusions from the Cold War to the present. This survey demonstrates that states take active measures to find and remove trespassing submarines from their territorial waters but not necessarily in a manner that suggests they are responding to a use of force. For example, Swedish national rules of engagement allow for the use of depth charges to notify (akin to warning shots for surface vessels) intruding Russian submarines that it is aware of their presence and to warn them to leave rather than to destroy the intruding submarine.

348. Geoff Ziezulewicz, *How Underwater Drones Will Change the Navy’s Sub Game*, NAVY TIMES (Aug. 3, 2018), <https://www.navytimes.com/news/your-navy/2018/08/03/how-underwater-drones-will-change-the-navys-sub-game/> [https://perma.cc/943N-B435].

349. Ruys, *supra* note 56, at 183.

350. Chargé d’affaires of the Permanent Mission of the Islamic Republic of Iran to the U.N., *supra* note 104.

ever, the focus of the complaint was on the violation of sovereignty.³⁵¹ Japan condemned China's violation of the Senkaku airspace as "a serious infringement of Japan's sovereignty."³⁵² Following its downing of the intruding Russian drone, Turkey announced that "whoever violates our borders, we will give them the necessary answer."³⁵³ China, in response to criticism of their seizure of the US drone in the South China Sea, noted it was "worth emphasizing that for a long time, the US military has frequently dispatched vessels and aircraft to carry out close-in reconnaissance and military surveys within Chinese waters,"³⁵⁴ obliquely suggesting that the drone surveillance was interfering with their sovereign rights. Condemning the Indian drone intrusion, China asserted that it "violated China's territorial sovereignty."³⁵⁵ Drone intrusions in Kashmir, Korea, and the disputed Georgian province were condemned as provocations in long-term disputes but not as aggressive acts.³⁵⁶ While the limited use of territorially intrusive surveillance drones does not appear to qualify as a proscribed use of force, there are certainly situations where drone use would cross this threshold (e.g. drones used to gather intelligence for an imminent attack.).³⁵⁷

From a policy perspective, the general reluctance of the international community to allege that territorially intrusive surveillance violates Article 2(4) is rational. While violations of territorial sovereignty and Article 2(4) are both contrary to international law, the Article 2(4) prohibition is normatively more powerful and sacrosanct. Article 2(4)'s normative force would be diminished if it were perceived that violations of the provision were common practice. By reserving allegations of Article 2(4) violations to more serious delicts, the delegitimizing and deterrent force of the provision is better preserved. Also, states, particularly major powers, are likely reluctant to strongly criticize or to characterize as a serious violation of international law actions that they also engage in or may in the future engage in.

351. U.N. SCOR, Annex I to the Letter dated 26 October 2005 from the Chargé d'affaires a.i. of the Permanent Mission of the Islamic Republic of Iran to the United Nations addressed to the Secretary-General, S/2005/692 (Aug. 9, 2005).

352. *Japan Scrambles Jets Over China Drone Flight Near Disputed Islets*, *supra* note 129.

353. *Turkey Would Shoot Down Planes Violating Its Air Space*, *supra* note 155.

354. *China to Hand Over Underwater Drone to US in Appropriate Manner*, *supra* note 188.

355. *China Claims Indian Drone 'Invaded Airspace in Crash'*, *supra* note 192.

356. Guy Faulconbridge, *Russia: Georgia Drone Flight Breached U.N. Rules*, REUTERS (Apr. 22, 2008, 8:48 AM), <https://www.reuters.com/article/us-georgia-russia-drone/russia-georgia-drone-flight-breached-u-n-rules-idUSL2284376120080422> [<https://perma.cc/C9B6-DHRN>]; Katharine Houreld, *Pakistan Says It Shot Down Indian Drone Near LoC*, REUTERS (Jul. 15, 2015, 9:53 AM), <https://in.reuters.com/article/pakistan-drone-india-loc/pakistan-says-it-shot-down-indian-drone-near-loc-idINKCN0PP10A20150715> [<https://perma.cc/57KX-FBGK>]; Jack Kim & Christine Kim (Paul Tait ed.), *South Korea Says Crashed North Korean Drone a 'Grave Provocation'*, REUTERS (June 20, 2017, 10:11 PM), <https://www.reuters.com/article/us-northkorea-southkorea-drone-idUSKBN19C074> [<https://perma.cc/2R39-6S88>].

357. David Kretzmer, *The Inherent Right to Self-Defence and Proportionality in Jus Ad Bellum*, 24 EUR. J. INT'L. L. 235, 248 (2013).

C. International Law Applicable to the Target or Responding State

So far, this Article has analyzed the relevant international legal rules and norms that regulate state use of territorially intrusive aerial and maritime surveillance drones. The focus now shifts from the surveilling state to the target state. Specifically, this section analyzes current state practice in responding to surveilling drones through the lens of rules that govern the use of force in international relations.

The extent to which states are permitted to use force to respond to foreign drones is an open question of significance in modern drone academic literature. Writing in *International Security* in 2016, Political Scientists Michael Horowitz, Sarah Kreps, and Matthew Furlmann note that “the rules of engagement for responding to drone incursions—whether and when to shoot down a drone that transgresses a state’s borders—are currently ambiguous.”³⁵⁸ To address this question from a sociological perspective, the Center for New American Security conducted a 2016 survey experiment designed to better understand how the introduction of drones into global arsenals might *change* expert and public attitudes about the use of force relative to human-inhabited aircraft.³⁵⁹ This section explores the underlying question about the justification for the use of force against drones from a legal perspective.

1. *When Can Force Be Used Under the UN Charter Against a Trespassing Drone?*

As discussed earlier, Article 2(4) of the UN Charter prohibits the use of force in international relations. There are two exceptions to this general prohibition: (1) a state can use force if authorized by the UN Security Council, and (2) it can use force in self-defense under Article 51 of the UN Charter.³⁶⁰ Article 51 states that “nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security.”³⁶¹ There is extensive academic debate (that is beyond the scope of this Article) about the level of force or threat necessary to actually constitute an armed attack.³⁶² Similarly, there is significant scholarship about the potential gap between the prohibition of the “use of force” in Article 2(4) and the right of self-defense that is triggered by an “armed attack.”³⁶³ Many scholars, as well as the ICJ in *Nicaragua*, hold that there are some

358. Horowitz et al., *supra* note at 2, at 28.

359. Michael C. Horowitz, Paul Scharre & Ben FitzGerald, *Drone Proliferation and the Use of Force An Experimental Approach*, CTR. FOR NEW AM. SOC'Y (2017), <http://drones.enas.org/wp-content/uploads/2017/03/Drone-Proliferation-and-the-Use-of-Force-Proliferated-Drones.pdf> [<https://perma.cc/HHS4-HSB6>].

360. U.N. Charter art. 42, 51.

361. U.N. Charter art. 51.

362. DINSTEN, *supra* note 55, at 207. For example, it is clear that a full-scale invasion of another state is an armed attack, but would a few small arms rounds fired across a border or minor logistical support of a rebel group qualify?

363. *Id.*

uses of force that are proscribed under Article 2(4) that do not have sufficient “scale and effects” to qualify as an armed attack, and therefore justify the aggrieved state’s resort to self-defense under Article 51.³⁶⁴ This leaves open the question about what, if any, right the aggrieved state has to utilize any type of force in response to forceful actions that do not rise to the level of an armed attack. Within this general conception of use of force and self-defense within the UN Charter framework, there are three ways to categorize potential state responses to an intruding drone: (1) response to an armed attack; (2) response to a use of force that does not meet the threshold of an armed attack; and (3) response to unfriendly actions that do not constitute a use of force. Each of these possibilities are analyzed below, before concluding that none provide adequate justification for the use of force in the common drone intrusion scenario.

a. Use of Force in Response to an Armed Attack Under Article 51

A drone intrusion could qualify as an “armed attack” if, for example, the drone was conducting tactical surveillance in support of an imminent use of kinetic force, or breaching a border as part of a first wave of a larger attack. If this armed attack threshold is met, the victim state would be authorized to use necessary and proportional force to eliminate the threat, clearly including shooting down the intruding drone. However, this clear “armed attack” fact pattern is purely hypothetical and does not at all reflect how surveillance drones are currently used. Indeed, in the examples surveyed for this Article none of the target states asserted that they used or threatened force against intruding drones in self-defense, nor did any claim that they were acting pursuant to Article 51.

b. Use of Force in Response to an Article 2(4) Violation That Does Not Qualify as an Article 51 Armed Attack (State Responsibility and Forcible Counter-Measures)

As mentioned earlier, it is far from clear or settled what right, if any, states have to utilize forcible counter-measures short of self-defense to respond to uses of force that violate Article 2(4) but do not meet the Article 51 threshold.³⁶⁵ The relevant ICJ cases are unclear and academic opinion is fractured, leading Professor Dinstein to conclude that “all of this is quite baffling.”³⁶⁶ Generally, states can utilize the doctrine of state responsibility to seek redress for wrongs under international law, which could theoretically include responding to violations of their right to be protected from forceful coercion under Article 2(4).³⁶⁷ However, this doctrine specifically precludes the resort to the use of force outside of Article 51,³⁶⁸ and there is

364. DINSTEIN, *supra* note 55, at 207.

365. *Id.* at 207.

366. *Id.*

367. See generally *Draft Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries*, [2001] 2 Y.B. Int'l L. Comm'n 33, U.N. Doc. A/56/10.

368. Article 50(1)(a) of the International Law Commission's 2001 draft articles on Responsibility of States for Internationally Wrongful Acts directs that “counter-measures

no indication that states are intentionally carving out an exception to this use of force prohibition. States are certainly not publicly justifying their use of force against intruding surveillance drones as permissible forcible counter-measures under the state responsibility doctrine. Further, it is unclear exactly what type of surveillance drone activity would fit into this category (i.e. constituting an Article 2(4) violation without violating Article 51). States that have used force against intruding drones have done so immediately upon discovery of the intrusion without waiting for the drone to commit or demonstrate an intent to commit any particular forcible act beyond crossing the border.³⁶⁹

c. Use of Force in Response to Wrongful Actions that Do Not Constitute a Violation of Article 2(4)

As argued in Part III.B above, a standard surveillance drone intrusion does not rise to the level of an Article 2(4) use of force, let alone armed attack. Until the intrusion at least constitutes a use of force, there is no justification under any prevailing understanding of self-defense that would permit a responsive use of force against the intruding drone. Without a use of force option, the surveilled state is limited to ordering the drone to leave its territory and taking nonforceful steps such as diplomatic protests to avoid recurrence.

In the maritime context, this restrained approach is codified in UNCLOS Article 30 which states:

If any warship does not comply with the laws and regulations of the coastal State concerning passage through the territorial sea and disregards any request for compliance therewith which is made to it, the coastal State may require it to leave the territorial sea immediately.³⁷⁰

Analyzing this UNCLOS provision in the context of submarine incursions, Professor Kraska concludes that:

in response to such incursions, coastal states may . . . require submarines to leave the territorial sea. The use of force in self-defense, however, may not be invoked by the coastal state to compel compliance.³⁷¹

Thus, under the self-defense doctrine, states are significantly constrained in their use of force. The intruding vessel must show sufficient hostility to justify a responsive use of force.³⁷² Eventually, a vessel's inten-

shall not affect the obligations to refrain from the threat or use of force as embodied in the [U.N.] Charter." Tom Ruys, 'ARMED ATTACK' AND ARTICLE 51 OF THE UN CHARTER IN CUSTOMARY LAW AND PRACTICE 146 (2014) (quoting *Draft Articles*, *supra* note 367, art. 50 para. 1(a)).

369. See e.g., Houreld, *supra* note 135; Chargé d'affaires of the Permanent Mission of the Islamic Republic of Iran to the U.N., *supra* note 104; *Intruding North Korean Drone Gets Back on Its Side of Border After South Korea Fires Warning Shots*, *supra* note 148; *South Korea Fires at North 'Object'*, *supra* note 143; *Turkey Would Shoot Down Planes Violating Its Air Space*, *supra* note 155.

370. UNCLOS, *supra* note 207, art. 50.

371. See Kraska, *supra* note 42, at 165.

372. *Id.* at 239-40.

tional disregard of directions to leave the territorial sea could be one significant factor suggesting hostility, which would then permit the use of force in self-defense.

In the aviation context, the Chicago Convention does not provide similar guidance about how to respond to intruding military aircraft;³⁷³ however, some national military doctrine and academic opinion suggests that there is a requirement for restraint analogous to that required in the maritime context. The US Navy, in standing legal guidance for its Commanders, permits the use of force against intruding aircraft only when there is a “sufficient threat to justify the use of force in self-defense.”³⁷⁴ Australian Air Force guidance is even more explicit in its requirement for restraint, directing that “an intruding aircraft may only be attacked where the right to invoke Article 51 self-defence can be demonstrated.”³⁷⁵ Neither military, however, provides published guidance about how to respond to intruding aircraft that do not or do not yet constitute a sufficient threat to justify the use of force in self-defense.³⁷⁶ From an academic perspective, Professor Lissitzyn asserts that “in time of peace, intruding aircraft whose actions are known to the territorial sovereign to be harmless must not be attacked even if they disobey orders to land, to turn back or to fly on a certain course.”³⁷⁷ Intruding aircraft, of course, can be ordered to land or to leave the jurisdiction and failure to do so could be factors that indicate hostility. However, disobedience of these directions alone would not necessarily provide a basis to use force in self-defense. Overall, there is no basis within the self-defense doctrine to justify use of force against an intruding surveillance drone until it can be determined from the drone’s behavior and all other surrounding circumstances that the state controlling the drone is using force or intends to use force.³⁷⁸

In practice, it is clear that states do not apply a self-defense use of force standard when responding to intruding drones. South Korea, Iran, Pakistan, China, and Russia (supporting Abkhaz separatists) each showed no hesitation in seizing or destroying drones they believed were trespassing yet not demonstrating threatening behavior. These states did not first attempt to order the drones to land or to leave the territory, nor did they justify their use of force in terms of self-defense.³⁷⁹ It could be argued that these actions are evidence of an emerging norm of customary international

373. Chicago Convention, *supra* note 89, art. 3 *bis* provides for civilian aircraft that: every State, in the exercise of its sovereignty, is entitled to require the landing at some designated airport of a civil aircraft flying above its territory without authority or if there are reasonable grounds to conclude that it is being used for any purpose inconsistent with the aims of this Convention; it may also give such aircraft any other instructions to put an end to such violations.

374. NWP 1-14M, *supra* note 234, § 4.4.2.

375. ROYAL AUSTRALIAN AIR FORCE, AAP 1003: OPERATIONS LAW FOR RAAF COMMANDERS § 2.25 (2004).

376. See generally NWP 1-14M, *supra* note 234.

377. Lissitzyn, *supra* note 1, at 587.

378. *Id.*

379. Japan did not use force against an intrusive Chinese drone in the Senkakus in 2013. However, it subsequently loosened its national rules of engagement to allow for

law that loosens Article 2(4) and Article 51 restrictions, at least in the context of responding to intrusive drones.

However, states have made no statements suggesting their actions are taken in self-defense. Instead, states appear to be asserting that they are exercising police powers to redress violations of their sovereignty.

2. *Can States Use Force Against Intruding Drones Pursuant to Their Sovereign Police Powers?*

As discussed in Parts III.A.1. through III.A.5 above, territorially intrusive drone surveillance violates the sovereignty of the target state. This raises the question of what options, beyond diplomatic protest or possibly sanctions, the target state has to respond to these incursions. As discussed in Part III.C.1 above, neither traditional self-defense nor state responsibility doctrines support the use of force against intruding drones in the most common surveillance scenarios. This leaves the exercise of sovereign police powers as the most viable justification for the use of force in these cases.

State authority to regulate activities that occur within the territory of the state is an inherent aspect of sovereignty. Only limited by international law, states have total authority to proscribe undesirable activities and to use police powers to enforce their laws within their territory including against the agents of foreign powers.³⁸⁰ For example, it is this authority that allows a state to arrest, convict, and even execute a foreign spy acting as the agent of a foreign power in peacetime.³⁸¹ Logically, this same coercive authority would allow a state to stop a drone that is seeking to capture the same intelligence as a human spy. Indeed, it is foreseeable that human spies could operate drones (purchased in the target state, smuggled into the target state, or even flown or sailed across the target state's borders) to facilitate their espionage mission in violation of the target state's laws. In such situations, it seems clear that the target state could seize and destroy the tools of the spy as part of the lawful seizure of the spy. However, can this logic be extended one step further and permit the target state's use of force against a sovereign immune drone under the control of a sovereign entity outside of the target state? For the answer to be yes, two legal hurdles must be overcome. First, it must be determined that the Article 2(4) prohibition on the use of force in international relations does not completely monopolize this field and *ipso facto* preclude all other possible uses of inter-state force. Second, the doctrine of sovereign immunity, which typically operates to protect state-owned vessels and aircraft from the jurisdiction of the enforcing state, cannot bar the exercise of this police power. These two potential barriers are analyzed below before concluding that neither presents an insurmountable barrier.

the use of force against future intruding drones following a warning to leave. Gettinger, *supra* note 119.

380. Subject, of course, to limitations associated with diplomatic immunity and sovereign immunity. The latter will be discussed in detail below. See *infra* Section 2(a)-(c).

381. Navarrete & Buchan, *supra* note 324, at 902.

a. Inter-State Use of Force as an Exercise of Sovereign Police Powers

Scholarly opinion is divided as to whether the exercise of sovereign police powers against another state is excluded from the general prohibition on the use force in Article 2(4). Professor Dinstein argues against this proposition, noting that in his opinion:

[T]he span of the prohibition of the use of inter-State force, as articulated in Article 2(4), is subject to no exception other than self-defense and collective security. When one State uses force unilaterally against another, even within its own territory, this must be based on the exercise of self-defence against an armed attack.³⁸²

Professor Tom Ruys is even more clear, arguing that:

[W]henver state A deliberately uses (potentially) lethal force within its own territory—including its territorial sea and its airspace—against military or police units of state B acting in their official capacity, that action by state A amounts to the interstate use of force in the sense of UN Charter Article 2(4).³⁸³

Advocating the exact opposite position, Professor Oscar Schachter asserts that:

There is no question about the right of a territorial sovereign to enforce its laws, with force if necessary, against an intruding vessel, plane or land vehicle that has violated the national domain. The use of such force is limited, not by the general language of article 2(4) The sweeping prohibition against force does not apply in such cases of ‘enforcement’ by states, because the act of force does not fall within the proscribed categories of article 2(4).³⁸⁴

The Institute of International Law issued a 2007 resolution on self-defense that also appears supportive of this permissive position, stating that in cases that do not meet the Article 51 criteria, “the target State may also take strictly necessary police measures to repel the attack.”³⁸⁵

Unfortunately, there are no judicial decisions or other relevant proclamations that provide a basis for judging between these mutually exclusive interpretations of Article 2(4). State practice, however, is illuminating. The US did not object to the Soviet use of force against Francis Gary Power’s U-2 in 1960, nor did it object to a subsequent Soviet assertion of criminal jurisdiction over the pilot, indicating that it considered these

382. DINSTEIN, *supra* note 53, at 215 n.1270.

383. Ruys, *supra* note 56, at 188.

384. Oscar Schachter, *The Right of States to Use Armed Force*, 82 MICH. L. REV. 1620, 1626 (1984); see also Dieter Fleck, *Rules of Engagement for Maritime Forces and the Limitation of the Use of Force under the UN Charter*, GERMAN Y.B. INT’L. L. 31, 165 (1988) (“Enforcement of sovereign rights may well include the use of force against foreign ships or aircraft which did not commit an armed attack. This is particularly true for actions against intrusion by foreign forces in the territorial sea, internal waters or national airspace, actions which cannot automatically be taken as armed attacks, in particular when serving espionage purposes.”).

385. Institute de Droit International, Present Problems of the Use of Armed Force in International Law, Res. 10A (Oct. 27, 2007), http://www.idi-iil.org/app/uploads/2017/06/2007_san_02_en.pdf [<https://perma.cc/8SYP-NUF4>].

Soviet actions to be an appropriate exercise of sovereign rights.³⁸⁶ In the maritime context, Sweden, in 1981, temporarily seized a grounded Soviet submarine while Sweden investigated the trespass of its territorial waters as a violation of its municipal law,³⁸⁷ demonstrating a willingness to use force (i.e. seizure) to facilitate an exercise of its police powers against a foreign warship.

Although never explicitly justified as such, states appear to rely on police powers in responding to trespassing drones. When protesting intrusions, surveilled states have universally complained of violations of their sovereignty and have openly used force in apparent vindication of these rights.³⁸⁸ In cases where drones were attacked while clearly located within the uncontested territory of the target state, the intruding states have not disputed the legitimacy of the use of force against their drones suggesting recognition of the legitimacy of these uses of force.³⁸⁹

The very nature of drones makes the argument for the use of police powers even more compelling. Unlike traditional manned military aircraft and submarines, drones are widely available to the public. States already regulate the use of drones within their territory and permit the use of force when necessary to ensure compliance with the governing regulations.³⁹⁰ These municipal laws commonly impose geographic restrictions that prohibit flights near sensitive areas such as airports or military bases and apply regardless of the intent of the operator (hobbyist or spy) or the nationality or location of the operator.³⁹¹ Moreover, with the potential of killing humans removed from the equation, use of destructive force against a drone is far less controversial. Given these dynamics, use of force against a trespassing drone is most analogous to the forceful seizure of a spy who scales a border fence, a scenario which Article 2(4) certainly was not intended to prohibit. Despite their status as military craft, their destruction while trespassing is not closely analogous to a decision to use force in self-defense against an intruding manned bomber aircraft or a menacing foreign warship unlawfully in territorial waters, scenarios that Article 2(4) was clearly intended to govern.

386. Lissitzyn, *supra* note 56, at 135.

387. Sadurska, *supra* note 56, at 35, 40. Both Romana Sadurska and Indrid Delupis argue that the doctrine of sovereign immunity should have protected the Soviet submarine from an assertion of Swedish investigatory jurisdiction. Delupis, *supra* note 56 at 74-75.

388. *See, e.g., supra* notes 312-21.

389. *See, e.g., supra* notes 73-102.

390. For example, the US Department of Defense announced a policy in August 2017 to permit the destruction of drone's flying over 133 US military facilities. Although the details of the policy are classified, the policy is presumably aimed at preventing espionage because military forces would have already possessed authority to use force in self-defense. *US Military to Shoot Down Consumer Drones*, BBC NEWS (Aug. 8, 2017), <http://www.bbc.com/news/technology-40860806> [<https://perma.cc/MCC9-Q3BG>].

391. The U.S. Library of Congress has created a database of drone regulations in a number of significant foreign jurisdictions. *See* Law Library of Congress, *Regulation of Drones*, LIBRARY CONGRESS (Apr. 2016), <https://www.loc.gov/law/help/regulation-of-drones/index.php> [<https://perma.cc/6WQZ-W92B>].

b. Are Drones Sovereign Immune Aircraft/Vessels?

There is no international agreement that specifically extends sovereign immune protections to aerial and maritime drones;³⁹² however, current state practice demonstrates that states do consider that these sovereign protections apply. Most prominently, the US considers military aerial and maritime drones as having full sovereign immune protections.³⁹³ The US publicly asserted this doctrine in protesting Iran's November 2012 attack on its aerial drone in the Persian Gulf as well as in its complaint against China's December 2016 seizure of its maritime drone in the South China Sea.³⁹⁴

Professors Terry Gill and Dieter Fleck agree with the US extension of these protections to aerial drones, noting that aerial drones logically fit within the definition of qualifying military aircraft established in the Chicago Convention and the 1923 Hague Rules of Air Warfare.³⁹⁵ It is less clear whether maritime drones qualify as sovereign immune vessels. UNCLOS provides no definition of the term "vessel" but implies that it contemplates they will be manned.³⁹⁶ Other multilateral maritime treaties are far more expansive in their definitions of "vessel," utilizing language broad enough to encompass drones.³⁹⁷ In the absence of an international agreement that explicitly excludes drones from sovereign immunity protections, however, it is extremely unlikely that any state would willingly forego these benefits. States, by their nature, seek to maximize their power and authority in the international sphere.³⁹⁸ Thus, the US policy of extending sovereign immune status to both maritime and aerial drones is likely to be reflective of both international *opinio juris* and state practice as more states articulate their drone policies.

c. Does the Sovereign Immunity Doctrine Bar States from Utilizing Police Powers Against Intruding Drones?

Under the doctrine of sovereign immunity, state owned military vessels and aircraft are generally immune from the enforcement jurisdiction of a foreign state while located within the territory of the foreign state.³⁹⁹ The doctrine prohibits the enforcement of municipal law (such as customs, environmental, or immigration restrictions) on the visiting craft.⁴⁰⁰ Similarly, the enforcing state cannot search or seize a craft in response to sus-

392. See generally Wolff Heintschel von Heinegg, *The Law of Military Operations at Sea*, in THE HANDBOOK OF THE LAW OF INTERNATIONAL MILITARY OPERATIONS § 20.10 (Terry D. Gill & Dieter Fleck eds., 2d ed. 2015).

393. NWP 1-14M, *supra* note 234, §§ 2.3.6, 2.4.4.

394. PANETTA & NEWTON, *supra* note 86, at 434-36; Domonoske, *supra* note 182.

395. Heintschel von Heinegg, *supra* note 392, at §§ 20.08, 20.10.

396. Michael N. Schmitt & David S. Goddard, *International Law and the Military Use of Unmanned Maritime Systems*, 98 INT'L REV. RED CROSS 567, 575 (2016).

397. *Id.* at 576-77.

398. See generally HANS J. MORGENTHAU ET AL., POLITICS AMONG NATIONS (2006).

399. Wolff Heintschel von Heinegg, *supra* note 392, at § 20.10.

400. *Id.* at 20.10.

pected violations of its municipal law.⁴⁰¹ These protections make sense as expressions of mutual respect and comity necessary to facilitate efficient and friendly interactions between sovereign states. In the absence of such reciprocal immunity, any official visit to a foreign state would risk misunderstanding or disagreement fraught with potential escalatory nationalistic implications. Sovereign immunity, of course, immediately disappears when relations turn overtly hostile and is replaced by its inverse legal authority, privileged destruction of the hostile state's craft.

The unresolved question is how does this doctrine apply in the grey area between the contemplated friendly visit and the overtly hostile interaction. The problem of how a state can respond to an intruding surveillance drone falls squarely in this grey area, where territorial sovereignty is in direct conflict with sovereign immunity. Sovereign immunity is most clearly applicable in situations where immunity is granted from compliance with regulations that are ancillary to an otherwise friendly visit.⁴⁰² When the sole purpose of the visit is unfriendly, planned to intentionally violate both the sovereignty and domestic laws of the target state, it seems very unlikely that any state would willingly cede its sovereign enforcement authority in deference to the sovereignty of the offending state.

Although there is no doctrinal unclean hands exception to the sovereign immunity doctrine, some scholarly opinion as well as state practice supports this exception.⁴⁰³ Quoting Professor Helmut Steinberger, Professor Fleck notes that "a 'foreign State need not be granted immunity with regard to objects it had brought into the forum State in violation of the forum State's territorial sovereignty (e.g. warships entering territorial seas in violation of international law or as instruments of espionage).'"⁴⁰⁴ Professor Lissitzyn agrees, noting that "intruding aircraft, whether military or not, and whatever the cause of the intrusion, are generally not entitled to the special privileges and immunities customarily accorded to foreign warships."⁴⁰⁵ Other scholars do not recognize this exception. Professor Ingrid Delupis, for example, concludes a study of sovereign immunity for spying warships with the assertion that any use of force against such

401. *Id.*

402. Delupis, *supra* note 56, at 53, 54, 57.

403. The absence of this doctrine likely reflects a gap between the evolution of international law and technological advancements. As discussed earlier, only very few countries for a relatively short period of time have possessed the capacity to use their military aircraft and warships as territorially intrusive espionage platforms. As drone surveillance proliferates, there is fertile ground for further development of this concept.

404. Fleck, *supra* note 298, at 701-02. See also Terry D. Gill, *The Forcible Protection, Affirmation and Exercise of Rights by States under Contemporary International Law*, 23 NETH. Y.B. INT'L L. 105 n. 70 (1992) (While it is true that foreign warships enjoy immunity from jurisdiction, this does not signify that such immunity extends to include immunity from protective action in response to non-innocent passage in the territorial waters or unauthorized penetration of the internal waters, land territory, or airspace of another state.).

405. Lissitzyn, *supra* note 1, at 55.

intruding vessels can only be based in self-defense.⁴⁰⁶ However, traditional sovereign immunity analysis (including Professor Delupis' study) is in part driven by the challenges associated with dealing with the human crew members. Drones simplify the academic analysis by removing the human from the equation. Potentially highly charged political concerns about death, capture, detention, treatment, and prosecution of the crew are avoided, allowing for a clearer study of the interaction between the powers of the territorial sovereign and the sovereign authority of the surveilling state manifested in their intruding unmanned craft. In this frame, the rights of the territorial sovereign certainly appear to dominate. With humans removed from the equation, it is difficult to conceive of a policy justification that would support sovereign immune protection for intentionally trespassing drones.

The terms "intentional" and "trespass," however, are essential for this conclusion. In cases where the incursion was the result of a navigational error or technical malfunction the drone would not *ipso facto* lose its sovereign immune status. Both India and the US have blamed drone incursions on technical malfunctions.⁴⁰⁷ Similarly, drones can be operated conspicuously and intentionally in locations where there is an open dispute about their right to operate (e.g. China's use of drones in the Senkaku / Diaoyu dispute⁴⁰⁸). In such cases, the application of police powers (or any use of force) is potentially as controversial and escalatory as the operation of the drone to contest the underlying disputed territory.⁴⁰⁹ In cases where an incursion is not intentional or the status of the territory is in dispute, the escalatory risk of taking any action against the drone significantly increases because the drone owner could reasonably claim that they have not acted in a knowingly wrongful manner and would therefore be more likely to respond with force to protect their drone and the sovereignty it symbolizes.

As discussed throughout this Article, states, in practice, have shown no hesitation in destroying trespassing drones and publicly protesting the drones' violation of their sovereignty. These actions have not been chal-

406. Delupis, *supra* note 56, at 75. See also Kraska, *supra* note 42, at 247 (arguing that the sovereign immunity doctrine limits the options of target state in responding to a submarine caught engaging in espionage in the territorial sea).

407. Estes, *supra* note 74; . *China Claims Indian Drone 'Invaded Airspace in Crash'*, *supra* note 192.

408. See PLAW ET AL., *supra* note 119, at 292.

409. Since 1983, the United States through its Freedom of Navigation Program (FON) has intentionally contested what it believes to be "unilateral acts of other states designed to restrict the rights and freedoms of the international community in navigation and overflight." The states whose claims are contested likely characterize these actions as intentional and unfriendly violations of sovereignty. However, they are deterred from taking forceful responsive action due to the risks inherent in challenging the manned aircraft and warships of the dominant military superpower. The utilization of unescorted drones in the US FON program, or by other States, to challenge the status quo in disputed areas (e.g. South China Sea) has the potential to lower the perceived barriers to use of force increasing the risk of escalation. U.S. Dept. of State, *Maritime Security and Navigation*, U.S. DEPT. STATE (Apr. 9, 2018), <https://www.state.gov/e/oes/ocns/opa/maritimesecurity/> [https://perma.cc/XUV8-5PRT].

lenged in cases when the intruding drones were located within the territory of the enforcing state. This state practice, in conjunction with the associated public statements, reflects *opinio juris*. The use of force as an exercise of police powers against trespassing drones is likely solidifying as a customary international law “unclean hands” exception to the sovereign immunity doctrine.

3. *What Level of Force is Necessary and Proportional?*

With the conclusion that it is permissible under international law to use force against a trespassing surveillance drone as an exercise of police powers and, in far more limited circumstances, in self-defense the following three questions arise: (1) Is there an obligation to warn before force is used? (2) Is it disproportionate to use destructive force to respond to a surveillance drone intrusion? (3) Can deadly force be used against a manned platform to protect a drone? This section addresses each of these three questions using the customary international law standards developed to clarify and restrict the use of force in self-defense.⁴¹⁰

a. *Is There an Obligation to Warn Before Force is Used Against a Drone?*

The ICJ in *Nicaragua* noted that it is a well-established rule of customary international law that “self-defence would warrant only measures which are proportional to the armed attack and necessary to respond to it.”⁴¹¹ Professor Schachter defines necessary to mean that “that force should not be considered necessary until peaceful measures have been found wanting or when they clearly would be futile.”⁴¹² Under this standard, unless the enforcing state reasonably believes that a warning will be ineffective, a warning is required.⁴¹³ For several reasons, however, this standard is not easily applicable to drones.

410. This section will utilize these standards to analyze exercise of inter-state police powers because there is not a separate corpus of rules that apply to this narrow and historically limited doctrine, and the underlying policies are equally applicable. See Schachter, *supra* note 384, at 1626.

There is no question about the right of a territorial sovereign to enforce its laws, with force if necessary, against an intruding vessel, plane, or land vehicle that has violated the national domain. The use of such force is limited, not by the general language of article 2(4) but by customary law principles requiring that force be limited in manner and amount to that reasonable in the circumstances.

411. DINSTEIN, *supra* note 55, at 249 (quoting *Nicaragua Case*, *supra* note 267, at 94).

412. See Schachter, *supra* note 384, at 1635. In the maritime context, UNCLOS codifies this standard establishing that, “[i]f any warship does not comply with the laws and regulations of the coastal State concerning passage through the territorial sea and disregards any request for compliance therewith which is made to it, the coastal State may require it to leave the territorial sea immediately.” UNCLOS *supra* note 207, art. 30. UNCLOS is silent on the coastal state’s options if the demand to leave the territorial sea is ignored. For manned warships, it is rational that refusal could be interpreted as an incipient armed attack justifying use of force in self-defense. See DINSTEIN, *supra* note 55, at 215.

413. See Schachter, *supra* note 384, at 1635.

First, from a policy perspective, this restraint is tied to the preservation of human life and the associated prevention of escalation of conflict associated with taking human life. The loss of a non-human machine is inherently less escalatory and is largely devoid of moral significance, undercutting the strength of the policy that animates this rule. This is especially true in situations where the drone is destroyed after intentionally engaging in trespass where use of force in response to the trespass is foreseeable. Next, the nature of the technology makes warnings more challenging. There is no potential to warn via voice communications and it is unclear what type of visual signs the drone and its distant operators could register as warnings (flares, warning shots, etc.). States are also incentivized to forcefully seize drones to gather intelligence about the identity and intentions of the operators. Finally, drone destruction serves as one of the only practical deterrents. Given the increasing frequency of their cross-border employment, it is clear that the perceived risk associated with violating the territorial sovereignty of another state is not particularly high in many cases. Knowledge that the drone could be destroyed will add an additional deterrent. Moreover, actual possession of the trespassing drone gives the aggrieved state a far stronger position from which to complain about the intrusion and makes it far more difficult for the violating state to deny the activity.

State practice is mixed. Both Turkey and Japan made statements indicating that their national rules of engagement require a warning before force is used.⁴¹⁴ Turkey claimed that it warned the intruding Russian drone three times before destroying it in October 2015.⁴¹⁵ There is no public information that suggests that South Korea, Iran, Pakistan, China, or Russia attempted any type of warning before using force against drones. In December 2016, the US Congress authorized the Department of Defense to forcefully destroy or seize aerial drones that present a threat to the safety or security of various Department of Defense assets within the US.⁴¹⁶ The law does not condition the use of force on a prior warning and it is unclear from publicly available sources whether this requirement is later imposed by the Department of Defense in classified guidance implementing this law.

To date, there are no publicly known incidents of states using force against trespassing drones in their territorial seas or internal waters. The one relevant maritime example, China's forceful seizure of the US drone in

414. Japan's restraint is probably more reflective of political realities than perceived legal constraints. The sovereignty dispute over the Senkaku / Diaoyu islands is a complex major power standoff with charged nationalist implications. Japan is surely reluctant to use force in a manner that could be interpreted as overtly aggressive. PLAW ET AL., *supra* note 122, at 292; *Turkey Would Shoot Down Planes Violating Its Air Space*, *supra* note 155; *see also*, Gettinger, *supra* note 119.

415. *Turkey Would Shoot Down Planes Violating Its Air Space*, *supra* note 155.

416. 10 U.S.C. § 130i (2017). *See* Ryan Browne & Rene Marsh, *US Military Warns It Can Down Drones Flying Over US Bases*, CNN (Aug. 7, 2017), <http://www.cnn.com/2017/08/07/politics/pentagon-drones-us-bases/index.html> [<https://perma.cc/HH5U-DP74>].

the Philippine EEZ,⁴¹⁷ suggests that state threshold for the use of force against maritime drones, like aerial drones, is also significantly decreased. Since the policy justifications that drive the liberal use of force against intruding aerial drones similarly apply in the maritime context, it is likely that states will be similarly quick to use force against the maritime drones. It is unclear how the mandate in UNCLOS Article 30 that a state must “require [vessels] to leave the territorial sea immediately”⁴¹⁸ prior to the use of force will impact state practice.

Overall, state practice suggests that the employment of non-forceful measures before destroying a drone are impractical. It is likely that a norm will continue to coalesce around this practice, making the standard and accepted response to a trespassing drone immediate use of force.

b. Is it Disproportionate to Use Destructive Force to Respond to a Drone Intrusion?

Use of force must be both necessary and proportional.⁴¹⁹ In the *ius ad bellum* context, Professor Dinstein notes that “proportionality points at a symmetry or an approximate ‘scale and effects’ between the unlawful force and the lawful counterforce.”⁴²⁰ This limitation is also applicable to the exercise of police powers. For example, it would be impermissible in peacetime to shoot a spy in lieu of capture when capture was feasible. In the context of drones, intentional destruction may, at first glance, seem asymmetrical to the abstract offense of intentional violation of territorial sovereignty. However, given the fact that there are no feasible less forcible alternatives to prevent or deter the incursion, actions that could lead to the destruction of the drone (e.g. shooting it down or jamming its navigation system) are reasonable. Once again, the absence of the possibility of the loss of human life changes the calculus in favor of less restraint. Although it is likely proportional to destroy a drone in response to a typical surveillance incursion, it would not be proportional to take the further step to use force against the drone operators or maintainers located outside the violated territory without other independent justification.

4. *Can Deadly Force Be Used Against a Manned Platform to Protect a Drone?*

The risk of escalation is generally lower in situations where states use drones to intentionally cross a mutually recognized border in order to collect intelligence on a target state because the intruding state knowingly assumes the risk of violating the sovereignty of the target state.⁴²¹ The risk

417. Perlez & Rosenberg, *supra* note 175.

418. UNCLOS, *supra* note 207, art. 30.

419. DINSTEIN, *supra* note 55, at 249.

420. *Id.* at 282.

421. This is the most common fact pattern in the modern era. Intrusions into Iran, South Korea, Pakistan, Turkey, and Abkhaz all fit into this pattern. *But see* Vice-President Dick Cheney’s critique of the Obama administration’s unwillingness to use force in Iran to destroy the RQ-170 stealth drone that crashed in Iran in 2011. There is always the potential that territorially intrusive military surveillance activities will lead to unin-

of escalation significantly increases in situations where there is a legitimate dispute concerning the location being surveilled and both sides calculate their responses believing their activities are legally justified.⁴²² This dynamic was present in both of the Japan/China drone incidents. In the 2013 incident, China threatened that “if Japan does what it says and resorts to enforcement measures like shooting down aircraft, that is a serious provocation to us, it is an act of war. We will surely undertake decisive action to strike back.”⁴²³ Similar elements existed in the November 2012 US / Iran dispute about whether a US surveillance drone had crossed into Iran’s territorial airspace, justifying an armed Iranian response. After an Iranian military plane shot at the US drone, Secretary Panetta deliberated with his top military advisors to decide if this “was a deliberate act of war by Iran or the foolish work of a rogue pilot.”⁴²⁴ In both incidents, the surveilling states asserted that they would not tolerate use of force against their drones because they believed they had a legal right to conduct the surveillance in the particular locations in which they were operating.⁴²⁵

Although diplomacy alone was sufficient to resolve the immediate tensions, the question remains; what if the US or Chinese drones were shot down? The world’s two great military and economic powers both publicly stated that they believed the unjustified use of force against a drone would have been an “act of war” justifying a resort to deadly force.⁴²⁶ As a matter of international law, however, would it have in fact been permissible for these states to have used force against human targets to defend or respond to attacks on their drones? Similarly, would it have been lawful for the US to use force against Chinese sailors to prevent the December 2016 seizure of US maritime surveillance drone or to recover the drone?

If the threatened platforms were manned, the use of force to protect them when attacked would be justifiable as an exercise of the right to self-defense. The absence of a threat to human life changes the equation. Clearly there are situations where an attack on military equipment alone could justify use of force in self-defense (e.g. an attack against parked military aircraft or a fuel depot) because such attacks unavoidably threaten lives through miscalculation or error, suggest a larger threat of aggression against the forces who depend on the equipment for their protection or accomplishment of their mission, and may suggest preparatory intent for hostility against other forces or assets of the attacked state. Unlike a general attack against military equipment, however, an attack or seizure of a single surveillance drone, in most circumstances, does not in any way

tended escalatory actions. *Obama Says U.S. Has Asked Iran to Return Drone Aircraft*, *supra* note 67.

422. Mark Willacy, *Japan, China in War of Words at Tokyo Scrambles Jets to Monitor Beijing Military Planes*, ABC [Austl.] (Oct. 28, 2013), <https://www.abc.net.au/news/2013-10-28/japan-china-war-of-words-erupts-regional-tensions/5048744> [<https://perma.cc/HJ9N-BCWH>].

423. *Id.*

424. PANETTA & NEWTON, *supra* note 86.

425. *Id.*; Willacy, *supra* note 422.

426. PANETTA & NEWTON, *supra* note 86; Willacy, *supra* note 422.

threaten human life.⁴²⁷ Similarly, use of force against a surveillance drone is not aimed at diminishing the fighting capacity of the surveilling state but rather is an assertion dominance or sovereignty over the surveilled area. Accordingly, the response to the use of force against the drone would not be calculated to protect lives in self-defense, but rather would be a defense of the abstract notion of sovereignty represented by the craft. Secretary Panetta articulated this dynamic in justifying the decision to authorize deadly force to protect the US drone against further Iranian interference, asserting that the use of force was necessary to protect “American property and [American] rights to fly in international airspace.”⁴²⁸

The right to use deadly force against humans in self-defense, however, is inextricably tied to the necessity to protect other human life. If there is no chance that the destruction of a drone will put any human at risk of death or harm,⁴²⁹ then, in the author’s opinion, the required necessity element of self-defense cannot be met and force cannot be used to kill humans who are threatening the drone. The defense of abstract rights such as freedom of navigation, overflight, sovereignty, or protection of property are not alone sufficient to justify the use of deadly force.⁴³⁰ There are a wide variety of peaceful international dispute resolution mechanisms available to deal with the accusations of various delicts which would arise from the contested destruction or seizure of a drone.⁴³¹

In quiet academic contemplation, this distinction about when deadly force can and cannot be used may seem uncontroversial. However, in the heat of a crisis response, especially where thinking is inevitably influenced by nationalism, most states will probably be pulled to respond the way China and the US threatened to respond, by using deadly force against the drone’s attackers. A retaliatory response in which humans are killed, of course, risks serious escalation. Fortunately, this scenario has not yet occurred so there is no information on how the international community would respond to a state that chooses to use deadly force to defend a drone.

427. Joshua Berlinger, et al., *Iran Shoots Down US Drone Aircraft, Raising Tensions Further in Strait of Hormuz*, CNN (June 21, 2019, 8:39 PM), <https://www.cnn.com/2019/06/20/middleeast/iran-drone-claim-hnk-intl/index.html> [<https://perma.cc/8W3F-P49Y>].

428. PANETTA & NEWTON, *supra* note 86, at 436.

429. For example, the drone is not providing any life critical intelligence mission.

430. Panetta and his team clearly had some cognitive dissonance about the wisdom and even morality of various interests the US were balancing in making this decision. Struggling with the calculus of human life and robots, he noted that:

there’s something mind-boggling about the idea that we’d send manned aircraft to defend an unmanned vehicle, since the whole point of unmanned aircraft is to allow us to conduct operations without risking danger to our people. Now, instead of robots protecting people, we had two pilots defending a robot.

PANETTA & NEWTON, *supra* note 86, at 436.

431. The primary option is simple bi-lateral diplomacy. The matter could also be referred to the UN Security Council, the International Court of Justice, or addressed through regional intergovernmental organizations (Arab League, African Union, ASEAN, etc.).

As drones continue to play an ever-larger role in peacetime military operations, particularly in volatile locations like the East China Sea, Persian Gulf, and contested EEZs, the risk of such confrontations will continue to increase. Moreover, in many cases, it may be lower level on-the-scene commanders who will be confronted with making real time decisions about using deadly force to protect their tactical drones.

Without prior policy development and training, there is significant risk that decision makers at all levels (from the tactical to the strategic) will make decisions that could violate international law and rapidly escalate tensions. Ideally, prior international coordination and expressions of shared expectations of restraint will mitigate the risk of unintended escalation of a conflict over the destruction or seizure of a drone.

Conclusion

In the near term, cross-border drone surveillance will likely continue to increase in frequency and global scope. In cases where surveillance drones are intentionally sent across mutually recognized borders, it is increasingly clear that states interpret international law to permit the use of destructive force as an exercise of state police powers within the recognized borders of the violated state. The escalatory risk in these situations is less significant because the state that loses the drone knowingly assumed the risk by sending it across the border. Indeed, clarity concerning the legal basis to use force against the intruding drone could reduce escalatory risk because both states will have similar expectations and understandings of the legal and policy consequences of their respective actions. This is analogous to the existing global understanding that it is permissible to bring criminal charges and appropriate punishment against a human agent of state caught spying in a target state.

The far more significant risk of military escalation occurs in situations where the underlying territory is in open dispute (e.g. Senkaku / Diaoyus, South China Sea, Iranian borders within the Persian Gulf) or the rights of states within the territory are in dispute (i.e. military activities in the EEZ). In such situations, the surveilling state operates their drone from a policy position that they have a legitimate right to be in the area in which they are operating. The target state operates with a directly conflicting perspective: that they have a right to exclude the drone. Within this dynamic, the lower threshold for the use of force against drones could quickly trigger escalatory actions that could lead to the loss of human life.

International law and norms that govern the relationships between states in fundamental ways such as respect for territorial sovereignty, espionage, use of force, and self-defense were developed in an era before the current revolution in military robotics, when states only had human agents available to carry out their peacetime interactions with one another. In this era, any source of inter-state friction or tension could quickly risk human life and invoke the associated escalatory consequences. As robotics play an increasingly significant role in inter-state interactions, policies of

restraint premised on preserving human life will become less compelling, potentially leading to increasingly confrontational state practices and the erosion of important norms of peaceful or at least restrained interaction. The beginnings of this phenomenon are clearly visible in the recent uptick in territorially intrusive drone surveillance. It is important for the international community to give this practice and its potential ramifications appropriate attention and debate.

