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## Article, Essay and Note

**\*55 MURKY WATERS: THE LEGAL STATUS OF UNMANNED UNDERSEA VEHICLES**Commander Andrew H. Henderson, JAGC, USN [\[FNa1\]](#)

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*[S]o far reaching are the principles which underlie the jurisdiction of the courts of admiralty that they adapt themselves to all the new kinds of property and new sets of operatives and new conditions which are brought into existence in the progress of the world.* [\[FN1\]](#)

**I. Introduction**

The Honorable Judge William H. Brawley [\[FN2\]](#) was not discussing a highly technical, undersea robot when he penned the above opinion in 1896 about the “progress of the world,” but rather the mud dredge *Morgan*, operating in a Potomac creek near Washington, D.C. [\[FN3\]](#) Despite rapid technological advances in unmanned systems-- air, land, sea, and underwater--his observations nonetheless remain relevant over 100 years later.

Throughout the world, there are presently hundreds of Unmanned Undersea Vehicles (UUVs) commercially available or under development. [\[FN4\]](#) These modern machines could hardly be anticipated by the drafters of early **\*56** treaties and statutes governing the operation of ships at sea however, and therefore--Judge Brawley's foresight notwithstanding--present unique challenges in the maritime legal landscape. Does extant maritime law treat a 25 pound swimming robot in the same manner as a 97,000 ton aircraft carrier? Is the UUV a sovereign extension of its state--and thus immune from seizure by other nations? Must it operate on the surface in another nation's territorial sea? May it operate there at all? These are vital legal issues requiring careful examination as the mission of the UUV is formulated and these watercraft are more broadly deployed.

Ultimately, a review of domestic and international law on point reveals that at least some of the UUVs currently under development will likely fall outside the current parameters of maritime jurisprudence. However, in the interests of both uniformity and precedent under customary international law, the United States should treat all UUVs as vessels governed by the full range of domestic and international laws of the sea.

**II. What are UUVs?****A. Physical Characteristics**

For the purposes of this article, a UUV is defined as a “[s]elf-propelled submersible whose operation is either fully autonomous (pre-programmed or real-time adaptive mission control) or under minimal supervisory control and is untethered except, possibly, for data links such as a fiber optic cable.” [\[FN5\]](#) But beyond that, rapid advancements in technology make both the description of, and uses for, UUVs somewhat mutable. First of all, there appears to be no consensus on what to call these robots. The term Unmanned Undersea Vehicle (UUV) is used herein, as it mir-

rors terminology utilized by the U.S. Navy. [FN6] Elsewhere these vehicles have additional monikers, including Autonomous Underwater Vehicles (AUVs), [FN7] Autonomous Marine Vehicles (AMVs), [FN8] and Remotely Operated Vehicles (ROVs), [FN9] to name a few.

\*57 The physical characteristics of UUVs vary as much as the nomenclature. The U.S. Navy, for example, currently has plans envisioning four classes, each more or less resembling a torpedo or small submarine: Man Portable (25-100 lbs displacement); Light Weight (500 lbs displacement); Heavy Weight (3000 lbs displacement); and Large (20,000 lbs displacement). [FN10] But UUVs are by no means purely military concepts. Indeed, throughout the world, there are presently hundreds of UUVs commercially available or under development, [FN11] with product lines so diverse they even include robotic fish. [FN12] “The possibilities appear limitless and the benefits incalculable.” [FN13]

## B. Missions and Roles

The roles UUVs play in both the military and civilian sectors are equally diverse. Civilian scientists, for example, use UUVs to explore heretofore unreachable underwater canyons, hydrothermal vents, deep-sea wrecks, and ice-covered seas. [FN14] Commercial ventures include searching for offshore oil and mineral deposits, laying underwater cables, and conducting salvage operations. [FN15] The most advanced machine can descend up to 6,000 meters (20,000 feet) and “can hover mere centimeters above delicate sea-floor sites and reach down with its robotic arm to recover artifacts and samples without disturbing the surrounding environment.” [FN16] Indeed, it was through the use of such robots that explorer Dr. Robert D. Ballard discovered wrecks like the *Titanic*, the *Lusitania*, and the *Bismarck*. [FN17] “This,” remarked one robotics engineer, “is the golden age for robotic exploration vehicles.” [FN18]

U.S. Navy plans for UUV use are divided into four main categories or “pillars” under its current UUV Master Plan: Force Net, Sea Shield, Sea Strike, and Sea Base. [FN19] The Force Net pillar deals with handling information and includes the UUV missions of Intelligence, Surveillance, and Reconnaissance (ISR) (information gathering), Communication/Navigation Network Nodes \*58 (CN3) (information dissemination), and Oceanography. [FN20] Sea Shield is a defense-oriented pillar that contains the missions of Anti-Submarine Warfare (ASW), Mine Counter Measures (MCM), and Inspection/Identification (of vessels, landings, piers, etc.). [FN21] Sea Strike is an offense-oriented pillar that envisions deception roles through Information Operations (IO) (where UUV decoys project the acoustic signature of a full-sized submarine), as well as kinetic weapons delivery via Time Critical Strike (TCS) missions (missiles, torpedoes, etc). [FN22] Lastly, the Sea Base pillar envisions payload delivery by UUVs to support other missions. [FN23] And though not quite a UUV, the Navy is also presently developing the Cormorant, a submarine-launched autonomous seaplane that may operate in both reconnaissance and weapons-delivery modes. [FN24]

Navy utilization of UUVs is not a solely futuristic venture, however. In 2003, eighty-pound Remote Environmental Measurement Units Support (REMUS) UUVs covered 2.5 million square meters in mine-clearing operations during the early stages of Operation Iraqi Freedom. [FN25] And in August 2004, the world's first warship equipped with a UUV--the destroyer *USS Momsen* (DDG 92)--was commissioned with a Remote Minehunting System (RMS). [FN26] “The RMS provides the Navy with its first-ever organic mine reconnaissance capability using an unmanned, remotely operated vehicle.” [FN27]

## III. Applicable Laws

A review of the laws governing UUVs--both domestically and internationally--is crucial given their growing use around the world. While little precedent exists directly on point, an examination of various treaties, statutes, and regulations utilized in applicable cases is illustrative for determining what rules to employ in UUV operation.

## \*59 A. Vessels

Whether in the form of a fake fish or an unmanned submarine, what does maritime law make of these machines? The key unit of measure, or “central talisman” [FN28] as it were, in evaluating the application of domestic and international laws to the governance of watercraft is “vessel”; [FN29] thus a machine not labeled as such theoretically falls outside the jurisdiction of these regulations. [FN30] But determining whether a particular machine is in fact a “vessel” is not the straightforward proposition it would seem at first blush.

### 1. International Law

“International law is not a static body of rules but rather a living creature, continually forged and shaped to serve the needs of an international community that itself is constantly changing.” [FN31] But the need to define that which is--and is not--a vessel under the law is as old as maritime commerce itself. Roman law, for example, explained “[n]avim accipere debemus sive marinam, sive fluviatilem, sive in aliquo stagno naviget sive schedia sit,” [FN32] literally translated, “we must accept a vessel whether of the sea or of the river, or that sails on some other piece of standing water, or if it should be a raft.” [FN33] Thus the term “vessel” included everything that floated upon the waters and aided commerce. [FN34]

A more contemporary definition in the International Maritime Dictionary notes that “vessel” is “[a] general term for all craft capable of floating on water and larger than a rowboat. The term vessel includes every description of water craft or other artificial contrivance used or capable of being used as a means of transportation on water.” [FN35] This definition is perhaps thought to be common knowledge in the international maritime community, for the term \*60 “vessel” goes undefined in the seminal 1982 United Nations Convention on the Law of the Sea (UNCLOS), which, among other things, defines territorial seas and proscribes rules for the navigation of vessels therein. [FN36] But following the International Maritime Dictionary’s “rowboat rule,” might large UUVs fall under one rule while light weight UUVs fall under another?

The International Regulations for Avoiding Collisions at Sea (COLREGS) provide some illumination, defining a vessel simply as “every description of watercraft, including nondisplacement craft and seaplanes, used or capable of being used as a means of transportation on water.” [FN37] This somewhat broader definition omits the size constraints put forth by the International Maritime Dictionary, but likewise contains the potentially confusing reference to a “means of transportation.” Some UUVs, by design, will transport payloads or weapons systems. [FN38] Others, however, will merely transport their internal sensors. Should that alone invoke international jurisdiction?

Ultimately, the most helpful guidance comes from the 2004 proposals of the American Branch International Law Association (ABILA) Law of the Sea Committee. [FN39] Seeking clarification of terms not otherwise defined by UNCLOS, the Committee suggests “vessel” be defined simply as “a human-made device, including submersible vessels, capable of traversing the sea.” [FN40] Though this proposal is in no way binding, its simplicity and straightforwardness make it an attractive suggestion.

### 2. United States Maritime Law

Congress codified the definition of “vessel” to include “every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.” [FN41] Virtually unchanged since its \*61 adoption in 1873, [FN42] this definition is reiterated-- and occasionally expanded upon--in at least twenty-four federal maritime or maritime-related laws. [FN43] The same definition applies to the armed forces of the United States as well through the Manual for Courts-Martial. [FN44] It is also a regularly contested definition, with tort and/or financial liability often hinging on a court’s proclamation that a watercraft “is” or “isn’t.” Consequently, in application, the definition of “vessel” sometimes appears malleable from one jurisdiction to another. [FN45]

In *Kathriner v. UNISEA, Inc.*, [FN46] for example, a permanently anchored liberty ship in Alaska, converted into a fish processing plant, was deemed not to be a vessel. Conversely in *Luna v. Star of India*, [FN47] a permanently anchored 100 \*62 year-old merchant ship, converted into a maritime museum in San Diego, was found to be a vessel. [FN48] Both cases studied the term “vessel” through the lens of The Jones Act [FN49] to determine potential tort liability for injuries sustained aboard and utilized the same federal statutory definition referenced *supra*. But the crux of these decisions rested on whether something that clearly *was* a vessel remained such after a change in the use of the craft. More relevant to the application of law to UUVs are cases reviewing the vessel status of atypical watercraft operating as designed.

Such an atypical craft is the *Super Scoop*, which was used in the mammoth “Big Dig” construction project rerouting a major interstate in Boston, Massachusetts. “[O]ne of the world’s largest marine dredges,” [FN50] the *Super Scoop* “is a massive floating platform from which a clamshell bucket is suspended beneath the water. The bucket removes silt from the ocean floor and dumps the sediment onto one of two scows that float alongside the dredge.” [FN51]

In holding that the *Super Scoop* was indeed a vessel, the Supreme Court in *Stewart v. Dutra* [FN52] specifically disavowed lower court reliance on whether the primary purpose of the craft was navigation or commerce and whether the craft was actually in transit at the time of the incident. [FN53] Instead, the Court reiterated the importance of giving the words in a statute their “ordinary and natural meaning” [FN54] and therefore determined “the *Super Scoop* was not only ‘capable of being used’ to transport equipment and workers over water--it *was* used to transport those things.” [FN55] The Court went on to note, “[d]espite the seeming incongruity of grouping dredges alongside more traditional seafaring vessels under the maritime statutes, Congress and the courts have long done precisely that ....” [FN56]

But this still does not address all of the issues raised by the operation of UUVs. Of particular concern is the statute’s requirement for the watercraft to be “a means of transportation.” As discussed *supra*, some UUVs will, by design, \*63 transport cargo payloads. Others, however, will not. And, as noted by the Court in *Stewart*, the capacity to transport equipment or workers is not the only factor; the Court in *Stewart* also referenced the *Super Scoop* having “certain characteristics common to seagoing vessels, such as a captain and crew, navigational lights, ballast tanks, and a crew dining area.” [FN57]

Despite the Supreme Court’s recent clarification in this area, there still exists the real possibility of incongruous results in similar cases. Noting the potential over-breadth of the federal definition, one jurist pondered its applicability to even a government-owned canoe, noting, “there is no limit as to the size or purpose of the vessel [in 1 U.S.C. §3].” [FN58] Other judicial musings envision the application of the “vessel” label to even more fantastic vehicles, such as spacecraft. [FN59] Additionally, of particular relevance to the case of UUVs, the statute’s requirement that a watercraft be a means of transportation begs the question: transportation of *what*? Scholars of domestic maritime law struggle with these anomalies and, as in the international legal arena discussed *supra*, propose more straightforward definitions. The Naval Terms Dictionary suggests, “[a]ny vehicle in which man or goods are carried on water.” [FN60] Emory law professor David Bederman proposes that a vessel simply be defined as “an object used as a conveyance or platform for a marine activity.” [FN61] Nonetheless, if and until such a straightforward definition is codified, in the light of *Stewart*, where does that leave the UUV?

In 1938, perhaps as a precursor to the International Maritime Dictionary’s “rowboat rule” (*supra*), the Fifth Circuit determined in *Lawson v. Maryland Casualty Co.* [FN62] that a rowboat was not a vessel within the meaning of federal law, despite the statute’s broad definition. [FN63] In dicta, however, the court mused that the rowboat “belonged to the nearby dredge,” which itself probably was a vessel. [FN64] The decedent in the case, who was killed while in the rowboat, was determined not to be a crew member of the dredge, but instead a visiting laborer working under control from the land, thus allowing recovery under the Longshoremen’s and Harbor Workers’ Compensation Act, [FN65] which utilizes the \*64 same federal definition of “vessel” discussed *supra*. [FN66] But what if a member of the dredge’s crew had been injured in the rowboat instead? The rowboat might then achieve some vicarious

form of vessel status from the “real” launching vessel. This analysis is illustrative in the case of underwater vehicles--particularly those launched from, or monitored via, traditional vessels.

## **B. Underwater Vehicles**

### *1. Manned Vehicles*

At present, there is no inherent legal precedent clearly defining the legal responsibilities in operating UUVs. [\[FN67\]](#) This is of course largely due to their novelty, but even more traditional manned underwater vehicles (submarines) posit interesting legal issues. In the traditional sense, the term “vessel” refers to a surface ship and “underwater vehicle” serves as the equivalent term for underwater applications. [\[FN68\]](#) Indeed, “[s]ubmarines are not directly referenced throughout the [COLREGS], as there are few private (or commercially operated) submarines in existence.” [\[FN69\]](#) The COLREGS do, however, “apply to all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels,” [\[FN70\]](#) and these rules have been interpreted to “apply to submarines when operating on the surface in the same manner as they apply to surface vessels.” [\[FN71\]](#) The U.S. Navy endorses this view and further applies applicable portions of the COLREGS to submerged navigation. [\[FN72\]](#) UNCLOS approaches this vessel-submarine issue by requiring submarines--and other underwater vehicles--“to navigate on the surface” in another nation's territorial sea, [\[FN73\]](#) essentially making submarines behave as traditional vessels. This, too, is a practice followed by the U.S. Navy. [\[FN74\]](#)

Other treaties seek to eliminate the distinction between the crafts entirely. The International Convention for the Prevention of Pollution of Ships (MARPOL 73/78) [\[FN75\]](#) offers a broader definition in Article 2, regulating “a vessel \*65 of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, *submersibles*, floating craft, and fixed or floating platforms.” [\[FN76\]](#) Another example is from the Treaty of Montreux, [\[FN77\]](#) which is incorporated by UNCLOS. [\[FN78\]](#) Governing navigation in the Straits of Dardanelles, the Sea of Marmora, and the Bosphorus, this treaty defines submarines simply as “all vessels designed to operate below the surface of the sea.” [\[FN79\]](#) Legally speaking then, submarines seem to exist in a sort of quasi-vessel status, depending on where they operate. But for all practical purposes, they are treated like any other ship on the seas.

### *2. Unmanned Vehicles*

Though UUVs represent cutting-edge technology and present unique legal challenges, there are some parallels to be drawn from similar components that have been used by industry for years. The American Bureau of Shipping (ABS), [\[FN80\]](#) for example, categorizes a “remotely operated vehicle” as “an unmanned unit tethered to a support vessel or structure and designed for underwater viewing, cutting, cleaning or other underwater tasks.” [\[FN81\]](#) It is not then a vessel itself, but rather an extension of the support vessel.

Similar logic was followed in a 1980 U.S. Customs Service decision that examined a tethered, submersible capsule used “as a component of an underwater service system designed to service well-heads located on the seabed, which cannot be used independently of the other system components located on a support vessel ....” [\[FN82\]](#) The U.S. Coast Guard had already categorized the capsule as a vessel for purposes of vessel documentation. [\[FN83\]](#) But in finding the capsule was not a vessel under tariff schedules, the Customs decision explained:

Not every article which can move on or in water with persons or merchandise is considered a vessel. Although lack of self-propulsion, restricted mobility, or dependence upon outside \*66 life support and communications systems by themselves may not necessarily prevent a craft from being considered a vessel, these factors, considered cumulatively, must be accorded great weight. [\[FN84\]](#)

The capsule, then, was a “component” of the support vessel. The decision went on, however, to specifically distinguish the tethered capsule from “a free-swimming submersible.” [\[FN85\]](#) It also acknowledged that a watercraft

could come within the statutory definition of vessel if it engaged in a maritime service and had “some relation to commerce or navigation, or at least some connection with a vessel employed in trade.” [\[FN86\]](#)

Using analogous rationale in *Estate of Wenzel v. Seaward Marine Services, Inc.*, [\[FN87\]](#) the Ninth Circuit overturned a summary judgment that denied vessel status to a submerged cleaning and maintenance platform (SCAMP). Utilized to scrape and clean submerged seawater intake ports on ship hulls--in this case the frigate *USS Rathburne*--the SCAMP is a “saucer shaped unit which is six feet in diameter and twenty inches deep ... equipped with an impeller ... [and] can be operated by remote control or steered manually by divers.” [\[FN88\]](#) The court explained the importance of a factual review in each case, holding:

The fact that the SCAMP was constructed for a purpose other than the transportation of persons or things from one place to another does not mean that as a matter of law, it is not a vessel in navigation. Strange looking, special purpose craft for the oil and gas business, far different from traditional seafaring ships have sometimes been held to be vessels. [\[FN89\]](#)

Viewing these limited precedents together, there is a strong argument that UUVs should be considered vessels regardless of their size or mission under U.S. law. If construed a submarine, like the largest UUVs might, they would be treated as such and be deemed vessels. If not, then under “component” criteria, UUVs would gain “vicarious” vessel status from the launching and/or controlling vessel, as the UUV would be both engaged in a maritime service and have some relation to navigation--or at least some connection with a vessel. Finally, adding the “SCAMP” rationale, the fact that “free-swimming” UUVs \*67 were constructed for a purpose other than the transportation of persons or things does not preclude outright vessel status. As such, even the most autonomous UUVs could be deemed vessels in their own right.

### C. Warships

Submarines are warships, [\[FN90\]](#) and it is a well-established tenet of international law that warships are extensions of their respective states, enjoying “sovereign immunity from interference by the authorities of nations other than the flag nation.” [\[FN91\]](#) As such, warships may not be seized, boarded, or searched without the permission of the commanding officer. [\[FN92\]](#)

A ship need not be armed, however, to be considered a warship. [\[FN93\]](#) Defined by UNCLOS, a warship is:

a ship belonging to the armed forces of a State bearing external marks distinguishing such ships of its nationality, under the command of an officer duly commissioned by the government of the State and whose name appears in the appropriate service list or its equivalent, and manned by a crew which is under regular armed forces discipline. [\[FN94\]](#)

A UUV is, of course, unmanned by definition and therefore lacks a crew or commanding officer. [\[FN95\]](#) It cannot then be a warship *per se*, even if deemed a vessel in its own right. But under the “component” theory discussed *supra*, UUVs might still be considered extensions of the launching/controlling warship. As such, they would likewise enjoy the same level of sovereign immunity as the support vessel--and also be immune from seizure.

If deemed vessels in their own right--but not warships--UUVs may still enjoy immunity as auxiliaries. “Auxiliaries are vessels, other than warships, that are owned by or under the exclusive control of the armed forces. Because they are state owned or operated and used for the time being only on government noncommercial service, auxiliaries enjoy sovereign immunity.” [\[FN96\]](#) \*68 Thus, even if not a warship, a UUV should still be immune from seizure by a foreign state.

### IV. Application of The Law at Sea

The legal classifications, or “regimes,” of ocean areas determine the degree of control that a coastal nation may

exercise over the conduct of foreign vessels within these areas. [FN97] These regimes have traditionally been classified under the broad headings of internal waters, territorial seas, and high seas. [FN98] Over the last several decades, additional regimes known as exclusive economic zones and archipelagic waters have also been added to the mix, all of which have been assimilated by customary international law [FN99] and codified in UNCLOS. [FN100] Though the United States has neither signed nor ratified UNCLOS, the regulations recited therein pertaining to navigation and the establishment of exclusive economic zones have been expressly endorsed by the President. [FN101] An overview of these regimes, and guidance for the operation therein of UUVs, follows.

#### **A. High Seas and Exclusive Economic Zones (EEZ)**

The high seas are international waters wherein complete freedom of navigation and overflight are preserved for the international community, [FN102] including “[m]ilitary maneuvers and activities that do not violate the [United Nations] Charter.” [FN103] The EEZ, as the name implies, is a regime designed to protect the economic interests of a coastal state, including exclusive use of the natural resources found therein. [FN104] Extending out 200 nautical miles (NM) from the coastal state's low tide baselines, [FN105] the EEZ does not restrict navigation, so long as the foreign vessel poses no interference with coastal state resources. [FN106] As such, UUVs may operate freely in both the high seas and the EEZ while \*69 exercising the requisite due regard for the interests of other vessels [FN107] and posing no threat to the territorial integrity of the coastal state. [FN108]

#### **B. International Straits and Archipelagic Sea Lanes**

Ships and aircraft may navigate through established international straits exercising transit passage protocol, [FN109] which requires a vessel to “proceed without delay through or over the strait” [FN110] via “continuous and expeditious” transit. [FN111] The same holds true for navigation through established archipelagic sea lanes. [FN112] This protocol allows for a ship's operation in its normal mode, [FN113] which, for a submarine, is submerged. [FN114] Specifically prohibited, however, are research or survey activities without the consent of bordering nations. [FN115] Consequently, sweeping patterns that might be inherent in the operation of an intelligence-gathering or oceanographic research UUV, for example, would not likely be permissible in an international strait without consent. [FN116] Nor would a \*70 support vessel's stopping to launch or recover a UUV likely be considered continuous and expeditious. [FN117]

A state, however, always enjoys an inherent right to self defense. [FN118] Thus, during navigation through straits suspected to contain mines--or some other threat--a warship should be allowed to deploy a mine countermeasure UUV ahead of its path. [FN119] Indeed, transit passage protocol allows for “transit consistent with sound navigational practices and the security of the force,” [FN120] thus “sweeping” with a UUV for defensive, force-protection measures would arguably be authorized-- particularly given the geographic confines of a strait and the increased risk of asymmetric/terrorist attack. [FN121]

#### **C. Territorial Seas**

The sovereignty of a coastal state extends beyond its lands and internal waters into its territorial sea, measured 12NM from low tide baselines. [FN122] Navigation through the territorial sea by foreign ships is permitted, but only by means of innocent passage protocol. [FN123] Like the transit passage protocol discussed *supra*, innocent passage requires “continuous and expeditious” travel. [FN124] Innocent passage is far more restrictive, however, as it must be for a specific purpose, [FN125] and must not be “prejudicial to the peace, good order or security of the coastal State.” [FN126] In addition, submarines and other underwater vehicles must “navigate on the surface and show their flag.” [FN127]

\*71 Under these restrictions, UUVs could potentially operate in a foreign territorial sea, but they would be required to navigate on the surface. [FN128] This poses both legal and practical challenges for the operator, however.

From a legal standpoint, because some UUVs--like Sea Strike TCS platforms--will be weapons-delivery vehicles, it is feasible that a coastal state would view the UUV as a weapons system in-and-of-itself: A torpedo that launches other torpedoes, as it were. Though the determination of a vessel's "innocence" in transit should be discerned based on the conduct of a vessel and not its innate capabilities, [\[FN129\]](#) the unmanned characteristic of the UUV could make for a colorable coastal state protest.

From a practical standpoint, a UUV operating on the surface would still be required to observe the "rules of the road" enumerated in the COLREGS. Rule 22, for example, requires an inconspicuous, partly submerged vessel to display a white, all-round light visible for three miles. [\[FN130\]](#) UUVs over 12 meters in length would have to display lights on the side, stern, and on a masthead. [\[FN131\]](#) Under rule 33, vessels are also required to make various sound signals, depending on their size. [\[FN132\]](#) And even if determined not to be a vessel, a UUV \*72 would still have to be operated with due regard for the safety of others. [\[FN133\]](#) These challenges are not insurmountable by any means, but they will require the attention of UUV designers and operators alike.

## V. Conclusion

This article examined the unique attributes of UUVs and how these novel watercraft may be viewed under both domestic and international maritime law. A strong case can be made under domestic law that UUVs are in fact vessels and, therefore, subject to all applicable rules for operation and navigation. This conclusion stems from the notion that most UUVs will either be considered components of their support ships, or be construed as vessels outright. It is conceivable that a UUV might fall through the legal cracks, so to speak, such as a non-payload UUV launched and operated from shore. This vehicle would have no support ship, nor would it technically be a means of transportation. But for the sake of uniformity and to avoid confusion, it is in the best interests of the United States to treat all UUVs alike.

This rationale holds particularly true in the international arena. With far less regulatory or statutory guidance available, the legal guidelines applicable to UUVs are even more fluid than domestic law. But perhaps more so than regulations or treaties on point, international law is built on the customary practices of nations. [\[FN134\]](#) And while it may be tempting for some to argue why UUVs should not be governed by maritime laws, the establishment of such a precedent poses a great danger to the United States. First, it is in the interest of the United States to establish the sovereignty of its UUVs to protect them from foreign seizure. Second, and more importantly, given the growing availability of these vehicles to other states throughout the world, the establishment of clear rules for their operation is of crucial importance for the security of United States--because America has territorial seas, too.

[\[FNal\]](#). Presently assigned as the Deputy Force Judge Advocate for Commander, Naval Air Forces, U.S. Pacific Fleet, in San Diego, California. LL.M. 2006, The Judge Advocate General's School, United States Army, Charlottesville, Virginia; M.A. 2004, University of Redlands School of Business; J.D. 1993, Pepperdine University School of Law; B.A. 1989, Bates College. Previous assignments include Officer In Charge, Naval Justice School Detachment, San Diego, California, 2002-2005; Command Judge Advocate, USS JOHN C. STENNIS (CVN 74), San Diego, California, 2000-2002; Tort Claims Attorney, Office of the Judge Advocate General, Washington, District of Columbia, 1998-2000; Staff Judge Advocate, Naval Air Station, Brunswick, Maine, 1996-1998; Defense and Legal Assistance Attorney, Naval Legal Service Office Southwest, San Diego, California, 1994-1996. Member of the bars of California, the Court of Appeals for the Armed Forces, the Ninth Circuit, and the Supreme Court of the United States. This article was submitted in partial completion of the Master of Laws requirements of the 54th Judge Advocate Officer Graduate Course at The Judge Advocate General's School, United States Army, Charlottesville, Virginia.

[\[FN1\]](#). [Saylor v. Taylor, 77 F. 476, 479 \(4th Cir. 1896\)](#).

[\[FN2\]](#). *See* William Huggins Brawley-Biography, <http://>



bioguide.congress.gov/scripts/biodisplay.pl?index=B000775 (last visited Mar. 10, 2006). A Civil War veteran, Judge Brawley served in Congress from 1891-1894 before accepting an appointment to the bench in the United States District Court of South Carolina. *See id.*

[FN3]. *See Saylor, 77 F. at 479.*

[FN4]. BARBARA FLETCHER, SPACE AND NAVAL WARFARE SYSTEMS CTR., UUV MASTER PLAN: A VISION FOR NAVY UUV DEVELOPMENT, [http:// www.spawar.navy.mil/robots/pubs/oceans2000b.pdf](http://www.spawar.navy.mil/robots/pubs/oceans2000b.pdf) (last visited Mar. 10, 2006).

[FN5]. U.S. DEPT' OF NAVY, THE NAVY UNMANNED UNDERSEA VEHICLE (UUV) MASTER PLAN (Nov. 9, 2004) at 4, *available at* [http:// www.chinfo.navy.mil/navpalib/technology/uuvmp.pdf](http://www.chinfo.navy.mil/navpalib/technology/uuvmp.pdf) [hereinafter NAVY UUV PLAN].

[FN6]. *Id.* at xiv.

[FN7]. *See* Stephanie Showalter, *The Legal Status of Autonomous Underwater Vehicles*, 38 MARINE TECH. SOC'Y J. 80 (2004).

[FN8]. *See* Michael R. Benjamin & Joseph A. Curcio, *COLREGS-Based Navigation of Autonomous Underwater Marine Vehicles*, Proceedings of the Institute of Electrical and Electronics Engineers (IEEE) Conference on Autonomous Unmanned Vehicles, at 32 (2004).

[FN9]. *See* AMERICAN BUREAU OF SHIPPING, RULES FOR BUILDING AND CLASSING UNDERWATER VEHICLES, SYSTEMS, AND HYPERBARIC FACILITIES (2002), [http:// www.eagle.org/absdownloads/index.cfm](http://www.eagle.org/absdownloads/index.cfm) (follow "Pub. #7" hyperlink) [hereinafter ABS RULES].

[FN10]. *See* NAVY UUV PLAN, *supra* note 5, at xvi.

[FN11]. *See* FLETCHER, *supra* note 4, at 1.

[FN12]. *See* Alison Ross, *New Breed of 'Fish-Bot' Unveiled*, BBC NEWS, Oct. 6, 2005, <http://news.bbc.co.uk/2/hi/science/nature/4313266.stm>.

[FN13]. Showalter, *supra* note 7, at 80.

[FN14]. *See id.*

[FN15]. *See id.*

[FN16]. Interview by Phil Sneiderman with Louis Whitcomb, Robotics Expert, Johns Hopkins University, in Baltimore, Md. (Aug. 14, 1997), [http:// www.jhu.edu/news\\_info/news/home97/aug97/robot.html](http://www.jhu.edu/news_info/news/home97/aug97/robot.html).

[FN17]. *See* Interview by Academy of Achievement with Robert D. Ballard, Ph.D, in Woods Hole, Mass. (Feb. 13, 1991), [http:// www.achievement.org/autodoc/page/bal0int-1](http://www.achievement.org/autodoc/page/bal0int-1).

[FN18]. Sneiderman, *supra* note 16.

[FN19]. See NAVY UUV PLAN, *supra* note 5, at xx-xxii.

[FN20]. See *id.*

[FN21]. See *id.*

[FN22]. See *id.*

[FN23]. See *id.*

[FN24]. See Bill Sweetman. *The Navy's Swimming Spy Plane*, CNN.com, Feb. 24, 2006, <http://www.cnn.com/2006/TECH/space/02/24/cormorant/index.html>.

[FN25]. See Chief Journalist Douglas H. Stutz, U.S. Navy, *UUV Use in Support of Operation Iraqi Freedom Re-counted*, NAVSEA NEWS WIRE, Aug. 22, 2003, <http://www.globalsecurity.org/military/library/news/2003/08/mil-030822-navsea01.htm>.

[FN26]. See *Unmanned Remote Minehunting System Installed for USS Momsen Commissioning*, SPACEDAILY, Aug. 31, 2004, <http://www.spacedaily.com/news/uav-04zzo.html>.

[FN27]. *Id.*

[FN28]. David J. Bederman, *The Future of Maritime Law in the Federal Courts: A Faculty Colloquium*, 31 J. MAR. L. & COM. 189, 191 (2000).

[FN29]. See, e.g., [1 U.S.C.S. § 3 \(2006\)](#) (definition of “vessel”); see generally United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 (discussing operation of vessels in national and international waters) [hereinafter UNCLOS].

[FN30]. “At one time *vessel* differed from *ship* in that a ship was defined as a square-rigged vessel with three masts, distinguished from a brig, bark, schooner, snow, etc.. This distinction for ship no longer holds, although those for the others still do.” CAPT JOHN. V. NOEL, JR., U.S. NAVY (RET.) & CAPT EDWARD L. BEACH, U.S. NAVY (RET.), NAVAL TERMS DICTIONARY 316 (4th ed. 1978) (emphasis in original).

[FN31]. Horace B. Robertson, Jr., *Contemporary International Law Relevant to Today's World?*, 45 U.S. NAV. WAR COLLEGE REV. 89, 103 (Summer 1992).

[FN32]. [Raft of Cypress Logs, 20 F. Cas. 169, 170 \(W.D. Tenn. 1876\)](#) (No. 11,527).

[FN33]. Translated Dec. 2, 2005 by Mary Henderson, who paid more attention in Latin class than her brother, the author.

[FN34]. [Raft of Cypress Logs, 20 F. Cas. at 170](#).

[FN35]. RENÉ DE KERCHOVE, INTERNATIONAL MARITIME DICTIONARY 890 (2d ed. 1961).

[FN36]. See generally UNCLOS, *supra* note 29.

[FN37]. [28 U.S.T. 3459 \(Oct. 20, 1972\)](#); *see also* International Navigational Rules Act of 1977, [33 U.S.C.S. § 1601 \(2006\)](#) (adopting the International Regulations for Avoiding Collisions at Sea) [hereinafter COLREGS].

[FN38]. NAVY UUV PLAN, *supra* note 5, at xxi.

[FN39]. The International Law Association (ILA) was founded in Brussels in 1873, with the American Branch formally established in 1922. A non-governmental association with consultative status in the United Nations, the ILA is “considered the preeminent private international organization devoted to the development of international law.” The study of international law is conducted by various committees composed of specialists selected from the membership. *See* American Branch--International Law Association: History and Mission, <http://www.ambranch.org/history.htm> (last visited Mar. 10, 2006).

[FN40]. George K. Walker, *Defining Terms in the 1982 Law of the Sea Convention III: The International Hydrographic Organization ECDIS Glossary*, 34 CAL. W. INT'L L. J. 211, 238 (2004).

[FN41]. [1 U.S.C.S. § 3 \(2006\)](#).

[FN42]. *See* [Stewart v. Dutra](#), 543 U.S. 481, 490 (2005).

[FN43]. *See* [Digiovanni v. Traylor Bros., Inc.](#), 959 F.2d 1119, 1124 (1st Cir. 1992) (Torruella, J., dissenting), *overruled by* [Stewart v. Dutra](#), 543 U.S. 481 (2005).

[FN44]. *See* MANUAL FOR COURTS-MARTIAL, UNITED STATES, R.C.M 103(20) discussion [§ 3 \(2005\)](#).

[FN45]. There are many cases on both sides of this issue. *See, e.g.*, [Stewart v. Dutra](#), 543 U.S. 481 (2005) (dredge was a vessel under Jones Act because it transported equipment and personnel over water); [Senko v. La Crosse Dredging Corp.](#), 352 U.S. 370, *reh'g denied*, 353 U.S. 931 (1957), *overruled in part by* [McDermott Int'l Inc. v. Wilander](#), 498 U.S. 337 (1991) (Jones Act applicable though dredge was anchored to the shore at the time of the injury and was not frequently in transit); [Manuel v. P.A.W. Drilling & Well Serv., Inc.](#), 135 F.3d 344 (5th Cir. 1998) (work-over rig is vessel in navigation as it was constructed to transport equipment to various places across navigable waters); [Tonnesen v. Yonkers Contracting Co., Inc.](#), 82 F.3d 30 (2d Cir. 1996) (reversing summary judgment that held a stationary barge was *per se* not a “vessel in navigation”); [Estate of Wenzel v. Seaward Marine Service, Inc.](#), 709 F.2d 1326 (9th Cir. 1983) (reversing summary judgment that held a submerged cleaning and maintenance platform was *per se* not a vessel); [Brunet v. Boh Brothers Constr.](#), 715 F.2d 196 (5th Cir. 1983) (moored pile-driving barge used to transport and carry a pound crane may be considered vessel in navigation); [Griffith v. Wheeling Pittsburgh Steel Corp.](#), 521 F.2d 31 (3d Cir. 1975), *cert. denied*, 423 U.S. 1054 (1976) (reversing summary judgment that held a moored coal barge was *per se* not a vessel); The [Showboat](#), 47 F.2d 286 (D. Mass. 1930) (schooner tied to wharf and used as a restaurant, but still equipped for sailing, is a vessel); The [Ark](#), 17 F.2d 446 (D. Fla. 1926) (houseboat lacking motive power, but not permanently attached to the shore, is a vessel); [Gallop v. Pittsburg Sand & Gravel, Inc.](#), 696 F. Supp. 1061 (W.D. Pa. 1988) (dredging platform on which crane was located was vessel under the Jones Act); [Uzdavines v. Weeks Marine, Inc.](#), 37 B.R.B.S. 45 (2003) (Board affirms determination that dredge is a vessel in navigation); [Foster v. Davison Sand & Gravel](#), 31 B.R.B.S. 191 (1997) (finding that a docked dredge on the Allegheny River is vessel). *But see* [Burchett v. Cargill, Inc.](#), 48 F.3d 173 (5th Cir. 1995) (holding that floating platform constructed and used primarily as a work platform is not a vessel in navigation); [Ellender v. Kiva Constr. & Eng'g Inc.](#), 909 F.2d 803 (5th Cir. 1990) (single construction barges, or several barges strapped together to form floating construction platform do not, as matter of law, constitute “vessels” under Jones Act as they have no independent means of navigation); [Hurst v. Pilings & Structures, Inc.](#), 896 F.2d 504 (11th Cir. 1990) (spud barge used as work platform not a vessel in navigation); [Ducropt v. Baton Rouge Marine Enterprises, Inc.](#), 877 F.2d 393 (5th Cir. 1989) (barge moored to shore and used as a stationary work platform was not a vessel); [Bernard v. Binnings Const. Co.](#), 741 F.2d 824 (5th Cir. 1984) (raft used as a small work platform was not a vessel); [Taylor v. Cooper](#)

[River Constructions](#), 830 F.Supp. 300 (D.S.C. 1993) (spud barge used as a work platform for bridge construction not a vessel); [Presley v. Healy Tibbits Constr. Co.](#), 646 F.Supp. 203 (D.Md. 1986) (barge used as work platform at a construction site not a vessel).

[FN46]. [975 F.2d 657](#) (9th Cir. 1992).

[FN47]. [356 F. Supp. 59](#) (S.D. Cal. 1973).

[FN48]. For more case comparisons, see Jeff Nemerofsky, [What Is A Vessel? A Three Prong Approach](#), 46 CLEV. ST. L. REV. 705 (1998); see also Matthew P. Harrington, *Jones Act: Navigation Is Only Incidental To The Function Of A Dredge, So The Dredge Is Not A Vessel, And A Worker Injured On Board Is Not For Jones Act Purposes A Seaman, That Is, A Member Of The Crew Of A Vessel*, 35 J. MAR. L. & COM. 293 (2004).

[FN49]. 46 U.S.C.S. App. § 688 (2006).

[FN50]. Massachusetts Turnpike Authority, [http:// massturnpike.com/html/bigdig/equipment/dutra.html](http://massturnpike.com/html/bigdig/equipment/dutra.html) (last visited Mar. 10, 2006).

[FN51]. [Stewart v. Dutra](#), 543 U.S. 481, 484 (2005).

[FN52]. [Stewart v. Dutra](#), 543 U.S. 481 (2005).

[FN53]. See [id.](#) at 495.

[FN54]. [Id.](#) at 494.

[FN55]. [Id.](#) at 495 (emphasis in original).

[FN56]. [Id.](#) at 497.

[FN57]. [Id.](#) at 484.

[FN58]. [United States v. Roach](#), 26 M.J. 859, 871 (C.G.C.M.R. 1988) (Bridgman, J., concurring) (discussing concern for potential abuse of military prosecutions for Hazarding a Vessel under UCMJ art. 110).

[FN59]. See [United States v. Buckroth](#), 12. M.J. 697, fn 1 (N.M.C.M.R. 1980) (discussing the probability of a variety of future military criminal prosecutions for Hazarding a Vessel under UCMJ art. 110).

[FN60]. NOEL & BEACH, *supra* note 30, at 316 (quoting Dr. Samuel Johnson).

[FN61]. Bederman, *supra* note 28, at 191.

[FN62]. [94 F.2d 193](#) (5th Cir. 1938).

[FN63]. See [id.](#) at 194.

[FN64]. See *id.*

[FN65]. [33 U.S.C.S. § 901 et seq. \(2006\)](#).

[FN66]. See [Lawson, 94 F.2d at 194](#).

[FN67]. See Benjamin & Curcio, *supra* note 8, at 32.

[FN68]. E-mail from Roy Thomas, Engineer, Ship Engineering Dept., American Bureau of Shipping (Sept. 19, 2005) (on file with author).

[FN69]. Benjamin & Curcio, *supra* note 8, at 32.

[FN70]. COLREGS, *supra* note 37, rule 1(a).

[FN71]. Benjamin & Curcio, *supra* note 8, at 32.

[FN72]. See e-mail from Lieutenant Commander Phillip Yu, U.S. Navy, Submerged Navigation Expert for Commander, Submarine Force, U.S. Pacific Fleet (Oct. 26, 2005) (on file with author).

[FN73]. UNCLOS, *supra* note 29, art. 20.

[FN74]. See U.S. DEPT OF NAVY, NWP 1-14M, THE COMMANDER'S HANDBOOK ON THE LAW OF NAVAL OPERATIONS--ANNOTATED SUPPLEMENT, para. 2.3.2.4 (1997) [hereinafter NWP 1-14M].

[FN75]. 1973 U.S.T. LEXIS 322 (U.S.T. 1973); 1978 U.S.T. LEXIS 322 (U.S.T. 1978). Adopted in 1973, the convention was modified by protocol in 1978 and is commonly referred to as MARPOL 73/78.

[FN76]. See *id.*, art. 2 (emphasis added).

[FN77]. Convention Regarding the Regime of the Straits, with Annexes and Protocol, Jul. 20, 1936, 173 L.N.T.S. 213 (1936) [hereinafter Treaty of Montreux].

[FN78]. See UNCLOS, *supra* note 29, art. 35(c).

[FN79]. See Treaty of Montreux, *supra* note 77, Annex II(B).

[FN80]. Founded in 1862, the non-profit American Bureau of Shipping (ABS) is one of the world's leading ship classification societies, "setting safety standards for the marine industry through the establishment and application of technical standards ... for the design, construction, and operational maintenance of ships and other marine structures." See ABS Company Overview, <http://www.eagle.org/company/overview.html> (last visited Mar. 10, 2006).

[FN81]. ABS RULES, *supra* note 9, at 155.

[FN82]. Classification of submersible capsule component of underwater wellhead service system, 15 Cust. B. & Dec. 884 (1980).

[FN83]. See *id.*

[FN84]. *Id.*

[\[FN85\]](#). *Id.*

[\[FN86\]](#). *Id.* (quoting *Hitner Sons Co. v. U.S.*, 13 C.C.P.A. 216, 221 (1922)).

[\[FN87\]](#). [709 F.2d 1326 \(9th Cir. 1983\)](#).

[\[FN88\]](#). *Id.* at 1327.

[\[FN89\]](#). *Id.* at 1328.

[\[FN90\]](#). See SAN REMO MANUAL ON INT'L LAW APPLICABLE TO ARMED CONFLICTS AT SEA 90 (Louise Doswald-Beck ed. 1995).

[\[FN91\]](#). NWP 1-14M, *supra* note 74, at para. 2.1.2.

[\[FN92\]](#). *See id.*

[\[FN93\]](#). *See* NWP 1-14M, *supra* note 74, at ch. 2, fn 2.

[\[FN94\]](#). UNCLOS, *supra* note 29, art. 29; *see also* NWP 1-14M, *supra* note 74, at para. 2.1.1.

[\[FN95\]](#). *But see* Jane Dalton, *Future Navies--Present Issues*, 59 U.S. NAV. WAR COLLEGE REV. 17, 24 (2006) (suggesting a remotely-operated vehicle might be legally considered “commanded” and “manned” by the controlling vessel). *Id.*

[\[FN96\]](#). NWP 1-14M, *supra* note 74, at para. 2.1.3.

[\[FN97\]](#). *See id.* at para. 1.2.

[\[FN98\]](#). *See id.* at para. 1.1.

[\[FN99\]](#). *See id.*

[\[FN100\]](#). *See* UNCLOS, *supra* note 29, arts. 46, 55.

[\[FN101\]](#). *See* President's Message on the United States Oceans Policy, 19 WEEKLY COMP. PRES. DOC. 383 (Mar. 10, 1983); *see also* NWP 1-14M, *supra* note 74, at para. 1.2.

[\[FN102\]](#). *See* UNCLOS, *supra* note 29, art. 87; *see also* NWP 1-14M, *supra* note 74, at para. 1.5.

[\[FN103\]](#). Elliot L. Richardson, *Law of the Sea: Navigation and Other Traditional National Security Considerations*, 19 SAN DIEGO L. REV. 553, 574 (1982).

[\[FN104\]](#). *See* UNCLOS, *supra* note 29, art. 56.

[\[FN105\]](#). *See* UNCLOS, *supra* note 29, art. 57. For an excellent overview of the regimes and how to determine their boundaries, *see generally* NWP 1-14M, *supra* note 74, at ch. 1.

[FN106]. See UNCLOS, *supra* note 29, art. 58; *see also* NWP 1-14M, *supra* note 74, at 1.5.2.

[FN107]. See UNCLOS, *supra* note 29, art. 87. *See generally* COLREGS, *supra* note 37.

[FN108]. See UNCLOS, *supra* note 29, art. 301.

[FN109]. See UNCLOS, *supra* note 29, art. 38. *But see id.* art. 45 (discussing innocent passage protocol (discussed *infra*) vice transit passage protocol, applicable to international straits which are: “(a) excluded from the application of the regime of transit passage under article 38, paragraph 1; or (b) between a part of the high seas or an exclusive economic zone and the territorial sea of a foreign State”).

[FN110]. See UNCLOS, *supra* note 29, art. 39.

[FN111]. See UNCLOS, *supra* note 29, art. 38. While in transit passage, ships and aircraft shall:

(a) proceed without delay through or over the strait;

(b) refrain from any threat or use of force against the sovereignty, territorial integrity or political independence of States bordering the strait, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations;

(c) refrain from any activities other than those incident to their normal modes of continuous and expeditious transit unless rendered necessary by *force majeure* or by distress;

(d) comply with other relevant provisions of this Part.

*Id.* art. 39(1).

[FN112]. See UNCLOS, *supra* note 29, art. 53, 54; *see also* NWP 1-14M, *supra* note 74, at 1.4.3.1.

[FN113]. See UNCLOS, *supra* note 29, art. 39.

[FN114]. See NWP 1-14M, *supra* note 74, at 2.3.3.1; *see also* CDR Ronald I. Clove, U.S. Navy, *Submarine Navigation in International Straits: A Legal Perspective*, 39 NAVAL L. REV. 103, 105 (1990) (submerged status for submarines transiting international straits has taken on the status of customary international law).

[FN115]. See UNCLOS, *supra* note 29, art. 40.

[FN116]. See Bernard H. Oxman, *The Regime of Warships Under the United Nations Convention on the Law of the Sea*, 24 VA. J. INT'L L. 809, 846 (1984); *see also* Memorandum from Office of the U.S. Navy Judge Advocate General (International and Operational Law) to Program Executive Officer, Mine and Undersea Warfare, NAVSEA (PMS 490) 4 (Jun. 10, 2005) (on file with author) [hereinafter OJAG MEMO].

[FN117]. See OJAG MEMO, *supra* note 116, at 4; *see also* Dalton, *supra* note 95, at 24.

[FN118]. See U.N. Charter, art. 51.

[FN119]. See OJAG MEMO, *supra* note 116, at 4, fn 12.

[FN120]. NWP 1-14M, *supra* note 74, at 2.3.3.1.

[FN121]. See Dalton, *supra* note 95, at 23.

[FN122]. See UNCLOS, *supra* note 29, art. 2, 3; see also NWP 1-14M, *supra* note 74, at 1.4.2.

[FN123]. See UNCLOS, *supra* note 29, art. 17; see also NWP 1-14M, *supra* note 74, at 2.3.2.1.

[FN124]. See UNCLOS, *supra* note 29, art. 18; see also NWP 1-14M, *supra* note 74, at 2.3.2.1.

[FN125]. See UNCLOS, *supra* note 29, art. 18. Passage through the territorial sea may only be for the purpose of: (a) traversing that sea without entering internal waters or calling at a roadstead or port facility outside internal waters; or (b) proceeding to or from internal waters or a call at such roadstead or port facility. *Id.* art. 18.

[FN126]. See UNCLOS, *supra* note 29, art. 19; see also NWP 1-14M, *supra* note 74, at 2.3.2.1. Activities considered prejudicial to peace, good order or security include the following:

(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 defence or security of the coastal State;

(d) any act of propaganda aimed at affecting the defence 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;

(g) the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal State;

(h) any act of willful and serious pollution contrary to this Convention;

(i) any fishing activities;

(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;

(l) any other activity not having a direct bearing on passage.

UNCLOS, *supra* note 29, art. 19(2).

[FN127]. See UNCLOS, *supra* note 29, art. 20; see also NWP 1-14M, *supra* note 74, at 2.3.2.4.

[FN128]. See Dalton, *supra* note 95, at 24.



[FN129]. See NWP 1-14M, *supra* note 74, at ch. 2, fn 27 (citing *Status of the Law of the Sea Treaty Negotiations: Hearing Before the H. Comm. on Merchant Marine & Fisheries*, 97th Cong. (Jul. 27, 1982) (statement of Prof. H. R. Robinson); see also Oxman, *supra* note 116, at 855) (interpreting “innocent passage” under UNCLOS art. 19 to apply to specific conduct, rather than the class of ship); see also LCDR John W. Rolph, JAGC, USN, [\*Freedom of Navigation and the Black Sea Bumping Incident: How “Innocent” Must Innocent Passage Be?\*](#), 135 MIL. L. REV. 137, 159 (1992) (warships enjoy a presumption of innocence when transiting foreign territorial seas until such time as non-innocence is clearly demonstrated).

[FN130]. See COLREGS, *supra* note 37, art. 22.

[FN131]. See *id.* art. 22.

[FN132]. See *id.* art. 33. For a detailed review of the challenges of controlling UUVs in accordance with the COLREGS, see also Benjamin & Curcio, *supra* note 8. For more discussion of lighting and signal requirements for UUVs, see also Showalter, *supra* note 7.

[FN133]. See COLREGS, *supra* note 37, art. 2; see also Dalton, *supra* note 95, at 25.

[FN134]. GEORGE B. DAVIS, THE ELEMENTS OF INTERNATIONAL LAW 3 (1903).

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