Workshop Report

RSIS-CIL Workshop on Autonomous Vessels – International Law and Implications on National Security [*]

Grand Copthorne Waterfront Hotel

1 February 2023

Overview of the Workshop

The *RSIS- CIL Workshop on Autonomous Vessels: International Law and Implication on Maritime Security* was held in the Riverfront Ballroom at the Grand Copthorne Waterfront Hotel on 1st of February 2023. The day-long Workshop was organized by the Institute for Defence and Strategic Studies (IDSS) of the S Rajaratnam School of International Studies (RSIS) of Nanyang Technological University and the Centre for International Law (CIL) of the National University of Singapore. The invitation-only participants included 24 representatives from various government agencies and from CIL and RSIS.

The format of the Workshop was planned by Jane Chan of RSIS and Robert Beckman of CIL. Readings were distributed to the participants before the seminar. The readings included suggested background readings, relevant provisions from the 1982 United Nations Convention on the Law of the Sea (1982 UNCLOS) and selected provisions from the US *Commander's Handbook on the Law of Naval Operations*.

The workshop was organized under four panels of 90 minutes each. Each panel focussed on different issues of maritime security raised by the use of autonomous ships. In each panel, one of the panel members led the discussion by making a brief presentation summarizing the main issues. The other panel members then made comments and asked questions. All five of the panel members participated actively in all four sessions.

The five panel members consisted of three law of the sea experts with an interest in maritime security and two experts on maritime security. The three law of the sea experts were Professor Stuart Kaye, the Director of the Australian National Centre for Ocean Resources and

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Security (ANCORS) of the University of Wollongong; Professor Natalie Klein of the University of New South Wales; and Emeritus Professor Robert Beckman of NUS. The two maritime security experts were Jane Chan, Senior Fellow and Coordinator of the Maritime Security Programme at RSIS, and Professor Geoffrey Till, Advisor to the Maritime Security Programme at RSIS. The five panels were as follows:

Panel 1. UNCLOS, the IMO and Autonomous Systems

Panel 2. Crimes by Autonomous Vessels

Panel 3. Crimes Against Autonomous Vessels

Panel 4. Use of Autonomous Vessels by Navies

At the end of the presentations and discussions among the panel members in each session, the participants at each of the four syndicates were directed to discuss a hypothetical scenario which raised some of the issues that had been discussed in that panel. A spokesperson for each table was then asked to summarize their analysis, and the panel members then commented on the analysis. The feedback from the audience at the close of the Workshop indicated that there was a general consensus that the informal style of the presentations, with discussions among the panel members rather than formal presentations, was more engaging and interesting for the participants than the normal workshop or seminar. Feedback from the panel members was that they also found it more interesting than a normal seminar or workshop.

Panel 1. UNCLOS, the IMO and Autonomous Systems

Professor Robert Beckman summarizes the work that has been undertaken by committees of the International Maritime Organization (IMO) to address the safety and security of what they refer to as maritime autonomous surface ships (MASS). He highlighted that the Maritime Safety Committee (MSC) of the IMO has been examining the implications of MASS on IMO conventions under their purview since 2017, with the prospect of adopting a non-mandatory MASS Code in 2024 and a mandatory Code in 2029. The MSC has identified four degrees of autonomy for MASS: (i) Degree one: Ship with automated processes and decision support; (ii) Degree two: Remotely controlled ship with seafarers on board; (iii) Degree three: Remotely controlled ship without seafarers on board and (iv) Degree four: Fully autonomous ship. In addition, two other committees of the IMO are also reviewing the implications of MASS on the conventions under their purview, and the IMO has recently decided that the three committees should now work together as a joint committee.

The IMO is most concerned with the implications of autonomy levels 3 and 4 on the safety and security of commercial ships, even though it does not foresee the use of commercial ships with autonomy level 4 in the foreseeable future. One of the most difficult issues being discussed at the IMO is the role and responsibility of the master and remote operator if a ship is being controlled by a remote-control operator located either onshore or on another ship. Prof Beckman also emphasized that to date the IMO is only reviewing the conventions and regulations adopted by the IMO. They have not examined the implications of MASS on the provisions in the 1982 UNCLOS because it is not an IMO Convention. However, some members at the IMO have urged it to consider the implications of MASS on some of the provisions in 1982 UNCLOS.

During the discussion in this panel, there was a discussion concerning the viability of forming a regional initiative on MASS or forming an ASEAN caucus in the discussion of this issue at the IMO. It was suggested that this could be done at the Senior Officials' Meeting (SOM) level to establish a regional working protocol on MASS.

Panel 2. Crimes by Autonomous Vessels

Panel 2 examined **Crimes by Autonomous Vessels.** Professor Natalie Klein led the discussion by providing some examples where MASS were used in drug trafficking schemes. She raised several issues concerning provisions in 1982 UNCLOS that would give rise to problems for enforcement agencies because the provisions assume that there is a master and crew on board the ship. This includes Article 110 on the right of visit and Article 111 on the right of hot pursuit. Consequently, it would be difficult to follow the procedures set out in these provisions, such as signalling the suspect ship to stop, stopping the ship (using a jamming signal), boarding the ship for inspection and verification, and confiscating or destroying the ship.

Alternatively, MASS can also be used by coastal States for policing purposes, as it can patrol the maritime areas, gather intelligence and enforce the law. However, other issues would complicate the use of MASS, such as the use of force and the rule of engagement standards. She asked whether there should be a change in these rules of conduct, especially concerning the requirement of human presence on the ship. There is also concern over the use of MASS for terrorism at sea.

The follow-up discussion noted that MASS is only used in high-end criminal activities, such as transporting narcotics and high-value goods since MASS vessels are very expensive. On the policing side, MASS is mainly used to gather intelligence rather than law enforcement and is particularly useful for states with large maritime areas, such as Australia or Indonesia. It was noted by Prof Stuart Kaye that the 1988 SUA Convention has provisions on intercepting electronic devices on board a ship; however, not every country in the region is a party to SUA (namely Indonesia and Malaysia).

There was also a discussion regarding the legal status of certain unmanned "systems" and whether they have immunity from arrest because they are either a warship or state property. This issue was raised in the US–China's incident over an American autonomous glider taken by Chinese forces in international waters west of the Philippines in 2016. Similar issues were also raised when Indonesia found unmanned devices in their waters.

Panel 3. Crimes Against Autonomous Vessels

In this panel, the discussion focussed on how the coast guard or navy could be informed of and respond to crimes committed against autonomous vessels. How would a MASS notify its flag State or the coastal State if it is being hijacked? How would the flag State notify the coastal authorities that they have permission to board their MASS if they believe it has been illegally boarded or hijacked?

There was a discussion among the participants about whether it is beneficial for a MASS to identify itself as fully automated (having no crew on board) for regulatory purposes because such identification could make it more vulnerable to becoming a target for armed robbery or piracy. On the other hand, if a suspect ship is identified as having no crew on board, it poses a challenge for law enforcement in determining the appropriate level of force to use against it, and it could render the traditional rules of engagement ineffective. As a matter of practice, if the law enforcer is not sure whether a suspect ship is manned or otherwise, it is assumed that it is manned in order to avoid unnecessary use of force against the ship. However, if the vessel is identified as being unmanned, the enforcement authority can proceed to stop the criminal acts without worrying about endangering the safety of the crew.

Panel 4. Use of Autonomous Vessels by Navies

Professor Geoffrey Till led the discussion and referred to the Ukraine–Russia war as a recent example of unmanned technology used in warfare. The use of drones could result in longer operation time for military activities, and with less risk. As a result, attacks will be more precise and discriminatory. However, technology can also create additional problems. There was the question of whether there should be a distinction between drones used for gathering intelligence (unarmed) and those used for arms activity (carrying bombs or missiles). There was also the ethical consideration of whether humans should be included in the decision-making process for unmanned missions. Would a human presence make operations more ethical or less objective and discriminatory?

Professor Sturt Kaye discussed the American viewpoint on MASS in military operations, manifested in the *US Commander's Handbook*, excerpts of which were in the materials distributed to participants. He said that from the American viewpoint, MASS could enjoy immunity and operate in the same manner as a warship, such as freedom of navigation through the territorial sea, archipelagic water and transit passage. However, the current international law on armed conflicts, such as the *San Remo Manual*, does not address MASS and the naval auxiliary. Hence, the need to update such law to reflect the technology change.

In the follow-up discussion, there was a question of who is making the rules on MASS, i.e. whether the naval powers should make the rules or whether small and developing countries should also have a say. It was noted that the US *Commander's Handbook* reflects the use of MASS from the viewpoint of a naval superpower, which may not always be consistent with the interests of small and developing countries. Consequently, there is a possibility that some states might not recognize such a unilateral declaration.

The issue of communication with MASS also arose among the discussants, where it was pointed out that coastal states could require MASS to navigate through specific sea lanes and traffic separation schemes. One issue is how the coastal authorities could communicate with a MASS in its territorial sea if the MASS fails to navigate in sea lanes or if it engages in activities which the authorities in the coastal State believe its passage is not innocent.

Discussion of Scenarios

The Workshop also featured three Scenarios after each Panel session, where the participants were divided into four syndicates to discuss four hypothetical cases relating to

MASS. The Panellists supported the groups in finding the correct applicable provisions in the UNCLOS and facilitated the discussions on the case. The case study highlighted the importance of adopting new regulations to clarify the existing rules on the definition of ships, rights of hot pursuit and visit, unmanned underwater systems, etc.

Conclusion

Overall, the Workshop achieved its stated objectives in promoting and enhancing the understanding of the relevant rules of international law and the major issues raised by MASS to maritime security. It also identified several legal and regulatory issues that must be addressed by the IMO in developing a MASS Code, namely the definition of ship or vessel, and communication with unmanned vessels. It also raised issues concerning unmanned vessels or "unmanned systems" that will not be addressed by the IMO such as immunity of MASS operated by Navies and enforcement agencies, and the use of MASS by the military. As the use of MASS is becoming increasingly common, countries in the region should become a part of this legal development process.

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9 March 2023