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Nuclear Responsibilities at Sea

Bridging the Maritime-Security Nexus in the Asia-Pacific

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Executive Summary

In November 2022, BASIC and the Institute for Conflict, Cooperation and Security at the University of Birmingham (ICCS) organised 'Nuclear Responsibilities at Sea: Exploring Policy Proposals for Maritime Risk Reduction in the Asia Pacific'. The purpose of this Track 2 dialogue was to explore how nuclear-armed and non-nuclear-armed states in the Asia-Pacific can best implement their responsibilities in relation to nuclear weapons, radioactive materials and/or conflict prevention in the maritime domain. The dialogue was attended by experts and government officials participating in an unofficial capacity, from a number of states (Australia, India, Pakistan, and the United Kingdom) and from states of the Association of Southeast Asian Nations (ASEAN) (Indonesia, Malaysia, Philippines, Singapore).

Two key takeaways emerged from the dialogue. First, risks of accidents or incidents at sea in the Asia-Pacific are currently greater than risks of intentional conflicts at sea. As the type and number of vessels within the Indian Ocean continue to grow, considerations for safety at sea should be prioritised when advancing policy proposals. Second, there is a gap between the nuclear and maritime domains that needs to be bridged. Currently, both domains are siloed from each other, meaning few conversations take place both at the official and civil society levels between nuclear and maritime experts. Therefore, risks arising from the nuclear-maritime nexus are less likely to be addressed nationally, regionally or internationally.

Amongst the policy proposed, participants noted that a new 'Asian Nuclear-Maritime Forum' specifically dealing with issues arising from the maritime-nuclear nexus was needed in the region. Furthermore, participants proposed policies relating to good order at sea, such as strengthening current code of conducts at sea; supporting cooperation and capacity-building; and encouraging declaratory policies.

Introduction

The idea for a dialogue on Nuclear Responsibilities at Sea originated from an earlier dialogue organised by BASIC and ICCS to explore shared nuclear responsibilities with experts and officials from a number of ASEAN states (Indonesia, Malaysia, Philippines, Singapore), Australia, India and Pakistan. During the dialogue, participants identified the nexus between the maritime and the nuclear domain as a possible area for fruitful cooperation amongst states in the Asia-Pacific. They noted how the *Nuclear Responsibilities Approach* could be useful to discuss such topics and develop policy options for risk reduction in the region.¹ In particular, the Approach could lead to a greater exploration of confidence-building measures and policy improvements to help govern submarine operations in the Indian Ocean and the South China Seas and to limit accidents and incidents in the Asia Pacific. To identify policy proposals, BASIC-ICCS asked participants to identify individual and shared responsibilities that states in the Asia-Pacific have in relation to nuclear weapons, radioactive materials in the maritime domain, or conflict prevention at sea. Such conversations served as a starting point to identify policy proposals.

Conversations on Nuclear Responsibilities at Sea highlighted that the nuclear and the maritime policy communities were siloed from each other. Some participants expressed that it was the first time that they attended a dialogue which dealt with nuclear issues specifically relating to the maritime domain. This highlighted the urgent need for greater interconnectedness, awareness and capacity – as risks arising from the nuclear-maritime nexus are less likely to be addressed either nationally, regionally or internationally due to the lack of a specific forum to address those issues.

The dialogue also stressed that there was a lack of confidence-building measures and policy improvements to prevent incidents/accidents to happen at sea – and if they were to happen, to prevent their escalation. This report sets out specific policy suggestions to bridge the nuclear-maritime nexus in the Asia-Pacific, increase inter-state cooperation, and encourage responsible behaviour at sea.

Box 1: The Nuclear Responsibilities Approach

What is the Nuclear Responsibilities Approach?

The Nuclear Responsibilities Approach is a way of thinking and talking about nuclear weapons policies and practices that puts consideration of responsibility at its heart. It responds to the heightening nuclear risks in the world today and the deep polarisation in global politics over how to reduce them. The approach is centred on the need to shift the nature of the contemporary global conversation on nuclear weapons away from one characterised by rights, blame, and suspicion towards one framed by shared and plural responsibilities, empathic cooperation, and even trust.

What is the Nuclear Responsibilities Toolkit?

The Nuclear Responsibilities Toolkit is designed to help policy communities think, talk, and write about their nuclear responsibilities, and those of others, in a practical manner. The Toolkit develops a policy exploration tool, 'The Responsibilities Framework', to structure individuals' or groups' thinking about the nuclear responsibilities of a given stakeholder (or group of stakeholders). Thinking holistically about nuclear responsibilities requires a number of key questions to be answered, and the Framework is designed to help individuals and/or groups carry out a systematic assessment. A simplification of the framework is presented below. More information on the Responsibilities Framework can be found in the Nuclear Responsibilities Toolkit.

¹ The Nuclear Responsibilities Approach is explained in greater length in *Box 1* of this report.

As detailed in the Toolkit, the 'Responsibilities Framework' can guide national-level or multilateral third-party facilitated dialogues centred around nuclear responsibilities. Nuclear responsibilities dialogues are designed to enable stakeholders to better understand one another's perceptions of their responsibilities, generate opportunities to clarify misperceptions and miscalculations, and create a space to reduce distrust and potentially build trust. In our view, the most productive nuclear responsibilities dialogues are those that are facilitated by a third party who is seen as a 'repository of trust' by all the parties and charged with the responsibility to ask searching questions, invite reflection on assumptions, and generally support the parties in the dialogue. Such third-party facilitated dialogues are designed to foster new or more effective policy proposals in relation to specific dialogue themes (in this case, the nuclear-maritime nexus) through conversations focused on nuclear responsibilities.

Establishing an Asian Nuclear-Maritime Forum

1. There are several nuclear risks that could arise from the maritime domain, including but not limited to the risk of radioactive waste, the risk of accidents and incidents between nuclear-armed and/or nuclear-powered submarines, and the risk of conventional accidents at sea which could have escalatory reactions. There is, however, a capacity, a coordination and a resource regional gap in the Asia-Pacific for which such nuclear-maritime risks are not being addressed.
2. To plug those gaps, more comprehensively address regional security needs, and encourage responsible behaviour at sea there should be a specific forum which would gather maritime and nuclear experts to discuss emerging risks and related policy options.
3. Amongst the current forums operating in the region, some are not suited to focus on the nuclear-maritime nexus as they are struggling to deliver on their original goals. The East Asia Summit (EAS), a regional forum 'for dialogue and cooperation on broad strategic, political, and economic issues'² comprising eighteen states,³ is notably hampered by tensions amongst its members, such as the deterioration of China's relations with the Quadrilateral Security Dialogue (Quad) members, namely – Australia, India, Japan and the United States. The Western Pacific Naval Symposiums (WPNS), which are a series of meetings amongst Pacific nations⁴ to discuss naval matters, face similar limitations.
4. Comprising nuclear specific and maritime specific working groups, ASEAN would be the most suited platform to bridge the nuclear and maritime policy communities if a specific nuclear-maritime group was constituted. This could take the form of an 'Asian Nuclear Maritime Forum' and contribute to de-siloing and bridging the gap between the maritime and nuclear domains.
5. Such a group should be as comprehensive as possible with regards to the issues and risks discussed, not the least because many of them are interconnected. The Asian Nuclear Maritime Forum would therefore not focus on one particular aspect of the nuclear-maritime nexus, but would deal with all its aspects such as defence, energy, and environmental issues.

² About the East Asia Summit: <https://eastiasummit.asean.org/about-east-asia-summit>

³ Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Laos, Malaysia, Myanmar, New Zealand, Philippines, Russia, Singapore, South Korea, Thailand, United States, Vietnam.

⁴ Australia, Brunei, Cambodia, Canada, Chile, France, Indonesia, Japan, Malaysia, New Zealand, Papua New Guinea, People's Republic of China, Philippines, Republic of Korea, Russia, Singapore, Thailand, Tonga, United States of America, Vietnam. Observers: Bangladesh, India, Mexico, Peru, The United Kingdom.

6. To ensure that the forum comprehensively and effectively addresses risks in the region, each issue would be addressed by different and specific stakeholders, including state-actors as well as private actors, companies, and civil society actors. This stakeholder mapping would ensure that each issue is being dealt with by the right actors, and could limit the stalemate faced in other forums. Furthermore, other actors with interest in specific issues could be involved through an observer status.
7. Such a forum would require key ASEAN states to champion and support its work and promote its relevance beyond the regional sphere and in the international sphere. The five founding members of ASEAN⁵ could play an important role in promoting its approval by other ASEAN member states. In particular, Indonesia's support of the forum would likely encourage other ASEAN states to support it, as Indonesia is often seen as ASEAN *de-facto* leader in light of its geographical dimensions, large population, strategic position, and natural resources.⁶
8. The promotion of the Asian Nuclear Maritime Forum should start with national and regional track 1.5 and track 2 dialogues, led by the Network of East Asian Think-Tanks (NEAT), which will directly feed into the ASEAN Secretariat.
9. The maritime-nuclear nexus gap is not solely a regional issue – but a national one too. Therefore, there needs to be capacity-building within domestic communities through familiarisation of stakeholders, education on the existing gaps, and knowledge sharing.

Supporting Cooperation and Capacity-Building on Seabed Mapping and Naval Operations

10. States in the Asia-Pacific share a responsibility to promote and participate in maritime safety, to ensure to prevent incidents/accidents happening at sea. However, capacity is unequal in the region, with regards to operational procedures, technical capabilities, etc.
11. The aforementioned Asian Nuclear Maritime Forum could address the pressing issue of capacity gap, alternatively coastguards and the ADMM-Plus⁷ could drive technical training and joint training, operational procedures and good practices, accidents/incidents responses (notably with regards to submarine search and rescue), and legally equipping states to counter grey-zone narratives and lawfare.
12. High-resolution seabed mapping is a critical tool for regulating underwater resource exploration, extraction, and equipment, allowing ships to be able to safely manoeuvre around natural – and human-made – structures on the ocean bottom, and ultimately to avoid accidents and or incidents. However, in the Asia-Pacific, like elsewhere, seabed mapping is still limited, with important discrepancies amongst Asia-Pacific states.⁸
13. With regards to seabed mapping, there is a need for more naval cooperation and capacity building, including providing public goods in terms of information sharing. Indeed, some Asia-Pacific states do not currently have the

⁵ Indonesia, Malaysia, the Philippines, Singapore, and Thailand.

⁶ Ralf Emmers, 'Indonesia's role in ASEAN: A case of incomplete and sectorial leadership', *The Pacific Review* 27, no. 4 (2014): 543-562. doi: 10.1080/09512748.2014.924230

⁷ A platform for ASEAN and its eight Dialogue Partners Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the United States.

⁸ Nick Routley, 'Our ocean floor remains largely undiscovered - these are the countries changing that', *World Economic Forum*, 26 November 2020. <https://www.weforum.org/agenda/2020/11/which-countries-are-mapping-ocean-floor/> (accessed 5 January 2023).

capacity to engage in seabed mapping: whilst Australia has mapped more than 60% of its EEZ, Thailand has mapped less than 3%.⁹

Strengthening Existing Codes of Conduct and Developing New Ones

14. The maritime domain in the region is currently regulated by several agreements, as well as International Law. During the 2014 WPNS, member countries agreed on a Code for Unplanned Encounters at Sea (CUES). CUES is a non-binding agreement which provides safety procedures as well as basic communication and manoeuvring instructions for naval ships and aircraft to follow during unplanned encounters at sea, to prevent incidents and/or unwanted escalation at sea. However, CUES is adopted by WPNS navies on a voluntary and non-binding basis. Accordingly, there is no arbitration mechanism provided for disputes arising from incidents between naval ships or naval aircraft.¹⁰
15. The scope of CUES is furthermore quite limited: it only applies to naval vessels and naval aircraft. Several WPNS member countries (including Singapore¹¹ and the United States¹²) have called for CUES to cover both naval vessels and coast guards. Indeed, the majority of incidents which have occurred in the region have involved non-naval maritime law enforcement vessels.¹³ Such expansion of CUES might, however, be opposed by China. According to a recent CSIS report, out of the '70 major incidents identified in the South China Sea from 2010 onward, at least one Chinese maritime law enforcement vessel was involved in 73 percent of incidents'.¹⁴
16. Furthermore, CUES does not deal with submarine operations. Due to the importance of secrecy and stealth for submarines, propositions to expand CUES to submarine operations have been met with a lot of criticism.¹⁵ Since 2015, Singapore has been encouraging the navies of other countries to extend the existing CUES to include a UCUES – Underwater Code for Unplanned Encounters at Sea. Indeed, it is expected that there will be 250 submarines operating in Asia by 2030, which consist of 'clear, blatant conditions for an underwater accident to happen' according to Lai Chung Han, Singapore's former navy chief.¹⁶
17. Despite being a politically challenging move, expanding the scope of CUES would be a strong signal in favour of risk reduction. Moreover, CUES is non-binding in nature and could be a useful interim tool to help manage the rising maritime tensions in Asia-Pacific, whilst states in the region work to agree on a binding Code of Conduct (CoC).

⁹ Routley, 'Our ocean floor remains largely undiscovered'.

¹⁰ Anh Duc Ton, 'Code for unplanned encounters at sea and its practical limitations in the East and South China Seas', *Australian Journal of Maritime & Ocean Affairs* 9, no.4 (2017): 227-239. doi: 10.1080/18366503.2017.1326075

¹¹ Vivian Balakrishnan. Transcript of speech delivered at Committee of Supply Debate, Parliament of Singapore, 7 April 2016. <https://www.mfa.gov.sg/Newsroom/Press-Statements-Transcripts-and-Photos/2016/04/MFA-Press-Release-Speeches-by-Minister-for-Foreign-Affairs-Dr-Vivian-Balakrishnan-Senior-Minister-of> (accessed 10 January 2023)

¹² Zhenhua Lu, 'US and China's underwater rivalry fuels calls for submarine code of conduct to cut risk of accidents', *South China Morning Post*, 21 March 2019. <https://www.scmp.com/news/china/military/article/3002736/us-and-chinas-underwater-rivalry-fuels-calls-submarine-code> (accessed 10 January 2023).

¹³ Ton, 'Code for unplanned encounters at sea'.

¹⁴ China Power Team, 'Are Maritime Law Enforcement Forces Destabilizing Asia?' *China Power*, 18 August 2016. Updated 26 August 2020. <https://chinapower.csis.org/maritime-forces-destabilizing-asia/> (accessed 20 January 2023)

¹⁵ Keith Zhai and David Tweed, 'Singapore Navy Chief Calls for Asian Submarines to Join Conduct Code', *Bloomberg*, 16 May 2017. <https://www.bloomberg.com/news/articles/2017-05-16/singapore-calls-for-asian-submarines-to-join-naval-conduct-code> (accessed 20 December 2022).

¹⁶ Zhai and Tweed, 'Singapore Navy Chief Calls for Asian Submarines to Join Conduct Code'.

18. Nonetheless, a binding CoC will be needed in the region, to maintain good order at sea, which could notably be based on CUES or on the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs). This CoC would therefore serve as a stronger risk reduction mechanism, as states would agree on a set of rules and principles on maritime behaviours relating to nuclear weapons, and/or risk escalation.
19. Such a CoC should include submarine operations in the region to limit risks of collision, expanding on UCUES and including legally binding provisions. Indeed, there are no regionally accepted rules governing submarine operations – and unlike other warships, submarines are by definition difficult to detect, increasing the chance of accidental collisions. As Asian countries are expected to acquire over 100 submarines by 2030 including nuclear-powered submarines,¹⁷ and Australia opened the door for other Non-Nuclear Weapons States (NNWS) to acquire nuclear-powered submarines, such an increase in numbers will naturally increase the likelihood of accidents.
20. Furthermore, the CoC should address the navigation of nuclear-armed or nuclear-powered submarines in the Southeast Asia Nuclear Weapon-Free Zone (SEANWFZ, or Bangkok Treaty). The Bangkok Treaty, in accordance with United Nations Convention on the Law of the Sea (UNCLOS),¹⁸ does not prohibit freedom of navigation, thus nuclear-armed or nuclear-powered submarines can still navigate in the territorial waters, in the archipelagic waters and in the Exclusive Economic Zones (EEZ) of the signatory states of the region. Therefore, a Code of Conduct should be implemented to set clear responsibilities in case of an accident in the region.
21. The emergence of Maritime Autonomous Surface Ships (MASS) and Unmanned Surface Vehicles (USV) creates new risks in the maritime domain, which remain unaddressed for. Whilst USVs and MASS could help reduce the frequency of human-related accidents on board ships, by removing the crews, their response to potential accidents is still uncertain.
22. Furthermore, COLREGs are not suited for either USVs and MASS, and there has been significant discussion across the shipping industry as to whether unmanned and autonomous vessels can comply with provisions under the current COLREGs which deal with manned vessels.¹⁹ A specific code of conduct dealing with USVs and MASS could seek to tackle some of the unresolved issues and potentially upcoming issues, notably introducing unmanned- and autonomous-specific regulations.

Encouraging Declaratory Policies at Sea

23. As states share a responsibility of maintaining good order at sea, nuclear-armed states should make declaratory policies to reduce risks of accidental escalation at sea caused by misunderstanding in the region. For that purpose, states should be encouraged to have clear maritime and nuclear doctrines. Nuclear doctrines serve a signalling purpose in the international sphere with respect to external actors and the broader international community, and play an important role as they help clarify intentions, preventing misunderstandings and unwanted escalations. Whilst maintaining some ambiguity is required with regards to nuclear doctrine for deterrence purposes, nuclear-armed states in the region should be encouraged to be more transparent when it comes to their nuclear doctrines in the maritime domain.

¹⁷ John Schaus, Lauren Dickey and Andrew Metrick, 'Asia's Looming Subsurface Challenge', *War on the Rocks*, 11 August 2016. <https://warontherocks.com/2016/08/asias-looming-subsurface-challenge/> (accessed 13 January 2023).

¹⁸ United Nations Convention on the Laws of the Sea, signed on 10 December 1982. https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed 2 January 2023).

¹⁹ Pengfei Zhang, Qiong Chen, Tobias Macdonald, Yui-Yip Lau and Yuk-Ming Tang, 'Game Change: A Critical Review of Applicable Collision Avoidance Rules between Traditional and Autonomous Ships', *Journal of Marine Science and Engineering* 10, no. 11 (2022): 1655. doi: 10.3390/jmse10111655

24. Such transparency should not only concern states in possession of ballistic missile submarines, but should be expanded to states possessing nuclear-powered submarines, namely Australia, as they pose a serious risk with regards to incidents/accidents as well.
25. Furthermore, states in the region should declare their intention not to engage in risky behaviour at sea. This would further help bridge the gaps in existing regimes (CUES, COLREGs), and serve as a confidence-building measure. Such declaratory policies should be championed by nuclear-armed states, as well as by the East Asia Summit.
26. Under the current legal regimes, namely UNCLOS, states are free to conduct military activities in other states' Exclusive Economic Zones (EEZs). However, the freedom of such activities is contested in the region and have thus led to several incidents.²⁰ Therefore, states should clarify their military activities and intentions in EEZs, as they are zones of shared rights and responsibilities.

Conclusion

27. The dialogue held in Kuala Lumpur highlighted that there is a gap that needs to be addressed and bridged between the maritime and the nuclear domains in the Asia Pacific. Currently, there is a lack of forum dealing with both issues concurrently. However, with the militarisation of the maritime domain in Asia Pacific, the risk of incident/accident is increasing.
28. Therefore, Track 1.5 and Track 2 dialogues that bring together maritime and nuclear experts in the Asia Pacific should continue, and crucially include China in the conversation, to further map out states' maritime and nuclear responsibilities in the region and to effectively identify policy proposals to address the maritime-nuclear gap.
29. In the meantime, concrete CBMs measures – as proposed in this report – can be implemented by states in the Asia Pacific, to avoid incidental/accidental risks in the maritime domain.

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²⁰ Moritaka Hayashi, 'Military Activities in the Exclusive Economic Zones of Foreign Coastal States' in *The 1982 Law of the Sea Convention at 30*, ed. David Freestone (Leiden, The Netherlands: Brill, 2013), pp. 121-129.

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