

# Regulatory Challenges for International Arctic Navigation and Shipping in an Evolving Governance Environment

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## INTRODUCTION

In September 2012 the National Snow and Ice Data Centre in the United States reported that in the middle of that month the Arctic region recorded the lowest summer sea ice cover on record.<sup>1</sup> Satellite sea ice tracking started in the 1970s and at that time sea ice typically covered 50 percent of the surface of the Arctic Ocean in the summer.<sup>2</sup> On 16 September seasonal sea ice extent covered only 24 percent of the surface of the Arctic Ocean.<sup>3</sup> The previous seasonal record was 29 percent cover and was registered in September 2007.<sup>4</sup> This trend appears to be continuing. Having completed a major research cruise, on 12 October 2012 scientists on board the German research vessel “Polarstern” reported that they discovered a large decline of thick multiyear sea ice in a 3,500 square kilometre area under study.<sup>5</sup> The Siberian shelves including the Laptev Sea were ice-free. In 2011 there was still multiyear ice in this region. Also, the fresh

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<sup>1</sup> “Ending Its Summer Melt, Arctic Sea Ice Sets a New Low That Leads to Warnings,” *New York Times*, 19 September 2012, online:

[http://www.nytimes.com/2012/09/20/science/earth/arctic-sea-ice-stops-melting-but-new-record-low-is-set.html?\\_r=0](http://www.nytimes.com/2012/09/20/science/earth/arctic-sea-ice-stops-melting-but-new-record-low-is-set.html?_r=0).

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

<sup>5</sup> “Arctic Research Ship Scientists on Thin Ice,” Alfred Wegener Institute Press Release, MarinePropulsion.com, 12 October 2012, online: <http://maritimepropulsion.com/news/arctic-research-ship-scientists-on-thin-ice-363>.

water content of the sea surface has increased accordingly.<sup>6</sup> The accelerated rate of sea ice loss, perhaps eventual loss by as much as 60%, was noted by the Intergovernmental Panel on Climate Change (IPCC) in 2007.<sup>7</sup> Estimates of an ice-free summer vary substantially. Forecasts for decrease of summer sea ice vary wildly, but the general view is that the trend will continue.<sup>8</sup>

These developments have led to increased international navigation and shipping in the region within a relatively short period, posing challenges for national and international regulators. While it may be initially queried whether international navigation and shipping in the Arctic should be treated differently from other maritime trading regions, there is a growing realization that the Arctic is different in a number of ways so as to affect how international rules and standards should be made and applied. One significant difference is a special power that Arctic coastal States enjoy under the United Nations Convention on the Law of the Sea, 1982 (LOS Convention).<sup>9</sup> They have additional legislative and enforcement jurisdiction over international shipping in ice-covered waters for vessel-source pollution purposes. It is unclear how this power relates to the functions of the competent international organization, i.e., the International Maritime Organization (IMO), for the establishment of international rules and standards for maritime safety, marine environment protection from shipping and maritime security. Accompanying this concern is the extent to which standards and rules set out in existing

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<sup>6</sup> Ibid.

<sup>7</sup> IPCC, Working Group II: Impacts, Adaptation and Vulnerability, Executive Summary, online: <http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=593>.

<sup>8</sup> "When Will the Arctic Be Ice-free in the Summer? Maybe four years. Or 40," Washington Post, 20 September 2012, online: <http://www.washingtonpost.com/blogs/wonkblog/wp/2012/09/20/when-will-the-arctic-be-ice-free-maybe-four-years-or-40/>.

<sup>9</sup> United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, UN Doc. A/CONF.62/122, 7 October 1982 [hereafter LOS Convention], Art. 234: "Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence."

international maritime law conventions can be assumed to apply in their entirety and as effectively as in other regions. In addition to the powers enjoyed by coastal States and the IMO functions, the Arctic Council, the leading regional body concerned with governance in the region, is becoming increasingly active on shipping matters. A key concern of this paper is the need for greater coherency in the efforts of multiple levels of governance and to maintain a “big picture” approach in responding to the regulatory needs of increased international navigation and shipping in the region.

## **PROSPECTS FOR INTERNATIONAL NAVIGATION AND SHIPPING**

The significance of decreasing summer sea ice is evident from growing commercial operations. In 2009 two heavy lift vessels carrying power plant equipment from South Korea to Rotterdam transited through the Russian Northern Sea Route without the need of assistance from icebreakers.<sup>10</sup> In 2010 a bulk carrier carried a cargo of iron ore from Kirkenes in Northern Norway to China, saving \$180,000 in fuel on a comparable voyage via Suez.<sup>11</sup> That year a large tanker, in excess of 100,000 tons carried a cargo of gas condensates from Murmansk to China.<sup>12</sup> In 2011 there were 34 transits from Europe to Asia carrying 820,000 tons of cargo, with transit times varying between 9-11 days.<sup>13</sup> The sailing season was a month longer than the previous year. The 2011 transits consisted of 15 vessels carrying liquid cargoes, 10 vessels were on ballast voyages, four carried refrigerated cargo, three carried bulk cargo and two general cargo. One vessel in particular, the “Vladimir Tikhonov”, a 163,000 dwt tanker, not only discovered a new high-latitude route within the Northern Sea Route, but also became the largest vessel

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<sup>10</sup> “Beluga Shipping Completes First Northeast-Passage Commercial Transit,” 2 October 2009, online:

<http://www.logisticsmanager.com/Articles/12410/Beluga+Shipping+completes+first+Northeast-Passage+commercial.html>.

<sup>11</sup> “Northern Sea Route: Open for Business,” Lloyd’s Shipping Economist, September 2010, online: [http://www.lloydlist.com/ll/sector/markets/lloyds-shipping-economist/lse-pdf/article345258.ece/BINARY/LSE-01\\_SEPTEMBER\\_2010.pdf](http://www.lloydlist.com/ll/sector/markets/lloyds-shipping-economist/lse-pdf/article345258.ece/BINARY/LSE-01_SEPTEMBER_2010.pdf).

<sup>12</sup> Aldo Chircop, “The Emergence of China as a Polar Capable State,” 7(1) *Canadian Naval Review* 9-14 (2011), 11.

<sup>13</sup> “Slow Start on Northern Sea Route,” Barents Observer, 27 August 2012, online: <http://barentsobserver.com/en/arctic/slow-start-northern-sea-route-27-08>.

ever to navigate in the region.<sup>14</sup> Unlike previous seasons, the 2012 navigation season saw vessels grouped in convoys with icebreaker support.<sup>15</sup>

Although 2012 saw a late start to the navigation season, it broke the previous year's record. Forty-six vessels transited the route, carrying a total cargo of 1,261,545 tons.<sup>16</sup> Twenty-five sailed eastbound while 21 sailed westbound.<sup>17</sup> The cargo was mostly bulk, including hydrocarbons (to China and South Korea) and iron ore (to China).<sup>18</sup> The navigation season lasted until November, although final transits by icebreakers were completed in December. In 2011 the last passage was just after mid-November. The transits are fast. The passage of the "SCF Amur" took seven days.<sup>19</sup> If decreasing sea ice trends continue, such transits can be expected to increase, especially as the infrastructure and actuarial practices for insurance improve. Scientists are already predicting that in 2013 the route might be open all year.<sup>20</sup> The Russian Federation anticipates needing a fleet of 45 icebreakers by 2030, compared to the 32 vessels at this time, many of which will need to be decommissioned.<sup>21</sup> New vessels are being planned that will enable operations also in the winter. Even with a thawing Arctic, there is ice variability that requires flexible ice breaker support.

There is growing interest in new transportation routes that combine benefits of shorter distances, cost-effective transits and routes not troubled by maritime security concerns. The Northwest Passage offers a package of routes through Canadian maritime zones (especially internal waters of the Canadian Arctic archipelago), Beaufort Sea, Baffin Bay, Davis Strait and Labrador Sea. Offering preponderantly summer navigation, it is

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<sup>14</sup> "Northern Sea Route Record Transit by Gazprom Tankship," Press Release, Thursday, 2 October 2012, online: <http://www.marinelink.com/news/northern-transit-gazprom348195.aspx>.

<sup>15</sup> "Slow Start on Northern Sea Route," supra note 13.

<sup>16</sup> "46 Vessels through Northern Sea Route," Barents Observer, 23 November 2012, online: [barentsobserver.com/en/arctic/2012/11/46-vessels-through-northern-sea-route-23-11](http://barentsobserver.com/en/arctic/2012/11/46-vessels-through-northern-sea-route-23-11).

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> "Northern Sea Route Record Transit by Gazprom Tankship," supra note 14.

<sup>20</sup> "Arctic Sea Route to Open Year-Round in 2013 - Scientists," Ria Novosti, 17 October 2012, online: <http://en.rian.ru/business/20121017/176696586.html>.

<sup>21</sup> "Cutting a Path in the Ice," Portnews, 6 October 2012, online: <http://en.portnews.ru/comments/1491/?searchref=%2Fsearch%2F%3Faction%3Dcontent%26page%3D14%26text%3Dicebreaker>.

9,000 km shorter than the Panama Canal route and 17,000 km shorter than the Cape Horn route.<sup>22</sup> The Northern Sea Route shortens a Hamburg-Yokohama voyage by 4,800 miles, in comparison to the Suez Canal route.<sup>23</sup> The transpolar route, if it materializes with an ice-free Central Arctic Ocean route, would shorten distances even further.<sup>24</sup>

The transits suggest commercial feasibility for the particular cargos carried. Polar class vessels are more expensive to build and operate. For example a very large crude carrier (VLCC) polar class 1A will use 16% more extra steel.<sup>25</sup> Polar experienced crews cost more as does the insurance.<sup>26</sup> However, the resulting savings from shorter distances, assuming little or no delay, are substantial both in terms of fuel costs and emissions. One calculation that took into consideration the reduction of a voyage from 40 to 22.5 days produced a saving of 28.2MT of fuel per day for 17.5 days, amounting to a saving of circa \$300,000.<sup>27</sup> A consequential benefit was reduction of emissions of nitrous oxide (NOx) by 50 tons, carbon dioxide (CO<sub>2</sub>) by 1,557 tons and sulphur oxides (SOx) by 35 tons.<sup>28</sup> Carrying a cargo of iron, the “Nordic Barents” transported the cargo from northern Norway to Qingdao, China, in 21 days, compared to a 40 day journey through the Suez Canal.<sup>29</sup> Some 1,000 tons of fuel were saved at a value of

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<sup>22</sup> K.J. Wilson et al., “Shipping in the Canadian Arctic: Other Possible Climate Change Scenarios,” in *Geoscience and Remote Sensing Symposium, IGARSS '04*, 20–24 September 2004, Anchorage, Alaska, Proceedings, vol. 3, 1853–1856 (New York: IEEE International, 2004).

<sup>23</sup> W. Østreg, “The International Northern Sea Route Programme (INSROP): Applicable Lessons Learned,” 42 *Polar Record* 71–88 (2006), 80.

<sup>24</sup> T.E. Jakobsson, ‘Climate Change and the Northern Sea Route: An Icelandic Perspective,’ in M.H. Nordquist, J. Norton Moore and A.S. Skaridov (eds.), *International Energy Policy, the Arctic and the Law of the Sea* (Nijhoff, Leiden, 2005), 285–301 at 295–297. But see the sobering comments of Willy Østreg, “The Trans Polar Passage,” posted on Arctis, online: <http://www.arctis-search.com/The+Trans+Polar+Passage+2>.

<sup>25</sup> “Arctic Route Helps Owners Slash Fuel Costs,” MarineLink.com, Thursday, June 14, 2012, online: <http://www.marinelink.com/news/arctic-owners-helps345491.aspx>.

<sup>26</sup> For example insurers of international shipping in the Northern Sea Route seek additional premium and impose conditions to be met. John Flaherty and Tom Gorrard-Smith, “Sailing on Thin Ice: The Future of Arctic Shipping,” Clyde & Co, 29 March 2012, online: <http://www.clydeco.com/insight/articles/sailing-on-thin-ice-the-future-of-arctic-shipping>.

<sup>27</sup> “Arctic Route Helps Owners Slash Fuel Costs,” supra note 25.

<sup>28</sup> Greg Trauthwein, “Arctic: Economic Promise or Environmental Peril,” MarineLink.com, 24 May 2012, online: <http://www.marinelink.com/news/environmental-economic344971.aspx>.

<sup>29</sup> “Shipping Magnate Creates History,” South China Morning Post, 27 May 2011, online: <http://www.scmp.com/article/968865/shipping-magnate-creates-history>.

\$650,000.<sup>30</sup> However, one study found that charges for services on the Northern Sea Route may be higher than the Suez Canal fee.<sup>31</sup>

Inter-continental traffic aside, the Arctic region has substantial intra-regional traffic, mainly to supply northern communities and transport natural resources extracted from the region. The increased access to resources will entail further growth of intra-regional traffic. The Barents Sea promises to become a major production region with markets in Europe and Asia. In the Russian sector there are major projects for the development of hydrocarbons, including gas condensate from the Shtokman field, the Prirazlomnoye oil field, and LNG gas production from the Yamal peninsula.<sup>32</sup> The Yamal project needs a new fleet of polar class LNG carriers with 170,000 cubic metre capacity to carry an estimated 200 loads a year, possibly to be operated on 20-year time charters.<sup>33</sup> The Norwegian offshore also holds promise. Recently it was reported that Statoil has planned a \$16 billion investment that includes a 280 kilometre pipeline and production unit in the Barents Sea, to be completed by 2018 and timed with first oil produced from the Skrugard field north of the Arctic Circle.<sup>34</sup> Seventy-two out of 86 offshore blocks recently launched by the Norwegian Government in the 22<sup>nd</sup> licensing round were in the Barents.<sup>35</sup> Oil production in the Barents could reach between 400-500,000 barrels of oil equivalent per day by 2020.<sup>36</sup> Norway also produces iron ore in Kirkenes. In the US Arctic, there continues to be oil production in Northern Alaska near Prudhoe Bay, accounting for more than half of the oil produced in the Arctic.<sup>37</sup> In other areas US licensee Shell's plans for drilling in the Chukchi and Beaufort Seas is for ten wells within

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<sup>30</sup> "Northern Route Transits to Hit High," Bloomberg, 14 June 2012, online: <http://www.marinelink.com/news/northern-transits-route345488.aspx>.

<sup>31</sup> J. Verny & C. Grigentin, "Container Shipping on the Northern Sea Route" 122 *International Journal of Production Economics* 107-117 (2009).

<sup>32</sup> "Cutting a Path in the Ice," supra note 21.

<sup>33</sup> "New Ships Planned for Russia's Yamal LNG Export Project," Lloyd's List, 5 October 2012.

<sup>34</sup> "Statoil Targets Arctic with up to \$16bn of Investment," Financial Times, 16 February 2013.

<sup>35</sup> "Norwegian Offshore Oil Rush Forces Rig Rates Higher," Press Release, MarineLink.com, 9 August 2012, online: <http://www.marinelink.com/news/norwegian-offshore-forces346853.aspx>

<sup>36</sup> "Poll: Arctic Oil Exploration to Reverse Decline in Norwegian Production," Press Release, MarineLink.com, 29 August 2012, online: <http://www.marinelink.com/news/production-norwegian347294.aspx>.

<sup>37</sup> Trauthwein, supra note 28.

two years, assuming environmental concerns are addressed.<sup>38</sup> Shell has experienced some delay from difficult ice conditions and delayed permits. Ironically, it has encountered ice in the two areas which is thicker than experienced in the last 20 years. One of its drill ships dragged anchor and drifted very close to the coast.<sup>39</sup> Offshore exploration leases have also been granted in the Canadian sector of the Beaufort Sea. At least one billion barrels of oil and nine trillion cubic feet of natural gas have been discovered, but the estimated potential is even higher at 5.4 million barrels for oil and 53 trillion cubic feet for gas.<sup>40</sup> The significance of these developments for shipping is the corollary domestic and international marine transportation of production.

Also of relevance to international navigation and shipping in the region is the growing venture tourism and cruise shipping in the region. These vessels regularly navigate the Canadian and Greenland Arctic in the summer season.<sup>41</sup> There is similar activity in other parts of the Arctic. In addition to cruise ships, Russia's nuclear powered ice-breakers get 70-80 days of work carrying tourists and until June this year they had done so 67 times.<sup>42</sup> There is also a discernible increase in fishing and marine scientific and climate research vessels operating in the region.<sup>43</sup> Growing accessibility of the region has not been limited to large commercial vessels. In 2007 the Canadian Department of the Environment reported that there was a five week period in the Parry Channel in the Northwest Passage where small ships, and possibly also sailboats could have

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<sup>38</sup> "Arctic Well Drills by Shell to Increase Due to Delays," Fox Business News, MarineLink.com, 3 August 2012, online: <http://www.marinelink.com/news/increase-drills-arctic346747.aspx>

<sup>39</sup> "Shell Arctic Drillship's Close Shave," Royal Dutch Shell, MarineLink.com, 16 July 2012, online: <http://www.marinelink.com/news/drillships-arctic-shell346257.aspx>.

<sup>40</sup> "Low-ball Arctic Oil Lease Earns Opposition Scorn," Canadian Press, 20 September 2012, online: <http://www.cbc.ca/news/business/story/2012/09/20/beaufort-franklin-ndp.html>.

<sup>41</sup> "Arctic Tourism Heating Up as Northwest Passage Melts," CBC News, 24 August 2012, online: <http://www.cbc.ca/news/canada/north/story/2012/08/23/north-arctic-tourism.html>.

<sup>42</sup> Tourists reportedly pay €19,800 for a ten day trip. "Nuclear Icebreaker Cruises," Ria Novosti, MarineLink.com, 8 June 2012, online: <http://www.marinelink.com/news/icebreaker-nuclear345331.aspx>.

<sup>43</sup> *Arctic Marine Shipping Assessment 2009 Report*, Arctic Council (PAME), online: <http://www.pame.is/amsa-2009-report> [hereafter AMSA Report], 77-81.

navigated waters not normally ice-free, and that some 100 vessels navigated the area.<sup>44</sup> In August this year a four-person rowing team completed a non-stop and unsupported row of over 1,000 miles from Inuvik, Canada to Point Hope, Alaska, crossing the Beaufort and Chukchi Seas over a period of 41 days.<sup>45</sup>

The increasing traffic described in this paper so far should be considered with caution. The increase in the various types of shipping in the Arctic does not necessarily mean that navigation is comparable to other more frequently navigated routes. There is less ice, but passage is still hazardous. There can be poor weather with reduced visibility (fog), possibly with ice build-up due to freezing of rain and sea spray. Passage is not necessarily always ice free, and indeed multi-year ice may be present. Navigation is largely limited to the summer season (June-October) for the vast majority of vessels and at this time still likely assisted by some ice-breaking capacity in one or more areas. The beginning of the navigation season may vary from year to year. For example in 2012 there was a late start to traffic on the Northern Sea Route and for the first two months while passage from the Kara Gate to the New Siberian Islands was in clear water, in the East Siberian Sea the ice was more difficult than the previous year.<sup>46</sup> The season then lasted for longer in the year.<sup>47</sup> In another area there was a late start to oil drilling in the Chukchi Sea by Shell because there was more ice cover than expected in the early summer.<sup>48</sup> Later in the summer, although passive microwave data indicated a sea that was nearly ice free, there were small ice floes that threatened the drilling platform to the point where operations were temporarily suspended.<sup>49</sup> In addition to natural hazards, there is a shortage of up to date charts and sufficient charting for navigable areas,

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<sup>44</sup> "Canada's Top Weather Stories for 2007: Vanishing Ice at the Top of the World," Environment Canada, online: <http://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=14D00DAA-1>.

<sup>45</sup> "Arctic 1,000-mile Rowing Boat Trip Ends," MarineLink.com, 30 August 2012.

<sup>46</sup> "Slow Start on Northern Sea Route," supra note 13.

<sup>47</sup> "46 Vessels through Northern Sea Route," supra note 16.

<sup>48</sup> "Arctic Well Drills by Shell to Increase Due to Delays," Fox Business News, MarineLink.com, 3 August 2012, online: <http://www.marinelink.com/news/increase-drills-arctic346747.aspx>.

<sup>49</sup> "Northern Sea Route Partly Blocked Although Sea Ice Near Minimum," Press Release, MarineLink.com, 19 September 2012, online: <http://www.marinelink.com/news/northern-although-blocked347788.aspx>.

although the situation may be better in Russian than in Canadian waters.<sup>50</sup> The areas are remote and there is little infrastructure to support ships in transit (e.g., navigation aids, ports & repair facilities, search and rescue, salvage, pollution response), although again there is better support for navigation in Russian waters.<sup>51</sup>

## **THE DEMAND FOR HIGH SAFETY AND ENVIRONMENTAL STANDARDS**

Given the increase in regional and international navigation and shipping in the region, it is therefore not surprising that in recent years Arctic States and international bodies have focused on the needs of enhanced safety and environmental standards for polar shipping. In addition to dedicated domestic polar shipping regulation, primarily in Canada and the Russian Federation, the Arctic Council and International Maritime Organization (IMO) have launched important initiatives.

### **Arctic Council initiatives**

At the outset, it should be highlighted that the Arctic Council, a regional body established by the Ottawa Declaration in 1996,<sup>52</sup> is essentially a political and not a regulatory body. Its objective is to “[P]romote cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues (non-military security), in particular issues of sustainable development and environmental protection in the Arctic” with particular consideration of the interests and well-being of the region’s indigenous

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<sup>50</sup> AMSA Report, supra note 43, 156-159.

<sup>51</sup> Ibid., 154-181.

<sup>52</sup> Declaration on the Establishment of the Arctic Council, Ottawa, 19 September 1996, adopted by Canada, Denmark (for Greenland), Finland, Iceland, Norway, Russian Federation, Sweden and United States. Online: <http://www.arctic-council.org/index.php/en/about/documents/category/5-declarations>. These States are known as the “Arctic Eight.” In addition to the Arctic Eight, the Council includes permanent participation from six associations of Arctic indigenous peoples, known as the Permanent Participants.

peoples.<sup>53</sup> The Council functions through a system of six working groups: Arctic Contaminants Action Program (ACAP); Arctic Monitoring and Assessment Programme (AMAP); Conservation of Arctic Flora and Fauna (CAFF); Emergency Prevention, Preparedness and Response (EPPR); Protection of the Arctic Marine Environment (PAME); and Sustainable Development Working Group.<sup>54</sup> It is not a regional organization and is not similar to regional sea organizations established elsewhere by treaty.<sup>55</sup> However, as of 2013 the Council has a permanent secretariat based in Trømsø, Norway. The preference of the Arctic Eight at this time appears to maintain the Council as a “soft” political body with the key function of facilitating cooperation among them and including with invited participation of other States as they deem appropriate. Past calls for the development of a new comprehensive international legal regime for the Arctic Ocean have been dismissed by Arctic States.<sup>56</sup>

The Arctic Environment Protection Strategy, which preceded the establishment of the Arctic Council, anticipated the need for protection of the fragile environment from shipping activities.<sup>57</sup> After its establishment, the Council tasked the PAME Working Group to consider the impact of shipping on the Arctic marine environment. PAME eventually launched the Arctic Marine Shipping Assessment (AMSA) study under the

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<sup>53</sup> Ottawa Declaration, *ibid.* In the accompanying communique, the “Ministers viewed the establishment of this new intergovernmental forum as an important milestone in their commitment to enhance cooperation in the circumpolar North. The Council will provide a mechanism for addressing the common concerns and challenges faced by their governments and the people of the Arctic. To this end, Ministers referred particularly to the protection of the Arctic environment and sustainable development as a means of improving the economic, social and cultural well-being in the North.” Joint Communique of the Governments of the Arctic Countries on the Establishment of the Arctic Council, 19 September 1996, online: <http://www.arctic-council.org/index.php/en/about/documents/category/5-declarations>.

<sup>54</sup> Arctic Council, online: <http://www.arctic-council.org/index.php/en/about-us/working-groups>.

<sup>55</sup> For example, among others, the Baltic, Black Sea, Caribbean, Mediterranean and North Sea regions.

<sup>56</sup> See the Illulissat Declaration, 28 May 2008, by the Arctic 5, online: [http://www.oceanlaw.org/downloads/arctic/Illulissat\\_Declaration.pdf](http://www.oceanlaw.org/downloads/arctic/Illulissat_Declaration.pdf). Although stopping short of advocating a new regional agreement, the EU favours “the further development of a cooperative Arctic governance system based on the UNCLOS.” See Communication from the European Commission to the European Parliament and the Council, The European Union and the Arctic Region, COM(2008) 763 final, 20 November 2008, at 10.

<sup>57</sup> Arctic Environment Protection Strategy, 14 June 1991, adopted by the Arctic 8, online: <http://www.arctic-council.org/~arctikar/index.php/en/about/documents/category/4-founding-documents>, at 35.

leadership of Canada, Finland and the United States and a final report was presented to the Arctic Ministers at the Trømsø meeting in 2009.<sup>58</sup> AMSA constitutes a recent comprehensive treatment of issues facing the future of shipping in the region at a time of change. Among other, the Report identifies gaps and issues in the existing governance and legal framework for international navigation and shipping and including infrastructure. The report is effectively a roadmap for the development of a suitable legal framework for safer shipping in the region taking into account the sensitive marine environment and interests of indigenous peoples. Several recommendations are worth highlighting. IMO safety and pollution prevention conventions with mandatory requirements need to be augmented, *inter alia* for ship design, equipment and operations aimed at the safety and protection of the marine environment.<sup>59</sup> Arctic states are also urged to explore harmonization of national regulatory regimes and in view of achieving uniform standards.<sup>60</sup> At this time some Arctic coastal States, empowered by a special provision in the LOS Convention<sup>61</sup> have developed their own regime for shipping in Arctic waters within national jurisdiction. These initiatives, although empowered by the LOS Convention, have resulted in differences in safety and environmental rules and standards applicable in the region, depending on whether a ship is navigating in one national maritime zone or another or even on the high seas.

Given its sensitivities, it is remarkable, although not surprising given the relative low international maritime traffic levels until recently, that the Arctic Ocean receives the lowest level of protection under the Convention on the Prevention of Pollution from Ships, 1973-78 (MARPOL).<sup>62</sup> The AMSA Report thus recommended designation of MARPOL special areas under the various convention annexes.<sup>63</sup> The need to reduce harmful air emissions was also considered. The AMSA Report went on to recommend the identification of areas of heightened ecological and cultural significance and

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<sup>58</sup> AMSA 2009 Report, *supra* note 43.

<sup>59</sup> *Ibid.*, 6.

<sup>60</sup> *Ibid.*

<sup>61</sup> LOS Convention, *supra* note 9, Art. 234.

<sup>62</sup> International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, London, 17 February 1978, 1340 UNTS 62-265 (1983) [hereafter MARPOL].

<sup>63</sup> AMSA 2009 Report, *supra* note 43, 7.

protecting them from shipping impacts.<sup>64</sup> Arctic coastal and marine ecosystems are some of the most sensitive and there are many species of terrestrial and marine mammals that could potentially be affected by increased traffic.<sup>65</sup> The Report continued that in some areas particularly sensitive sea areas ought to be considered for designation.<sup>66</sup> There are many areas of heightened ecological and cultural significance that should received protection from navigation and shipping activities.<sup>67</sup> Another recommendation addressed the threat of ship strikes, noise and disturbance of marine mammals and urged consideration of working with the IMO to develop and implement mitigation strategies.<sup>68</sup> In this regard, the IMO would consider proposals for routeing measures submitted for this purpose, as it has done elsewhere. Ballast waters were also addressed and the Report urged an assessment of the risks posed by ballast water carried invasive (exotic) species and the taking of measures within national jurisdiction.<sup>69</sup> Along this vein was the prevention of oil spills and development of a circumpolar response capacity.<sup>70</sup> Responding to spills in very cold water environments and in the presence of ice flows is a notoriously challenging exercise. Perhaps one of the most far reaching recommendations for the future of safe and environmentally acceptable Arctic shipping is with regard to the building of new and strengthening of existing infrastructure to support both domestic and international shipping.<sup>71</sup> This includes ports and related reception facilities for wastes, search and rescue capability, salvage capacity and consideration of places of refuge for ships in need of assistance.

The AMSA roadmap has already led to tangible instances of regional cooperation in implementing recommendations, including through the adoption of new legal arrangements. The first such legal agreement is the Agreement on Cooperation on

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<sup>64</sup> Ibid.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> See IUCN/NRDC Workshop to Identify Areas of Ecological and Biological Significance or Vulnerability in the Arctic Marine Environment, Workshop Report prepared by Lisa Speer and Thomas L. Laughlin, 2-4 November 2010, La Jolla, CA. The report includes recommendations relevant for shipping at 37.

<sup>68</sup> AMSA 2009 Report *supra* note 43, 7.

<sup>69</sup> Ibid.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

Aeronautical and Maritime Search and Rescue in the Arctic, adopted in 2011,<sup>72</sup> pursuant to the International Convention on Maritime Search and Rescue, 1979<sup>73</sup> and the Chicago Convention on International Civil Aviation, 1944.<sup>74</sup> The objective of this Agreement is “to strengthen aeronautical and maritime search and rescue cooperation and coordination in the Arctic.”<sup>75</sup> Each of the Arctic Eight States undertook to “promote the establishment, operation and maintenance of an adequate and effective search and rescue capability within its area.”<sup>76</sup> The first joint exercise by the Parties, named SAREX, took place off the east coast of Greenland in 2012.<sup>77</sup> Given the region’s remoteness, a useful aspect of this agreement is a framework to enable aircraft engaged in SAR operations to refuel in another jurisdiction on a permitting basis.<sup>78</sup>

A second legal agreement concerning marine oil pollution preparedness and response cooperation is expected to be adopted in May 2013 as an output of the EPPR Working Group.<sup>79</sup> It will be an instrument that will be inspired in part by the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPPRC).<sup>80</sup> The Working Group does not operate as a response agency. It has worked to: “plan and prepare for response to accidents; develop strategies and tasks to prevent accidents; enhance best practices; facilitate exchange of information; and focus on the environmental implications of emergencies involving oil, hazardous and noxious

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<sup>72</sup> Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, Nuuk, 2 May 2011, online: Arctic\_SAR\_Agreement\_EN\_FINAL\_for\_signature\_21-Apr-2011.pdf [hereafter Nuuk SAR Agreement].

<sup>73</sup> International Convention on Maritime Search and Rescue, London, 27 April 1979, 1405 UNTS 97.

<sup>74</sup> Convention on International Civil Aviation, Chicago, 7 December 1944, online: <http://www.icao.int/publications/pages/doc7300.aspx>.

<sup>75</sup> Nuuk SAR Agreement, supra note 72, Art. 2.

<sup>76</sup> Ibid., Art. 3.

<sup>77</sup> First Live Arctic Search and Rescue Exercise – SAREX 2012, online: <http://www.arctic-council.org/index.php/en/oceans/search-and-rescue/620-first-arctic-search-and-rescue-exercise-sarex-2012>.

<sup>78</sup> NUUK SAR Agreement, supra note 72, Art. 8.

<sup>79</sup> “Negotiations in Helsinki on New Arctic Agreement on Marine Oil Pollution Response,” Arctic Council, online: <http://www.arctic-council.org/index.php/en/oceans/emergency-preparedness/570-negotiations-in-helsinki-on-new-arctic-agreement-on-marine-oil-pollution-response>.

<sup>80</sup> International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 30 November 1990, 30 ILM 733.

substances (HNS), radiation, and natural disasters in the Arctic.”<sup>81</sup> The work to date includes the development of an Arctic Region Oil Spill Response and Logistic Guide (Arctic ERMA) and contribution of an Arctic component to an IMO project on In Situ Burn (ISB) of Oil Spills on Water and Broken and Solid Ice Conditions.<sup>82</sup>

The Arctic Council’s role with regard to international shipping is likely to continue to be facilitative and to follow-up on AMSA recommendations through reporting from its member States. Even if it were to achieve a common understanding and approach to desired standards for international shipping in the region, the Arctic Council’s ability to consider international shipping matters is constrained by its small membership, limitations on observers and the global nature of the shipping industry. After all, the competent international organization for the establishment of international standards and regulations for international shipping is the IMO.

### **Initiatives in the IMO**

The development of international rules and standards for global navigation and shipping occurs through the IMO. Insofar as the Arctic region is concerned, in recent years the IMO has launched several initiatives. There has been a major update to the system of navigational areas (NAVAREAS) and meteorological areas (METAREAS) in the Arctic to better reflect the need for information services for safe navigation and identifying responsibilities of coastal State providers in the region. In 2007 the Maritime Safety Committee (MSC) endorsed the Sub-Committee on Communications and Search and Rescue (COMSAR)’s work leading to the creation of new NAVAREAs up to 90 degrees north.<sup>83</sup> The IMO has also adopted important guidelines for vessels operating in remote areas. The two sets of guidelines most directly relevant are the 2006 Guide for Cold

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<sup>81</sup> Emergency Prevention, Preparedness, Response (EPPR) Progress Report to the Senior Arctic Officials, March 2012, Arctic Council, online: <http://www.arctic-council.org>.

<sup>82</sup> Ibid.

<sup>83</sup> IMO Sub-Committee on Radio Communications and Search and Rescue, 11<sup>th</sup> Session, COMSAR 11/18; Report of the Maritime Safety Committee at its Eighty-Third Session, MSC 83/28, 26 October 2007.

Water Survival<sup>84</sup> and the 2007 Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas.<sup>85</sup>

The 2010 Manila Amendments to the Convention on Standards for Training Certification and Watchkeeping, 1978 (STCW) have paved the way for future standards and rules for polar seafaring.<sup>86</sup> They provide for new training guidance for personnel serving on board ships operating in polar waters including with regard to: ice characteristics and ice areas; ship performance in ice and cold climate; voyage and passage planning; operating and handling a ship in ice; knowledge of local regulations and requirements; equipment limitations; safety precautions and emergency procedures; and environmental considerations.<sup>87</sup> The Manila Amendments constitute a first step in strengthening standards for polar seafaring and the STCW will need to be revisited after the expected mandatory polar code is concluded and adopted. A matter to be considered is what training standards ought to be left for the polar code rather than STCW.

Probably the most important initiative for the development of appropriate safety and environmental regulation for Arctic shipping is consideration of a mandatory polar code. Early consideration commenced in the 1990s, eventually leading to the voluntary 2002 Guidelines for Arctic Shipping. In 2010 the Guidelines were amended, also to include the Antarctic, and are now known as the Polar Guidelines.<sup>88</sup> In 2009 Denmark, Norway and the US proposed to mandate the IMO's Ship Design, Construction and Equipping (DE) Sub-Committee to commence work on a mandatory code.<sup>89</sup> Work was started in

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<sup>84</sup> Guide to Cold Water Survival, IMO Doc. MSC.1/Circ.1185, 2006.

<sup>85</sup> Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas. IMO Doc. A 25/Res.999, 3 January 2008.

<sup>86</sup> International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, London, 7 July 1978, 1361 UNTS 2, as amended by the Manila Amendments, Final Act of the Conference of the Parties, IMO Doc. STCW/CONF.2/33, 1 July 2010.

<sup>87</sup> Resolution 2, Section B-V/g, online:

<http://www.imo.org/OurWork/HumanElement/TrainingCertification/Documents/34.pdf>

<sup>88</sup> Guidelines for Ships Operating in Polar Waters, Resolution A.1024(26) adopted on 2 December 2009, IMO Doc. A 26/Res.1024, 18 January 2010.

<sup>89</sup> Mandatory Application of the Polar Guidelines, submitted by Denmark, Norway and the United States, IMO Doc. MSC 86/23/9, 24 February 2009.

2010 with intended completion in 2012, but this ambitious target was not feasible given the range of complex issues and interrelatedness to existing instruments. It was recognized that differences between the two polar regions ought to be reflected in the code. The code would initially apply to the Convention on the Safety of Life at Sea, 1974 (SOLAS)<sup>90</sup> passenger and cargo ships and eventually attention would be given to non-SOLAS ships, such as fishing vessels.<sup>91</sup> A pragmatic consideration was that the provisions would likely have to be a mixture of mandatory and recommendatory requirements. An important perspective, given the hazards of Arctic navigation, is the emphasis on hazard identification, risk analysis and risk control options. Overall, the work on the code is guided by a goal based approach with outcomes set out as targets to be achieved. The actors actually involved in the designing, building, equipping, owning, managing and operating polar class vessels would be expected to apply their knowledge and skills to meet those standards. This expectation demonstrates the critical role played by industry associations, such as the International Association of Classification Societies (IACS) through their Unified Requirements (UR),<sup>92</sup> in scoping out the issues, developing a framework for polar shipping standards and eventually applying those standards.

The work on the mandatory polar code is increasingly showing how much there is need for an integrated approach to the regulation of international navigation and shipping in the Arctic. The work on the code addresses: ship design, construction and equipment; operational and training concerns; search and rescue; and the protection of polar marine environments. Polar geography apart, these are themes already addressed in several different safety and environmental instruments. SOLAS, MARPOL and STCW

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<sup>90</sup> International Convention for the Safety of Life at Sea, London, 1 November 1974, 1184 UNTS 2.

<sup>91</sup> A decision made at the 55<sup>th</sup> Session of the DE Sub-Committee, 21-25 March 2011. Making the Polar Code Mandatory, A Note by the Secretariat, IMO Doc. MSC91/8, 7 August 2012.

<sup>92</sup> International Association of Classification Societies, Requirements Concerning Polar Class, IACS Req. 2011, online:

[http://www.iacs.org.uk/document/public/Publications/Unified\\_requirements/PDF/UR\\_I\\_pdf410.pdf](http://www.iacs.org.uk/document/public/Publications/Unified_requirements/PDF/UR_I_pdf410.pdf).

are cases in point, and they are not the only relevant instruments.<sup>93</sup> The mandatory polar code is effectively another perspective or layer on aspects of those instruments insofar as Arctic shipping is concerned. Accordingly, it is not surprising that the question has arisen whether certain aspects of the proposed code (e.g., environmental protection) are better placed under an existing instrument rather than be re-created in a separate instrument.<sup>94</sup> The approach endorsed is that the polar code should be made mandatory through the adoption of amendments to particular instruments, while being aware that there could be issues of common definitions across instruments and entry into force dates under different instruments, possibly risking fragmentation.<sup>95</sup> The technical work done to date has necessitated reference to and feedback from other IMO sub-committees such as for Radiocommunications, Search and Rescue (COMSAR), Fire Protection (FP), Safety of Navigation (NAV), Stability, Load Lines and Fishing Vessel Safety (SLF), and Training and Watchkeeping (STW).

In addition to the polar code, more initiatives with regard to existing legal instruments can be expected in the future. Among these instruments MARPOL stands out with reference to an AMSA recommendation to consider special area designation for the Arctic Ocean under some of the Annexes mentioned earlier. Canada and the Russian Federation have legislated “zero” discharge rules for most ship-generated wastes (e.g., for oily waste under Annex I).<sup>96</sup> This national standard is higher than the MARPOL standard currently applicable in Arctic waters.<sup>97</sup> Another potential issue to be considered is whether “nearest land” for permitted discharge purposes, if any, needs to be re-defined to take into consideration areas where the coast is buffeted by permanent ice or where there is ice-packing. As in other marine regions, MARPOL special area designations will likely be accompanied by an expectation for the establishment of port

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<sup>93</sup> For example the ballast waters and anti-fouling conventions are also affected. See Note by the Secretariat, *supra* note 91.

<sup>94</sup> *Ibid.*

<sup>95</sup> *Ibid.*

<sup>96</sup> David VanderZwaag and Aldo Chircop et al., *Governance of Arctic Marine Shipping*, Marine & Environmental Law Institute, Dalhousie University, 10 October 2008, , online: <http://library.arcticportal.org/391/1/AMSA-Shipping-Governance-Final-Report---Revised-November-2008.pdf>.

<sup>97</sup> *Ibid.*

reception facilities and port inspections. The issue of port reception facilities in a region with very few ports and areas where waste can be properly recycled or disposed of will need to be considered. It is only upon actual availability of appropriate reception facilities, as reported upon to the IMO by regional States, that special area status becomes effective under MARPOL.<sup>98</sup>

Although discussions on the polar code have addressed load line issues for stability of fishing vessels because of ice build-up, broader consideration of load lines for a wider variety of vessels may also become necessary.<sup>99</sup> The need for prescribed load lines adapted to individual marine regions and navigation seasons around the world has long been recognized in the Load Lines Convention, 1968 (LL Convention)'s annexes.<sup>100</sup> At this time there is no Arctic annex and the North Atlantic winter load lines appear to be in use for Arctic shipping.

Although at this time Arctic navigation is miniscule in comparison to traffic in established navigation routes, a further question to be broached is whether the Collision Avoidance Regulations (COLREGS)<sup>101</sup> could be usefully re-visited as polar traffic increases. The COLREGS were largely developed with certain assumptions in mind, such as navigation in open waters permitting certain actions and course directions. A vessel navigating through an ice field might be constrained by its ability to manoeuvre, but this concept under COLREGS applies to a vessel undertaking a particular operation.<sup>102</sup> Ice navigation is not necessarily linear and course changes could be constrained, or perhaps even required because of anticipated ice. The safe action to be taken with regard to vessels in the vicinity when there is also multi-year ice in the area bears

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<sup>98</sup> Ibid.

<sup>99</sup> Recent science may provide a pointer in this direction, for example the recent findings by German scientists regarding increase of surficial fresh water in the region alluded to earlier. See "Arctic Research Ship Scientists on Thin Ice," supra note 5.

<sup>100</sup> International Convention on Load Lines, London, 5 April 1966, ATS 1968 no. 23.

<sup>101</sup> Convention on the International Regulations for Preventing Collisions at Sea, London, 20 October 1972, 1050 UNTS 16.

<sup>102</sup> See for instance Regulation 3, *ibid.*, definition of a vessel restricted in its ability to manoeuvre, which could be read to include a vessel navigating through ice or ice-breaking. But this rule is premised on vessels in the area not being similarly constrained so as to take the necessary action regarding course.

thinking.<sup>103</sup> An understanding of what is safe speed in an ice field taking into consideration vessel and environmental factors could be useful.<sup>104</sup> COLREGS do not have a specific rule on convoys, now an operational practice in the provision of icebreaking services in the Northern Sea Route.<sup>105</sup>

## **Law of the sea framework for national regulation**

A discussion on the governance challenges for international shipping in the Arctic would not be complete without some reference to jurisdictional and regulatory issues at the national level. The region is undergoing jurisdictional change as a result of regional coastal States' ability to exercise sovereign rights over extended continental shelves in most of the Arctic Ocean, as legitimated by the LOS Convention.<sup>106</sup> Rights over extended continental shelves, although exclusive, do not affect the legal status of superjacent waters, including international navigation.<sup>107</sup> The maritime zones that affect international navigation and shipping are internal waters, territorial seas and exclusive economic zones (EEZs). Internal waters and territorial seas fall under coastal State sovereignty.<sup>108</sup> However, there remains the international right of innocent passage in the territorial sea.<sup>109</sup> The freedom of navigation applies to the EEZ,<sup>110</sup> subject to a special coastal State power to regulate international navigation for the purposes of vessel source pollution discussed below.<sup>111</sup> The legal concern is the extent and content of coastal State regulation of international shipping with regard to innocent passage in the

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<sup>103</sup> For example Regulation 8, *ibid.*, regarding the action to be taken to avoid a collision. Such a manoeuvre may not be possible if there is ice, especially multi-year ice, in the vicinity.

<sup>104</sup> For example in Regulation 6, *ibid.*, presence of ice could be included as a factor to be considered by all vessels in determining safe speed. The Canadian modification of this rule used to include "ice conditions" as factors to be considered by all vessels, but was repealed in 2008 (SOR/2008-272, s. 10). Ice as a factor is now limited to vessels with operational radar. Mariners are cautioned that ice might not be detected by radar. Collision Regulations (Canada Shipping Act), C.R.C., c. 1416.

<sup>105</sup> Commencing in the 2012 navigation season.

<sup>106</sup> "Slow Start on Northern sea Route," *supra* note 13

<sup>107</sup> LOS Convention, *supra* note 9, Art. 78.

<sup>108</sup> *Ibid.*, Art. 2.

<sup>109</sup> *Ibid.* Art. 17.

<sup>110</sup> *Ibid.*, Art. 58.

<sup>111</sup> *Ibid.*, Art. 234.

territorial sea and transit passage through straits used for international navigation. Fees may only be charged for services rendered and not merely for passage.<sup>112</sup> The subject is complex because the legal status of large areas of waters in Canadian and Russian areas, which are prime candidates for new trade routes, is contested. Canada and the Russian Federation claim waters enclosed by straight baselines as historic internal waters and subject to national sovereignty, effectively placing those areas beyond any right of international navigation.<sup>113</sup> However, some States claim that those waters include straits used for international navigation and as a result they are subject to the international regime of transit passage.<sup>114</sup> The latter characterization potentially constrains the two coastal States in regulating international navigation.<sup>115</sup> It is not realistic to expect either Canada or the Russian Federation to withdraw from their positions on the legal status of those waters. The more likely scenario is for States to continue to agree to disagree and for the Arctic States in question to develop practical frameworks and arrangements to facilitate international navigation through those waters to promote development of their northern regions. This appears to be the contemporary policy and practice with regard to the Northern Sea Route.

The LOS Convention provides another dimension to coastal State power to regulate international shipping in the Arctic. In Article 234, a provision mostly negotiated between Canada, the former Soviet Union and the US, coastal States enjoy more far-reaching power to regulate international navigation within their EEZs than in any other marine

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<sup>112</sup> *Ibid.*, Art. 26.

<sup>113</sup> Statement by Joe Clarke, Secretary of State for External Affairs, House of Commons, H.C. Debates, 10 September 1985, at 6461. The Arctic Archipelago was enclosed by straight baselines by Territorial Sea Geographical Coordinates (Area 7) Order, SOR/85-872. Decree of the Presidium of the Central Executive Committee of the U.S.S.R. of 15 April 1926, On the Proclamation of Lands and Islands Located in the Northern Arctic Ocean as Territory of the USSR, 32 *Sobranie Uzakonenii i Rasporiazhenii Raboche-Krest'ianskogo Pravitel'stva S.S.S.R.*, 203 (1926).

<sup>114</sup> In particular the United States and some EU member States. See US department of State, Limits in the Seas No. 112: United States Responses to Excessive National Maritime Claims, 9 March 1992, online: <http://www.state.gov/documents/organization/58381.pdf>, at 29-30.

<sup>115</sup> For example transit passage, unlike innocent passage, may not be suspended. LOS Convention, *supra* note 9, Arts 44 & 45. Also, if those waters are not internal, coastal States are constrained in the types of fees they can levy. Only fees for service could be levied. Further, strait States and transit States are expected to cooperate on navigation and safety aids in straits subject to transit passage. *Ibid.*, Art. 43.

region.<sup>116</sup> They are in a position to adopt higher standards than those generally adopted through the IMO and without the requirement to do so through the IMO.<sup>117</sup> They have in fact done so. The rule is accompanied by conditions and possibly uncertainties. There have to be hazards to navigation, such as severe climatic conditions and ice cover for most of the year such as to create obstructions.<sup>118</sup> Although the forecast is for an ice free Arctic in the summer, the winter season is longer, effectively making sure that Article 234 powers can be exercised all year round. Another criterion is that irreversible damage could be caused to the environment, which is satisfied by the sensitive Arctic environment where the ability to combat spills is limited, either because ice is present or a spill occurs in a remote area where timely response is not possible. The rule also refers to powers to be exercised within the EEZ, and it is not clear if this is also intended to include the territorial sea.<sup>119</sup> The laws and regulations to be adopted must be non-discriminatory, and have due regard to navigation. The rules must be based on the best scientific evidence, i.e., they cannot be arbitrary as otherwise they may be challenged. Article 234 is intended for the purposes of regulation of vessel source pollution. A question that arises is whether Article 234 provides merely an extended pollution jurisdiction in the Arctic (after all it is situated in Part XII of the LOS Convention concerning the protection and preservation of the marine environment) or can also include safety regulation.<sup>120</sup> A further question is whether this power includes regulating other non-pollution shipping impacts on the marine environment, such as routing to avoid whale strikes. Arguably, broader marine environmental regulatory power over international navigation is included in the EEZ's environmental jurisdiction, but any requirements imposed on international shipping would require cooperation through the IMO. In some instances the safety and pollution jurisdictions are intertwined, especially

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<sup>116</sup> LOS Convention, *supra* note 9. For a commentary on the negotiation history, see M.H. Nordquist et al., eds., *United Nations Convention on the Law of the Sea 1982: A Commentary* Vol. IV (Dordrecht: Martinus Nijhoff Publishers, 1991), 392-398.

<sup>117</sup> *Ibid.* See also Aldo Chircop, "Climate Change and the Prospects of Increased Navigation in the Canadian Arctic," 6 *World Maritime University Journal* 193-205 (2007), at 201.

<sup>118</sup> LOS Convention, *supra* note 9, Art. 234.

<sup>119</sup> D. Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit," 38 *Ocean Development and International Law* 3-69 (2007), at 47.

<sup>120</sup> Aldo Chircop, "The Growth of International Shipping in the Arctic: Is a Regulatory Review Timely?" 24 *International Journal of Marine and Coastal Law* 355-380 (2009), at 371.

in the Arctic, but there can also be safety matters that are unrelated to pollution, such as rules regarding life saving equipment. If Article 234 is interpreted restrictively for environmental purposes, Arctic coastal States would need to find a complementary balance between domestic environmental regulation and maritime safety regulation through the IMO. This is a difficult provision to administer. This became evident recently in the context of Canada's 2010 Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) establishing mandatory reporting requirements for vessels of 300 gross tonnage or more, vessels engaged in towing and vessels carrying pollutants or dangerous goods entering or leaving Canadian Arctic waters.<sup>121</sup> A communication from the United States to the Canadian Department of Transport in 2010 questioned the consistency of the NORDREG regulations with international law, including Article 234 requirements.<sup>122</sup>

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<sup>121</sup> Northern Canada Vessel Traffic Services Zone Regulations, SOR/2010-127.

<sup>122</sup> The requirement of Canadian permission by foreign vessels to enter and transit Canadian Arctic waters, and failure of compliance with which would entail prosecution "would be a sweeping infringement of freedom of navigation within the exclusive economic zone and the right of innocent passage within the territorial sea ..." The position of the United States is that "requiring permission to transit these areas" does not meet the Article 234 obligation "having due regard to navigation." Among other, the communication also questioned the scientific basis for the regulations and the possible application to areas that are not necessarily ice-covered for most of the year. The view was advanced that any ship reporting and routing measures which appropriately fall under SOLAS should be requested and adopted through the IMO. Finally, in reiterating its view that "the Northwest Passage constitutes a strait used for international navigation ... [A]t a minimum, a measure such as the NORDREG Zone Regulations for an international strait would need to be proposed and adopted at the IMO." Letter to Robert Turner, Department of Transport, Ottawa from Eric Benjaminson, Minister-Counsellor, Economic Energy and Environmental Affairs, Embassy of the United States, 19 March 2010, online: <http://www.state.gov/documents/organization/179286.pdf>.

## CONCLUSION

It is interesting to observe how the work on the future mandatory polar code requires cross-referencing to a range of IMO legal instruments on several issues. Although much of the edifice of international maritime law under the auspices of the IMO has been developed issue by issue, the future of Arctic shipping requires a big picture approach. While much of the focus at this time is on the needs of the polar code, this approach will eventually require a broader view of other international rules and standards that bear on shipping activities in the Arctic than are currently being addressed. As I have had opportunity to comment elsewhere, I believe that “a comprehensive assessment of the international maritime rules, regulations and standards to determine their near- and long-term practical application in the Arctic environment” is needed.<sup>123</sup> For example the application of the private international maritime law conventions also needs to be examined, for example with regard to the requirements for seaworthiness in contracts of carriage. A broader legislative programme than currently under way will be necessary. The advantage would be that the regulatory needs of Arctic shipping are approached in a systemic and coordinated manner and maritime contracting would be greatly facilitated.

The Arctic Council is playing an important role in developing a better understanding of the need for safety and environment protection in the Arctic and with due regard to the interests of indigenous peoples. It is also a forum where political consensus for future regulatory roadmaps may develop, as is the case with AMSA. However, the building of consensus and garnering support for safe and environmentally acceptable shipping in the region cannot be fully possible without a more inclusive process for participation in Arctic Council activities. The fact is the Council has limited membership and recently the rules for observers have been tightened to the point of being restrictive.<sup>124</sup> It is in the interest of the Arctic States to build a broader basis of support for the protection of the region by encouraging rather than discouraging other maritime States from participating

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<sup>123</sup> Chircop, “Growth of International Shipping,” *supra* note 120, at 379.

<sup>124</sup> Aldo Chircop, “Should Observer Participation in Arctic Ocean Governance be Enhanced?” Editorial, 7 *Canadian Naval Review* 2-3 (2012).

effectively in regional governance. The bulk of international shipping in the Arctic is flagged in non-Arctic States. The cooperation of all maritime States (i.e., flag States) is needed to ensure that high standards are applied to all tonnage trading in the region. Finally, Arctic States should consider cooperation with regard to Article 234, i.e., work together to achieve the higher standards they wish to legislate and enforce for Arctic shipping, and in doing so work more closely with the IMO. At the same time, common sense ought to prevail over the need for high standards, including mandatory reporting, which serves the interests of maritime safety and effective search and rescue.