

**COLLEGE OF LAW AND MANAGEMENT STUDIES**

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*A Critical Analysis of the Effectiveness of the Regulatory Regime Under the Polar Code and Its Application to the South African National Antarctic Programme.*

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Mini Dissertation Submitted to the School of Law in Partial Fulfilment of the Requirements of the Degree Master of Laws in Maritime Law.

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Lastly, I thank my supervisor, Dr V Surbun for his guidance and advice.

### **List of Abbreviations.**

ATCM	Antarctic Treaty Consultative Meeting.
ATS	Antarctic Treaty System.
AWPPA	Arctic Waters Pollution Prevention Act.
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources.
COMNAP	Council of Managers of the Antarctic National Programs
CSA	Canada Shipping Act.
CSC	Clean Shipping Coalition.
DE	IMO Sub-Committee on Ship Design and Equipment.
DEA	Department of Environmental Affairs.
FOEI	Friends of the Earth International.
ICSU	International Council for Science.
IFO	Intermediate Fuel Oil.
IMO	International Maritime Organisation.
IWC	International Whaling Commission.
MARPOL	International Convention for the Prevention of Pollution. From Ships.
MEPC	The IMO Marine Environment Protection Committee.
MSC	The IMO Marine Safety Committee.
NEMA	National Environment Management.
NEP	North-East Passage.
NLS	Noxious Liquids Substances.
NSR	Northern-Sea Route.
NSRA	Northern-Sea Route Administration.
OWG	Outside Working Group.

PC	Polar Class.
PWOM	Polar Waters Operational Manual.
SANAE	South African National Antarctic Expedition.
SANAP	African National Antarctic Programme.
SCAR	Special Committee on Antarctic Research.
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers.
UNCLOS	United Nations Convention on the Law of Seas
USSR	Union of Soviet Socialist Republics.
WWF	World Wide Fund for Nature



## **ABSTRACT**

*A Critical Analysis of the Effectiveness of the Regulatory Regime under the Polar Code and Its Application to the South African National Antarctic Programme.*

The Polar Regions, the Arctic and Antarctic, have been experiencing severe ice melts which have resulted in the predictions that new shipping routes would open for vessels to navigate these regions. This proved to be disconcerting because, given the resultant ease with which the vessels would navigate the Polar Regions; this would invite more vessels and human presence to the Polar Regions. This would put the Polar environment at risk of pollution. The laws of the Arctic Coastal states were applicable in the Arctic, whereas, the Antarctic Treaty System (ATS) governs the Antarctic region. However, these laws did not adequately regulate the protection of the Polar environment from pollution.

In 2017, the International Maritime Organisation (IMO) responded to the threat on the Polar environment by introducing the *International Code for Ships Operating in the Polar Waters* (the Polar Code). The Polar Code brings uniformity to the laws that govern the Polar Regions, and it aims to provide for safe ship operation and protection of the Polar environment by addressing risks present in the Polar waters that are not adequately mitigated by other instruments of the IMO. The Polar Code seeks to achieve its goal by proposing the structural standards for every ship that would navigate the Polar waters. This dissertation will investigate the structural requirements of the Polar Code. The Polar Code differentiates between categories A, B, and C ships, and different requirements apply to these vessels. This dissertation will investigate the provisions of the Polar Code to determine whether they are sufficient in protecting the Polar environment.

The study will then ascertain whether they apply to a South African vessel, *S.A Agulhas II* that frequently navigates the Antarctic waters for the purposes of the South African National Antarctic Programme (SANAP).

This dissertation will discuss the development of the Polar Code, the provisions thereof that deal with safety of ship operation, the provisions that aim at protecting the Polar environment, and the shortcomings of the Polar Code. The discussion will then culminate on the implications of the Polar Code to the SANAP and make recommendations.

## **CHAPTER 1: INTRODUCTION**

### *1.1 Background*

“Global warming” is a universal scourge, therefore, the Arctic and Antarctic region (Polar Regions) are one of the threatened regions. The increases in the temperatures in the Polar Regions have reduced the sea-ice; as a result, the Arctic Council predicts, “that the North-East Passage (NEP) may be open for shipping in 2020.”<sup>1</sup> This would reduce or eliminate “Arctic Sea-ice” and increase the possibility for ships to navigate through the “NEP and the Northern-Sea Route (NSR).”<sup>2</sup> Consequently, the warming of the Polar Regions would result in significant human activity in the regions with more vessels traversing the Polar waters. The other reasons that would encourage more ships to use the NEP and the NSR are the shorter distance and the threat of pirates, and armed robberies against ships in the South-East Asia make the NSR and NEP safer routes.<sup>3</sup> Moreover, the ships will navigate the Arctic Ocean because there is a potential that the region is rich in mineral resources and because of the recent development of tourism in the Arctic.<sup>4</sup> This prospect of more ships navigating the Arctic and the Antarctic, more regularly, raised an alarm that there are high possibilities of pollution happening in these icy regions.

This concern is not unique to the Polar Regions because vessel pollution may happen anywhere in the ocean where there are vessels navigating the sea. This is more worrisome for the Polar Regions because, as it will be shown in this chapter, there exist laws that regulate different aspects of ship navigation in the Polar waters, but those laws do little with regards to the protection of the ecosystems of the “Polar Regions” from ship pollution. Even though laws existed in the ‘Polar Regions’, this potential opening of the new routes in the Polar Regions created a need for a new legal instrument that would defend the ‘Polar Regions’ from ship pollution. The International Maritime Organisation (IMO) introduced the *International Code for Ships Operating in Polar Waters* (Polar Code) which came to force on 01 January 2017 to remedy the defect.<sup>5</sup>

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<sup>1</sup> Arctic Council, Arctic Marine Shipping Assessment 2009 Report (Report, 2009) 5.

<sup>2</sup> J Bai. “The IMO Polar Code: The Emerging Rules of Arctic Shipping Governance” (2015) 30 *International Journal of Marine and Coastal Laws*. 632.

<sup>3</sup> Bai (2015) at 675.

<sup>4</sup> Bai (2015) at 675.

<sup>5</sup> *International Code for Ships Operating in Polar Waters* (Polar Code), 2017.

The Polar Code is a response to the threat of pollution to the Polar environment. That is evident from the stated “goal of the Code, which is to provide for safe ship operation and the protection of the Polar environment by addressing risks present in Polar waters and not adequately mitigated by other instruments of the Organisation.”<sup>6</sup> The “Polar Code” creates uniformity to rules governing the Polar Regions and the Code’s application is mandatory in the Polar Regions. The dissertation will discuss the Polar Code in more detail in chapter 2 of this dissertation.

This chapter will now briefly discuss the geography of the Arctic and the Antarctic because that would help with understanding the extent of the jurisdiction of the Polar Code in the Polar Regions. This chapter will then discuss the Arctic Coastal state laws that existed before the Polar Code was adopted by the IMO, this will show the legal scope of those laws and the reasons that made it necessary for the IMO to adopt the Polar Code.

### 1.2. The Geography and Realms of the Arctic and the Antarctic Regions

It is important for this dissertation to set the scene by juxtaposing the Arctic and the Antarctic region. This is because, this dissertation will discuss the application of the Polar Code in these regions and the provisions of the Polar Code may differ in their application to a vessel depending on whether the vessel in question would be navigating the Arctic or the Antarctic waters. The juxtaposition of the Arctic and the Antarctic region is important in the understanding of these regions and to the understanding of the “provisions of the Polar Code” and the Polar Code as a whole.

The Polar Code discusses waters in the “Arctic and the Antarctic waters”.<sup>7</sup> The “*Guidelines for Ships Operating in Polar the Waters* of 2010 (2010 Guidelines)” also note that, “ships operating in the Arctic and Antarctic environments are exposed to many unique risks.”<sup>8</sup> Conditions like the “poor weather, the relative lack of good charts, poor communication systems and the lack of other navigational aids” worsen those risks in both Polar Regions.<sup>9</sup> In

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<sup>6</sup> Polar Code, Introduction.

<sup>7</sup> *Guidelines for Ships Operating in the Polar Waters*, 2010.

<sup>8</sup> Ibid.

<sup>9</sup> See Preamble of the Polar Code.

defining the arctic, one must be aware that various boundaries delineate the Arctic Region.<sup>10</sup>

These boundaries include:

“The astronomical boundary which refers to the Arctic Circle (66°32’51”);

The 10°C July isotherm, which forms a climatological-geographical boundary that stretches far to the South near Greenland and the Bering Strait region; and

An ecological boundary traced by the outer edge of the continuous permafrost zone above the East Asian and Canadian shields, which are characterised by a continental climate, this boundary also extends far to the South below the 60<sup>th</sup> parallel.”<sup>11</sup>

The Arctic region does not have definitive boundaries.<sup>12</sup> Furthermore, the 2010 Guidelines define the “Arctic Region” as an “ocean surrounded by continents, while the Antarctic is a continent surrounded by oceans.”<sup>13</sup> However, the Antarctic Waters are “those waters which are south of 60° S.”<sup>14</sup> The difference between the two regions is that, in the Antarctic region, the ice lasts for multiple years, whereas, the ice lasts only for few seasons in the Arctic region.<sup>15</sup> There exist arguments that the Antarctica habitually gets introduction amid “the flurry of superlative adjectives.”<sup>16</sup> In addition, the Antarctica is the dry, windy and colder than the Arctic region.<sup>17</sup> In addition to that, Antarctica is a primeval wasteland with almost no human occupation.<sup>18</sup>

### 1.3. The Legal Landscape of the Polar Regions Prior to the Adoption of the Polar Code.

This chapter will now look at the Russian and Canadian laws that were governing the Polar Regions before the coming into effect of the Polar Code. The section focuses on the laws of these two countries because these two Arctic countries are more active in adopting laws aimed at governing the Arctic region. This makes these laws important in trying to understand the legal landscape that existed before the Polar Code and without Canadian and

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<sup>10</sup> D Mager. “Climate Change, Conflicts and Cooperation in the Arctic: Easier access to Hydrocarbons and Mineral Resources?” (2009) 24 *The International Journal of Marine and Coastal Law*.348.

<sup>11</sup> Mager (2009) at 348-349.

<sup>12</sup> Ibid.

<sup>13</sup> Guideline (2010), Preamble.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> K Scott. “Institutional Development Within Antarctic Treaty System”. (2003) 52. *International and Comparative Law Quarterly*. 473.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

Russian laws in the Arctic; this region would have been close to being lawless. On that note, it will be equally important to discuss the Antarctic Treaty System (ATS) as it is the law that governs the Antarctic region.

### 1.3.1 *The Implications of Article 234 of the United Nations Convention of the Law of Seas (UNCLOS).*

Article 234 of the UNCLOS authorises the Arctic coastal states to adopt the laws that govern the Arctic region.

The Arctic region has to abide to a number of governing laws.<sup>19</sup> However, “UNCLOS applies to the entire Arctic Basin and is in force for all Arctic rim states except the United States, which accepts the relevant provisions of UNCLOS as customary international law.”<sup>20</sup> Importantly, UNCLOS vests the “Arctic coastal states” with rights to adopt laws governing the Arctic Region by stating that:

“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.”<sup>21</sup>

Myron describes “article 234 of UNCLOS” as the law that is specific to making laws that govern the Arctic region.<sup>22</sup> The “Arctic State laws” that are adopted “under the auspices of Article 234” of the “UNCLOS” often deviate from the intention of “Article 234” simple because the same article is phrased in a confusing manner, for example, the use of the words

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<sup>19</sup> PA Berkman, OR Young. “Governance and Environmental Change in the Arctic Ocean” (2009) 324 (5925). AAAS. 339.

<sup>20</sup> Ibid.

<sup>21</sup> UNCLOS, Article 234.

<sup>22</sup> H Myron. “United Nations Convention on the Law of the Sea 1982, A Commentary” (1991) 85 (2) *Center for Oceans Law and Policy, University of Virginia*. 408.

like “due regard” leads to inconsistencies with the original intention of the Article.<sup>23</sup> Those “Arctic Coastal laws for the prevention, reduction or control of pollution” shall be in line with commonly accepted “international laws” of the IMO or laws of any international organisation with the same standing.<sup>24</sup>

UNCLOS encourages states to pass laws using the right that they receive from Article 234 with the aim of “preventing, reducing and controlling pollution” in the Arctic region<sup>25</sup>

Considering the above, this dissertation will now discuss the Canadian laws that she passed under the right given by “Article 234 of UNCLOS”. The purpose is that of showing the shortcomings of the Canadian laws and the ways in which those shortfalls made the adoption of the Polar Code necessary.

### 1.3.2. *Canadian Laws governing the Arctic*

In “1969, the *SS Manhattan*, a U.S. ice-strengthened tanker, sailed through Canadian Arctic waters without obtaining Canada’s consent and this voyage of the *SS Manhattan* raised alarm about Canada’s Arctic jurisdiction and marine environmental protection in the region.”<sup>26</sup> Canada responded “to a challenge to her authority in the Arctic waters by adopting the *Arctic Waters Pollution Prevention Act*<sup>27</sup> (AWPPA).”<sup>28</sup> The AWPPA prohibits pollution only if it is in the “Canadian Arctic waters” or if the pollution is in the islands that are close to Canadian waters.<sup>29</sup> The Canadian Prime Minister, Pierre Trudeau, had to clarify the reason behind enactment of the AWPPA by saying that the Act aims to rectify the shortcomings in maritime pollution prevention strategies.<sup>30</sup> The AWPPA “prohibits the deposit of any waste within the Canadian Arctic waters unless other regulation permits such deposit of waste.”<sup>31</sup>

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<sup>23</sup> LC Williams. “An Ocean Between Us: The Implications of Inconsistencies Between the Navigational Laws of Coastal Arctic Council Nations and The United Nations Convention on the Law of the Seas for Arctic Navigation” (2017) 70 (1) *Vanderbilt Law Review*. 382.

<sup>24</sup> UNCLOS, Article 211 (5).

<sup>25</sup> UNCLOS, Article 194.

<sup>26</sup> D Vander Zwaag. “Shipping and Marine Environmental Protection in Canada” in Donald Rothwell and Sam Bateman (ed) *Navigational Rights and Freedoms and New Law of the Sea* (2000) 209.

<sup>27</sup> *Arctic Waters Pollution Prevention Act* (R.S.C, 1985, c. A-12).

<sup>28</sup> *Ibid.*

<sup>29</sup> AWPPA, Preamble.

<sup>30</sup> C Lamson. “Arctic Shipping, Marine Safety and environmental Protection” (1987) 11(1), *11 Marine Policy* 3. 7.

<sup>31</sup> AWPPA Article 4 (1) Ch A-12 (1985).

In the case of deposit of waste or likelihood thereof, the master of the ship must report the incidence to a “pollution prevention officer” in a way that the governor in council may find appropriate.<sup>32</sup> The AWPPA gives the power to the “governor in council” to give order for the destruction of the ship, if necessary, or any cargo he or she finds inside the ship, or if he or she decides to save the ship, the “governor in council” may sell such vessel and cargo or any of these.<sup>33</sup> However, the governor may make such an order merely on belief that the vessel is polluting the Arctic waters.<sup>34</sup> Subsequently, Canada passed the “*Canada Shipping Act*”<sup>35</sup> (CSA) in 2001 but it only came into effect on July 1, 2007.”<sup>36</sup>

The “CSA applies to waters south of 60 degrees within Canada’s territorial waters or fishing zones.”<sup>37</sup> In the case of contravention of the CSA, by commission of an offence, a person or vessel liable may be committed to “summary conviction to a fine not more than \$1,000, 000 or to imprisonment for a term not more than 18 months or both.”<sup>38</sup> There might be an overlap between the provisions of the CSA and the AWPPA.<sup>39</sup> Failure to obey any Canadian regulations activates the ‘AWPPA’, which prevents the vessel from entering the ‘Canadian waters’ if they fail to obey Canadian laws.<sup>40</sup>

The ‘AWPPA’ and the ‘CSA’ are Canada’s effort at protecting the Canada’s Arctic waters against pollution from ships. The problem with these Canadian laws is that they only prohibit pollution in the Canadian Arctic waters and because of their jurisdictional limitation; they do not go beyond that. This is clear in the goal of the AWPPA as stated above. This provokes the question on the possible achievement of the protection of the “Arctic waters”, beyond the “Canadian Arctic maritime zones.” The dissertation will now turn to look at the Russian legislative frameworks in the Arctic.

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<sup>32</sup> AWPPA Article 4 (2) Ch A-12 (1985).

<sup>33</sup> AWPPA Article 13 (2) Ch A-12 (1985).

<sup>34</sup> Ibid.

<sup>35</sup> *Canada Shipping Act*, 2001 (S.C. 2001, c. 26).

<sup>36</sup> *Canada Shipping Act*, 2001.

<sup>37</sup> DM McRae, DJ Goundrey. “Environmental Jurisdiction in Arctic Waters: The Extent of the Article 234” (1982) 16 *U.Brit. Colum.L.Rev.* 207.

<sup>38</sup> *Canada Shipping Act*, Article 121 (2).

<sup>39</sup> L Clark. “Canada’s Oversight of Arctic Shipping: The Need for Reform” (2008) 33 *Tulane Maritime Law Journal.* 95.

<sup>40</sup> AWPPA ss 15 (4) (b).

### 1.3.3. Russian Laws Governing the Arctic Waters.

Russia also passed laws under the auspices of “UNCLOS’s Article 234”.<sup>41</sup> The Russian legislative frameworks cover different laws applying to the Arctic waters including the “protection of economic zones of the USSR,<sup>42</sup> protection and preservation of the marine environment,<sup>43</sup> laws on territorial seas and contiguous zones,<sup>44</sup> and laws governing exclusive economic zones of the USSR.”<sup>45</sup> The “*Foundations of Russian Federation Policy in the Arctic 2020 and Beyond*” (“the Foundations”) were adopted in the end of March 2009.<sup>46</sup> The “Foundations aim to protect the Arctic environment” and liquidate maritime ship claims in the “Arctic region”.<sup>47</sup>

Russia’s Ministry of Transport approved the “*Rules of Navigation on the Water Area of the Northern Sea Route* (the Rules) which came into force on January 17, 2013.”<sup>48</sup> The “Rules” allow the “Northern Sea Route Administration (NSRA)” to authorise ships to traverse the waters in “the area of the NSR” but the ship-owner or shipmaster must apply for that permission.<sup>49</sup> However, “the application must have the indication of full denomination and (if any) of identification number of the IMO, family name, first name, patronymic (if any) of the applicant, contact phone, fax, e-mail address for a physical person.”<sup>50</sup> The ship-owner should confirm that the ship would comply with the Russian Rules before entering the ship into the NSR.<sup>51</sup> The ‘NSRA’ has a discretion to deny a ship the opportunity to navigate the “water area of the NSR” but in that case; the NSRA must also indicate the reasons for the refusal to grant the permission.<sup>52</sup>

The ‘Russian Rules’ only prevent vessel pollution from ships navigating the ‘Arctic waters’ adjacent the Russian coast. The Rules regulate the safety of the navigation for vessels traversing the Arctic adjacent to the Russian waters. The common feature between the CSA,

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<sup>41</sup> O Jensen. “The IMO Guidelines for Ships Operating in Arctic Ice-Covered Waters: From Voluntary to Mandatory Tool for Navigation Safety and Environmental Protection?” 2007 *The Fridtjof Nansen Institute*. 07.

<sup>42</sup> *Statute on the Protection of the Contiguous Zones of the USSR*, 1985.

<sup>43</sup> *Statute on the Protection and Preservation of the Marine Environment in the Economic Zone of the USSR*, 1985.

<sup>44</sup> *Territorial Sea and Contiguous Zone Act*, 1998.

<sup>45</sup> *Federal Act on the Exclusive Economic Zone of the Russian Federation*, 1998. The State Duma adopted this legislation on November 1998, and the Federation Council approved it on 2 December 1998.

<sup>46</sup> *Foundations of The Russian Federation’s State Policy in The Arctic Until 2020 And Beyond*, 2009.

<sup>47</sup> Foundations (2009), Article 3, Para 6 (C).

<sup>48</sup> *Rules of Navigation on the Water Area of the Northern Sea Route*, 2013.

<sup>49</sup> The Rules (2013), Article 2, para 3.

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> The Rules (2013), Article 2, Para 11.



AWPPA and the Rules is that their adoption came at the time when there were few vessels navigating both the Arctic and Antarctic. There may have been enough vessels navigating the ‘Arctic region’ to necessitate for the “protection of the environment” because there have always been open routes for ships in that region even prior the ice melts, but the risks have changed, the Antarctic region is now also threatened by ship pollution. Therefore, this necessitates that there be rules that will defend the environment of both the Arctic and the Antarctic region from pollution. This shows that there was always a need for a regulatory law that would protect the Arctic environment beyond the maritime zones of the Arctic states.

This chapter will now turn to discuss the laws that were governing the Antarctic before the adoption of the Polar Code.

#### 1.3.4. The Laws Governing the Antarctic Region Prior to the Adoption of the Polar Code.

The *Antarctic Treaty*<sup>53</sup> of 1959 holds together the Antarctic region, and the Treaty seeks to maintain the Antarctica as a “nuclear free zone and use the region for peaceful purposes only.”<sup>54</sup> The *Antarctic Treaty*, by means of Article IV, prohibits all the sovereignty disputes over the Antarctic Region.<sup>55</sup> However, the Antarctic Treaty System (ATS) operates together with “international law and other international conventions such as UNCLOS and *Convention on Biological Diversity*.”<sup>56</sup> Therefore, the *Antarctic Treaty* works together with the laws that govern the “fishery,<sup>57</sup> seal resources,<sup>58</sup> and mining.”<sup>59</sup> Butte argues that, “the almost universal acceptance of the ATS has led some commentators to argue that the duties it generates are owed *erga omnes*, and bind all members of the international community.”<sup>60</sup>

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<sup>53</sup> *Antarctic Treaty* 402 U.N.T.S. 71, entered into force June 23, 1961. Although the Treaty entered into force in 1961, it was opened for signature in 1959, hence, the Antarctic Treaty of 1959.

<sup>54</sup> *Antarctic Treaty*, Article 1.

<sup>55</sup> See Article IV (2), of the *Antarctic Treaty*, “No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force”.

<sup>56</sup> *Convention on Biological Diversity*, 1992.

<sup>57</sup> *Convention on the Conservation of Antarctic Marine Living Resources*, 1982; entered into force on 7 April 1982.

<sup>58</sup> *Convention for the Conservation of the Antarctic Seals*, 1978; signed on 1 June 1972 and entered into force on 11 March 1978.

<sup>59</sup> *Convention for the Preservation of Mineral Resources*, 1988.

<sup>60</sup> D Butte. “International Norms in the Antarctic Treaty” (1990) 3. *International Legal Perspectives*. 1.

In 1991, states approved the *Protocol on Environmental Protection to the Antarctic Treaty*<sup>61</sup> (the Madrid Protocol), in Madrid. The Madrid Protocol, “protects the Antarctic environment and the Antarctic ecosystems”, therefore, just like the *Antarctic Treaty*, it encourages “peace and science” in the Antarctic region.<sup>62</sup> The parties to the “*Antarctic Treaty* decided that the Protocol” should be an accessory to the “*Antarctic Treaty*”, therefore, it is not an amendment to the Treaty.<sup>63</sup> Furthermore, the Madrid Protocol provides that, “activities in the Antarctic Treaty area shall be planned and conducted so as to limit adverse impacts on the Antarctic environment and dependent ecosystems.”<sup>64</sup>

The chapter shows that, unlike the Arctic and the Antarctic regions that have several laws, the Antarctic region has only the *Antarctic Treaty* of 1959 as the main regulatory instrument for the region. This might be because there is less human presence in the Antarctic Region as compared to the Arctic Region that has coastal states and people living in those states. The *Antarctic Treaty* only applies in the Antarctic region. This shows that the Antarctic regulatory legal regime is less complicated, and the Antarctic region has not previously drawn much of human interests outside scientific endeavours and countries are not interested in enjoying sovereignty in the region, except those countries that become parties to the *Antarctic Treaty*. The Polar Code in its application in the Antarctica will have to consider the *Antarctic Treaty*.

Regrettably, the *Antarctic Treaty* does not deal with the protection of the environment in the Antarctic region and that is one of the concerns since there is a possible introduction of the new shipping routes in the region. As was said earlier, the Polar Code has come to remedy that defect; however, the disappearance of ice and the opening of the shipping routes in the Polar region heightened the need for an instrument that would protect the environment of the Poles from pollution. The Polar Code is that legal instrument, it is more of a reply to the problem, and it vindicates the shortcomings of the previous laws that existed before the ‘Polar Code’ in the Polar region. The laws of the ‘Arctic States’ and the *Antarctic Treaty* have jurisdictionally limited application; however, the Polar Code applies to both Polar Regions and in the areas that the previous Polar legal frameworks that existed prior the Polar Code did not apply. The goal-based Polar Code focuses on the strengthening of the structure of the vessels that navigate the Polar Regions. Despite that, as chapter 3 of this dissertation will show, the Polar Code is insufficient to protect the Polar environment.

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<sup>61</sup> *Protocol on Environmental Protection to the Antarctic Treaty*, 30 ILM 1455 (1991).

<sup>62</sup> *Protocol on Environmental Protection to the Antarctic Treaty*, 1991, Article 2.

<sup>63</sup> Madrid Protocol, Article 4.

<sup>64</sup> Article 3 (2) (a).

#### 1.4. The Aim of the Study.

Considering the previous information about the Polar Regions, this study will seek to determine: (i) whether the Polar Code is sufficient in protecting the Polar environment, and, (ii) the implications of the Code for South Africa in the Antarctic Region.

This study will submit that the difference in categorisation of ships in the Polar Code puts in jeopardy the aim of the Polar Code in protecting the environment of the Poles. This weakens the efficiency of the Polar Code in safeguarding the Polar environment. The Polar Code allows the “Category C”<sup>65</sup> ships to navigate the Polar waters without having their hulls strengthened, in the same way as it requires for the “Category A”<sup>66</sup> and “Category B”<sup>67</sup> ships, and this puts the Polar environment in jeopardy. This study will submit that the Polar Code is insufficient in protecting the Polar environment; therefore, the IMO needs to make amendments to the Polar Code to remedy the gap.

This study will prescribe the suitable amendments for the Code. The possible amendments will submit that all the provisions of the Polar Code aimed at strengthening of the ship and protecting the environment should apply to all vessels.

#### 1.5. The Structure of the Study.

After setting the scene, in chapter 1, by discussing the geographical characteristics of the ‘Polar Regions and the laws of the Polar Regions, the legal development and legislative history of the Polar Code in chapter 2, Chapter 3 will situate and critically analyse the Polar Code. Chapter 4 will go on to discuss South Africa’s activities in the Antarctic region through SANAP and then discuss the possible effects of the Polar Code on the programme. This study will lastly suggest recommendations and conclude in chapter 5.

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<sup>65</sup> Polar Code, Definitions, Para 2.3, defines Category C ship as “a ship designed to operate in open water or in ice conditions less severe than those included in categories A and B.”

<sup>66</sup> Polar Code, Definitions, Para 2.1; “Category A ship means a ship designed for operation in Polar waters in at least medium first-year ice, which may include old ice inclusions.”

<sup>67</sup> Polar Code, Definitions, Para 2.2 defines ‘Category B ship’ as “a ship not included in ‘category A’, designed for operation in ‘Polar waters’ in at least thin first-year ice, which may include old ice inclusions.”

## **CHAPTER 2. LEGAL DEVELOPMENT OF THE POLAR CODE.**

### *2.1. Introduction*

The previous chapter sets out the geographical and legal landscape of the Polar Regions that are under the jurisdiction of the Polar Code. This chapter aims to layout the legal developments of the Polar Code from its origins as a proposition and *travaux preparatoires* to its adoption as uniform legal rules governing the two Poles. The Polar Code is mandatory however, this chapter will look at the Polar Code at its first adoption as recommendatory guidelines in 2002 and 2009 respectively. The chapter will conclude by investigating the Polar Code's safety measures for ship operation.

### *2.2. The Recognition of the Need for Uniform Rules in the Polar Regions and a Leap Forward.*

The *Exxon Valdez*, an oil tanker on a voyage from Alaska to California, ran aground off the coast of Alaska in 1989.<sup>68</sup> The vessel had deviated from the designated shipping routes in attempt to avoid colliding with the icebergs; unfortunately, it ran aground in the Blich Reef in Prince William Sound.<sup>69</sup> This accident resulted to the puncturing of 11 oil tanks and spill of “41 million litres (11 million gallons) of oil to the fragile Arctic waters.”<sup>70</sup> The accident of the *Exxon Valdez* prompted the IMO to develop a Polar legal instrument.<sup>71</sup> In addition, “the near loss of the cruise ship *Maxim Gorkiv* near Spitsbergen, and the sinking of the *T/S Finn Polaris* near Nanisivik, Baffin Island, highlighted the dangers of shipping in northern waters that put pressure on the IMO to adopt the Polar legal instrument for the protection of the environment.”<sup>72</sup>

In 1991, these accidents prompted Germany to make a proposal to the IMO that the ships traversing or intending to navigate the icy waters of the Poles should have their structures

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<sup>68</sup> South African National Antarctic Programme (SANAP) ‘Lessons Not Learned: 20 Years After the Exxon Valdez Disaster Little Has Changed in How We Respond to Oil Spills in the Arctic’ Available at <http://www.sanap.ac.za/about/how-we-got-involved/>. Accessed on 16 October 2018.

<sup>69</sup> Ibid

<sup>70</sup> Ibid.

<sup>71</sup> Jensen (2007) at 8.

<sup>72</sup> P. Kikkert. “Promoting National Interests and fostering Cooperation: Canada and the Development of the Polar Code” (2012) 43 (3) *Journal of Maritime Law and Commerce*. 321.

strengthened to withstand navigation in the icy conditions and the Germans asked this rule to be entrenched in chapter II-1 of the 1974 SOLAS”.<sup>73</sup> Germany’s proposal received support from other states.<sup>74</sup>

The IMO “referred the matter to the IMO Sub-Committee on Ship Design and Equipment (DE), which appointed Canada to head an Outside Working Group (OWG) of technical experts to develop specialised rules for ships operating in Polar Waters.”<sup>75</sup> Despite their disagreement with Germany’s proposal, Canadian officials nonetheless saw it appropriate that there should be the uniform rules that govern the Polar Regions.<sup>76</sup> However, the proviso is that those uniform rules should not interfere with Arctic Coastal laws that are passed by the Arctic states and those rules must only play a subsidiary role to international conventions, like UNCLOS.<sup>77</sup> The OWG held annual meetings “between 1992 and 1997 in Germany, Sweden, Norway, Russia, the United States, Canada and Finland”, to create the uniform rules that would govern the Poles and protect their environments.<sup>78</sup>

Those meetings gave birth to the “*International Code of Safety for Ships in Polar Waters*”<sup>79</sup>, which Canada submitted on behalf of the OWG to the DE’S 41<sup>st</sup> session in London 1998.<sup>80</sup> The draft Code set out the “rules for construction, navigation and equipment with the aim to provide that all ship operations in Polar waters meet internationally acceptable standards.”<sup>81</sup> The “DE sent the draft Polar Code to IMO technical committees for further review which took place in 1999 in the 71<sup>st</sup> session of the Marine Safety Committee (MSC).”<sup>82</sup> The “1998 Antarctic Treaty Consultative Meeting (ATCM)” raised concerns that the Code does not deal effectively with the “special conditions of the Antarctic region” therefore; the Code has no relevance to the Antarctic region.<sup>83</sup> Jensen argues that, “the proposed Code was further criticised for its area of application because the Code applies to the Arctic and to the Antarctic region as well-yet, the argument was that, such expansion of the area of application

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<sup>73</sup> IMO, Document Maritime Safety Committee 59/30/32, IMO, 12 April 1991.

<sup>74</sup> Jensen (2007) at 9.

<sup>75</sup> Jensen (2007) at 9.

<sup>76</sup> Jensen (2007) at 9.

<sup>77</sup> Kikkert (2012) at 322.

<sup>78</sup> Report of the MSC on the 68<sup>th</sup> Session. IMO doc. MSC 68/23 (12 June 1997), section 20.5.

<sup>79</sup> *International Code of Safety for Ships in Polar Waters*, 1998.

<sup>80</sup> Jensen (2007) at 9.

<sup>81</sup> *International Code of Safety for Ships in Polar Waters*. IMO doc. DE 41/10, Annex 1, p.3.

<sup>82</sup> Jensen (2007) at 9.

<sup>83</sup> Final Report of the 22<sup>nd</sup> ATCM in Tromso, 25 May-5 June 1998, Paras 85-95.

of the Code to apply to the Antarctic was done without sufficient consideration of the implications for the Antarctic.”<sup>84</sup>

Despite some dissatisfaction from some of the IMO member states, “the MSC decided to develop the draft Polar Code as recommendatory guidelines.”<sup>85</sup> However, the recommendatory guidelines were to apply only to the Arctic, and not to the Antarctic.<sup>86</sup> Furthermore, “inconsistencies with international treaties would have to be removed, and the future Code should include only rules not already covered by other instruments.”<sup>87</sup> The MEPC, “at its 48<sup>th</sup> session (October 2002) and the MSC, at its 76<sup>th</sup> session (December 2002), approved the recommendatory *Guidelines for Ships Operating in the Arctic Ice Covered Waters* (the 2002 Guidelines).”<sup>88</sup>

### 2.3. The 2002 Guidelines: Structure and Provisions.

The IMO became aware of the need and necessity for the Guidelines that would “regulate shipping through the NSR” to preserve the primeval and environmentally fragile “Arctic region”.<sup>89</sup> This resulted to lengthy and laborious negotiations that culminated in the IMO reaching agreement on the “non-mandatory Guidelines”.<sup>90</sup> However, the IMO completed the Guidelines in 2002.<sup>91</sup> The 2002 Guidelines received their roots from the 1998 “*International Code of Safety for Ships in Polar Waters*” which was submitted to Ship Design and Equipment Sub-committee at its 41<sup>st</sup> session in London.”<sup>92</sup> Notably, the 2002 Guidelines “only applied to vessels that are engaged in commercial activities and this excludes the fishing vessels as well as yachts not engaged in commercial activities.”<sup>93</sup> The “2002 Guidelines also applied only to vessels engaged in international voyages thus arguably excluding ships making round-trip excursions from a single port.”<sup>94</sup>

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<sup>84</sup> Jensen (2007) at 9-10.

<sup>85</sup> Jensen (2007) at 10.

<sup>86</sup> Jensen (2007) at 10.

<sup>87</sup> Jensen (2007) at 10.

<sup>88</sup> International Maritime Organisation (IMO), *Guidelines for Ships Operating in Arctic Ice-Covered Waters* (23 December 2002). CIRC\MSC\1056-MEPC-Circ 399.

<sup>89</sup> V Sakhuja. “The Polar Code and the Arctic Navigation” (2014) 38 (6) *DOI*. 805.

<sup>90</sup> Kikkert (2012) at 328.

<sup>91</sup> Kikkert (2014) at 328.

<sup>92</sup> Sakhuja (2014) at 805.

<sup>93</sup> ATCM 30 at 6.

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

The application of the 2002 Guidelines was limited to vessels travelling in waters with one-tenth of ice, and such ice must be posing a structural risk to ships.<sup>95</sup> Structurally, the ‘2002 Guidelines’ have two parts: “part A provides a guide for Polar class ships” whereas, “parts B and C of the Guidelines” provide a guide for “Polar class and non-Polar class ships.”<sup>96</sup> The aim of the ‘2002 Guidelines’ was to “promote safety of navigation and to prevent pollution from ship operations in Arctic ice-covered waters”, on that note, the same Guidelines had provisions dealing with “construction, equipment and operational parts presented in that order and subdivided into chapters.”<sup>97</sup>

However, “in November 2007, the IMO Assembly adopted resolution A.999 (25) to supplement resolution A.893 (21) which contained *Guidelines for Voyage Planning for Passenger Ships Operating in Remote Areas*.”<sup>98</sup> These Guidelines provide for a voyage planning that should include a “detailed voyage and passage plan, the factors such as the safe areas and no-go areas; surveyed marine corridors, if available; and contingency plan for emergencies in the event of limited aid being available for assistance in areas remote from SAR facilities.”<sup>99</sup>

#### 2.4. *The “Guidelines for Ships Operating in Polar Waters”<sup>100</sup> (2010 Guidelines).*

The MSC, “at its 79<sup>th</sup> session in 2004, considered a request by the XXVII ATCM for IMO to consider amending the Guidelines so that they would also be applicable to ships operating in the Antarctic Treaty Area and instructed its DE to revise the Guidelines accordingly.”<sup>101</sup> Hence, “at its 52<sup>nd</sup> session in 2009, DE finalised a draft Assembly resolution on *Guidelines for Ships Operating in Polar Waters*, addressing both Arctic and Antarctic areas, which was approved by the eighty-sixth session of MSC and the fifty-ninth session of MEPC.”<sup>102</sup> The 2010 Guidelines addressed “issues including fire safety, life-saving and navigational

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<sup>95</sup> Ibid.

<sup>96</sup> 2002 Guidelines, chapter 1, at para. 1.1.2 and para. 1.13.

<sup>97</sup> 2002 Guidelines, Preamble.

<sup>98</sup> International Maritime Organisation (IMO), *Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas*, Resolution A.999 (25) (Agenda item 9), Adopted on November 29, 2007.

<sup>99</sup> Ibid at Annex 3.1.

<sup>100</sup> International Maritime Organisation (IMO), *Guidelines for Ships Operating in Polar Waters*. Resolution A.1024 (26) (Agenda item 10) Adopted on December 2, 2009.

<sup>101</sup> International Maritime Organisation (IMO). Report of the Maritime Safety Committee on Its Seventy-Ninth Session. MSC 79/23. (Agenda Item 23). 15 December 2004. 74.

<sup>102</sup> International Maritime Organisation (IMO), *Guidelines for Ships Operating in Polar Waters*. Resolution A.1024 (26) (Agenda item 10) Adopted on December 2, 2009. Foreword.

equipment, operational issues, environmental protection and damage control.”<sup>103</sup> These Guidelines were recommendatory; thus, they provide recommendations rather than mandatory directions.<sup>104</sup>

The above, as per the 2010 Guidelines, is achievable by means of an “integrated approach based on requirements in existing conventions, which cover the design outfitting, crewing and operation of ships for the conditions, which they will encounter.”<sup>105</sup> For the first time, the 2010 Guidelines acknowledged that both Arctic and Antarctic conditions can include dangers that can damage the structure of all ships.<sup>106</sup> Hence, the layout of the 2010 Guidelines includes the “general, construction, equipment, operational and environmental protection and damage control provisions presented in that order and subdivided into chapters.” These Guidelines provide that vessels may navigate icy waters only if they have their structures strengthened for purposes of navigating in such conditions.<sup>107</sup> For the first time, the definitions section of the 2010 Guidelines contain the definition of the Polar waters as including both the Arctic and Antarctic and further give the definitions of Arctic region and the Antarctic region separately.

Unlike the 2002 Guidelines, the 2010 Guidelines are double principled in that, firstly, they “aim to promote the safety of navigation” and secondly, they aim “to protect the Poles from ship pollution”.<sup>108</sup> The other upgrade as to the 2010 Guidelines is that they govern both the Arctic and the Antarctic. One can say the same about the Polar Code, which took this principle of governing both the Arctic and the Antarctic.

## 2.5. *Commentary on the 2010 Guidelines*

Jensen believes that there should be a course to train the ice navigators for purposes of navigating in icy conditions but it is concerning that, “there exists no model course for ice navigators or qualification scheme for individuals who are to operate vessels in ice-covered waters.”<sup>109</sup> It is worrying that notwithstanding the absence of training arrangements for ice-navigators, “section 1.2.1 of the 2010 Guidelines requires all ships operating in ice-covered

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<sup>103</sup> 2010 Guidelines.

<sup>104</sup> 2010 Guidelines, preamble.

<sup>105</sup> Ibid.

<sup>106</sup> Ibid.

<sup>107</sup> Ibid.

<sup>108</sup> The 2010 Guidelines.

<sup>109</sup> Jensen (2007) at 15.



waters are to carry at least one ice-navigator.”<sup>110</sup> An “ice-navigator is a person who is qualified under the International Convention on Standards of Training, Certification and Watch-keeping for Seafarers (STCW convention), and that person must be specially trained and otherwise qualified to navigate in Polar Waters.”<sup>111</sup> Wanerman describes “the ice-navigator as the new officer of the deck department whose task is to monitor Polar waters for any ice that places the integrity of the ship at risk.”<sup>112</sup> The matters get worse because an ice navigator must always have a document in his or her possession that certifies that he or she has received training and passed the training for duties of an ice-navigator.<sup>113</sup>

Furthermore, the preamble, of the 2010 Guidelines labels the Guidelines as merely “recommendatory and not mandatory” and this may affect negatively to the practical effectiveness of the Guidelines because some ship operators might choose not to give much importance to some regulations of the Guidelines because of their recommendatory status.<sup>114</sup> The Guidelines merely existed as soft law. Wanerman argues that, the Guidelines have too many flaws for implementation as is in the Polar Code and the first flaw of the IMO Guidelines is that they are just guidelines.<sup>115</sup>

This chapter has discussed the developments of the law on the Polar Regions until the adoption of the 2010 Guidelines. Now this chapter will turn on to discuss the Polar Code as the Polar Regions’ regulatory instrument adopted after the Guidelines. As one can expect, there are lot of similarities between the 2010 Guidelines and the Polar Code.

## 2.6. The Polar Code

The status of the Guidelines is that they are recommendatory and that they lacked the binding effect, therefore, they were not able to fulfil the intended purpose of establishing the uniform regime in Arctic shipping. Finally, on its 86<sup>th</sup> meeting in London, “the MSC proposed a mandatory Polar Code to regulate shipping in the Arctic and the Antarctic.”<sup>116</sup> This came after the “28 May 2008 meeting of the representatives of the five coastal states on the Arctic

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<sup>110</sup> Ibid.

<sup>111</sup> 2010 Guidelines G-3.10.

<sup>112</sup> ROG Wanerman. “Freezing Out Non-Compliant Ships: Why the Arctic Council Must Enforce the Polar Code” (2015) 47 *Case Western Reserve Journal of International Law*. 439.

<sup>113</sup> 2010 Guidelines; section 14.2.

<sup>114</sup> 2010 Guidelines, Preamble, Para P-1.4.

<sup>115</sup> Wanerman (2015) at 440.

<sup>116</sup> Bai (2015) at 679.

Ocean” in Ilullisat, Greenland, which met to discuss and adopt a declaration that made it clear that “they would not develop a new comprehensive international legal regime to govern the Arctic Ocean.”<sup>117</sup> The representatives of the Arctic States declared that they will keep themselves informed of the laws in the “Arctic Ocean” and they will continue to adopt necessary laws.<sup>118</sup> Nevertheless, this did not deter the IMO from making preparations necessary for the adoption of the “Polar Code”.

The need for mandatory uniform Polar rules was clear, but the IMO was still unclear of how it should adopt those rules because it had the options to “enact the Code as a separate international convention or it could have just amended the conventions that were already in force”<sup>119</sup>

Alternatively, the IMO would implement a separate convention and that would call for ratification by the member states holding a significant percentage of the world merchant shipping.<sup>120</sup> In November 2014, “the MSC and the MEPC adopted Part I-A of the Polar Code, safety measures at the 94<sup>th</sup> session of the MSC.”<sup>121</sup> The “MSC adopted Part II-A of the Polar Code on Pollution Prevention Measures and MARPOL amendments in May 2015 at its 68<sup>th</sup> session.”<sup>122</sup> The Polar Code is the combination of the “Part I-A Safety Measures and the Part II-A Environmental measures”; however, the text of the Polar Code separates these two Parts in the same fashion. The adoption of the two parts of the ‘Polar Code’ by the ‘MSC’ and the MEPC meant that the Polar Code was completed.

#### *2.6.1. The Status of the Polar Code.*

There are many possible conceptions of the Polar Code. Zanotto defines “the Polar Code as a response of the international community to the environmental challenges deriving from climate change to protect the Arctic Ocean from the threat consisted of the increasing naval activity to the region and to promote a safe shipping in the northern seas.”<sup>123</sup> The Polar Code is a product of strenuous conferences and it is a leap from the MARPOL and UNCLOS

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<sup>117</sup> Arctic Ocean Conference Ilullisat, Greenland (27-29 May 2008). ‘The Ilullisat Declaration’ adopted on 28 May 2008.

<sup>118</sup> Ibid.

<sup>119</sup> Bai (2015) at 679.

<sup>120</sup> Ibid.

<sup>121</sup> IMO, International Code for Ships Operating in Polar Waters (Polar Code) (Safety-related provisions) (21 November 2014) IMO Resolution MSC. 385 (94).

<sup>122</sup> IMO, International Code for Ships Operating in Polar Waters (Polar Code) (Environment-related provisions) (15 May 2015) IMO Resolution MEPC. 264 (68).

<sup>123</sup> F Zanotto. To What Extent Do Sea Transport and Navigation Challenges Deriving from Climate Change Justify a New Governance for the Arctic Region? (LLM Thesis, Tilburg University, 2016) 24.

Conventions.<sup>124</sup> On that note, the Polar Code is not a self-governing Convention.<sup>125</sup> Bai explains that,

“The Polar Code tries to balance the interests of different stakeholders: Arctic States have seen as accepted their instances to a safer marine environment, to use it for commercial purposes too. On the other hand, Non-Arctic States are seeking for the liberalisation of the seas, hence, willing to concede stricter rules on the protection of Arctic ecosystem and the Polar Code tries to make these two conflicting views coexist.”<sup>126</sup>

The “preamble of the Polar Code” describes the same Code as, “an initiative towards supplementing the existing IMO instruments in order to increase the safety of ships operation and mitigate the impact on the people and the environment in the remote, vulnerable and potentially harsh Polar waters.”<sup>127</sup> The “Polar Code” found its roots on the underlying principles of non-discrimination, “safety of life at sea and environmental protection”.<sup>128</sup>

The “principle of non-discrimination” refers to the prevention of discriminatory actions and unnecessary restrictions on shipping by governments in the overarching purpose of international maritime conventions adopted by the IMO.<sup>129</sup> However, the principles of “safety of life at sea and environmental protection” underpin the global shipping order and they are the “substantive principles of the Arctic shipping governance.”<sup>130</sup> Importantly, “the goal of the Polar Code” is two-fold as it aims “to provide for safe ship operation and the protection of the Polar environment by addressing risks present in Polar waters and not adequately mitigated by other instruments of the organisation.”<sup>131</sup> These are the views of the different academics trying to give a possible definition of the Polar Code.

This chapter will now discuss the structure and the “safety provisions of the Polar Code” and this is for the purposes of showing how deep the Code goes in ensuring the safety of ship navigation in the Polar waters.

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<sup>124</sup> Bai (2015) at 678.

<sup>125</sup> Bai (2015) at 678.

<sup>126</sup> Bai (2015) at 688.

<sup>127</sup> The Polar Code, Preamble.

<sup>128</sup> Bai (2015) at 680.

<sup>129</sup> *Convention on the International Maritime Organisation* No. 4214 of 1958 (Geneva, 6 March 1948, came in force 17 March 1958) 289 UNTS 3. At Part 1 Art.1 (b).

<sup>130</sup> Bai (2015) at 680.

<sup>131</sup> The Polar Code, Introduction.

### 2.6.2. Structure of the Polar Code

The Polar Code has an introduction, Part I and Part II. An introduction section of the Polar Code has the “mandatory provisions” that apply to both Part II and I. However, Part-I of the Polar Code is subdivided into Part I-A which has the mandatory provisions on safety measures and Part I-B containing recommendatory provisions on safety. Part II is divided in the same fashion as compared to Part I. Part II has Part II-A which “has mandatory provisions on prevention of pollution” in the Polar Regions and Part II-B contains recommendatory provisions on the prevention of pollution. The whole structure of the Polar Code adopted a *goal-based* approach, which is evident in that at the beginning of every chapter of the Code, the goal of the chapter is at the beginning of the chapter and the same is applicable for all the chapters. Each chapter of “the Polar Code has the overall goal of the chapter, functional requirements to fulfil that goal and regulations.”<sup>132</sup>

### 2.6.3. Provisions of Part I-Safety Measures- of the Polar Code.

Chapter 1 of Part I-A of the Polar Code explains the style and the arrangements of the chapters of the Polar Code. Chapter I of Part I-A contains the definitions section. Importantly, the vessels that “are regulated by the Polar Code should” always carry a Polar ship certificate when they are navigating the Polar waters.<sup>133</sup> The issuance of the “Polar Ship Certificate shall be after an initial or renewal survey to a ship, which complies with relevant requirements of the Code.”<sup>134</sup> The Administration must issue that “Polar Ship Certificate or the certificate” to a ship that is qualified to navigate the Polar waters however, any person or organisation recognised by the said administration “in accordance with UNCLOS Regulation XI-1/1” can issue the same certificate to a qualifying ship.<sup>135</sup> In every case, “such Administration is responsible for that Polar Ship Certificate.”<sup>136</sup> However, the Polar Code fails to give definition of “Administration” as per its use in the Code and this might be the source of confusion in the future.

The vessel shall be assessed before being given the ‘Polar ship certificate’ and that assessment must be aimed at exposing the qualities and shortcomings of the vessel for the

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<sup>132</sup> Part I-A, Chapter 1.1 of the Polar Code.

<sup>133</sup> Part I-A, Chapter 1, Para 1.3.1.

<sup>134</sup> Part I-A, Chapter 1, Para 1.3.2.

<sup>135</sup> Part I-A, Chapter 1, Para 1.3.4.

<sup>136</sup> Ibid.

reasons of navigating the Polar waters, taking into account the encompassing weather conditions, such as “operating in low temperature”<sup>137</sup> and “operation in ice”.<sup>138</sup> After all the tests on the ship are done, “the owner, operator or crew of the ship will be given a Polar Waters Operational Manual (PWOM), which shall include information on the ship-specific capabilities and limitations in relation to the assessment required in chapter 1 of the Code.”<sup>139</sup> In terms of Paragraph 2.2.4 of Part I-A, “the PWOM shall include or refer to the specific procedures to be followed in the event of an incident in Polar waters.”<sup>140</sup> Chapter 3 of The Code dictates for the ships to be equipped with materials that would allow them to operate safely in the low air temperatures of the Polar Regions<sup>141</sup> and in “ice-strengthened ships, the structure of the ship must be able to resist both global and local structural loads anticipated under the foreseen ice-condition.”<sup>142</sup>

Therefore, ships shall be stable enough when they encounter some ice accumulations to their structure due to cold temperatures, and “ships of Category A and B” shall be stable enough to withstand damage that they might suffer because of ice impacts.<sup>143</sup> While the first six sections of the Code deal with the structural requirements for ships navigating Polar waters, chapter 7 gives the strategies for fire safety or protection and it aims to ensure that “fire safety systems and appliances are effective and operable.”<sup>144</sup> Chapter 7 of the Code further dictates that, “means of escape remain available so that persons on board can safely and swiftly escape to the lifeboat and life raft embarkation deck under the expected environmental conditions.”<sup>145</sup> Chapter 8 deals with lifesaving and the preparations for “lifesaving in the Polar waters” with the goal of providing for “safe escape, evacuation and survival.”<sup>146</sup>

Chapter 8 requires “the exposed escape routes to remain accessible and safe at all times, taking into consideration the potential icing of structures and snow accumulation.”<sup>147</sup> In the case of evacuation, the available lifesaving must be sufficient to provide assistance when rescue is required even under the adverse environmental conditions.<sup>148</sup> For survival purposes,

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<sup>137</sup> PART I-A, Chapter 1, Para 1.5.1.

<sup>138</sup> Part I-A, Chapter 2, Para 1.5.2.

<sup>139</sup> Part I-A, chapter 2, Para 2.2.2.

<sup>140</sup> Part I-A, chapter 2, para 2.2.4.

<sup>141</sup> Part I-A, chapter 3, para 3.2.1.

<sup>142</sup> Part I-A, chapter 3, Para 3.2.2.

<sup>143</sup> Part I-A, chapter 4, Para 4.2.2.

<sup>144</sup> Part I-A, Chapter 7, Para 7.1.

<sup>145</sup> Ibid.

<sup>146</sup> Part I-A, Chapter 8, Para 8.1.

<sup>147</sup> Part I-A, Chapter 8, Para 8.2.1.1.

<sup>148</sup> Part I-A, Chapter 8, Para 8.2.2.

everyone on board a vessel must be given adequate thermal protection “taking into account the intended voyage, the anticipated weather conditions (cold and wind), and the potential immersion in Polar waters where applicable.”<sup>149</sup> The Code comprehensively provides for means of “effective communication for ships and survival crafts during normal operation and in emergencies.”<sup>150</sup>

“Chapter 11 of the Polar Code” deals with voyage planning by ensuring that the “company, master of the vessel and crew are provided with sufficient information to enable operations to be conducted with due consideration to safety of ship and persons on board and, as appropriate, environmental protection.”<sup>151</sup>

Furthermore, the crew of the ship that is operating in the Polar waters must be qualified and receive such qualification by going through ‘training and have experience’ in navigation of the icy waters.<sup>152</sup> This includes the “familiarisation of every crewmember with the procedures and equipment contained or referenced in the PWOM relevant to their allocated responsibilities.”<sup>153</sup>

## 2.7. *Conclusion.*

This chapter has looked at the reasons for adopting the Polar Code and the process that culminated in the enactment of the mandatory Polar Code. This chapter defined the Code and moved on to give a detailed description of the Safety provisions of the Polar Code. Nonetheless, the Safety provisions of the Polar Code are not much of a cause of criticism. The following chapter will survey the criticisms made against other provisions of the Polar Code and the shortcomings of the Code. It will be submitted that the provisions aimed at protecting the Polar environment are controversial and questionable.

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<sup>149</sup> Part I-A, Chapter 8, Para 8.3.2.1.

<sup>150</sup> Part I-A, Chapter 10, Para 10.1.

<sup>151</sup> Part I-A, Chapter 11, Para 11.1.

<sup>152</sup> Part I-A, chapter 12, Para 12.1.

<sup>153</sup> Part I-A, chapter 12, para 12.3.4.

## **CHAPTER 3: A CRITICAL ANALYSIS OF THE ENVIRONMENTAL PROVISIONS OF THE POLAR CODE.**

### *3.1. Introduction.*

Following the introduction and synopsis of the Polar Code and the discussion of the “Polar Code Part I-A provisions”, this chapter will investigate the Part II-A provisions of the Polar Code that regulate the protection of the environment of the Poles. The chapter will discuss the criticisms made against the Polar Code, then conduct a probative analysis of the environmental provisions of the Code and expose its shortfalls. The aim of this chapter is to show that, even though the Polar Code is a leap forward, there is a need for amendments to enable it to become a more effective legal tool for the protection of the Polar environment.

### *3.2. Provisions of the Polar Code for the Protection of the Polar Environment (Part II-A).*

#### *3.2.1 Chapter 1 of Part II-A.*

Chapter 1 of Part II-A “prohibits any discharge into the sea of oil or oily mixtures from any ship in the Arctic waters”,<sup>154</sup> but paragraph 1.1.2 gives exception to “the discharge of clean or segregated ballast”.<sup>155</sup> Notwithstanding that, Category A ships may navigate the Polar waters even if at the time, they do not comply with the oil prohibition provision of the Polar Code and that is possible if the Administration gives approval for such a voyage.<sup>156</sup> However, “that ‘Category A’ ship must be operating continuously in Arctic waters for more than 30 days and shall comply with the prohibition not later than the first intermediate or renewal survey, whichever comes first, one year after 1 January 2017.”<sup>157</sup> Nonetheless, “the discharge requirements of MARPOL of Annex 1 Regulation 15.3” are applicable during the period of an approval from the Administration.<sup>158</sup>

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<sup>154</sup> Polar Code, Part II-A, Chapter 1, Para 1.1.1.

<sup>155</sup> Polar Code, Part II-A, Chapter 1, Para 1.1.2.

<sup>156</sup> Polar Code, Part II-A, chapter 1, para 1.1.3.

<sup>157</sup> Ibid Chapter 1, Para 1.1.3.

<sup>158</sup> Ibid.

In addition to that, chapter 1 provides structural requirements. The “Category A and B” vessels that have the bigger oil tanks are required to have their oil tanks detached from the hull capacity.<sup>159</sup>

However, such detachment of fuel tanks from the hull is not a requirement for the vessels that have “the small oil fuel tanks with the maximum individual capacity lesser than 30 m3.”<sup>160</sup> Furthermore, “Category A and B ships constructed on or after 1 January 2017 shall have all cargo tanks constructed and utilised to carry oil separated from the outer shell by a distance more than 0.76 m.”<sup>161</sup> The Polar Code excludes the application of this requirement to the oil tankers.<sup>162</sup>

Thus paragraph 1.2.3 provides that, “for ‘category A and B’ oil tankers of less than 5, 000 tonnes deadweight constructed on or after 1 January 2017, shall have the entire cargo length protected with double bottom tanks or spaces complying with the applicable requirements of regulation 19.6.1 of MARPOL Annex 1.”<sup>163</sup>

Paragraph 1.2.3.2 requires the vessels “to protect the entire cargo length with wing tanks or spaces in accordance with regulation 19.3.1 of MARPOL Annex 1 and to comply with the applicable requirements for distance referred to in regulation 19.6.2 of MARPOL Annex 1.”<sup>164</sup> In addition to that, the vessels that are navigating the Polar Regions must have “all tanks holding oil residue (sludge) and oily bilge water separated from the outer shell by a distance greater than 0.76 m.”<sup>165</sup> Notably, “paragraph 1.2.4 only applies to ‘Category A and B’ ships and it does not apply to small tanks with a maximum individual capacity lesser than 30 m3.”<sup>166</sup>

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<sup>159</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.1.

<sup>160</sup> Ibid.

<sup>161</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.2.

<sup>162</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.2.

<sup>163</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.3.1.

<sup>164</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.3.2.

<sup>165</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.4.

<sup>166</sup> Ibid.



### 3.2.2. Chapter 2 of Part II-A: “Control of Pollution by Noxious liquids in Bulk.”

The vessels may not “discharge the Noxious Liquid Substances (NLS) into the Polar waters.”<sup>167</sup> However, paragraph 2.1.3 for the Administration to allow the discharge of NLS into Polar waters for Category A and B ships.<sup>168</sup>

Chapter 3 of Part II-A on “prevention of pollution by harmful substances carried by sea in packaged form, was kept blank intentionally.”<sup>169</sup>

### 3.2.3. Chapter 4 of Part II-A: Prevention of Pollution by Sewage from Ships.

The only time when the vessels may release sewage to the icy waters is only when such release of sewage is permitted under “MARPOL Annex IV.”<sup>170</sup> The vessels may also release “comminuted (*sic*) and disinfected sewage in accordance with regulation 11.1.1 of MARPOL Annex IV at a distance of more than three nautical miles from any ice-shelf,<sup>171</sup> or fast ice<sup>172</sup> and such release shall be as far as practicable from areas of ice-concentration exceeding 1/10.”<sup>173</sup> Ships may discharge sewage in Polar waters even if they “are discharging sewage that is not ‘comminuted’ (*sic*) or disinfected in accordance with regulation 11.1.1 of MARPOL Annex IV, only if such discharge is more than 12 nautical miles from any ice-shelf or fast ice and shall be as far as possible from areas of ice concentration exceeding 1/10.”<sup>174</sup>

### 3.2.4. Chapter 5 of Part II-A of the Polar Code: Prevention of pollution by Garbage from Ships.

In terms of paragraph 5.2.1 of chapter 5 of Part II-A,

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<sup>167</sup> Polar Code, Part II-A, Chapter 2, Para 2.1.1.

<sup>168</sup> Polar Code, Part II-A, Chapter 2, Para 2.1.3.

<sup>169</sup> Polar Code, Part II-A, Chapter 3.

<sup>170</sup> Polar Code, Part II-A, Chapter 4, Para 4.2.1.

<sup>171</sup> Polar Code, Part II-A, Chapter 4, Para 4.1.2; describes ice-shelf as “a floating ice of considerable thickness showing 2 to 50 m or more above sea-level, attached to the coast.”

<sup>172</sup> See para 4.1.3; “fast ice means sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice-wall, to an ice-front, between shoals and grounded iceberg.”

<sup>173</sup> Polar Code, Part II-A, Chapter 4, Para 4.2.1.1.

<sup>174</sup> Polar Code, Part II-A, Chapter 4, Para 4.2.1.2.

“Discharge of garbage is permitted by reference to Regulation 4 of MARPOL Annex V. However, such discharge of garbage to the Arctic waters must be made when the ship is as far as practicable from areas of ice concentration exceeding 1/10 but, in any case, not less than 12 nautical miles from the nearest land, nearest ice-shelf, or nearest fast ice.”<sup>175</sup>

Paragraph 5.2.1.2 requires, “food wastes to be capable of passing through a screen with openings no greater than 25 mm and those food wastes shall not be contaminated by any other garbage type.”<sup>176</sup> Furthermore, “chapter 5 of Part II-A of the Polar Code” prohibits the discharge of food wastes,<sup>177</sup> and animal carcasses into the Polar waters.<sup>178</sup> Chapter 5 permits the “discharge of garbage into the sea” in the Antarctica only if the performance of such discharge is under the auspices of “Regulation 6.1 of MARPOL Annex V”.<sup>179</sup>

However, “such discharges of garbage into the sea in the Antarctica shall be as far as possible from the areas of ice concentration exceeding 1/10, but in any case not less than 12 nautical miles from the nearest fast ice.”<sup>180</sup> Similar to the provision that applies to the Arctic, chapter 5 prohibits the discharge of food wastes onto ice.<sup>181</sup> In terms of paragraph 5.2.3 of chapter 5, “operation in Polar waters shall be taken into account, as appropriate, in the Garbage Record Book, Garbage Management Plan and the placards as required by MARPOL Annex V.”<sup>182</sup>

The chapter will now survey the shortcomings of the Polar Code as argued by the academics and go on to discuss the shortcomings of the Code as evident from the reading of the provisions of the Code.

### 3.3. *The Shortcomings of the Polar Code.*

The Polar Code is rooted on a “risk-based approach in determining scope and adoption of a holistic approach in reducing identified risks.”<sup>183</sup> The Polar Code is an optimistic step but it leaves some challenges to the Polar environment unanswered.<sup>184</sup> This is evident from the fact that, there is still a need for more effort to increase and improve charting in the Polar Regions

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<sup>175</sup> Polar Code, Part II-A, Chapter 5, Para 5.2.1.1.

<sup>176</sup> Polar Code, PART II-A, Chapter 5, Para 5.2.1.2.

<sup>177</sup> Para 5.2.1.3.

<sup>178</sup> Para 5.2.1.4.

<sup>179</sup> Polar Code, Part II-A, Chapter 5, Para 5.2.2.

<sup>180</sup> Para 5.2.2.1.

<sup>181</sup> Polar Code, Part II-A, Chapter 5, Para 5.2.2.2

<sup>182</sup> Polar Code, Part II-A, Chapter 5, Para 5.2.3.

<sup>183</sup> Polar Code, Preamble, Para 7.

<sup>184</sup> F Ulmer. ‘Alaska and the Arctic.’ (2014) 31. *Alaska Law Review*. Available at: <https://scholarship.law.duke.edu/alr/vol31/iss2/3>. Accessed on 22 August 2018. 165.

to make navigation safer.<sup>185</sup> Disappointingly, the Polar Code is selective in its application because “the provisions of the Polar Code do not apply to all categories of vessels, but only to vessels of merchant ships listed in the MARPOL convention.”<sup>186</sup> Above all that, “the Polar Code allows the discharge of heavy oil fuel into the Poles, while it only recommends the provisions on the ballast water management and anti-fouling system and it gives no statutory value to the regulation of the release of ballast to the icy waters.”<sup>187</sup> Zanutto argues that, based on the above arguments, the Polar Code is insufficient for protecting the Poles because it postpones the crucial environmental problems in the Polar Regions that require immediate consideration.<sup>188</sup>

Cooperation among states is fundamental to the success of the Polar Code and the Arctic and non-Arctic states must be willing to cooperate.<sup>189</sup> Therefore, there should not be an overrating of the capacity of the Polar Code in protecting the environment of the Poles from suffering vessel pollution.<sup>190</sup> Liu elucidates his point by adding that, “Regulation 43 of MARPOL Annex 1 which entered into force on August 1, 2011, prohibits both the carriage in bulk as cargo and use as fuel of certain crude oils in the Antarctica and similar ban in the Arctic was advocated by non-governmental organisations during negotiations of the Polar Code.”<sup>191</sup> Unfortunately, despite this, “the ban is only provided as a recommendation in Part II-B which states that ships are encouraged to apply regulation 43 of MARPOL Annex 1 when operating in Arctic waters.”<sup>192</sup> Walsh quotes the words of “John Maggs, president of the Clean Shipping Coalition (CSC)”, when he said that:

“The purpose of developing the Polar Code was to make sure that increased Polar shipping activity because of climate change did not put lives and the environment at risk. Sadly, the negotiations have resulted in a Code that falls far short of what is required. Without urgent

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<sup>185</sup> Ibid.

<sup>186</sup> Zanutto (2016) at 25.

<sup>187</sup> N Liu. ‘Can the Polar Code Save the Arctic?’ (2016) 20 (7). *American Society of International Law*. Available at: <https://www.asil.org/insights/volume/20/issue/7/can-polar-code-save-arctic>. Accessed on 22 August 2018.

<sup>188</sup> Zanutto (2016) at 25.

<sup>189</sup> Zanutto (2016) at 25.

<sup>190</sup> Liu (2016).

<sup>191</sup> Liu (2016).

<sup>192</sup> Liu (2016).

further strengthening, it is just a question of when, not if, an incident occurs, with serious consequences for the delicate Arctic and Antarctic environments.”<sup>193</sup>

Liu is concerned that, in the fragile ecosystems like the Arctic, the “ballast management and the anti-fouling provisions” are mere recommendations in “Part II-B of the Polar Code.”<sup>194</sup> This is worrisome because the ballast water and biofouling introduce many invasive species to the icy waters.<sup>195</sup> In addition to that, “the Polar Code lacks an implementation mechanism apart from State Party monitoring”, which may result to the accidents in the parts of the Poles that are inaccessible at times.<sup>196</sup>

The Friends of the Earth International (FOEI), the World Wide Fund for Nature (WWF) and Pacific Environment and the Clean Shipping Coalition (CSC) submitted a document, MEPC 67/9/9, in which they set out their comments and submitted shortcomings of the Polar Code.<sup>197</sup> In the MEPC 67/9/9, the co-sponsors were worried that the “title of Part II of the Polar Code” refers only to “pollution prevention” and this is worrying because there are a number of environmental issues that need attention in the Code.<sup>198</sup> Furthermore, the co-sponsors argued that:

“In relation to chapter 4 on ‘prevention of pollution by sewage from ships’, the distances proposed from any ice-shelf, land-fast ice, and areas of ice concentration exceeding 1/10 are arbitrary. Hence, these provisions are likely to result in ships discharging raw and untreated sewage (which has to be discharged more than 12 nm from any ice) directly into marine mammal and seabird feeding grounds.”<sup>199</sup>

The “step one of the Polar Code deliberations primarily focused on safety and navigation and less on environmental protection...for that reason, a significant gap remains in the Polar Code to address environmental protection.”<sup>200</sup> David Miller, President and CEO of WWF-Canada criticises the Code in that, it has power of defending the Polar ecosystems from oil pollution

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<sup>193</sup> D Walsh. ‘Polar Code Too Weak to Properly Protect Polar Environments from the Increased Shipping Activity. 25 November 2014. *Antarctic and Southern Ocean Coalition*. Available at: <https://phys.org/news/2014-11-polar-code-weak-properly-environments.html>. Accessed on 22 August 2018.

<sup>194</sup> Liu (2016).

<sup>195</sup> Liu (2016).

<sup>196</sup> Wanerman (2015) at 429.

<sup>197</sup> Marine Environment Protection Committee. Mandatory Code for Ships Operating in Polar Waters: Environmental Protection in the Polar Code. MEPC 67/9/9 (02 August 2014).

<sup>198</sup> MEPC 67/9/9. Para 2.

<sup>199</sup> MEPC 67/9/9. Para 5.

<sup>200</sup> MEPC 67/9/9. Para 9.

but it has failed dismally to give such protection.<sup>201</sup> The Polar Code neglects the vital issues of the Polar environment such, “emissions to air, discharge of grey water, and the introduction of alien species, however, these were raised during the negotiations but were set aside in order to progress safety issues.”<sup>202</sup>

The Cambridge Workshop (DE 56/INF.3) raised a number of Polar environment issues but the Polar Code neglects those environmental issues therefore; it does not regulate “the lack of data and information on the impact of the environmental hazards and thus the difficulty of determining appropriate additional controls.”<sup>203</sup> The Polar Code also neglects the “reduced ship speed (already constrained in ice) as means to reduce fuel consumption, fauna strikes, and hull penetration risks as identified in Cambridge.”<sup>204</sup>

#### 3.4. *Other Shortcomings of the Polar Code.*

The “Polar Code prohibits the discharge of oil or oily mixtures into Polar waters.”<sup>205</sup> It is only fair to presume that the prohibition applies to all ships traversing the Polar waters because chapter 1, paragraph 1.1.1 of Part II-A, does not specify the category of ships which are prohibited from discharging oil in the Polar waters. On that note, to ensure prohibition to the discharge of oil in the Polar waters, chapter 1, paragraph 1.2.1 of Part II-A specifies that Category A and B ships shall have “all oil fuel tanks separated from the outer shell of the ship.”<sup>206</sup> A provision that requires the hull strengthening of “Category A and B” ships only applies to ships with bigger “fuel tanks with a maximum individual capacity of more than 30 m<sup>3</sup>.”<sup>207</sup> It does not make sense that the provisions calling for hull strengthening only apply to Category A and B ships because there is a possibility that Category C ships might navigate the icy waters. This possibility is manifest from the definition of Category C ships in the Polar Code, “as ships designed to operate in open water or in ice conditions less severe than included in Categories A and B ships.”<sup>208</sup> The concept of ship categories was introduced in

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<sup>201</sup> Advocacy Group Opinion. ‘New Polar Code, A good First Step, but Lacks Meaningful Protections for the Arctic. Available at <http://www.wwf.ca/?23703/New-Polar-Code-a-good-first-step-but-lacks-meaningful-protections-for-the-Arctic>. Accessed on 20 August 2018.

<sup>202</sup> MEPC 67/9/9. Para 10.

<sup>203</sup> MEPC 67/9/9. Para 14.

<sup>204</sup> Ibid.

<sup>205</sup> Part II-A, Chapter 1, Para 1.1.1.

<sup>206</sup> Polar Code, Part II-A. Para 1.2.1.

<sup>207</sup> Ibid.

<sup>208</sup> Para 2.2. Definitions section.

the Polar Code with the intent to organize requirements together for certain classes of ships.<sup>209</sup> Three Polar Ship categories – A, B, and C – are linked to ice class notations and provide a broad indication of a ship’s capability to navigate in ice.<sup>210</sup> It is the duty of the ship builders to determine the capabilities of the ship to navigate ice and allows shipowners not to comply with the strict requirements of the Polar Code if it was not their intention to have their vessels to traverse through regions that have a thick ice concentration.

This definition confirms that it is permissible for Category C ships to travel in the less icy conditions, but one cannot say with certainty that, the ice in which the Category C ship might encounter will not always present structural risks to the ship because of the changing seasons and unpredictable ice build-up. Chapter 4 of Part I-A supports the above concern because it “ensures adequate subdivision in both intact and damaged conditions.”<sup>211</sup> In terms of Chapter 4 of Part I-A, such “subdivision and stability in intact and damaged conditions is achievable if vessels of Category A and B have sufficient residual stability to sustain ice-related damages.”<sup>212</sup> Therefore, “ships of Category A and B shall be strong enough to withstand flooding resulting from hull penetration due to ice impact.”<sup>213</sup> This provision does not include Category C as the ships that “should be able to withstand flooding resulting from hull penetration due to ice impact.”<sup>214</sup> Is this because Category C ships cannot suffer ice impact and have their hulls damaged due to ice impact, or maybe the Code does not give much importance to Category C ships? This gap in the provisions of the Polar Code renders the Polar Code less effective in protecting the Polar environment. This Chapter will discuss some recent ship accidents that happened in the icy waters and this will demonstrate that the hull penetration does not only occur because of ice impact but there may be accidents that may result to an oil spill.

As a precautionary effort and taking into consideration the fragile nature of the Polar environment, every ship navigating the Polar waters must survive flooding in cases of hull penetration because Category A and B ships are not the only ships that may suffer an accident in the Polar waters. Unfortunately, an accident may take place even in clear waters for

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<sup>209</sup> American Bureau of Shipping (ABS). ‘IMO Polar Code Advisory’ January 2016. Available at [file:///E:/polar%20code/after%20polar%20code/ABS\\_Polar\\_Code\\_Advisory\\_15239.pdf](file:///E:/polar%20code/after%20polar%20code/ABS_Polar_Code_Advisory_15239.pdf). Accessed on 21 January 2019. At 15.

<sup>210</sup> American Bureau of Shipping (January 2016) at 15.

<sup>211</sup> Part I-A, Chapter 1, Para 4.1.

<sup>212</sup> Part I-A, Chapter 4, Para 4.2.2.

<sup>213</sup> Part I-A, Chapter 4, Para 4.3.2.1.

<sup>214</sup> Part I-A, Chapter 4, Para 4.3.2.1.

instance if the hull of the ship hits the rocks on the seabed or the ship may run aground,<sup>215</sup> or there may be ship collision of two or more vessels.<sup>216</sup> Therefore, the Polar Code must require all ships that are navigating the Polar waters to have oil fuel tanks separated from the hull of the ship and by requiring that, the Polar Code will protect the Polar environment effectively at least from the oil spills. The IMO should amend the Polar Code so that it would require hull strengthening of all the ships that traverse the Polar waters because of damage that the Polar ecosystems would suffer if there would be an oil spill either from Category A, B or C ships.

McRae and Goundrey are concerned that “an oil spill can be environmentally disastrous wherever it occurs but the effect of an oil spill in the Arctic would undoubtedly be more serious than elsewhere because the regenerative capacity of life forms generally in Arctic conditions is much lower than it is in more temperate areas.”<sup>217</sup>

This part of the chapter highlighted the shortcomings of the Polar Code from its wording and the resultant adverse consequences on the environment based on such interpretation. The next section will discuss the possible damage and grave consequences to the Polar environment in the occurrence of an oil pollution within the Polar Regions.

### 3.5. *The Consequences of an Oil-Spill in the Icy Waters.*

The chapter has shown that the Polar Code does not adequately protect the Polar environment, however, this dissertation will investigate the damage that might result should there be an oil spill in the Poles. Williams affirms that, “due to the isolation and the extreme nature of the Arctic circle’s environment, accidental spills of oil or other pollutants would be difficult to mitigate.”<sup>218</sup> Alarming, “no Arctic rim State can be secure from the impact of oil pollution, even when the pollution source is a thousand miles away from its coasts.”<sup>219</sup>

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<sup>215</sup> The Accident of the *M/V Selendang Ayu* in 2004. The dissertation will discuss this incident in detail here in chapter 3 on page 31-32.

<sup>216</sup> The Sinking of the *Runner 4* in 2006. This dissertation will discuss this incident in detail here in chapter 3 on page 32.

<sup>217</sup> DM McRae, DJ Goundrey. “Environmental Jurisdiction in Arctic Waters: The Extent of the Article 234” (1982) 16 *U.Brit. Colum.L.Rev.* 201.

<sup>218</sup> LC Williams. “An Ocean Between Us: The Implications of Inconsistencies Between the Navigational Laws of Coastal Arctic Council Nations and The United Nations Convention on the Law of the Seas for Arctic Navigation” (2017) 70 (1). *Vanderbilt Law Review.* 380.

<sup>219</sup> A Roginko, M Lamourie. “Emerging Marine Environmental Protection Strategies for the Arctic” (1992) 16 (4). *Marine Policy.* 261.

Unfortunately, the marine transportation in the Arctic poses a risk of an oil spill on its own let alone oil and gas development in the Polar Regions.<sup>220</sup> Schachter and Serwer add that, “once the crude oil enters the marine environment it first forms slicks and these slicks float on the ocean surface, spreading and travelling in a way determined primarily by winds and ocean currents.”<sup>221</sup>

That causes the ice to disturb the normal rate of absorbing the sunlight thus causing more rapid melting of the ice.<sup>222</sup> An oil spill will then have more effect on sea birds and especially the mammals, because it would suffocate them, cause a “loss of insulation of their fur”, and lastly, they will “suffer poisoning by ingestion”.<sup>223</sup> Despite that much of damage that would materialise from an oil spill, unfortunately there is an inadequacy of oil clean-up technologies in the Polar Regions.<sup>224</sup> A Polar oil spill is particularly challenging because of a number of environmental consequences that could be felt in the case of oil pollution and because the ‘ice conditions’ can change more rapidly.<sup>225</sup> However, Wilkinson et al warns that, under drifting “ice, any rising oil will paint the underside of the ice irregularly; giving a large number of small under-ice slicks, while under fast ice a much larger oil pool may form because the ice is not in motion.”<sup>226</sup> It is unfortunate that notwithstanding this, “there is a lack of a satisfactory implementation of oil spill response on the NWP and this also reflect the lack of the adequate infrastructure in the Polar Regions.”<sup>227</sup> The harshness of an oil pollution depends on the “type of organisms that are exposed to oil, the volumes of spilled oil, weathering process, oil combatting measures taken, and the location of the spill.”<sup>228</sup>

This chapter will look at the recent incidents of oil spills that have occurred in the Polar waters and briefly examine the causes and consequences.

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<sup>220</sup> Ulmer (2014) 164.

<sup>221</sup> O Schachter, D Serwer. “Marine Pollution Problems and Remedies” (1971) 65 (1) *Cambridge University Press*. 89.

<sup>222</sup> McRae, Goundrey (1982) at 202.

<sup>223</sup> McRae, Goundrey (1982) at 202.

<sup>224</sup> McRae, Goundrey (1982) at 203.

<sup>225</sup> J Wilkinson...et al. “Oil Spill Response Capabilities and Technologies for Ice-Covered Arctic Marine Waters: A Review of Recent Developments and Established Practices.” (2017) 46 (3). *Kungl Vetenskap Akademien*. 424.

<sup>226</sup> Wilkinson...et al (2017) at 435.

<sup>227</sup> KM Eger. ‘Effects of Oil Spills in Arctic Waters’ 2010. *CHNL*. Available at <http://www.arctis-search.com/Effects+of+Oil+Spills+in+Arctic+Waters>. Accessed on 20 August 2018.

<sup>228</sup> Eger (2017) at 425.



### 3.5.1. The Accident of the M/V Selendang Ayu in 2004

An accident that befell the *M/V Selendang Ayu*, a Malaysian-registered vessel, is “the biggest shipping accident in the Aleutians’ recent history.”<sup>229</sup> On “08 December 2004, the *M/V Selendang Ayu* on its voyage from Seattle, Washington to China” ran aground in the Alaska’s Aleutian Islands.<sup>230</sup> The *M/V Selendang Ayu* “was carrying approximately 478, 000 gallons of oil aboard including ‘intermediate fuel oil’ 380 (IFO 380), diesel oil and other lubricating oils.”<sup>231</sup> The stricken *M/V Selendang Ayu* could not hold for a long time and during the process of evacuating the crew, “it broke in half and spilled an estimated 321, 052 gallons of IFO 380 along with 14, 680 gallons of marine diesel fuel and 60, 000 tons of soybeans as freight.”<sup>232</sup> Poor weather conditions resulted in the delay of aid for several days and poor weather conditions resulted to the crash of one of the rescuing helicopters, which resulted to the death of six crewmembers of the *M/V Selendang Ayu*.<sup>233</sup> The incident of the *M/V Selendang Ayu* resulted in the “death of more than 1,600 birds, closing of the local crab fishery, contamination of local beach and the fishing companies had to implement extreme and costly measures to ensure that the oil did not contaminate their harvest product.”<sup>234</sup>

### 3.5 .2 The Sinking of the Runner 4 in 2006.

This incident happened “on 5 March 2006, when a Dominican-registered cargo ship carrying aluminium, *Runner 4* collided with the Malta-registered cargo ship *Svjatoy Apostol Andrey* and the collision resulted to the sinking of the *Runner 4*.”<sup>235</sup> This accident happened in the Gulf of Estonia and it only took four minutes for the *Runner 4* to sink.<sup>236</sup> These ships were travelling in a caravan and they were following an icebreaker, unfortunately, ice channel fell

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<sup>229</sup> A Ropeik. ‘10 Years On, Selendang Ayu Spill’s Legacy Still Evolving’ *Alaska Public Media*. 12 December 2014. Available at <https://www.alaskapublic.org/2014/12/12/10-years-on-selendang-ayu-spills-legacy-still-evolving/>. Accessed on 09 October 2018.

<sup>230</sup> R Morris. ‘Overview of M/V Selendang Ayu Response’ in R Brewer (ed) *The Selendang Ayu Oil Spill: Lessons Learned Conference Proceedings August 16-19, 2005 — Unalaska, Alaska* (2006) 5.

<sup>231</sup> Morris (2006) at 5.

<sup>232</sup> Morris (2006) at 34.

<sup>233</sup> Morris (2006) at 6.

<sup>234</sup> World Wide Fund for Nature. ‘Lessons Not Learned: 20 Years After the Exxon Valdez Disaster Little Has Changed in How We Respond to Oil Spills in the Arctic’ available at <file:///F:/polar%20code/exxon%20valdez/selendang%20ayu%201.pdf>. Accessed on 09 October 2018. 7.

<sup>235</sup> K Wang...et al. ‘The Drift and Spreading of the Runner 4 Oil Spill and the Ice Conditions in the Gulf of Finland, Winter 2006’ (2008) 57 (3) *Estonian Journal of Earth Sciences*. 181.

<sup>236</sup> ‘Cargo Ship Perishes in the Gulf of Finland’ *The Baltic Times* 08 March 2006.

from the side, which delayed the *Runner 4*.<sup>237</sup> The *Svjatoy Apostol Andrey* could not stop in time and she hit the *Runner 4*'s stern thus piercing a hole into the engine room of the *Runner 4*.<sup>238</sup> The detection of an "oil spill was very difficult because of severe ice conditions."<sup>239</sup> However, upon its detection, "much of the oil had spread to shallow areas that were inaccessible to the boats and this delayed the oil clean-up process."<sup>240</sup> This incident resulted in the death of "35 000 birds."<sup>241</sup>

### 3.5.3. The 2007 Oil Spill in the Kerch Strait.

This accident happened "on 11 November 2007, when a storm hit the Kerch Strait, a narrow waterway connecting Azov and the Black Sea."<sup>242</sup> This storm resulted in the sinking of four vessels but one oil spill from Russian tanker, *Volgoneft-139*, left disturbing consequences on the environment.<sup>243</sup> The other vessels were carrying sealed containers full of sulphur; therefore, not much of oil pollution resulted from the sinking of those vessels.<sup>244</sup> Unfortunately, the oil spill clean-up operations could not happen timeously because of the "harsh weather conditions."<sup>245</sup> *Volgoneft-139* broke into two "whilst carrying 3500 tonnes of IFO 180 and this resulted to an oil spill of about 1300 tonnes from the tanks of the back part of the *Volgoneft-139* and the 1000 tonnes of oil that remained on board were pumped out before the vessel was towed to Kavkaz Harbour."<sup>246</sup> Approximately, "30 000 birds and 9000 fish died because of the accident."<sup>247</sup>

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<sup>237</sup> 'Cargo Ship Perishes in the Gulf of Finland' *The Baltic Times* 08 March 2006.

<sup>238</sup> 'Cargo Ship Perishes in the Gulf of Finland' *The Baltic Times* 08 March 2006.

<sup>239</sup> Wang (2008) at 181.

<sup>240</sup> World Wide Fund for Nature. 'Lessons Not Learned: 20 Years After the Exxon Valdez Disaster Little Has Changed in How We Respond to Oil Spills in the Arctic' available at <http://polarcode/exxonvaldez/selendangayu.pdf>. Accessed on 10 October 2018. 7.

<sup>241</sup> Ibid.

<sup>242</sup> Ibid.

<sup>243</sup> Cedre. 'Kerch Strait' Available at <http://wwz.cedre.fr/en/Resources/Spills/Spills/Kerch-Strait>. Accessed on 10 October 2018.

<sup>244</sup> Ibid.

<sup>245</sup> World Wide Fund for Nature (note 240) at 7.

<sup>246</sup> Cedre. 'Kerch Strait' Available at <http://wwz.cedre.fr/en/Resources/Spills/Spills/Kerch-Strait>. Accessed on 10 October 2018.

<sup>247</sup> The Maritime Executive. 'Update on Black Sea Oil Spill' *The Maritime Executive: Intellectual Capital for Executives*. 2 July 2014, Available at <https://www.maritime-executive.com/article/2007-11-30update-on-black-sea-oil-spill>. Accessed on 10 October 2018.

### 3.6. *Conclusion.*

This chapter has discussed the Part II-A mandatory provisions of the Polar Code that aim to protect the environment of the Poles. However, the Part II-A provisions of the Polar Code and the Polar Code in general have been subject to criticism from academics and interested parties in the Polar Regions. On that note, this chapter considered the provisions of the Code and highlighted a gap in the 'Polar Code' in as far as the Code's endeavour at protecting the Polar environment from the oil pollution. The Polar Code allows vessels (Category C ships) that do not have their hulls strengthened to traverse the Polar waters. This is a significant oversight from the Polar Code because it requires Category A and B ships to have their hulls strengthened but not Category C ships. The knowledge that there have been several accidents in the icy waters and that all the ships that were involved in these accidents had single hull bottoms makes it clear that vessels navigating the Polar waters should have double hull bottoms. The case studies highlighted that accidents in the icy waters can materialise through different causes and there have been troubles in the clean-up operations because of inclement weather conditions.

It is accordingly submitted that the Code's discrimination based on vessel category presents a significant oversight. The chapter has shown that in the case of an accidental oil discharge in the Polar waters, the damage could disturb vulnerable Polar ecosystems. Therefore, it is submitted that the discrimination by vessel category defeats the effectiveness of the Polar Code in protecting the Polar Regions against oil spills.

The next chapter will analyse South Africa's position in the Antarctic through the SANAP and discuss the possible consequences of the Polar Code to the SANAP.

## **CHAPTER 4: SOUTH AFRICA'S INVOLVEMENT IN THE ANTARCTICA AND THE POLAR CODE.**

### 4.1. Introduction.

The previous chapters have investigated various aspects of the Polar Code from its development, provisions and the shortcomings of the same Code. This chapter will highlight the relevance of the Code to South Africa by exposing South Africa's participation in the Antarctic region through the SANAP and then disclose the implications of the Polar Code to the SANAP. Overall, this chapter aims to set out the implications of the Polar Code on the SANAP.

### 4.2. South Africa and the Antarctic Region.

South Africa has the advantage of being able to conduct research in the Antarctic Region, because, "logistically, it is the closest African point to the South Pole and is a well-established gateway to the Antarctic and it acts as a summer springboard for many international expeditions."<sup>248</sup> Additionally, "a transect between Cape Town and Antarctica crosses one of the world's most oceanographically and biologically dynamic regions, encompassing three ocean basins, two major boundary currents and the circumpolar current."<sup>249</sup> Hence, the voyages between the Cape Town and the Antarctic Region are possible partly because of "South Africa's geographical proximity to the Antarctic region."<sup>250</sup>

In 1947, "the South African frigate *HMSAS Transvaal* commanded by Lieutenant-Commander John Fairbairn sailed from Simon's Town under strict security and the code name Operation "Snoektown" to occupy the Prince Edward Islands (Marion Island and Prince Edward Island).<sup>251</sup> South Africa completed its occupation of the Marion and the Prince Edwards Islands on 29 December 1947 and on 4 January 1948 respectively.<sup>252</sup> The occupation of these islands was announced and published in a "South African *Government*

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<sup>248</sup>IJ Ansorge...et al. "Exploring South Africa's southern frontier: A 20-year vision for polar research through the South African National Antarctic Programme" (2017) 113 (5/6). *South African Journal of Science*.1.

<sup>249</sup> Ansorge...et al (2017) at 1.

<sup>250</sup> Ibid.

<sup>251</sup> J Cooper, R.K Headland. "History of South African Involvement in Antarctica and at the Prince Edward Islands" (1991) 21 (2). *S.Afr.T.Nav.Antarkt.* 79.

<sup>252</sup> Cooper, Headland (1991) at 79.

*Gazette Extraordinary* of 30 January 1948.”<sup>253</sup> The voyage of the “*HMSAS Transvaal* placed an inhabiting party ashore on Marion Island at Gunners Point in Transvaal Cove.”<sup>254</sup> However, after World War II, South Africa started to undertake meteorological expeditions to the Prince Edward Islands and it established a permanent weather base on Marion Island which resulted on the completion of its annexation of these islands in 1948.<sup>255</sup> South Africa undertook its first South African National Antarctic Expedition (SANAE) in 1959, and this resulted in South Africa’s permanent occupation of the Prince Edward Islands.<sup>256</sup>

South Africa is the founding member of the ATS and through that membership; the state is required to undertake research in the Antarctic Region.<sup>257</sup> The *Antarctic Treaty* “establishes the legal framework for the management of the region and signatories undertake to ensure the use of the Antarctic region for peaceful and scientific purposes only and the preservation of the Antarctic environment.”<sup>258</sup> South Africa, as “the founding member of the *Antarctic Treaty*” enjoys the right to conduct scientific research in the Antarctic region.

Surprisingly, “South Africa is currently the only African signatory to the Antarctic Treaty and the only African nation with an Antarctic research programme and through its presence in the Antarctic region, South Africa is serving and representing the broader African community.”<sup>259</sup> South Africa has delegates on a “Special Committee on Antarctic Research (SCAR) and those were elected during the International Geophysical Year, 1957-58, at the request of the Bureau of the International Council of Science (ICSU).”<sup>260</sup> SCAR operates within (ICSU) framework and SANAP uses SCAR to submit annual reports to ICSU.<sup>261</sup> South Africa’s participation in the ‘SCAR’ dates back to 1960.<sup>262</sup> Encouragingly, South

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<sup>253</sup> Cooper, Headland (1991) at 79.

<sup>254</sup> Cooper, Headland (1991) at 79.

<sup>255</sup> South African National Antarctic Programme (SANAP). ‘How We Got Involved’ available at <https://www.sanap.ac.za/about/how-we-got-involved/>. Accessed on 05 September 2018.

<sup>256</sup> Ibid, How We Got Here.

<sup>257</sup> P.H. Skelton. “The South African Antarctic and Southern Ocean Research Plan 2014 – 2024” (March 2014). Prepared for: *The National Research Foundation*. 16.

<sup>258</sup> South African National Antarctic Programme (SANAP). ‘How We Got Involved’ available at <https://www.sanap.ac.za/about/how-we-got-involved/>. Accessed on 05 September 2018.

<sup>259</sup> Ansorge (2017) at 2.

<sup>260</sup> P.H. Skelton (2014) at 16.

<sup>261</sup> South African National Antarctic Programme (SANAP). ‘International Responsibility’ available at <https://www.sanap.ac.za/about/international-responsibility/>. Accessed on 05 September 2018.

<sup>262</sup> P.H. Skelton (2014) at 16.

Africa's participation extends to the "SCAR's working groups, groups of specialists and capacity building programmes to promote the involvement of young scientists."<sup>263</sup>

South Africa is involved with the "International Whaling Commission (IWC) since its foundation in 1946, whose deliberations include the whales of the Southern ocean,"<sup>264</sup> and in 1980, South Africa became a party to the *Convention for the Conservation of Antarctic Marine Living Resources*<sup>265</sup> (CCAMLR).<sup>266</sup> Unfortunately, South Africa is more involved on the Prince Edward Islands but it puts less focus on the "Dronning Maud Land in Antarctica", which remains poorly studied to date.<sup>267</sup> The SANAP is fruitful for South African research because it offers "logistic support to countries like Germany in Dronning Maud Land and Norway at Bouvetoya."<sup>268</sup> In return, "other Antarctic nations have helped with freeing beset South African vessels on several occasions over the years, relieving the Marion Island station on at least one occasion and evacuating ill team members from SANAE by air."<sup>269</sup>

The Prince Edward Islands are South African territory.<sup>270</sup> Marion Island hosts an overwintering base intended for research and meteorological observations.<sup>271</sup> South Africa is a lessee of a weather station on the British-governed Gough Island (40°19S, 9°55W) in the central South Atlantic Ocean.<sup>272</sup> However, being a British island, South Africa does not have ultimate responsibility for the management of the Gough Islands; and the state has to follow the "requirements and regulations of the island's management plan."<sup>273</sup> South Africa is also "a member of the *Agreement on the Conservation of Albatrosses and Petrels*."<sup>274</sup> Therefore, it was important for South Africa to be a member of this Convention because "the Prince Edward Islands are globally important breeding sites for several marine top predators, including albatrosses and petrels."<sup>275</sup> The Prince Edward Islands currently enjoy maximum

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<sup>263</sup> SANAP 'International Responsibility' available at <https://www.sanap.ac.za/about/international-responsibility/>. Accessed on 05 September 2018.

<sup>264</sup> Cooper, Headland (1991) at 86.

<sup>265</sup> *Convention on the Conservation of Antarctic Marine Living Resources*, 33 UST 3476; 1329 UNTS 48; 19 ILM 841 (1980).

<sup>266</sup> Cooper, Headland (1991) at 86.

<sup>267</sup> Ansorge (2017) at 2.

<sup>268</sup> Cooper, Headland (1991) at 86.

<sup>269</sup> Cooper, Headland (1991) at 86.

<sup>270</sup> P.H Skelton (2014) at 17.

<sup>271</sup> P.H Skelton (2014) at 17.

<sup>272</sup> P.H Skelton (2014) at 17.

<sup>273</sup> Cooper, Headland (1991) at 8.

<sup>274</sup> *The Agreement on the Conservation of Albatrosses and Petrels* 2258 UNTS 257, 2004. "This is a legally binding international Treaty signed in 2001 and entered into force on 1 February 2004; South Africa ratified as the fifth Party to the agreement."

<sup>275</sup> Ansorge (2017) at 3.

protection from South Africa because the state declared them the special nature reserves under the *National Environment Management (NEMA): Protected Areas Act 57 of 2003* in 2013.<sup>276</sup>

This section demonstrated the basis for South Africa to enjoy research in the Antarctic region and the extent of South Africa's presence in the Antarctic Region. This is possible because of South Africa's geographical advantage and through its membership to the *Antarctic Treaty* and there are Antarctic Conventions, which require South Africa to be a Party to protect the Polar Environment. The Prince Edward Islands fell within the Antarctic and geographically they are still in the Antarctic region. The Prince Edwards Islands are now a South African territory through annexation; therefore, the next section of this chapter will discuss the *Prince Edwards Islands Act*,<sup>277</sup> the South African Act that confirmed the Prince Edwards Islands are South African territories.

#### 4.3. *The Prince Edward Islands Act.*

On 07 October 1948 after the annexation of the Prince Edward Islands, the South African Parliament passed the Prince Edward Islands Act. The aim was to confirm that the Prince Edward Islands are South African territories, and confirm "that South Africa has a right to the" administration, control and governance of the Prince Edward Islands.<sup>278</sup> On that note, "the Governor-General issued a proclamation, dated the twelfth day of January 1948, by which it was declared that His Majesty's sovereignty over the said Prince Edward Islands is to be exercised by His Majesty's government in the Union of South Africa."<sup>279</sup> The Prince Edward Islands Act confirms the annexation of the Prince Edward Islands by stating that:

"The Prince Edward Islands, consisting of Marion Island, situate latitude 46° 53' S., longitude 37° 45' E., and Prince Edward Island, situate latitude 46° 36'S., longitude 37° 57' E. (hereinafter called the territory) is declared to have been annexed to and to form part of the Union of South Africa."<sup>280</sup>

Section 1(2) adds that,

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<sup>276</sup> Ansorge (2017) at 3.

<sup>277</sup> Act 48 of 1948.

<sup>278</sup> *The Prince Edward Islands Act.*

<sup>279</sup> *The Prince Edward Islands Act.*

<sup>280</sup> *The Prince Edward Islands Act*, s 1(1).

“For the purposes of the administration of justice, and in general for the application of the laws of the Union, the territory shall be deemed to be situated within the Magisterial district which includes the city of Cape Town and to form part of the electoral division which includes the harbour of the city of Cape Town.”<sup>281</sup>

#### 4.3.1. The Law that Applies in the Prince Edward Islands.

Section 2 of the Prince Edward Islands Act provides it clearly that “the Roman-Dutch Law, as existing and applied in the Province of the Cape of Good Hope, whether as judicially interpreted, or as modified by statute, shall be in force in the Prince Edward Islands as the common law of the territory.”<sup>282</sup> If the Roman Dutch Law does not regulate the matter at hand, the Prince Edward Islands Act has a schedule of laws that are enforceable in the Prince Edwards Islands whenever they are applicable.<sup>283</sup> Notwithstanding that, “the Governor-General has the power to, by proclamation in the Gazette, declare any law in force in the Province of the Cape of Good Hope to be in force in the Prince Edward Islands, with such modifications as he may deem fit.”<sup>284</sup> That includes the power to repeal, make amendments or modifications to any laws, or the making of new laws to be applicable to the Prince Edward Islands.<sup>285</sup> Section 3(2) of the Prince Edward Islands Act provides the procedure to pass the law after the Governor-General’s proclamation. However, section 4 of the Act limits future application of laws in the Prince Edward Islands.<sup>286</sup> Therefore, “Section 4 prohibits any Act of the South African Parliament passed after the date of commencement of the Prince Edward Islands Act to apply to the Prince Edwards Islands, unless by such Act it is specifically expressed so to apply or unless it is declared to apply by proclamation of the Governor-General.”<sup>287</sup> This only applies to South African domestic laws because the Antarctic Treaty is still applicable to this region and it gives authority to South Africa to conduct research in the Prince Edward Islands.

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<sup>281</sup> *The Prince Edwards Islands Act*, s 1 (2).

<sup>282</sup> *The Prince Edwards Islands Act*, s 2.

<sup>283</sup> *Prince Edwards Islands Act*, s 3 (1). The laws set out in the schedule include, *The Administration of Estates Act*, 1913; *The Justices of the Peace and Oaths Act*, 1914; *The Criminal Procedure and Evidence Act*, 1917; *The Special Justices of the Peace Act*, 1918; *The Inquests Act*, 1919; *The Magistrates' Courts Act*, 1944; and, *The Electoral Consolidation Act*, 1946.

<sup>284</sup> *The Prince Edwards Islands Act*, s 3 (2).

<sup>285</sup> *The Prince Edwards Islands Act*, s 3 (2).

<sup>286</sup> *The Prince Edwards Islands Act*, s 4.

<sup>287</sup> *The Prince Edwards Islands Act*, s 4.



#### 4.4. *South Africa's Science Programme (SANAP).*

This section will now look at the themes under which the SANAP conducts the research in the Antarctic Region. SANAP covers number of research topics from “upper air research with cosmic rays to geological earth sciences.”<sup>288</sup> This includes themes, for the SANAP, “like geospace, climate variability, biodiversity, sustainability, and the social, historical and political nature of human presence in the Antarctic Region.”<sup>289</sup> Cooper adds that, “physical research has concentrated on studying the upper atmosphere at SANAE IV, although regular monitoring of meteorological conditions also takes place at the bases.”<sup>290</sup> On the other hand, “Auroras, solar winds and the ozone layer are some of the subjects of the SANAP with direct relevance to the navigation and communication systems upon which we have become so dependent.”<sup>291</sup> Fortunately, “South Africa collaborates with tertiary institutions, research councils, and other international institutes like Alfred Wegner Institute, Germany, Darfmouth College, USA” to make its research more efficient and accurate.<sup>292</sup>

This shows that the SANAP is a very broad research programme covering various topics but in addition, it creates relationships between South Africa, other countries, universities and different organisations. This has a positive impact on the continuation of the South Africa's Antarctic research programmes. Having established that, the next section will discuss the South African research vessel, the *S.A Agulhas II*, with the aim of exposing the implications of the Polar Code on the vessel. This is significant because if the provisions of the Polar Code apply to the *S.A Agulhas II*, the vessel has to meet the Polar Code's structural requirements as discussed in chapter 2, and the “provisions for the protection of the Polar environment” that were discussed in chapter 3 of the dissertation. *S.A Agulhas II*'s compliance with the provisions of the Polar Code would help in the achievement of the goal of the Polar Code, which is to protect the environment of the Poles.

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<sup>288</sup> Council of Managers of the Antarctic National Programs (COMNAP). ‘South African National Antarctic Program (SANAP)’. Available at: <https://www.comnap.aq/Members/SANAP/SitePages/Home.aspx>. Accessed on 17 September 2018.

<sup>289</sup> Ibid COMNAP.

<sup>290</sup> Cooper (2006) at 5.

<sup>291</sup> Council of Managers of the Antarctic National Programs (COMNAP). ‘South African National Antarctic Program (SANAP)’. Available at: <https://www.comnap.aq/Members/SANAP/SitePages/Home.aspx>. Accessed on 17 October 2018.

<sup>292</sup> COMNAP.

#### 4.5. *The S.A. Agulhas II.*

South Africa owns only three of the vessels that have navigated between Antarctica and Cape Town. The *S.A. Agulhas II* is the successor of the *R.S.A*<sup>293</sup> and the *S.A Agulhas*,<sup>294</sup> which were South African vessels dedicated to Antarctic voyages. The vessel, “*S. A Agulhas II* is owned by the Department of Environmental Affairs (DEA).”<sup>295</sup> The *S.A Agulhas II* which was built in 2012 replaced the old *S.A. Agulhas*, which was retired from SANAP duty.<sup>296</sup> Unlike her predecessor, “the purpose for building *S.A. Agulhas II* was to execute both scientific research and to supply South African research stations in the Antarctic Region.”<sup>297</sup> *S.A Agulhas II* “has a range of 15 000 nautical miles (27 000 km) at 14 knots (using 14 - 25 tonnes of fuel a day) and can stay at sea for 90 days.”<sup>298</sup>

The *S.A Agulhas II* has considerably “better ice-breaking capability (DNV Ice 10, PC 5) compared to the *S.A Agulhas* and is able to break through 1m thick ice at 5 knots.”<sup>299</sup> This is because the vessel has “powerful diesel electric propulsion system (4 x 3 000 kW main engines) that delivers more than double the power of the old *S.A Agulhas*, combined with a bow and underwater ice-knife design that allows it to operate even in winter sea ice conditions.”<sup>300</sup> Significantly, “the *S.A Agulhas II* meets the IMO’s ‘Safe Return to Port’ requirements, which came with the *SOLAS 2009 Rules for Passenger Ships* and became

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<sup>293</sup> South African National Antarctic Programme (SANAP). ‘R.S.A’. Available at <https://www.sanap.ac.za/vessels/south-african-vessels-to-antarctica/r-s-a/>. Accessed on 01 November 2018.

“The 1573 -tonne *R.S.A.* was South Africa’s first Antarctic supply vessel. *R.S.A* was built in Osaka, Japan and she was launched in September 1961 and arrived in Cape Town on her maiden voyage by year-end.”

<sup>294</sup> South African National Antarctic Programme (SANAP). ‘S.A Agulhas’. Available at <https://www.sanap.ac.za/vessels/south-african-vessels-to-antarctica/s-a-agulhas/>. Accessed on 11 November 2018. “The *S.A Agulhas* was in service for more than thirty years (1978 – April 2012). She was used to service the three SANAP research bases in the Southern Ocean and Antarctica as well as doing various research voyages. She was an ‘Ice Class 1’ vessel and she had a gross tonnage of 6122. 96 tonnes.”

<sup>295</sup> Department of Environmental Affairs: Republic of South Africa. ‘S.A. Agulhas II’. Available at <https://www.environment.gov.za/saagulhasii>. Accessed on 17 September 2018.

<sup>296</sup> Department of Environmental Affairs: Republic of South Africa.

<sup>297</sup> SANAP. ‘SA Agulhas II’. Available at <https://www.sanap.ac.za/vessels/s-a-agulhas-ii/>. Accessed on 17 September 2018.

<sup>298</sup> Seamaster. ‘A New Ship for Polar Research in South Africa, South African Research has a New Ship: Mike Lucas Tells Us About the New Polar Research and Supply Ship, SA Agulhas II. (2012) 8 (3). Available at <https://seamaster.co.za/wp-content/uploads/2016/08/SA-Agulhas-Information.pdf>. Accessed on 20 September 2018. 50.

<sup>299</sup> Ibid, ‘A New Ship for Polar Research in South Africa, South African Research has a New Ship: Mike Lucas Tells Us About the New Polar Research and Supply Ship, SA Agulhas II. 50-51.

<sup>300</sup> Ibid, ‘A New Ship for Polar Research in South Africa, South African Research has a New Ship: Mike Lucas Tells Us About the New Polar Research and Supply Ship, SA Agulhas II’. 51.

mandatory for all ships built after July 2010.”<sup>301</sup> This ship has features like a moon-pool and a drop keel and facilities for coring of ocean seabed, deep-water probes, underwater observatory and a meteorology lab amongst other facilities.”<sup>302</sup>

#### 4.5.1. The S.A. Agulhas II and the Polar Code.

The Polar Code distinguishes vessels according to their certification to navigate Polar Waters by, Category A, B and C ships. The *S.A. Agulhas II* is a Polar Class (PC) 5 vessel.<sup>303</sup> The Polar Class 5 ships can engage on “a year-round operation in medium first-year ice, which may include old ice inclusions.”<sup>304</sup> The “Category A is granted to ships that have a Polar class notation PC 1 to PC 5.”<sup>305</sup> Therefore, the *S.A. Agulhas II* is a Polar Category A vessel. Notably, the definition of the Polar Category A ships is similar to the one of the ships assigned PC 5 notations, because the Category A” ships are defined as, “ships designed for operation in Polar waters in at least medium first-year ice, which may include old ice inclusions.”<sup>306</sup> When a ship has an additional service feature of Polar Category A, the scantlings of propeller blades, propulsion line, steering equipment and other appendages are to comply with at least the requirements of section 3 of the Polar Code, as applicable to the

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<sup>301</sup> Department of Environmental Affairs Republic of South Africa. ‘SA Agulhas II & Islands: A Look into the Ship’s History, Its Functions and the Study of Oceans’ Available at [https://www.environment.gov.za/sites/default/files/docs/publications/SA\\_agulhas.pdf](https://www.environment.gov.za/sites/default/files/docs/publications/SA_agulhas.pdf). Accessed on 20 September 2018. 2. See, Wartsila Encyclopedia of Marine Technology. ‘Safe Return to Port (SRtP)’. Available at [https://www.wartsila.com/encyclopedia/term/safe-return-to-port-\(srtp\)](https://www.wartsila.com/encyclopedia/term/safe-return-to-port-(srtp)). Accessed on 20 September 2018, describes Safe Return to Port” as “new SOLAS regulations applicable to new passenger ships having their keel laid on or after 1st July 2010, and having a length of 120m or more, or having 3 or more Main Vertical Zones. As per these regulations, a passenger ship shall be designed so that the essential systems remain operational after a fire casualty which does not exceed casualty threshold, or a flooding of any single watertight compartment and the ship is able to proceed to a safe port under their own power.”

<sup>302</sup> COMNAP. ‘About South African National Antarctic Program’. Available at <https://www.comnap.aq/Members/SANAP/SitePages/Home.aspx>. Accessed on 17 September 2018.

<sup>303</sup> SANAP. ‘SA Agulhas II’. See para 1.2.10 of Part I-A of the Polar Code which describes the Polar Class (PC) as meaning, “the ice class assigned to the ship by the Administration or by an organization recognized by the Administration based upon IACS Unified Requirements.”

<sup>304</sup> International Association of Classification Societies (IACS). Requirements Concerning Polar Class. 2016. 1-2. See; Guidance Note N1650. ‘Guidelines for Existing Ships Operating in Polar Waters (May 2018)’ page 7, which describes first year ice as the ice of 0.3m to 0.7m thickness.

<sup>305</sup> Guidance Note N1650. ‘Guidelines for Existing Ships Operating in Polar Waters (May 2018)’. *Bureau Veritas*. 11. See also; Rule Note NR 527 DT R03 E. Rules for the Classification of Ships Operating in Polar Waters and Icebreakers. (January 2017) at page 10 para 4.1.1 which add that “Polar Category A is assigned to ships designed for operation in polar waters in at least medium first-year ice, which may include old ice inclusions.”

<sup>306</sup> Polar Code, Para 2.1, definitions section.

additional class notation Polar Class 5.<sup>307</sup> The general rule is that “the bows with vertical sides, and bulbous bows should be avoided” for ships which are assigned PC 1 to PC 5.<sup>308</sup>

In terms of paragraph 3.3.2.1 of the Polar Code, “scantlings of the *S.A Agulhas II* must be approved by the Administration, or a recognized organization accepted by it, taking into account standards acceptable to the Organization or other standards offering an equivalent level of safety.”<sup>309</sup> It is a requirement in terms of the Polar Code that the *S.A Agulhas II*, since it is Category A ship, “be able to withstand flooding resulting from hull penetration due to ice impact.”<sup>310</sup> Furthermore, the *S.A Agulhas II* shall always carry on board a valid Polar Ship Certificate.<sup>311</sup> The Polar Code requires “the bridge wings of the *S.A Agulhas II* to be enclosed or its design be in such a manner that would protect navigational equipment and operating personnel.”<sup>312</sup> The *S.A. Agulhas II*, as per the Polar Code requirements, “shall have all oil residue (sludge) tanks and oily bilge water holding tanks separate from the outer shell by more than 0.76 m.”<sup>313</sup>

In addition to that, the *S.A. Agulhas II* shall be “ice strengthened and have the oil fuel tanks separated from the outer shell by a distance of not less than 0.76 m”, as “chapter I Part II-A of the Code” requires.<sup>314</sup> The *S.A. Agulhas II* is indeed ice-strengthened, the very reason it is classified as a Polar Code’s category A vessel and it is given PC 5 notation. The *S.A Agulhas II* shall not carry “any substance identified as NLS in chapter 18 of the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk*, unless such carriage is approved by the Administration.”<sup>315</sup> Furthermore, the ‘*S.A Agulhas II*’ shall not discharge sewage into the sea.<sup>316</sup> However, “if it is operating in areas of ice concentrations exceeding 1/10 for extended periods, the *S.A Agulhas II* must discharge sewage using an approved sewage treatment plant certified by the Administration to meet the

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<sup>307</sup> Rule Note NR 527 DT R03 E. ‘Rules for the Classification of Ships Operating in Polar Waters and Icebreakers’. (January 2017). 43.

<sup>308</sup> International Association of Classification Societies (IACS). ‘Requirements Concerning Polar Class’. (2016). 1.

<sup>309</sup> Polar Code, Part I-A, Chapter 3, Para 3.3.2.1.

<sup>310</sup> Polar Code, Part I-A, Chapter 4, Para 4.3.2.1.

<sup>311</sup> Polar Code, Part I-A, Chapter 1, Para 1.3.1.

<sup>312</sup> Polar Code, Part I-A, Chapter 9, Para 9.3.2.1.4.2

<sup>313</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.4.

<sup>314</sup> Polar Code, Part II-A, Chapter 1, Para 1.2.1.

<sup>315</sup> Part II-A, Chapter 2, Para 2.1.3.

<sup>316</sup> Part II-A, Chapter 4, Para 4.2.2.

operational requirements in either Regulation 9.1.1 or 9.2.1 of MARPOL Annex IV.”<sup>317</sup> In addition to that, *S.A Agulhas II* must have “means provided to ensure sufficient ship operation in the case of propeller damage including CP-mechanism.”<sup>318</sup>

#### 4.6. Conclusion.

South Africa has territories in the Prince Edward Islands and the research bases in the islands with continuing research in the area. Because of “South Africa’s proximity to the Antarctic Region” and her membership to the ATS, South Africa has an advantage to conduct research in the Antarctic Region. However, it takes a vessel to travel from Cape Town to the Antarctic Region and that vessel, for the purposes of SANAP, is the *S.A. Agulhas II*. In her travels to the Antarctic Region, the *S.A. Agulhas II* must abide by the provisions of the ‘Polar Code’ because the Code provides the uniform rules that apply to vessels traversing both the Arctic and the Antarctic region. On that note, the *S.A. Agulhas II* has PC 5 notation which makes the vessel Polar Category A, therefore, the vessel is expected to meet the Polar Code’s structural requirements because of such categorisation. The aim of this chapter was to show the ways in which the Polar Code may affect the SANAP and although the Code does not affect the programme directly, but it does place additional requirements on the *S.A. Agulhas II* and the vessel serves the purpose of transporting the South African researchers and supplies for the Antarctic programmes. Notably, these ship structural requirements would also be applicable to all future South African research vessels.

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<sup>317</sup> Polar Code, Part II-A, Chapter 4, Para 4.2.3.

<sup>318</sup> Rule Note NR 527 DT R03 E. Rules for the Classification of Ships Operating in Polar Waters and Icebreakers. (January 2017). 31.

## **CHAPTER 5: RECOMMENDATIONS AND CONCLUSION**

The previous chapters have discussed the law that applies in the Polar Regions; unfortunately, the provisions of the Polar Code do not apply equally to the ships that traverse the Polar Regions. It is recommended that all the provisions of the Polar Code that apply to Category A and B ships shall apply in the same capacity to Category C ships that traverse the Polar waters. This is because, as the dissertation has shown in chapter 3, a ship accident may happen in the Polar Regions irrespective of the ship's Polar Code categorisation. An oil spill is particularly destructive to the Polar region's vulnerable and sensitive ecosystem. Accordingly, this dissertation has demonstrated that the selective categorisation of vessel would have adverse consequences. The following section identifies the relevant provisions that require amendment by the inclusion of Category C vessels. Necessary precautions must be taken to avoid an oil spill, particularly, a change in the wording and application of certain provisions of the Polar Code.

### **5.1. RECOMMENDATIONS.**

#### *5.1.1 Amendment of "Chapter 3 of Part I-A of the Polar Code: The Provisions on Ship Structure."*

Chapter 3 of the "Polar Code" deals with the material and scantlings of the vessel to ensure the integrity of the ship structure when faced with conditions that come with navigating the Polar waters. It is submitted that the same provisions should apply to all the ships navigating the Polar waters. The word "not" must be removed, in paragraph 3.3.2.4 of Part I-A of the Polar Code and be substituted with "to". Therefore, the proposed section of the paragraph would read as follows:

*"A category C ship needs to be ice strengthened even if, in the opinion of the administration, the ship's structure is adequate for its intended operation."*

#### *5.1.2 Amendment of Chapter 4 of Part I-A: Subdivision and Stability.*

Paragraph 4.2.2 of Chapter 4 requires Category A and B ships to be stable enough to withstand ice-related damages. It is submitted that Paragraph 4.2.2 of the Polar Code must

require Category A, B and C ships to “have sufficient stability to sustain ice-related damages.”<sup>319</sup> Therefore, this dissertation recommends that the words “and C” be added, in paragraph 4.2.2, between the words “B, constructed”. Therefore paragraph 4.2.2 of Part 1-A of the Polar Code”would read as follows:

*“...ships of ‘category A, B and C’, constructed on or after 1 January 2017, shall have sufficient residual stability to sustain ice-related damages.”*

In Paragraph 4.3.2.1, the words “and C” must be added to the wording of paragraph 4.3.2.1 between “B, constructed”. The first sentence of the paragraph would read as,

*“In order to comply with the functional requirements of paragraph 4.2.2, ships of ‘categories A, B and C’, constructed on or after 1 January 2017, shall be able to withstand flooding resulting from hull penetration due to ice impact.”*

#### 5.1.3 Amendment of “Chapter 9 of Part II-A: Safety of Navigation.”

In paragraph 9.3.2.4.2, the words “and C” must be added to the wording of paragraph 9.3.2.4.2 of Part I-A between the words “B, ships”. The proposed paragraph would read as,

*“...in ‘Category A, B and C’ ships constructed on or after 1 January 2017, the bridge wings shall be enclosed or designed to protect navigational equipment and operating personnel.”*

#### 5.1.4 Amendment of Chapter 1 of Part II-A: “Prevention of Pollution by Oil.”

This is a contentious chapter of the Polar Code as discussed in chapter 3 of this dissertation. This is because of the possible consequences that the Polar ecosystems would suffer in the occurrence of an oil spill. The changing of the wording of this chapter would minimise the possibilities of an oil spill happening in the Polar waters.

It is submitted that the words “and C” should be added in paragraph 1.2.1 of Part II-A of the Polar Code. These words must be added between the words paragraph “B, Ships” in Paragraph 1.2.1. The proposed paragraph would then read,

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<sup>319</sup> Part I-A, Chapter 4, Para 4.2.2.

*“For ‘Category A, B and C’ ships constructed on or after 1 January 2017 with an aggregate oil fuel capacity of less than 600 m<sup>3</sup>, all oil fuel tanks shall be separated from the outer shell by more than 0.76 m.”*

The words “and C” be added to the wording of paragraph 1.2.2 of Part II-A” of the Polar Code between the words “B, ships”. The new paragraph 1.2.2 would then read,

*“For ‘category A, B and C’ ships other than oil tankers constructed on or after 1 January 2017, all cargo tanks constructed and utilized to carry oil shall be separated from the outer shell by more than 0.76 m.”*

The words “and C” be added, to the wording of paragraph 1.2.4 of Part II-A of the Polar Code, between the words “B ships”, so that the proposed paragraph would read as follows,

*“For ‘category A, B and C’ ships constructed on or after 1 January 2017 all oil residue (sludge) tanks and oily bilge water holding tanks shall be separated from the outer shell by more than 0.76 m.”*

*5.1.5 Amendment of Chapter 2 of Part II-A: “Control of Pollution by Noxious Substances in Bulk.”*

The words “and C” should be added to the wording of paragraph 2.1.3 of chapter 2 of Part II-A between the words “B ships” so that the proposed paragraph would read as,

*“For ‘Category A, B and C’ ships constructed on or after 1 January 2017, the carriage of NLS ... shall be subject to the approval of the Administration.”*

It is accordingly submitted that these legislative would aid in the minimisation of risk of pollution in the Polar waters.



## 5.2 CONCLUSION.

The objectives of this dissertation were to establish whether the Polar Code is sufficient in protecting the Polar environments and to highlight the implication of the Polar Code on the SANAP. To achieve those objectives, the dissertation described the Polar Code and the reasons for its enactment as a response to the risks introduced by the possible opening of the new shipping routes in the Polar Regions. The melting of ice, because of global warming, in the Arctic and the Antarctic regions raised alarm that most of the Polar shipping routes would be open for navigation. This would invite more vessels to navigate the Polar Regions and it would invite human occupation of the Polar Regions. It is well established that human habitation and the navigation of many vessels in the Polar Regions threatens the Polar environment with vessel pollution. The IMO saw it necessary to adopt the Polar Code to protect the Polar environment from vessel pollution, because it was found that the laws that were previously applicable in the Poles did little, if not nothing, to protect the Polar environment. The Polar Code aims to guarantee the safety of ship navigation and protect the environment of the Poles.

As for ensuring the safety of ship navigation, the provisions of the Polar Code require the vessels that navigate the Polar waters to have their hulls strengthened and to have an effective plan for their voyages. It was found that this is helpful in protecting the Polar environment because if the hull of the ship is strengthened for navigating the icy conditions, it can avoid some of the shipping accidents like hull damage due to ice impact and that protects the Polar environment from oil pollution. On that note, the environmental provisions of the Polar Code had to be surveyed to establish their efficiency in protecting the Polar environment. Oil pollution is a threat to the apt polar environment and this dissertation shows that the vessels must exercise extra care to protect the Polar environment from accidental oil discharges. The fragility of the Polar environments and the uniqueness of its ecosystems make the consequences of the oil spill difficult to mitigate. This was evident in the number of birds and mammals that died in the recent vessel accidents that happened in the icy waters. The oil clean-up operations in the accidents of the *M/V Selendang Ayu* in 2004, the sinking of *Runner 4* in 2006 and the 2007 oil spill in the Kerch Strait proved to be difficult due to bad weather and ice conditions.

The Polar Code has been subject to many criticisms from the academics and experts on the Polar environments with some labelling the Code as a failure. On the scrutiny of the environmental provisions of the Polar Code, it was found that a gap in the provisions of the Polar Code and that lacunae could negate the whole objective of the Polar Code in protecting the Polar environment. The Polar Code allows the Category C vessels that are not ice-strengthened to navigate the Polar waters. This is a significant omission because the Code requires the Category A and B vessels to be ice strengthened for navigating the Polar waters. The ice strengthening makes the hull more resilient when faced with ice impacts thus reducing the likelihoods of hull piercings that would result to an oil spill. Under the present regime, Category C vessels are not obliged to strengthen their hulls.

The omission of protection to Category C vessels is of particular importance to the SANAP, because the *S.A Agulhas II* frequently navigates the Antarctic region. South Africa enjoys the right to conduct research in the Antarctic region because of its geographical proximity to the Antarctic. Furthermore, South Africa's membership to the Antarctic Treaty gives right to South Africa to conduct research in the Antarctic region. It deploys *the S.A. Agulhas II* to transport the team of South African researchers to the Antarctic region. The South Africa's Department of Environmental Affairs owns the *S.A Agulhas II* and the vessel is a Category A vessel under the Code. Accordingly, the vessel must abide by the environmental provisions of the Polar Code; therefore, the *S.A Agulhas II* should be ice-strengthened for its voyages to the Antarctic region. The *S.A Agulhas II* is indeed ice-strengthened as required by the Polar Code.

The dissertation, having established the shortcomings of the Polar Code in categorisation of vessels, recommends that the Polar Code must be amended so that the provisions that apply to the "Category A and B" vessels must also apply to all categories of vessels that navigate the Polar waters. This would help in ensuring the complete protection of the Polar environment, at least, against accidental oil discharges. The Provisions of Chapter 3 of Part I-A of the Polar Code that require the strengthening of the structure of the ship should be applicable in all vessels that navigate the Polar waters. The provisions of Chapter 4 in Part I-

A of the Polar Code that require the ships to have sufficient residual stability to sustain ice-related damages must be applicable to all the vessels that navigate the Polar waters. It was also recommended that the bridge wings of all ships, not just “Category A and B”, shall be enclosed or designed to protect navigational equipment and operating personnel. In attempt to prevent oil pollution, the oil fuel tanks must be isolated from the outer shell for all ships that navigate the Polar waters.

There is scant literature covering the role and significance of the SANAP. This study interlinked the SANAP with the Polar Code and it demonstrated the ways in which the Polar Code impacts with the SANAP and the operation of *S.A Agulhas II*. Gunnarsson commented that:

“Non-ice strengthened Ships should not be allowed to operate in Polar waters, even in supposedly ‘ice-free’ Polar waters and the Code does not explicitly spell out what should happen in the event of an oil or chemical spill, and how to be adequately equipped and crew trained to deal with minor spills.”<sup>320</sup>

The Polar Code is a significant leap towards bringing the uniformity to the rules that govern the Polar Regions. Notwithstanding that, the Polar Code still requires some further refinement mainly in the Part II-A provisions that deal with the environmental protection of the Polar environment. The proposed amendments are crucial and only upon their adoption would the Polar Code achieve a better protection of the Polar environments. The Polar Code’s categorisation of the vessels that traverse the Polar Regions could defeat the stated goal of protecting the Polar environment.

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<sup>320</sup> B Gunnarsson. ‘Impact of IMO’s Polar Code on NSR Future Shipping’ 2015 *Centre for High North Logistics*. 16.

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