

Places of Refuge: Port Suitability

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Introduction

As global dependence on fossil fuel for energy continues to grow, maritime environmental concerns are once again in the forefront of public debate in the transportation industry.

In the light of several international incidents of ships in need of assistance being refused access to refuge in sheltered waters with severe environmental, social, economic and political consequences, the International Maritime Organization (IMO) adopted two resolutions in December 2003, on “*Places of Refuge for Ships in Need of Assistance*” (*IMO Resolutions*). This was an important step in formulating guidelines for decision-making involving incidents leading to the need for ‘*Safe Harbour*’ and acknowledged this issue’s critical nature.

The degree of risk to the ship and its crew and cargo, as well as to the environment, coastal communities and the salvors, can be mitigated by performing remedial measures in sheltered waters rather than in a port. However, as identified in this study, in the Canadian context major ports offer the best place of refuge for ships in need of assistance.

This paper on determining suitable places of refuge considers Canada’s geography, international treaty obligations, environmental protection, alternatives to ports as places of refuge, existing ports, risk assessment and risk based classification of ports.

Canadian Background

With 243,792 kilometres of coastline (including islands) bordering three oceans, and another 9,500 kilometres along the Great Lakes, Canada has the longest coastline in the world. Canada’s population is 33 million and its Exclusive Economic Zone (EEZ) covers 3.7 million square kilometres which, combined with the second largest national

continental shelf, makes Canada's total offshore area 6.5 million square kilometres. Despite the extensiveness of its coastlines and offshore natural assets, Canada has not designated places of refuge for ships in need of assistance nor adopted a national policy to deal with requests for places of refuge. The Department of Fisheries and Oceans and Transport Canada are, however, studying various submissions following the sense of urgency generated by the two *IMO Resolutions* of December 2003, on places of refuge.

Many states, including Canada, give to ministers, harbour authorities or delegated persons the power to permit the entry, or conversely, the power to order the removal of vessels, or to take unilateral action to remove or destroy a vessel, in certain circumstances, such as where there is a risk to the safety of a port, or the maritime and coastal environment. This emphasizes the importance of the issue of places of refuge as an international subject requiring action for the protection of the commercial, social and environmental interests of the states concerned.

Canada's east and west coasts are near the major trans-ocean maritime trade routes. This strategic location and the rapid growth and development of the offshore oil and natural gas industry, warrant the provision of safe havens for ships transporting hazardous cargoes, when and if they encounter emergency situations.

International Treaty Obligations

From the historical perspective, the right of ships to seek refuge when in distress has been universally accepted as necessary and acknowledged as such in various international instruments. Article 18 of the *United Nations Convention on the Law of the Sea*, 1982 (LOS Convention, which Canada ratified in November 2003), explicitly states that passage of a ship through the territorial seas of another nation shall be continuous and expeditious. "However, passage includes stopping and anchoring, but only in so far as the same are incidental to ordinary navigation or are rendered necessary by *force majeure* or distress or for the purpose of rendering assistance to persons, ships or aircraft in danger or distress."¹

Other international conventions which Canada has signed oblige Canada to provide assistance, support and rescue to ships in distress. Chapter 5, Regulation 7 of the *International Convention for the Safety of Life at Sea*, 1974² (which Canada ratified in May 1978), and Article 11 of the *Convention for the Unification of Certain Rules of Law respecting Assistance and Salvage at Sea*, 1910³ (which Canada ratified as a dominion of the United Kingdom in September 1910), along with Article 98 of the LOS Convention make it the duty of every state to render assistance to ships, crews and passengers in distress, and to cooperate with neighbouring States for this purpose, by way of mutual regional arrangements.

Canada's treaty obligations, therefore, reaffirm Canada's duty to render maritime assistance, and this duty is reason enough to develop a policy on places of refuge.

Assistance to ships also extends to health issues. International health regulations discourage the denial of entry to ports of ships carrying persons with infectious diseases. Canada, with its rapidly growing cruise industry, must ensure that adequate facilities are available in potential places of refuge to deal with contagious diseases, such as avian bird flu, Norwalk virus, severe acute respiratory syndrome (SARS) and swine flu (H1N1), in order to protect coastal populations.

The growth in types and sizes of ships has added a new dimension to the debate on places of refuge. Large oil tankers and, indeed any large ship equipped with diesel propulsion systems, carry vast amounts of crude oil and refined petroleum products, either as cargo or as fuel bunkers for propulsion and other ship's services.

Chapter 2 - Regulation 9 of the *International Convention for the Prevention of Pollution from Ships*, 1973/1978 (MARPOL 1973/1978 – ratified by Canada in February 1993) prohibits any discharge into the sea of oil or oily mixtures from ships.⁴ The 'General Obligation' under Article 1 binds the parties to the Convention to take steps "to prevent the pollution of the marine environment by the discharge of harmful substances or effluents containing such substances."⁵ The parties to the *International Convention on Oil Pollution*

Preparedness, Response and Cooperation, 1990 (OPRC Convention - ratified by Canada in March 1994) undertake “to take all appropriate measures to prepare for and respond to an oil pollution incident.”⁶

While the obligation to grant refuge to ships in distress may *prima facie* seem unassailable, it ignores the environmental risks to a coastal area that the entry of a damaged ship might entail. Hence, it pits the obligation of granting of refuge to a ship in distress against a need to protect and preserve the environment. While Canada’s duty to render maritime assistance to ships and crews in distress is clear, Canada’s environmental obligations are also unequivocal. This dichotomy must be resolved on an international, national and regional level. It is a significant issue for Canada, with our dependence on seaborne trade for economic progress and development.

An additional consideration is the highly charged security environment following the terrorist attacks on 11 September 2001, which led to many measures to bring dangerous cargoes and any suspicious cargoes (especially containerized cargoes) under increased scrutiny and control. Such measures need to be harmonized with any regulations adopted to assist ships in distress or in need of assistance.

A places of refuge policy would render a high degree of organization and preparedness in the protection of the marine environment from pollution, while meeting the commitments to extend assistance with the provision of a safe haven.

Canada’s international obligation regarding providing assistance to ships in distress is clear as is Canada’s obligation to protect and preserve the marine environment. Security is another crucial factor that has been introduced recently. A robust policy on places of refuge will safeguard all these obligations while enhancing Canada’s reputation as a maritime nation.

Environmental Conservation

In an era of rapidly growing maritime trade, national and international efforts to prevent marine environmental disasters have taken various dimensions, including vessel safety mandates, traffic control

measures and increased state inspections and control of ships. The customary right of access to a place of refuge for vessels in need of assistance has become a complex issue with its increasingly conflicting values. The humanitarian rationale for granting the right of access to a vessel in distress is being undermined by technological developments enabling passengers and crew members to be rescued at sea. The principles of environmental protection, enshrined in international law, have gained significance narrowing the focus to local jurisdictions while clouding the universal principles of maritime law.

Heightened global awareness of the significance of the marine environment has spurred the tendency to refuse access. As in the case of the January 2001 incident of the *Castor* in the Mediterranean Sea, ships needing assistance in a safe harbour have had to go from port to port and from one national authority to another, seeking refuge until it was granted. In some cases, the ships (e.g. *Erika* in December 1999 and *Prestige* in November 2002) were irretrievably damaged and sank in the process, with the resulting oil pollution being spread across several coastal states. Furthermore, the crews of the stricken vessels had been in danger.

The *IMO Resolutions* describe a place of refuge as “a place where a ship in need of assistance can take action to enable it to stabilize its condition and reduce the hazards to navigation and to protect human life and the environment.”⁷ The same terminology is used in Article 20 of the *European Union (EU) Directive 2002/59/EC*. This Directive describes a place of refuge as “a port, the part of a port or another protective berth or anchorage or any other sheltered area identified by a member state for accommodating ships in distress.”⁸ From these definitions, a place of refuge can be a port or any other sheltered body of water which can provide assistance to a ship in distress under the best possible conditions, including protection from the elements, availability of equipment and personnel and minimum impact on the environment.

Access to Sheltered Waters

The former Secretary-General of the IMO, Mr. William O'Neill, has remarked:

“Ships in a situation such as that facing the *Castor* do not need or want to proceed to a port. What they do need is access to relatively sheltered waters so that whatever operations must be performed to make them and their cargoes safe, can be done with minimum risk to either the ship, the coastal state, the environment or indeed the salvors themselves.”⁹

The International Chamber of Shipping also stated in a submission to the IMO Maritime Safety Committee that “although in some cases port facilities may be required, in many instances the immediate need is access to sheltered waters rather than entry into port.”¹⁰ The experience gained from past incidents shows that when a ship is in need of assistance the best solution is to bring it to a safe haven affording protection from the wind and the sea. This is a place where the required assistance can be provided quickly, easily and effectively. On the other hand, port authorities have generated some doubts on their automatic acceptance. For example, the European Sea Ports Organization (ESPO) suggests:

“A ship in distress does not necessarily need to find shelter in a port. What it needs is access to relatively sheltered waters so that whatever operations must be performed to make the ship, its crew and its cargoes safe, can be done with minimum risk to either the ship, the coastal State, the environment or indeed the salvors themselves. There is therefore no need for accommodation in a port. Pollution controls are indeed easier to carry out in such sheltered waters because, in case of accident, the environment, safety and economy of the port is not endangered and, the ship being close to the shore, pollution remains limited to a restricted area.”¹¹

Access to sheltered waters is a minimum requirement. However, such minimum response may be less than adequate, especially in view of Canada's growing tanker traffic and vast stretches of coastline. A more focused approach is needed for granting or refusing refuge to ships in need of assistance.

Alternatives to Ports as Places of Refuge

There have been studies conducted on alternatives to the use of ports as places of refuge. The use of an offshore anchorage has been suggested.¹² The protection to population of distance from inhabited areas would be an anchorage's main advantage. In today's environmentally sensitive and cost conscious world, interest in designating offshore anchorages as places of refuge seems to be virtually non-existent.

Another alternative proposed in Spain is the construction and installation of special reception facilities as places of refuge. These large docks (including floating docks) are to be strategically located along the coast to provide access within a reasonable time frame, to which the damaged ships could be routed. Within these facilities, potential spills can be contained and the risk of environmental pollution minimized. The major drawbacks of this alternative are the high costs of construction and maintenance, the speculative guesswork in locating a facility, the negative environmental consequences of construction in coastal areas, and the unpredictable payback period for the investment. Such facilities would speed the decision-making process as well as address potential liability issues. However, such an approach would be cost prohibitive in Canada due to the number required along extensive stretches of coastline.

A viable place of refuge must have the facilities and resources to offload the damaged ship's cargo, provide tug assistance, respond to oil spills and fires and repair structural damage, along with the competent personnel to handle these emergencies. It is highly unlikely that small ports, natural bays and inlets without ship handling facilities would provide these emergency services to ships in need of assistance. In addition, there are the negative consequences of providing refuge in a designated remote location with a fairly low ecological, environmental and commercial value. The perception would be that the location is of a sacrificial nature, with containment being the main objective. Such sacrificial locations would have to be identified and provided with appropriate containment equipment. This would mean significant investment in many remote locations along Canada's extensive coasts with little (if any) tangible payback.

There would also be considerable costs in maintaining a stand-by roster of equipment, personnel and facilities in remote locations.

Nearby communities and regional authorities could be expected to react adversely if their local waters were deemed sacrificial. Furthermore, the environmental assessment for such locations would have to include the possibility of tides, currents and waves carrying the escaped oil into adjacent areas or coastal zones under different weather conditions. Land transportation and supporting infrastructure would also be needed.

Existing Ports and Harbours

A rational approach suggests that the best places of refuge in Canada are existing ports with their supporting infrastructure, facilities, resources and emergency response plans. Their emergency response plans can be supported by environmental assessments, monitoring and oil spill trajectory modeling. Canada's major oil handling ports are highly efficient and have extremely low risk cargo movement procedures. These ports (Vancouver, Hamilton, Montreal, Quebec, Saint John, Halifax, St. John's) have international reputations for their cargo-handling safety and environmental consciousness.

Major Canadian ports, whether natural harbours or developed in strategic locations, have contiguous coastal areas used for commercial purposes other than shipping (e.g. tourism, aquaculture, fishing or areas earmarked for conservation). The parties representing these varied interests demand protection from pollution risks. Only the major ports in the moderate-to-large cities have the equipment, infrastructure, facilities and trained personnel to alleviate these interest groups' fears and reassure them of the port's ability to contain and mitigate possible pollution risks.

From the perspective of resource availability, ports are the most suitable places to receive a ship in need of assistance since they can provide quick response, effective action and the best guarantees of containment, security, safety and risk mitigation. Oil spill containment and recovery, fire-fighting, salvage, first-aid and repair are best handled at a port with the necessary facilities and

infrastructure. It is highly unlikely that a remote anchorage or a sheltered body of water in a rural area with little industrial activity would be able to provide an adequate and effective response, besides providing shelter. The *IMO Resolutions* also state:

“Consideration must be given to the possibility of taking the affected ship to a port or terminal where the transfer or repair work could be done relatively easily.”¹³

The federal Ministry of Fisheries and Oceans has designated five ‘*Large Ocean Management Areas*’ (LOMAs) in Canada. These areas encompass the major large city ports and are targeted for the implementation of integrated coastal management plans as they are classified as ecologically and biologically significant sites. Thus, the future trend is that maritime economic activity must coexist with environmental conservation. The major moderate-to-large city ports are well distributed along the Canadian coasts and are best suited for achieving this goal from the perspective of providing places of refuge for ships in need of assistance.

The multi-modal concept of ‘*Short Sea Shipping*’ being promoted in Canada and the U.S. by the federal government and the marine industry involves an integrated continental approach to the transportation of goods and passengers in North America, with the ultimate goal of improving the quality of life, economy and environment of Canadians.

Taken together, these initiatives (‘*Large Ocean Management Areas*’ and ‘*Short Sea Shipping*’) will compel port and harbour managers to demonstrate that the operations, facilities and equipment used will not be in conflict with the overwhelming public desire to protect coastal and marine habitats and species. Ports will be under pressure to improve their facilities and resources in order to be suitable places of refuge and to meet the challenges that providing refuge bring. The major moderate-to-large city ports are best equipped operationally, financially and environmentally to meet these challenges.

Risk Assessment

Granting refuge in cases of potential distress or serious danger is centuries old maritime law. Before the latter part of the nineteenth century, commercial transportation by ship could not damage the environment in the way large ships can today. Consequently, today's perceived risk to coastal communities is far higher. Granting refuge to a ship in distress or danger is not merely a humanitarian gesture to save the lives of the crew members. It is also a means of mitigating developing accidents. The examples of the *Erika* and the *Prestige* vividly demonstrate the consequences to the environment and the coastal communities if refuge is not granted.

The most important consideration in the decision to grant or refuse refuge to a ship is risk. Risk assessment is not limited merely to the success or failure of measures implemented to support the ship, her crew or cargo. When there is a request for refuge, the consideration receiving the highest priority should be what happens if the endangered ship is beyond assistance and develops into a total loss while at the place of refuge and in the vicinity of the coastline. Should this situation occur, the local community and the environment around the site of the stricken vessel would be affected in a severe manner, resulting in economic, social, environmental and political consequences.

A suitable risk assessment procedure provides a tool to determine the potential impact to the coastal community by the presence of the damaged ship and the mitigating measures needed to reduce the risks to an acceptable level.

The most viable and cost effective approach would therefore be: to assess each port's risk as a place of refuge based on the major critical activities and hazards associated with oil tankers and to rank the port's risk exposure if refuge was granted. The ports with the lowest risk (low risk port) would be the best suited places of refuge while the ports with the highest risk (very high risk port) would be the least suited. The intermediate risk categories (medium risk port and high risk port) have varying levels of suitability as places of refuge for ships in need of assistance.

Such a risk assessment procedure could be included as an additional element in the port's emergency response plan manual. As all Canadian ports have an emergency response plan, adding this risk assessment would be simple, easy and cost effective. It offers benefits to federal decision-making authorities both in providing a procedure for a quick evaluation of alternatives when a request for refuge is made as well as supplying information on the resources and investments needed to lower the risk profile of ports in strategic locations.

The foremost thought in the minds of the coastal communities is the significant tanker catastrophes and accidents that have released large amounts of hazardous substances and pollution, and caused marine environmental damage. Table 1 shows the major pollution incidents from tanker accidents and includes the cause of the accident and the quantity of oil spilled. Undoubtedly, perception of major environmental consequences has an impact in the refuge granting decision-making process. Coastal communities potentially affected would want assurances that no refuge decision is made that could affect their health, safety and well being.

It is evident that the prime concern in assessing risk is balancing the perceived and objective risks to the environment and community. To reach an acceptable solution in a democratic society, it is vital that all parties and stakeholders are involved in the process, in a meaningful and effective manner.

To fulfill these crucial objectives the best solution is to agree on a transparent, thorough and structured risk assessment before any accident occurs. An appropriate methodology can be designed and easily applied such that the risks are accepted in an objective, dispassionate and unequivocal manner. Such acceptance is imperative due to the time element in a refuge situation. The quicker response is implemented after an incident, the higher the chances of success and the less effort and resources expended. Conversely, the later response is implemented, the lower the chances of success and the greater the effort and resources expended.

Table 1: Major Pollution Incidents from Tanker Accidents

Major Pollution Incidents				
Year	Ship (Tanker)	Cause of Accident	Location	Quantity of Oil Spilled (tonnes)
1967	<i>Torrey Canyon</i>	Navigation Error	Cornwall, U. K.	119,000
1976	<i>Argo Merchant</i>	Grounding	Massachusetts, U.S.A.	25,000
1978	<i>Amoco Cadiz</i>	Rudder Failure	France	223,000
1979	<i>Atlantic Empress</i>	Collision	Tobago	287,000
1983	<i>Castillo de Bellver</i>	Fire/Sank	Off South Africa	252,000
1988	<i>Odyssey</i>	Structural Failure	Canadian Atlantic	132,157
1989	<i>Exxon Valdez</i>	Navigation Error	Alaska, U. S. A.	37,000
1991	<i>ABT Summer</i>	Fire/Explosion	Off Angola	260,000
1991	<i>Haven</i>	Explosion/Sank	Off Genoa, Italy	144,000
1993	<i>Braer</i>	Engine Failure	Scotland, U. K.	85,000
1999	<i>Erika</i>	Structural Failure	Bay of Biscay	20,000
2002	<i>Limburg</i>	Terrorism	Off Yemen	12,000
2003	<i>Prestige</i>	Structural Failure	Off Spain	63,000
2007	<i>Hebei Spirit</i>	Collision	South Korea	10,800

Risk Based Classification of Ports

Although functioning ports are best suited as places of refuge, not all Canadian ports are fully equipped to provide refuge. A port providing refuge must have the necessary infrastructure and facilities to handle emergencies. Providing refuge in a port may also have serious socio-economic implications. Just the presence of a ship seeking refuge may create an emergency situation in the port affecting its economic activity and threatening its environment, infrastructure and equipment. The safety of the port and the local inhabitants and port personnel may also be at stake. The decision on whether or not to accept a damaged ship in a port would only be made after interaction

between the coastal and port authorities, the ship seeking refuge and Canada's maritime administration (Transport Canada). While Transport Canada will have the last word and the overriding authority, local interests and port authorities play a crucial role in the decision-making process.

To arrive at a solution encompassing all concerns, one has to evaluate each port and grade it on the basis of its suitability against several universally accepted criteria (or critical activities). This allows for port ranking and thus permits quick decision-making in a refuge situation. Ports with the necessary facilities and infrastructure would be regarded as low risk ports while the least equipped ports would be regarded as very high risk ports. Partially equipped ports would fall under the categories of medium risk or high risk. Such a ranking provides administrators and managers with the tools to assess each port on the basis of its suitability for refuge and suggests investments needed to lower the port's risk profile. This is the most pragmatic strategy for identifying a place of refuge in the Canadian context.

Conclusions

Developing appropriate policies and procedures to preserve and protect our maritime assets, natural resources, people, cultural heritage and environment are important to ensure new economic opportunities are best utilized for the greatest common good and national prosperity. Ships have grown rapidly in size and complexity to meet increased trade demands. The growing volume of cargoes carried by ships in general and oil tankers in particular, as well as the large bunker fuel capacities of modern ships have led to an increased likelihood of a maritime accident. This growth lends added impetus to the need for credible containment and response strategies by coastal states, including places of refuge policies and procedures.

While Canada's duty to render maritime assistance to ships and crews in distress is clear, the country's environmental obligations are also unequivocal. This dichotomy requires resolution on an international level as well as at the national, provincial and regional levels. Canada's treaty obligations reaffirm the country's duty to render maritime assistance, including for issues of health. With Canada's

coasts located near major trans-ocean trade routes and the discovery and exploitation of new offshore oil fields on the east coast, there is urgency in developing an appropriate policy on places of refuge.

Although anchorages and sheltered offshore waters can be considered as places of refuge under the *IMO Resolutions*, the existing moderate-to-large city ports of Canada are best suited for this role due to their extensive response infrastructure, facilities and equipment. They are also well distributed along the coasts. A risk assessment based classification of ports into risk categories will facilitate the decision-making process when a request for refuge is received and establish the investment needed to reduce the ports' risk exposure.

¹ United Nations, *The Law of the Sea: Official Text of the United Nations Convention on the Law of the Sea with Annexes and Index* (New York, United Nations Publications, 1983), 6.

² International Convention for the Safety of Life at Sea, 1974, London, 1 November 1974, International Maritime Organization, 2004, 360.

³ Convention for the Unification of Certain Rules of Law respecting Assistance and Salvage at Sea, Brussels, 23 September 1910, 103 U.K.T.S. 441.

⁴ International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, 1340 U.N.T.S. 184, as amended by Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships of 1973, 17 February 1978, 1340 U.N.T.S. 61, Annex 1, Reg. 11 (hereafter MARPOL).

⁵ International Maritime Organization, *MARPOL 73/78 Consolidated Edition*, 1991 (Consolidated Edition, London, International Maritime Organization, 1992), 78.

⁶ International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 1990), London, 30 November 1990, IMO Doc. OPR/CONF/25, 30 I.L.M. 735 (May 1991).

⁷ International Maritime Organization (IMO): "Places of Refuge – Addressing the Problem of Providing Places of Refuge to Vessels in Distress", 16 June 2005, 3.

⁸ European Parliament and the Council of the European Union, "Directive 2002/59/EC Establishing a Community Vessel Traffic Monitoring and Information System and Repealing Council Directive 93/75/EEC" Official Journal, L208, 5 August 2002, Article 20.

⁹ The Baltic Exchange, "Place or Ports", The Baltic Online, www.thebaltic.com/supplements/World%20Ports/place.htm, 7 July 2005.

¹⁰ The Baltic Exchange, "Place or Ports", The Baltic Online, <www.thebaltic.com/supplements/World%20Ports/place.htm>, 7 July 2005.

¹¹ European Sea Ports Organization (ESPO), "Accommodating Ships in Distress: The Ports' Perspective", 19 December 2002, 4.

¹² Carsten S. Wibel, "Places of Refuge: Solutions for a Burning Problem", Paper presented at the International Conference and Exhibition, Ship/Port Interface – Environment and Safety, Rotterdam, The Netherlands, 22-24 October 2002, 15 June 2005.

¹³ International Maritime Organization (IMO): "Guidelines on Places of Refuge for Ships in Need of Assistance", IMO Assembly Resolution A.949(23), adopted on 5 December 2003, IMO Doc. A23/Res.949, 5 March 2004, 1.9.