

InfoNorth

A Matter of Good Fortune? The Grounding of the *Clipper Adventurer* in the Northwest Passage, Arctic Canada

by E.J. Stewart and J. Dawson

INTRODUCTION

The uncharted rock on which our ship ran aground is just one fragment of an entire world we have yet to perceive.

(Winter, 2010)

Because of its hazardous ice conditions, the Canadian Arctic was a latecomer to the burgeoning polar cruise industry: the first cruise was offered in 1984. Since 2006, some regions, especially the Northwest Passage, have witnessed considerable growth in this sector. Despite this growth, cruise operators in Arctic Canada have kept a good human safety profile, although there is a “lengthy record and anecdotal history of groundings and other bumbles” (Jones, 1999:31). In August 1996, for example, the *Hanseatic* ran aground in the Simpson Strait, perforating two of the ship’s fuel reservoirs, and all 153 passengers had to be evacuated by helicopter (Grenier, 2004). The latest of these incidents came in August 2010, when the *Clipper Adventurer* grounded on an underwater cliff in Coronation Gulf in the Northwest Passage. Although there was no loss of life or environmental catastrophe, the incident showed the stark reality of the individual, cultural, and environmental risks associated with polar travel, and it should send a warning to decision makers about the complexities of managing and governing cruise activities in Arctic waters. After an overview of Arctic cruise trends in Canada, we explore briefly what happened to the *Clipper Adventurer* during the summer of 2010 and comment on the implications of that incident for the governance of cruise tourism in Arctic Canada, particularly in relation to safety issues.

CRUISE SHIP TOURISM IN ARCTIC CANADA

Historically, ice conditions have precluded most commercial shipping in the Arctic. The first tourist voyage through the Northwest Passage by the *Explorer* in 1984 aroused sufficient interest in the region to warrant similar transits (Marsh and Staple, 1995; Jones, 1999); however, only two other crossings were successful during the next four years (Marsh and Staple, 1995). From 1992 to 2005, a more regular pattern of cruise activity emerged: not only were there

one to three successful voyages through the Northwest Passage each year, but cruise ships also visited other locations in the Canadian Arctic such as Baffin Island, Hudson Bay, and Ellesmere Island. The trend toward a more sustained Arctic cruise industry in Canada was solidified in 2006, when 22 cruises operated in the region—double the number observed during the previous season (Buhasz, 2006). Over the four following years, the number of planned cruises increased by an average of 9.5% each year. The 2009 cruise season was the busiest on record, with 26 planned cruises. As was observed in 2010, cruise ship activity for the 2011 season is likely to decrease as a consequence of the global economic recession (Stewart et al., 2010). In addition, the absence this year of the Inuit-operated cruise vessel *Lyubov Orlova* will eliminate the seven tourist cruises that it normally operates. However, the market of individuals seeking to experience the Canadian Arctic by sea is expected to grow from 2012 onwards, reflecting the dramatic growth in travel to Antarctica (Lück et al., 2010).

The patterns of cruise activity reveal a great deal of variability across the Canadian Arctic region. Eastern and southern Baffin Island destinations, such as Cape Dorset, as well those on the shores of Hudson Bay, such as Churchill, have witnessed a decline in cruise activity in recent years (Stewart et al., 2010), but more cruises have moved into the northern, central, and western regions, and most dramatically, through the Northwest Passage. In 2010, the Northwest Passage experienced the highest volume of cruise ship landings (community and shore visits) in the industry’s history, representing a 57% increase from 2006 (Table 1). It is hardly surprising, therefore, that the majority of incidents involving cruise ships have occurred in this stretch of water.

THE GROUNDING OF THE *CLIPPER ADVENTURER*

In 1975, the *Alla Tarasova* was built in the former Yugoslavia as an expedition and research vessel purposely designed for travel to the polar regions, with an A-1 ice class rating. In 1998, under the ownership of Clipper Cruise Line, the 4000-ton vessel was renamed *Clipper Adventurer* after being refitted as an expedition cruise ship with the capacity to accommodate 122 passengers. A sister

TABLE 1. Total community and shore landings by region (after Stewart et al., 2010; Dawson et al., 2011).

Region	Community and shore landings ¹				% change 2006–10
	2006	2008	2009	2010	
High Arctic	3	3	2	8	+63%
Northwest Passage	20	23	36	47	+57%
Baffin Bay	47	37	20	25	-68%
Hudson Bay, Newfoundland and Labrador	25	14	14	20	-25%
Total	95	77	72	100	+5%

¹ Data for 2005 and 2007 are not available.

ship to the *Lyubov Orlova*, the vessel is currently owned by International Shipping Partners and sails under charter to various cruise operators such as Quark Expeditions and Adventure Canada. The *Clipper Adventurer* regularly visits both polar regions, transiting the Arctic during the Northern Hemisphere summer and the Antarctic during the austral summer. The vessel had just begun to be a regular visitor to the Canadian Arctic with her first voyage through the Northwest Passage in 2009.

In 2010, the *Clipper Adventurer* was scheduled to complete four cruises to various locations throughout the region, including the High Arctic, Baffin Island, and the Northwest Passage. During a cruise advertised as “Into the Northwest Passage,” the *Clipper Adventurer* was chartered by Adventure Canada, and made visits to Pond Inlet, Beechey Island, Gjoa Haven, and Bathurst Inlet before running aground two days before the end of the voyage. On 27 August, while making its way from Port Epworth to Kugluktuk, Nunavut, the vessel ran into a known hazard in Coronation Gulf at 67°58' N, 112°40' W, approximately 100 km east of Kugluktuk. The seas were calm, sunny conditions prevailed, and good visibility with no wind or swell was reported at the time of the incident. According to local news reports, the ship's hull suffered serious damage, and watertight compartments were ruptured, although the ship's interior did not take in water, and no oil spills were reported. Although the ship was listing at about 4.5° to port (Fig. 1), all 118 passengers and 69 crew members were safe and unharmed during the incident. As reported by Adventure Canada, efforts by the ship's crew to dislodge the vessel during high tide on 28 August were unsuccessful. As a consequence, the Canadian Coast Guard (CCG) dispatched the nearest icebreaker, the *Amundsen*, to assist the stranded ship. The icebreaker was 500 km away in the Beaufort Sea, but was on the scene by 0900 the following day.

As explained by Church et al. (2010:38), researchers from the University of New Brunswick's (UNB) Ocean Mapping Group who were on the *Amundsen* at the time of the grounding, Coronation Gulf is transected by a number of island chains known as the Coronation Sills. These geological features “are steep (often vertical) and allow little opportunity for a vessel to avoid [them] if approached without prior knowledge.” Adventure Canada CEO Matthew Swan reported to the CBC news channel, “we were on

a single line track here that indicated we had 68 metres of water directly under us, when we found ourselves on a rock ... It's a part of the world where you do your best, but there are blank spots on the map.” However, the Canadian Hydrographic Service had reported these escarpment features in 2007, and the CCG (2007a) had issued a notice to shipping in the same year. It is the responsibility of the ship's officers to update their own charts and note these hazards when they are issued; in the case of the *Clipper Adventurer*, this was reportedly not done.

On the northern side of Coronation Gulf, chartered shipping lanes have been established to avoid these navigation hazards, but apart from earlier surveying by the *Amundsen* in 2005–06, little is known about the southern region of Coronation Gulf. As a consequence, the *Clipper Adventurer* ran aground on a hazard that the crew could easily have avoided if they had been working with updated charts, or if serendipitously the vessel had tracked a course just a few ship lengths to the east or to the west (Hydro International, 2010). As the region is poorly charted and also known to possess challenging geological features, travel to rescue the stricken *Clipper Adventurer* was also hazardous for the icebreaker *Amundsen*. However, the researchers onboard the *Amundsen* were able to chart a safe course using high-resolution multi-beam sonar from the ship's barge. The safe corridor allowed the *Amundsen* to travel both to the *Clipper Adventurer* and then onward to the community of Kugluktuk, from where the passengers were flown to Edmonton, arriving on 30 August.

The surveys completed by UNB researchers were also used by other Coast Guard ships assisting with the recovery of the *Clipper Adventurer*. The Resolve Marine Group was awarded the salvage of the cruise ship. The salvage team arrived on the ship on 29 August and, as soon as the *Amundsen* had evacuated the passengers, began to assess the damage. The team removed fuel and closed breaches in the hull in preparation to refloat and tow the vessel to Cambridge Bay for repairs. Salvage personnel also flew in from Yellowknife, Northwest Territories (Marine Log, 2010). By the end of September 2010, the Coast Guard had towed the ship out of the region (Fig. 2).

Despite the difficulties faced in the 2010 season, the *Clipper Adventurer* is scheduled to take passengers on five separate cruises through Arctic Canada in 2011, including



FIG. 1. The *Clipper Adventurer* grounded in Coronation Gulf, August 2010. (Photo: Sven Commandeur.)

tours to Baffin Island, Newfoundland and Labrador, and through the Northwest Passage. The vessel will be operating the “Arctic Safari” cruise for the recently reconfigured Inuit-operated cruise company, Cruise North Expeditions (Cruise North Expeditions, 2011), and in addition, will be under charter to Adventure Canada. It is anticipated that the *Clipper Adventurer* will be the busiest cruise ship in the Canadian Arctic in 2011. During the austral summer, the vessel is also expected to make seven trips to the Antarctic Peninsula (Quark Expeditions, 2011).

DISCUSSION

The unfortunate grounding of the *Clipper Adventurer* gives rise to pressing questions for the cruise industry in the Canadian Arctic. For instance, how can risk be minimized for the increasing number of cruise ships and tourists visiting the Canadian Arctic? What can be learned from the grounding that will help improve future cruise operations in the Arctic, particularly with regard to safety? What voluntary and regulatory mechanisms are required to ensure the Arctic cruise industry meets appropriate safety and environmental protection standards? The anticipated growth in the cruise sector, in combination with increasing debate over sovereignty in Canada’s Arctic waterways (Huebert, 2001) and the possibility of increased hazards in the Northwest Passage (Stewart et al., 2007), makes addressing these questions critically important. Although hazardous ice was not a factor in the *Clipper’s* grounding, incidents may accelerate because ice conditions in this stretch of water will become more unpredictable as the Northwest Passage transitions to an ice-free summer. The prevalence of multi-year ice may be particularly problematic for transiting vessels (Stewart et al., 2007).

It was a matter of good fortune that the *Amundsen* was relatively close to the *Clipper Adventurer*, and even more fortunate that the icebreaker was carrying the appropriate



FIG. 2. The *Clipper Adventurer* being towed out of the Northwest Passage in the vicinity of Pond Inlet in September 2010. (Photo: Michael Peterloosie.)

equipment and operational expertise to map a safe rescue course, which allowed the *Amundsen* access to the grounded ship “without risk of succumbing to the same fate” (Church et al., 2010:38). Why the crew of *Clipper Adventurer* was unaware of a charted hazard is currently a matter of speculation, but it is clear that the approach adopted by the *Amundsen* minimized the risk associated with the evacuation of passengers from the cruise ship to the icebreaker and onward to Kugluktuk. Without doubt the CCG greatly increased the efficiency and effectiveness of the rescue under difficult conditions (Church et al., 2010). However, it is impossible to guarantee that the Coast Guard will be close enough to provide search and rescue services to stricken cruise ships in the vast and increasingly busy waterways of the Canadian Arctic. Under normal circumstances, the CCG’s response time could be 10 hours or more, depending on ice, weather, hydrographic, and other conditions (CCG, 2007b, 2008). While six icebreakers are deployed to the Arctic in summer, and while search-and-rescue operations take precedence in CCG operations, expecting this small fleet of icebreakers to cover such a vast area of waterways is unrealistic. The fortunate circumstances that permitted the rescue of the *Clipper Adventurer* in 2010 may not prevail during future incidents.

Fear of future incidents, along with the desire to exercise sovereignty over the Arctic region, has placed Arctic marine governance at the forefront of northern policy issues in Canada (Government of Canada, 2010). The federal government has already begun to revise reporting and monitoring policies in Arctic waters, including a change in July 2010 to NORDREG (Northern Canada Vessel Traffic Services), which for the first time made it mandatory for vessels over 300 tonnes to report to the CCG while operating in Arctic waters. However, according to CCG and Transport Canada representatives, more than 98% of vessels operating in Arctic waters were already reporting to the CCG even when it was voluntary. It is therefore questionable whether

this policy change will make any appreciable difference beyond reiterating the view that Canada is asserting sovereignty over what it considers to be internal waters. This change has been criticized as being meaningless in practice considering it will capture only the 2% of vessels that were not previously reporting. Perhaps more relevant would be significant federal investment in additional icebreakers and other infrastructure for enforcement, search-and-rescue, environmental disaster prevention, and clean-up and salvage operations. Although the federal government has committed CDN\$800 million to procuring one new polar icebreaker, which is expected to have greater icebreaking capabilities than any other ship operating under the CCG, this ship will simply replace the CCGS *Louis S. St-Laurent*, which is expected to be decommissioned in 2017 (CCG, 2011). Thus, at present there seem to be no plans to make additions to the currently operating Arctic fleet of six Canadian icebreakers. It is also clear from the grounding of the *Clipper Adventurer* that significant research investment in charting Arctic waterways is overdue. Some federal funding has been allocated to this initiative, but it is not clear yet whether existing financial commitments will be sufficient.

It is vital, in order to ensure economic, socio-cultural, political, and environmental sustainability in the Arctic region, to identify and evaluate specific policies and regulations that will enhance safety and security in and sovereignty over Canadian Arctic waters. It is also important to evaluate the institutional structures that actually implement and enforce the decisions that are made. Marine shipping is inherently complex, a situation reflected in the multilayered and multiscale nature of regulatory institutions. In addition to the umbrella framework provided by the International Maritime Organization (IMO), Canada has additional acts, regulations, legislation, and guidelines governing passenger ship operation in Canadian Arctic waterways. An array of federal and territorial organizations support the regulation and operation of passenger vessels in the Canadian Arctic, including the Canadian Coast Guard (search-and-rescue operations), the Department of National Defence (public safety and emergency preparedness), the Department of Fisheries and Oceans (vessel traffic monitoring services), Environment Canada (distribution of sea ice data), Parks Canada (protected areas), and the Canada Border Services Agency (immigration and passport control), as well as all three northern territorial governments (Dawson et al., 2011). It will be increasingly important to understand and perhaps streamline this complex governance framework as shipping, and particularly cruise shipping, becomes more prevalent in Arctic waters.

There is currently no single or common governing body that manages or supports the Arctic cruise sector in Canada. However, in Greenland and Norway, where cruise tourism has had a much longer history than in Canada, such a body is relatively well developed (Stewart and Draper, 2006; AECO, 2011). Throughout Svalbard, Jan Mayen, and Greenland, the cruise sector is overseen by the Association of Arctic Expedition Cruise Operators (AECO). This

international organization was founded in 2003 to manage Arctic cruises that are safe, friendly to the environment, and beneficial to Arctic communities (AECO, 2011). Like the International Association of Antarctica Tour Operators (IAATO), which includes many Arctic cruise operators among its members, AECO acts as a representative body offering information, guidelines, and voluntary policies for operating cruise ships in the European Arctic (AECO, 2011). Although Arctic Canada falls outside the regional remit of AECO, the grounding of the *Clipper Adventurer* should provide impetus to create a new body, or to extend the remit of IAATO or AECO to the Canadian Arctic.

CONCLUSION

The Northwest Passage is a “honey pot” for cruising in the Canadian Arctic because it combines good wild-life viewing opportunities with the unrivalled chance to witness relics of the historical exploration of the Passage (Stewart et al., 2010). However, it has also been the location of various incidents involving cruise and other vessels (such as the tanker *Nanny*, which ran aground shortly after the *Clipper*), and more accidents are likely to occur there in the future (Stewart et al., 2007). John Hughes, director of the UNB Ocean Mapping Group onboard the *Amundsen*, noted that cruise ships are tending to deviate from safe shipping lanes toward “riskier areas...where there is more dramatic topography or stunning wildlife” (Hydro International, 2010). The grounding of the *Clipper Adventurer* therefore evoked little surprise, and although we do not wish to sensationalize the possibility of further incidents, neither can we dismiss it. While management cannot handle all eventualities in this remote polar environment, increased attention is clearly needed to streamline the cruise sector’s complex governance structure, maximize benefits to local communities, and minimize risks to human life and to the environment. Good fortune may be running out.

ACKNOWLEDGEMENTS

We would like to thank Sven Commandeur and Michael Peterloosie, who granted permission to use their photographs in this paper.

REFERENCES

- AECO. 2011. Association of Arctic Expedition Cruise Operators (AECO). www.aeco.no.
- Buhasz, L. 2006. Northern underexposure. *Globe and Mail*, 1 July. <http://www.theglobeandmail.com/life/northern-underexposure/article833485/>.
- CCG (Canadian Coast Guard). 2007a. Written notices to shipping: Western Arctic. www.ccg-gcc.gc.ca/e0004475?todo=notships&series_id=1&area_id=3.

- . 2007b. Levels of service and service standards. www.ccg-gcc.gc.ca/folios/00022/docs/los-and-ss-v4-2-eng.pdf.
- . 2008. Service standards. www.ccg-gcc.gc.ca/eng/CCG/Ice_Service_Standards.
- . 2011. Investment plan 2010/11 – 2014/15. www.ccg-gcc.gc.ca/e0012060.
- Church, I., Cartwright, D., and Hughes Clarke, J. 2010. The *Clipper Adventurer* grounding: CCGS *Amundsen* response and risk mitigation with near real-time construction of safe shipping corridors. Paper presented at the ArcticNet 7th Annual Scientific Meeting, 14–17 December 2010, Ottawa, Ontario.
- Cruise North Expeditions. 2011. A new chapter in Arctic polar cruising. www.cruisenorthexpeditions.com/press_release/CNE_AC_NewChapter.pdf.
- Dawson, J., Stewart, E.J., Pearce, T., and Ford, J. 2011. Emerging cruise tourism economies in Arctic Canada: Ulukhaktok case study. Ottawa: Indian and Northern Affairs Canada.
- Government of Canada. 2010. Statement on Canada's Arctic foreign policy: Exercising sovereignty and promoting Canada's Northern Strategy abroad. www.international.gc.ca/polar-polaire/canada_arctic_foreign_policy-la_politique_etrangere_du_canada_pour_arctique.aspx?lang=eng.
- Grenier, A.A. 2004. The nature of nature tourism. *Acta Universitatis Lapponiensis* 72. PhD thesis, University of Lapland, Rovaniemi, Finland.
- Huebert, R. 2001. Climate change and Canadian sovereignty in the Northwest Passage. *Isuma: Canadian Journal of Policy Research* 2(4):86–94.
- Hydro International. 2010. Arctic rescue. www.hydro-international.com/news/id4176-Arctic_Rescue.html.
- Jones, C.S. 1999. Arctic ship tourism: An industry in adolescence. *The Northern Raven* 13(1):28–31.
- Lück, M., Maher, P.T., and Stewart, E.J., eds. 2010. *Cruise tourism in the polar regions: Promoting environmental and social sustainability?* London: Earthscan.
- Marine Log. 2010. Resolve Marine Group starts *Clipper Adventurer* salvage. www.marinelog.com/DOCS/NEWSMMIX/2010_sep00033.html.
- Marsh, J., and Staple, S. 1995. Cruise tourism in the Canadian Arctic and its implications. In: Hall, C.M., and Johnston, M.E., eds. *Polar tourism: Tourism and the Arctic and Antarctic regions*. Chichester: John Wiley and Sons Ltd. 63–72.
- Quark Expeditions. 2011. *Clipper Adventurer*. www.quarkexpeditions.com/our-ships/clipper-adventurer.
- Stewart, E.J., and Draper, D. 2006. Sustainable cruise tourism in Arctic Canada: An integrated coastal management approach. *Tourism in Marine Environments* 3(2):77–88.
- Stewart, E.J., Howell, S.E.L., Draper, D., Yackel, J., and Tivy, A. 2007. Sea ice in Canada's Arctic: Implications for cruise tourism. *Arctic* 60(4):370–380.
- Stewart, E.J., Tivy, A., Howell, S.E.L., Dawson, J., and Draper, D. 2010. Cruise tourism and sea ice in Canada's Hudson Bay region. *Arctic* 63(1):57–66.
- Winter, K. 2010. An Arctic accident. *Maclean's*, 16 September. www2.macleans.ca/2010/09/16/an-arctic-accident/.
- Emma J. Stewart is with the Faculty of Environment, Society and Design, Lincoln University in Christchurch, New Zealand; emma.stewart@lincoln.ac.nz*
- Jackie Dawson is with the Global Environmental Change Group in the Department of Geography, University of Guelph, Guelph, Ontario.*