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The Continuing Search for Law and Order at Sea (and Why All States Should Join In)

Ian Townsend Gault

Those interested in and concerned with the proper governance of the world's oceans, including the preservation and protection of the marine environment, the optimum utilisation of natural resources, and the maintenance of law and order at sea in general are dismayed when we encounter fresh evidence that our work is still cut out for us. I am writing in the immediate aftermath of two meetings, an academic conference in Australia, and a day-long workshop devoted to the results of the three-year project ostensibly focusing on Marine energy resources in Asia, but which in both events went rather further than that. Each meeting included a number of younger scholars and researchers, the experts of tomorrow. For the most part, they had implicit belief in the power of international law, and the law of the sea in particular, to guide the international community in meeting the goals I outlined at the outset. Who could possibly object to the notion of the proper governance of the world's oceans? While all of them were idealists, those of us who have been working on these issues for decades were relieved to see that they were also realists. This is just as well.

The *Jakarta Post* of Tuesday, December 13, 2011 contained two items which tended to bring one down to earth, if this phrase can be used in the maritime context. One in fact was earthly enough: in his inaugural speech, the newly installed Chief of the Armed Forces of the Philippines called for greater military expenditure on the part of his government in order, inter alia, to protect his country's claims to the Spratly Islands of the South China Sea. The second article was a much briefer account of an incident offshore South Korea. A South Korean Coast Guard vessel detained a Chinese vessel suspected of fishing illegally. At least two officers boarded the suspect vessel, and were stabbed by members of the crew (by the Captain, it now appears: one of the officers has since died). It is not too difficult to conjecture what had happened here – the fishers were in waters claimed by China, while the Coast Guard was attempting to enforce an overlapping claim by South Korea.

Taken on their own, neither the speech by the Philippine military leader, nor the violent incident in the waters off South Korea would seem especially noteworthy. But they come at the end of a year which has seen more than its share of a hardening of political attitudes to claims on sovereignty over disputed islands in East and Southeast Asia, and clashes between fishers and enforcement vessels in disputed waters, sometimes accompanied by the intervention of the naval forces of the state to which the fishers belong. And so we have a confrontation between the enforcement agencies (navy, Coast Guard, fisheries enforcement, or whatever it may be) of two states, each anxious to enforce the respective claims along with other countries. Wars have started over less.

Some readers may still be asking why any of this is of interest or concern to those outside the region's potentially affected, the waters of East Asia and Southeast Asia. It is an excellent question, and perhaps should be addressed before going further. Let us take the Canadian reader as an example. IZ readers can reasonably be presumed to have a keen interest in all matters international. But examples which seem to be resolutely regional can have unexpected international implications. In fact, I could place the stabbing incident in the context of the worldwide problem of so-called IUU (illegal, unregulated, unreported) fishing without any difficulty at all. And in turn, I would place IUU fishing in the context of challenges to law and order at sea in general. This much broader category includes piracy, people smuggling, the illegal trade in narcotics, armaments, wilful pollution of the Marine environment, and the like. The dollar values attached to each activity will vary, but of them all, IUU fishing is the most prevalent because it is the easiest and cheapest form of illegal activity at sea. Is Canada not concerned about illegal fishing? People smuggling? Other forms of smuggling? Marine environmental quality?

Canadian concerns with island disputes are of a much lesser order. The outstanding example of such a problem for Canada is the wrangle with Denmark over Hans Island between Ellesmere Island and Greenland, but assessing this issue as a threat to peace and security on a scale of 1 to 10, it ranks as zero. The issues for countries such as the Philippines in the South China Sea (and there are other such disputes in that body of water, and also in the East China Sea, not to mention the continuing demand by Japan for the return of the Kuril Islands from Russia) are unfortunately multifaceted. The first aspect is relatively straightforward – the Philippines claims the Spratly Islands, it is in fact in occupation only a few of them, so it wishes to maintain sovereignty over what it has, while pursuing its rights over what it has not. The problem is that "what it has not", islands it claims but does not occupy is that they are occupied by the forces of other littorals of the South China Sea – Malaysian, Vietnam, China, and Taiwan (Brunei is often included in this list, but so far as some of us can see, the only named feature in the Marine area claimed by Brunei is a reef, not an island). And these four have claims of their own. Those of Malaysia are relatively modest, and extend only to features within its 200 nautical mile claim. Vietnam, China and Taiwan, on the other hand, claim the entire Spratly group, and indeed all the other islands in the South China Sea.

These facts alone suggest a potentially dangerous situation, but the independent observer is puzzled when informed that the total land area of the Spratly Island group is no more than that of two football fields. Sovereignty over the Spratlys is not sought for land territory, therefore: it is for the maritime spaces around the islands, and the rights over living and nonliving resources that are, or maybe, associated therewith. Having said this, it must never be forgotten that when states make claim to territory, no matter how useless and insignificant it may be, national pride is inevitably involved. And herein lies a problem of some magnitude. All Spratly claimants have backed up their positions with the most extreme nationalist rhetoric available to them. They have taken every opportunity to proclaim to the people and to the world that their rights are undeniable, not subject to negotiation or compromise, inalienable, and so forth. Few states can withdraw

from positions so trenchantly stated, and the governments concerned here, democratically elected and otherwise alike, simply cannot do so.

The popular perception of “the prize” in the South China Sea is extensive areas of maritime jurisdiction, and the reputedly vast hydrocarbon resources of the continental shelf. Whoever holds the islands, goes the story, gets the oil and gas. This is how South China Sea issues were first explained to me when I began to work intensively in Asia in the mid 1980s. Even then, I had questions. How, I wondered, could such insignificant features possibly generate zones of jurisdiction to equal, never mind exceed, those measured from mainland coasts? Legally speaking, this was impossible. The Court of Arbitration established by Britain and France to determine unresolved continental shelf boundary matters awarded the Channel Islands, British possessions off the coast of France, mere enclaves of maritime jurisdiction. Anything greater than this would have been “disproportionate.” The Arbitration between Canada and France used this principle with respect to St. Pierre et Miquelon, small French islands just south of Newfoundland. The International Court of Justice has applied “proportionality” principles numerous times, and – more importantly – so have states in settling boundaries by agreement. Conclusion: not all land is equal when it comes to maritime boundary-making. Only a handful of objective observers believe that few, if any, of the islands in the South China Sea generate anything other than a territorial sea of 12 nautical miles.

So much for the islands holding the key to the South China Sea. The second shock for the holders of the conventional wisdom is that the fabled hydrocarbon resources are probably just that – fabled, a myth. True, there are significant reserves in the South China Sea, but they are to be found in areas within 200nm of the littorals, most notably Vietnam. It should be pointed out that these conclusions are based purely on what geologists have been able to conclude on the basis of the evidence, little of which has been obtained by drilling. However, there seems to be certainty that the conditions required for the presence of continental shelf hydrocarbons simply do not exist in significantly large areas of the South China Sea. The “second Saudi Arabia” will certainly not be found there. Not for the first time comes the warning to beware the hype surrounding supposedly enormous resource deposits. People believe in El Dorado because they want to, and always have, despite continuous failures to find it.

All this might seem to bid fair to taking much of the sting out of South China Sea debates, but we are not quite there yet. National pride is still at stake regarding the sovereignty disputes, and these tend to take on a life of their own, never quite going away, retaining enough strength to continue to trouble the world. And while oil might dominate the resource debate, it is not the only ocean resource of note – the South China Sea has a significant fishery, providing by far the greater part of the protein requirements of more than 700 million people. Marine biological resource potential has yet to be fully assessed, but is likely to be of great significance based on what we know. And now we are talking about renewable resources which, if properly managed, will continue produce for generations to come (though proper emphasis should be placed on the word “if”).

Now we come to a complicating factor, to put it no more strongly. In 1947, the government of the Republic of China (ousted by Communist forces in 1949) issued a map of the South China Sea and the area beyond the Luzon Strait showing eleven segments of line, some of which are drawn just off the coasts of the other littorals. All South China Sea islands lie “within” a zone formed by connecting the segments. But there was no clear statement of what exactly this map signified. By the international legal standards of the time, had it been to seabed and water column jurisdiction, it would have been rejected by the international community, except insofar as it related to the natural prolongation of the Chinese landmass. The map has been reissued by the government of the People’s Republic with nine segments (and has been modified since, with the most recent version appearing this year, with a tenth segment off the west coast of Taiwan). Beijing has still not indicated what legal significance attaches to it, though most commentators assume that Chinese sovereignty over South China Sea islands would be included at a minimum). Some Chinese scholars have indicated that it shows the limits of China’s claim to “historic waters” in the South China Sea. Historic waters is not a phrase generally accepted by international lawyers: bays yes, waters no. Even then, it is a concept of very limited application.

Why historic to China? Because Chinese fishers have fished there since time immemorial. No doubt. But surely so have fishers from the entire coastal region, and there is hard evidence that fleets from what is now India fished there also. In the course of 2011, there were innumerable clashes between fishing and enforcement vessels – that has been happening for decades. But 2011 marked something new – on two occasions, Chinese vessels severed the cables of seismic arrays being towed behind ships conducting petroleum exploration for Vietnamese interest holders. The only justification for such acts would be a reinforcement of a claim by China to exercise sole control over such activities in those waters. The point is, the first of these incidents took place in waters which would be on the Vietnamese side of a hypothetical median line drawn between Vietnam and the nearest island feature (this gives that feature the maximum effect it could possibly have at international law). But the area was “within” the segments. Thus, the only justification for the Chinese action would be a claim to exercise plenary jurisdiction seaward of a line “linking up” the segments. I consider this position to have little or no justification, and interestingly, it has prompted at least one leading and highly respected regional law of the sea expert to publish articles sharply critical of Chinese jurisdictional equivocation, and demanding clarification of its claims. These appear to have caught the attention many, including governments.

It is tempting to see the cable cutting incident as another form of “enforcement”, not unlike the arrest of a vessel caught illegally fishing. I would also argue that it goes well beyond this. Shooting seismic is a way of acquiring information, but unlike fishing, the resource itself is totally unaffected. Severing the cables was, arguably, a disproportionate response, increasing tensions quite needlessly. It might also be an illegal act: under international law (and I should emphasise that point), and Vietnam has a better claim to those waters and continental shelf than China.

One of my first contributions to IZ, prompted by some wild talk in the media as regards claims in Arctic waters, was ultimately an essay on an aspect of law and order at sea, in that case, the application of established and accepted rules pertaining to maritime jurisdiction there, as opposed to any inclination on the part of the littoral states to “help themselves”, and carve up the whole ocean between them merely because they are the littorals (the “wild talk” shows no signs of abating: I have read more than one article in respected journals which is so full of basic errors as to be either worthless, or actually harmful). A subsequent contribution I co-authored with Clive Schofield addressed a more obvious “law and order at sea” challenge: piracy. We also discussed yet another, arising from the harassment of the USS *Impeccable* as it carried out surveying duties within the Chinese EEZ, activities not expressly brought within the jurisdictional ambit of the coastal state. The argument is that the stories which prompted this effort should be seen as being yet further aspects of something larger, linking them in ways not always obvious at first blush.

In conclusion: is the knife attack on the Korean officers part and parcel of a more trenchant attitude on the part of China and the Chinese towards their disputed claims? Is this the link between those two apparently distinct stories in the *Jakarta Post*? Perhaps so. In any event, it is hard to see how military build-up, knife attacks on enforcement officers, cutting seismic cables and activities of this nature contribute in any helpful way to the advancement of the law and order at sea agenda, which is admittedly as broad one as defined here. But that result is hardly in the best interests of coastal states, including the littorals of the South China Sea.

The Tsunami and Article 9

Brent Sutherland

It is a well-worn bit of wisdom that the 1947 *Constitution of Japan* was more or less written and imposed by the American occupation authorities. However both Douglas MacArthur and Prime Minister Kujiro Shigeharu claimed that the war renouncing *Article 9* was the latter's idea. This is fundamentally a chicken and egg argument, as the fact is Japanese liberals at the time blamed the more unpopular measures (that they happened to like) on the occupiers.

In any case it is obvious that one of the prime goals of the 1947 constitution was to prevent Japan from ever returning to militarism. Article 9 states: “[a]spirng sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes. To accomplish the aim of the preceding paragraph, land, sea, and air forces, as well as other war potential, will never be maintained.” Arguably, Article 9 was violated just a few years later by the establishment of the National Police Reserve in 1950 which was comprised of 75000 men armed with light infantry weapons. The National Police Reserve eventually became the Japan Self Defense Force (SDF) which presently possesses such “force” like kit as tanks, submarines and fighter jets. Nevertheless the fiction remains that the SDF is not a military. In fact the SDF does not have its own military justice system, thus a deserter merely gets fired rather than say...hung, keelhailed or made to break rocks. This is more than a mere inconvenience as the SDF is now routinely dispatched to lawless parts of the world on peacekeeping missions, which would make any potential crimes against locals by SDF members difficult to prosecute. On the other hand, such a crime might be too easy to prosecute if the locals offer to mete out their own version of justice. In that respect at least, the SDF, really, is just a group of civil servants who happen to be heavily armed.

Up until the 1990s, the notion of revising Article 9 was one that mainly interested ideologues. There are conservatives that feel that having a bona-fide military is inherently a good thing, and also that Japan has come a long way since the war and subsequent occupation. On the other hand there are pacifists who feel that Article 9 means what it says; and thus the SDF should not exist-or at the very least be lightly armed. It has long been a policy plank of the once-dominant (and maybe again) Liberal Democratic Party that Article 9 be amended. However, pragmatists have tended to be comfortable with the paradox of Article 9 coexisting with what is obviously a military force. In fact every constitutional challenge to the existence of the SDF has lost. The Supreme Court of Japan has consistently interpreted Article 9 as not precluding self-defense, therefore the SDF may exist. Thus the SDF is armed with very sophisticated weapons, but avoids kit that could be seen as only useful for force projection, such as auxiliary fuel tanks for their aircraft or amphibious assault ships.

The 1947 Constitution has never been amended. In fact the requirements of amending it are no more rigorous than in some other nations. A majority of two-thirds in each house of the Diet, and then a simple majority in a national referendum are required. There are provisions from 1947 that may be no longer all that relevant or useful today, such as Article 89 which states: “[n]o public money or other property shall be expended or appropriated for the use, benefit or maintenance of any religious institution or association, or for any charitable, educational or benevolent enterprises not under the control of public authority.” Thus the government of Japan cannot fund something as innocuous as a homeless shelter run by a religious organization, or contract out international humanitarian activities to the usual non-governmental organizations. However, even an amendment to Article 89 grounded in common-sense has been precluded by the notion that any amendment whatsoever is a slippery slope towards the amendment of Article 9.

The first Gulf War transformed the Article 9 debate from one which mainly interested constitutional scholars and ideological axe-grinders into a matter of everyday concern. Japan was heavily criticized in the United States for not contributing even non-combat personnel to the “coalition of the willing.” Consequently Article 9 has been interpreted as allowing the overseas dispatch of the SDF for peacekeeping and humanitarian missions. The SDF has since served honorably in such diverse places as Cambodia, Mozambique and the Golan Heights. This has made revision of Article 9 more acceptable amongst centrists. It is argued that the SDF is deserving of “normalization” in terms of being recognized as a legitimate military being not unlike that of any other sovereign nation.

What then does this have to do with the events of March 13, 2011? The triple disaster of earthquake, tsunami and nuclear meltdown resulted in the SDF’s largest mission ever. Over 100,000 SDF members were sent to the Tohoku region to assist with the aftermath. They were tasked with everything from airlifting food and fuel to recovering the dead. To the rank and file SDF members, their own supposed constitutional illegitimacy has never been the issue that it has been with conservative politicians. The pacifist’s concern that they might be closet goose-steppers also strikes them as unconnected to reality. A large chunk of SDF personnel come from rural and/or working-class backgrounds, thus they appreciate the steady paycheck, room for advancement, and/or the training that the SDF provides. Hence the feeling amongst some of the general public that SDF members are “tax leeches” or only in it to get “free” training in skills such as aircraft maintenance that will qualify them for well-paid civilian jobs. However, one assumes it is better to be considered a time-server rather than a war-criminal in waiting.

After the tsunami the usefulness of the SDF can no longer be questioned. No matter what the constitutional issues are, and whether or not it is a true military, the SDF now has a much larger stature with the Japanese public. This will inevitably affect the debate over Article 9. It can be argued now that “normalization” is fait accompli, therefore the constitution should be amended to reflect reality. It can also be argued that “normalization” would eventually make for a more rational process of tasking the SDF. At present the consent of the prefectural governor concerned is needed for domestic missions, and the consent of the Diet is needed for overseas missions. Obviously, in the

case of a natural disaster, the prefectural government could be totally incapacitated. In the latter case, a mission such as extracting Japanese civilians from a war zone might not allow time for debate.

Regardless of what any revisions to Article 9 might be, to be able to move forward with the debate and subsequent constitutional amendment would require a degree of political maturity that has heretofore been lacking. If it does actually happen, it will mark a clear transition from the post-war era, to the post-tsunami era.

Over the Top?

Retreating Sea Ice and the Prospects for Rising Navigation in the Arctic

Clive Schofield*

Introduction

Recent years have clearly witnessed profound changes in the Arctic environment. The most arresting indicator of these changes has been the dramatic melting of Arctic sea ice in northern hemisphere summers. The severe downward trend in sea ice cover has been evident over the last decade with especially large losses in summer sea ice cover, as compared with the long-term average recorded over the past five years since the record sea Arctic ice minimum extent recorded in 2007.

While these spectacular and alarming developments have given rise to great concerns over the fate of the Arctic environment and peoples, they have also raised the prospect of increased access to the Arctic. In particular, the enormous losses of summer sea ice cover in the Arctic has raised the prospect that fabled and long-sought sea lanes ‘over the top’ of the world via Arctic waters may provide realistic alternative options to traditional routes for global maritime trade.

The inherent attractions offered by Arctic navigational routes over those predominantly used for maritime commerce at present, especially in terms of the distance savings involved in inter-oceanic passages, are readily apparent. It is also acknowledged that Arctic navigation is clearly on the rise with a number of notable transits of Arctic sea lanes being made in the summer of 2011. However, the potential for Arctic routes to transform the pattern of global seaborne trade should be viewed with considerable caution, as this article explores.

Going, going...

In 2011 the sea ice minimum extent in the Arctic was reached on 9 September.¹ On the basis of satellite observations, sea ice coverage in the Arctic on that date was estimated at 4.33 square kilometres (km²) – a figure only marginally (162,000km²) greater than the lowest level ever recorded since accurate satellite-based measurements began of 4.13km² million, set in September 2007.²

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¹ See, D.Perovich, W.Meier, J.Maslanik and J.Richter-Menge, “Sea Ice”, *Arctic Report Card: Update for 2011*, National Oceanic and Atmospheric Administration (NOAA), available at, http://www.arctic.noaa.gov/reportcard/sea_ice.html; see also, National Snow and Ice Data Center, “Summer 2011: Arctic sea ice near record lows” NSIDC Arctic sea ice news, available at, <http://nsidc.org/arcticseaicenews/>.

² *Ibid.* The figure for the record sea ice minimum of September 2007 relates to the average five-day mean sea ice extent as provided by the United States National Snow and Ice Data Centre (NSIDC).

The 2011 sea ice minimum therefore represents the second lowest figure recorded since satellite measurements began over 30 years ago.³ This level of sea ice cover is substantially lower than the long-term average for sea ice cover – 31 per cent or over 2 km² million lower than the average recorded for the period 1979-2000. Further, the extremely low 2011 sea ice minimum extent is consistent with the minima recorded over the past five years. Indeed, the past five northern summers have seen the five lowest Arctic sea ice extents on record while the past decade (2002-2011) have experienced nine of the ten lowest levels ever recorded.⁴

Even though the sea ice minimum for 2011 was not quite as low as that for 2007 (though it was a near-run thing), this observation is arguably just as alarming if not more so. Not only does the 2011 figure serve to confirm and underscore the overall decadal declining trend in summer sea ice cover in the Arctic but this extreme low occurred despite the fact that oceanic and atmospheric conditions in the Arctic in 2011 were by no means as conducive to melting as they were in 2007. The conditions experienced in the Arctic in 2007 have been described as a “perfect storm” for summer ice loss.⁵ These conditions featured, in particular, a “persistent dipole anomaly weather pattern” with unusually high pressure over the Beaufort Sea as well as unusually low pressure over the Kara Sea drawing warmer winds and waters from the south into the Arctic basin, thus contributing to record ice loss. In contrast, 2011 featured both oceanic and atmospheric conditions nearer the average, yet near record summer ice loss still occurred.⁶

A key explanation for this remarkable extent of ice loss, despite generally more moderate conditions than in previous years, relates to ice thickness. The thickness of sea ice can be used as a proxy measure for the age of ice, that is, the older the ice, the thicker it tends to be. It has been suggested that Arctic sea ice thickness has been reduced by around 40 per cent in recent decades, based on measurements from submarines.⁷ Such

See, *National Snow and Ice Data Centre* (NSIDC), “Arctic Sea Ice Shatters All Previous Record Lows”, NSIDC Press Release 1 October 2007, available at:

http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html>. It should be noted that the estimated uncertainty for extent in these figures is of the order of plus or minus 50,000 km².

³ Satellite-based measurements of Arctic sea ice cover, utilising passive microwave instruments, have been routinely and accurately made since 1979. See, Perovich *et al.*, “Sea Ice”.

⁴ *Ibid.*

⁵ See, *National Snow and Ice Data Centre* (NSIDC), “Summer 2011: Arctic sea ice near record lows”, NSIDC Press Release 4 October 2011.

⁶ *Ibid.* In fact similar weather patterns were experienced in 2011 but not as strongly or persistently as for 2007. Air temperatures in 2011 were near average as compared to 5°C above average in the Beaufort and Chukchi Seas in 2007. The exception to the rule in 2011 was areas north of Greenland and in the Canadian archipelago, where air temperatures were even warmer than in 2007 – a likely factor in the opening of the Northwest Passage.

⁷ One notable study suggested this figure for the reduction in mean ice thickness within the central Arctic Ocean between the periods of 1958-76 and 1993-97. See, D.A. Rothrock, Y. Yu, G.A. Maykut, “Thinning of the Arctic Sea Ice Cover”, *Geophysical Research Letters*, 26 (23) (1999) 3469–3472.

conclusions are supported by more recent satellite observations.⁸ Of particular concern has been the replacement of older, thicker, multiyear ice with seasonal ice that is far more likely to melt during warmer seasonal episodes. Overall Arctic sea ice cover is substantially thinner and younger than in the past. For example, in March 2011 it was estimated that first and second year ice comprised 80 per cent of the ice cover in the Arctic basin, as compared to 55 per cent on average over the period 1980-2000.⁹ The critical consequence of this trend towards younger and thinner ice cover is that Arctic sea ice is increasingly vulnerable to rapid melting in the summer months.

An allied consideration is that it has been observed that the Arctic melt season is lengthening with a later freeze-up in the Arctic leading to the summer Arctic sea ice melt season lasting nearly a month longer now than it did in the 1980s.¹⁰ This later freezing and earlier melting inevitably has significant impacts on the extent and dynamics of sea ice. At the time of writing (January 2012) for example, Arctic sea ice extent was unusually low, the third lowest in the satellite record, something arguably attributable to the factors outlined above.¹¹

There have been suggestions that climate variability may result in periods of stabilization and possibly expansion in Arctic sea ice cover in “the next few decades.”¹² However, the inherent uncertainties associated with predicting climate variability are acknowledged and it has also been conceded that such a pause could be only temporary in character.¹³ Overall, a sustained, severe and ongoing downward trend in summer sea ice extent, as well as thickness, age and volume is evident. Indeed, summer sea ice extent in the Arctic has declined by 12 per cent per decade over the period 1979-2011.¹⁴ The ongoing negative trend in sea ice cover in the Arctic Ocean has led to forecasts of a sea ice-free summer period in coming decades.¹⁵ This, in turn, has implications for growing navigational opportunities in Arctic waters.

The Lure of Fabled Arctic Sea Lanes

The enormous reductions in the extent of sea ice covering the Arctic Ocean witnessed in recent years, coupled with the prospects of an ice-free summer period in the foreseeable future have served to reignite long-held (though long-dormant) dreams of the

⁸ Katherine Giles, Seymour Laxon, and Andy Ridout “Circumpolar thinning of Arctic sea ice following the 2007 record ice extent minimum” *Geophysical Research Letters* 35(2008) L22502.

⁹ NSIDC, “Summer 2011: Arctic sea ice near record lows”.

¹⁰ Thorstan Markus, Julienne Stroeve and Jeffery Miller, “Recent changes in Arctic sea ice melt onset, freezeup, and melt season length.” *Journal of Geophysical Research* 114 (2009) C12024. Doi: 10.1029/2009JC005436.

¹¹ See, *National Snow and Ice Data Centre* (NSIDC), “Positively Arctic: Arctic Oscillation Switches Phase”, NSIDC Press Release 5 January 2012.

¹² See, “Arctic Ice Melt Could Pause in Coming Decades”, National Science Foundation, Press Release, Aug.11 2011, available at <http://www.nsf.gov/news/news_summ.jsp?cntn_id=121359&WT.mc_id=USNSF_51&WT.mc_e v=click?>.

¹³ *Ibid.*

¹⁴ Perovich *et al.*, “Sea Ice”.

¹⁵ ACIA (Arctic Climate Impact Assessment), *Arctic Climate Impact Assessment: Impacts of a Warming Arctic* (Cambridge University Press, Cambridge, 2004), at 19.

opening up of sea lanes across the top of the world. As the Arctic warms, so sea ice coverage will tend to be reduced and thus the seasonal Arctic navigational ‘window’ will correspondingly widen.¹⁶ The key potential navigational routes between the Atlantic and the Pacific Oceans by way of the Arctic are the Northwest Passage and the Northern Sea Route (formerly known as the Northeast Passage). In due course, if melting in the Arctic continues, a transpolar “over-the-top” route may even be possible.¹⁷

The longstanding lure of the Arctic alternative for navigations is readily understood. The Northwest Passage offers a staggering 9,000km (4,860nm) distance saving over the traditional route between Europe and Asia via the Panama Canal and a 17,000km (9,180nm) saving as compared with the Cape Horn route.¹⁸ In this context it is worth bearing in mind that in excess of 80 per cent of global trade by volume is carried by sea – underscoring the rationale for exploring Arctic navigational alternatives to traditional sea lanes.¹⁹

The obvious attractions of such routes are that the substantially shorter distances involved could potentially translate into savings in the time voyages take with corresponding savings in terms of bunkering (fuel) costs. A related benefit of using Arctic sea lanes, and one emphasized by the shipping companies starting to take up the Arctic navigational option is that the shorter distances travelled and thus reduced fuel consumption necessarily also entails substantial savings in terms of the emissions of harmful gases. For example, in addition to noting substantial savings in fuel costs, Niels Stolberg, the President and CEO of the Beluga Shipping Group, which began using the Northern Sea Route from 2009 (see below), stated that “[w]ith regard to the global CO2 balance we are able to reduce the bunker consumption and cut down the environmentally harmful emissions by using the Northern Sea Route.”²⁰

It can also be observed that use of Arctic sea routes has notable maritime security advantages. All of the Arctic navigational routes are remote from areas presently threatened by piracy and attacks against shipping. Of particular note in this context are the waters off the Horn of Africa, which lie athwart the main traditional sea lanes linking Europe to the Asia-Pacific through the Mediterranean Sea and Indian Ocean via the Suez Canal, Red Sea and Bab-al Mandeb route. These waters have been bedeviled by an enormous rise in piracy-style attacks against commercial shipping. Such direct threats to navigation are absent from the Arctic.

¹⁶ Claes L Ragner, *Den norra sjövägen*, Barents – ett gränsland i Norden [*The Northern Sea Route, The Barents - A Nordic Borderland*] (Torsten Hallberg ed., Fridtjof Nansen Inst. tran., 2008), <<http://www.fni.no/publ/marine.html>>

¹⁷ See Hon. Norman Yakeleya, Member of the Legislative Assembly of the Northwest Territories, Statement to the Legislative Assembly (June 2, 2008), available at <http://www.exec.nt.ca/currentnews/speechDetails.asp?varStatement_ID=684>.

¹⁸ Katherine J. Wilson et al., “Shipping in the Canadian Arctic: Other Possible Climate Change Scenarios”, 3 *Geoscience & Remote Sensing Symp.* 1853, 1853 (2004).

¹⁹ See, United Nations Conference on Trade and Development (UNCTAD) (2008), *Review of Maritime Transport 2008* (Geneva: UNCTAD), at 8.

²⁰ See ‘Successfully mastered Northeast Passage is followed by planning start for 2010’, Beluga Group, 18 September 2009, at <<http://www.beluga-group.com/en/#News-News>>.

Rising Arctic Navigation

In response to the retreat of Arctic sea ice in the summer, navigation traffic has shown distinct signs of increasing. While many voyages through Arctic waters tend to be regional in nature (that is, not involving passage between oceans via Arctic routes), notably driven by the tourism, oil and gas and fishing sectors, increasingly Arctic routes are being used for transits between the Atlantic and Pacific Oceans.

Of particular note in this context is the fact that in the last three years both the Northwest Passage, including the wider and deeper northern route via the Parry Channel, and Northern Sea Route have been free of ice and open for navigation in the month of September.²¹ Moreover, the Northern Sea Route has been open every year since 2008 and the southern route through the Northwest Passage via the “Amundsen Route” has been viable for navigation in September every year from 2007.²² This has led to a number of notable recent commercial transits of, particularly, the Northern Sea Route.

In particular, two heavy lift vessels of Germany’s Beluga shipping group, the *Beluga Fraternity* and *Beluga Foresight* successfully completed what was billed as the first commercial transit of the Northern Sea Route (sailing from Pusan in Korea to Hamburg in Germany) between July and September 2009.²³ Whilst these vessels were relatively small (12,744 dead-weight-tons(dwt)), 2010 saw the passage of the first high-tonnage tanker through the Northern Sea Route. The SCF *Baltica* departed Murmansk on 14 August 2010 and arrived in Ningbo, China on 6 September 2010 carrying a cargo of 70,000 tonnes of gas condensate. The 22 day voyage was estimated to be twice as fast as the alternative route via the Suez Canal.²⁴

Further notable inter-oceanic transits occurred in 2010, which saw the first passage of a high-tonnage bulk carrier, suggesting that Arctic routes may be viable for relatively low-value cargoes. The ice-classed bulk carrier MV *Nordic Barents* carried 41,000 tonnes of iron ore concentrate from Kirkenes in Norway to China, becoming the first non-Russian flagged bulk carrier to pass through the Northern Sea Route.²⁵ This was followed up with the passage of world’s largest ice-class bulk carrier with a cargo of 70,000 tonnes of iron ore concentrate through the North Sea Route in 2011.²⁶ Indeed, 2011 featured multiple commercial transits of the Northern Sea Route, including the first passage of a

²¹ According to satellite measurements which, due to resolution limitations, may mean that up to 15 per cent of the observed “open” water may be covered with ice. See, Perovich *et al.*, “Sea Ice”.

²² *Ibid.*

²³ Clive Schofield and Tavis Potts, “Across the Top of the World? Emerging Arctic Navigational Opportunities and Arctic Governance”, *Carbon and Climate Law Review*, 3 (2009) no.4: 472-482.

²⁴ Maritime Information Centre, ‘SCF Baltica completes her voyage from Murmansk to Ningbo (China)’, 9 September 2010, available at, <http://www.micportal.com/index.php?option=com_content&view=article&id=4337:scf-baltica-completes-her-voyage-from-murmansk-to-ningbo-china&catid=21:world-ports&Itemid=32>.

²⁵ See, Nordic Bulk Carriers, “NSR Project”, available at <<http://www.nordicbulkcarriers.com/nsr-project>>. See also, “MV Nordic Barents makes historic voyage”, *Barents Observer*, 26 August 2010, <<http://www.barentsobserver.com/mv-nordic-barents-makes-historic-voyage.4812338-131162.html>>.

²⁶ *Ibid.*

Panamax-class tanker, the 74,000 dwt *STI Heritage* and the first Suezmax-class supertanker, the 162,000dwt *Vladimir Tikhonov*, in September 2011. Both tankers set speed records for passage from Novaya Zemlya to the Bearing Strait, with the *STI Heritage's* eight day voyage swiftly bettered by half a day by the *Vladimir Tikhonov*.²⁷

Hazardous Waters Ahead?

Despite the excitement caused by these pioneering voyages, there exist strong reasons to doubt that global maritime transport routes will be fundamentally reconfigured just yet. The first and most obvious factor that mitigates against the use of Arctic sea lanes for regular inter-oceanic transits is that, while the waterway (or rather, waterways) in question may be ice-free at the end of the Arctic summer, the Arctic navigational 'window' is still relatively narrow.²⁸ For example, in 2011, the Northern Sea Route opened from mid-august until late September.²⁹ For much of the year, however, and year-round in the event of a cold summer, Arctic routes are likely to be impassable due to ice cover.³⁰ Indeed, even in a relatively ice-free summer, wind-blown ice may impede and delay navigation – an unwelcome factor given the drive for timely delivery of cargoes which pervades much of the shipping industry.

The hazardous nature of navigation in the Arctic will necessarily also have cost implications in terms of the need to build, operate and maintain ice-strengthened vessels. Ice-breaker support may also be required and insurance costs are likely, for the foreseeable future at least, to remain extremely high.³¹ The latter factor is likely to become less problematic as Arctic routes become more proven, however. A further likely challenge to use of the Arctic routes relates to the absence or poor quality of port facilities and other support infrastructure. Whilst the Northern Sea Route is, at first glance, far better positioned in this respect, featuring more than 50 ports along its length, it has been suggested that 40 per cent of the ports available for ship traffic are, in fact, non-functional.³² Limitations in terms of adequate charting of Arctic routes as well as availability of sufficient satellite coverage for accurate positioning and navigation also exist. Similarly, the provision of meteorological information, especially on ice conditions and the distribution of wind-blown ice likely to impact on navigation, remains a problematic issue.

Despite shorter transit distances, these factors are likely to entail delays and increased costs which will tend to erode the savings offered by substantially reduced transit

²⁷ See, "Supertanker sets speed record on Northern Sea Route", *Barents Observer*, 1 September 2011, available at, <http://www.barentsobserver.com/supertanker-sets-speed-record-on-northern-sea-route.4954241-16149.html>.

²⁸ See, Ragner, "The Northern Sea Route". See also, Schofield, Potts and Townsend-Gault, "Boundaries, Biodiversity, Resources, and Increasing Maritime Activities", 40-42.

²⁹ NSIDC, "Summer 2011: Arctic sea ice near record lows".

³⁰ See Patrick R.M. Toomey, "Global Warming: Arctic Shipping", *Meridian* (Canadian Polar Commission, Ottawa, Ont.) Fall/Winter 2007, at 10, available at <<http://www.polarcom.gc.ca/media.php?mid=3278>>.

³¹ *Ibid.* at 10.

³² Valeria Criscione, "New Possibilities for the Northeast Passage", 2 July 2011, available at <http://www.nortrade.com/index.php?cmd=show_article&id=583>.

distances.³³ Furthermore, there have been indications that even with a rise in temperatures, there will be only a marginal lengthening in the summer sailing season. In fact, navigation through the Northwest Passage in particular may even become considerably more hazardous as softer first-year ice in the channels between the islands of the Canadian Arctic archipelago melts and causes hard multi-year sea ice from the central Arctic Ocean to drift into and essentially ‘fill up’ the Northwest Passage.³⁴

A further serious concern relates to the environmental impacts of increased shipping traffic through Arctic waters. There is some merit in the claims outlined above that use of Arctic routes are advantageous on environmental grounds because of reductions in harmful emissions as a consequence of shorter distances sailed and thus savings on fuel burned. The counterpoint to this, however, is that CO₂ emissions are only part of the problem. The burning of fossil fuels leads to the emission of other noxious gases as well as black carbon (soot). Use of Arctic routes necessarily entails the release of such pollutants directly into the sensitive Arctic environment which is where they are least desired. In particular, when black carbon falls on ice it inevitably tends to darken the surface, thus accelerating melting through enhanced heat absorption.

Even more alarmingly, increased navigation in the Arctic gives rise to increasing risks of maritime accidents such as vessel source pollution and collisions leading to oil spills and the release of other noxious substances into the Arctic environment. The risks attached to such a disastrous eventuality are reinforced by the limitations on supporting infrastructure along Arctic sea lanes mentioned above. Deficiencies in search and rescue as well as accident response and clean up capacities would in all likelihood serve to exacerbate the harmful consequences of any maritime accident in Arctic waters.

Outlook

In light of the significant challenges outlined above, developments in Arctic navigation should be kept in perspective. No fundamental reconfiguring of global patterns of navigation appears likely in the near future. Nonetheless, it is clear that Arctic navigation is on the rise and great further potential does exist. Further, the great potential opportunities offered by Arctic sea lanes are highly likely to be investigated further in the future. Indeed, a number of the obstacles to the use of Arctic navigational routes are likely to be countered by technological advances and infrastructure investments on the part of Arctic coastal states. Such developments include improved vessel design, port upgrades, improved positioning technologies and charting and improved access to up to date metrological information. These improvements may collectively in effect serve to lengthen the Arctic summer sailing window. This is the case even if sea ice cover itself does not reduce further although, as noted, the overall negative trend in summer sea ice cover appears likely to be sustained. The retreat of summer sea ice extent in the Arctic is also increasingly facilitating the use of safer routes for navigation. The Northern Sea

³³ *Ibid.* at 10. See also Potts & Schofield, *The Arctic: A Race for Resources or Sustainable Development?*, at 22–23.

³⁴ Wilson et al., “Shipping in the Canadian Arctic: Other Possible Climate Change Scenarios”, at 1854. See also Potts and Schofield, *The Arctic: A Race for Resources or Sustainable Development?* at 50.

Route, for example, in fact consists of a series of routes at different latitudes. A key limitation on use of the Northern Sea Route in the past was the need to use the lower latitude, near shore, coastal route. This requires passage through straits lying between the mainland and islands offshore the Siberian coast: something that, in turn, dictated a maximum draft for shipping of only 12.5m.³⁵ This restriction necessarily impacts on both the size of ships that can utilise the route as well as the speed of passage. However, in 2011 it was reported that shipping was now able to use a route to the north of the Novosiberian Island, thus avoiding the shallow Sannikov Strait.³⁶

These developments have led Arctic and other states to push for international regulation of shipping in the Arctic through the development of a mandatory Polar Code.³⁷ More controversially, increasing shipping activity in the Arctic has prompted efforts on the part of littoral States, especially Russia and Canada, to exert more control over navigation, largely on safety of navigation and environmental grounds. These efforts to assert more control over navigation in Arctic waters have sharpened already existing disputes with States such as the United States over navigational freedoms through what the US views as straits used for international navigation. Consequently, further international diplomatic icebergs related to navigational rights in the Arctic would seem to lie dead ahead.

³⁵ Ragner, 'The Northern Sea Route'. See also, Clive Schofield, 'The Tip of a Fast-disappearing Iceberg?: Implications of the opening up of the Northern Sea Route', Commentary, *Australian Journal of Marine and Ocean Affairs*, Vol.1, no.4 (2009): 132-134.

³⁶ "New pathway along the Northern Sea Route", *Barents Observer*, 27 September 2011, available at <<http://www.barentsobserver.com/index.php?id=4964702&xxforcedir=1&noredir=1>>.

³⁷ It was reported in October 2010 that further progress had been made in the development of a mandatory Code for ships operating in polar waters. The move to adopt a mandatory Code follows on the 2009 adoption of Guidelines for ships operating in polar waters on the part of the IMO Assembly (Resolution A.1024(26)). See, "Mandatory Polar Code Further Developed", International Maritime Organization (IMO), Sub-Committee on Ship Design and Equipment (DE) - 54th Session, 25 - 29 October 2010, 29 October 2010, available at <<http://www.imo.org/mediacentre/meetingsummaries/de/pages/de-54th-session.aspx>>.