

The Strategic Importance of the Oceans

*This essay was written by the editors of **Maritime Affairs** and draws on many of the articles on maritime security and oceans use published in past editions. One of the reasons for publishing this rather lengthy essay is to draw attention to the broader aspects of maritime security and also to provide a context for the prevailing emphasis on homeland security. The focus of the essay is more upon shipping than other issues because that is the area of greatest immediate vulnerability. The environmental and ocean management issues are also very important, but in the aftermath of 11 September, 2001, they have unfortunately taken second place to the shipping sector.*

Do the oceans require separate consideration within the broader aims of global stability?

Yes, they do! Not only are the oceans fundamental to our economic well being, but they are also an essential part of our life-support system. If we abuse the oceans, we eventually harm ourselves.

The oceans are not benign, they are as potentially unstable as many of the countries they border. But it is no longer adequate to focus only on the traditional military threats to maritime security, instead, we need to look at a wider range of maritime factors that have the potential to challenge security. In addition to the obvious problem of conflict on land spilling over into the adjacent waters, there are several areas of concern. Some are merely extensions of traditional issues, such as trade, others are relatively new, concern for the marine environment for instance, and some have to be seen as self-inflicted.

There is an argument that these issues should be the concern of economists, lawyers, and scientists rather than strategists. This is not so, contemporary maritime strategy (and thus sea power) has to take these divisive issues into consideration. The classic calculus of sea power was largely a function of navies and naval power. Today, sea power, and thus maritime strategies, must take note of all factors that have political implications.

To begin, we need to put the oceans in their larger, international context.

THE UNSTABLE INTERNATIONAL SYSTEM

The evolution of the global economic system, globalization, has resulted in a fragile socio-economic structure susceptible to disruption at many places and in many ways. For instance, consumer goods are seldom produced in one plant or even one country today, they are now assembled from component parts made around the world. Similarly, raw materials are largely refined in places other than where they were extracted. All this has created a production and market system dependent on various means of transportation of which the container industry is a key element. This system is managed by the transfer of data, orders, and capital by satellite and, increasingly, fibre-optic communications networks. The shift throughout this system to a policy of “just in time delivery” for raw materials, component parts, and finished goods greatly increases its susceptibility to disruption. Even though a degree of redundancy still exists through duplication this is actually reducing as the international trade network becomes increasingly efficient. Further, the suppliers of international transport are consolidating into fewer but larger global organizations, which includes not only shipping lines but also port operators, forwarders, insurers, and ship builders. Therefore, the global economy can be brought to its knees quite easily. And when the global economy slows down or is disrupted, the impact

on societies is almost immediate. The events of 11 September 2001 stand as an example of the system's fragility and of the implications of disruption.

Today, we face threats of instability on three fronts:

- C ***economically***, because of the interdependence and lack of resilience in the global economy;
- C ***geopolitically***, because of the risk that regional instability (especially where sectarian and cultural minority unrest and violence prevail) could lead to more widespread unrest and instability which, in turn, has the potential to disrupt the global economy; and
- C ***domestically***, under various scenarios (including terrorist and criminal activities) which present challenges to the established government and by direct threats to infrastructure and citizens.

Those who persist in claiming that we now live in an era without any threat to our security have yet to grasp the complex and uncertain nature of the present international system.

While it is fair to say that Canada does not face a direct military threat, national security is now under threat from several other directions -- the so-called asymmetric threats . Predictably, various interpretations of the threat and its potential impact exist. Some will claim, naively, that "It cannot happen in Canada!" while others share the US view that it is the overall economy, and thus our entire way of life, that is at risk from instability within the system.

No country today (with the possible exception of the few still in the agricultural age) is self-sufficient, they have become economically interdependent. Hence, the foremost national security concern for all should be the prevention of instability in the international system. This is an impossible undertaking of course. One only has to consider the 1995 Kobe earthquake to appreciate the impact of an unpredictable natural disaster on a country's economy.

Yet, many potential instabilities can be addressed. In some cases this requires the use of military force, while some other threatening situations can be contained or even avoided by preventive measures such as greater infrastructure redundancy or through increased physical security or by the careful application of economic assistance to countries and regions under stress. Whatever action is taken it will be expensive, but if the global economy, upon which our standards of living depend, is to be kept stable those expenditures must be made.

In terms of the delicate balance that now exists within the global economy, any disruption to the system or even any situation with the potential to deteriorate can represent an impending crisis to one or more states. For instance, a Middle East war would have enormous impact on the flow of oil until alternative means of supply are found, such a situation has the potential to bring the Japanese and some other economies to a standstill. But it is not all shipping-related, the effects of a terrorist attack on a major fibre-optic terminal would be felt around the world until new systems were put on line. This would take time, and in the interim the ripple effect through the industrialized world would be near disastrous. The attack on the *World Trade Center* should be a lesson to us all. With this in mind, it should not be difficult for a state to determine its national security interests. Those interests then form the basis for both domestic security policy and the external intervention policy, and the oceans are central to both those policies.

Before moving on to look at the strategic aspects of ocean use and the implications for national security, there is a need to review some governing factors, especially the Law of the Sea and the demographics of the coastal zones.

INTERNATIONAL LAW AND THE LAW OF THE SEA

The 1982 *UN Convention on the Law of the Sea* created what has been referred to as a “new Constitution for the Oceans”. Several features of the convention have significantly changed the way states use and administer the oceans. New and expanded jurisdictional zones include: the twelve-nautical-mile territorial sea (increased from 3 miles) over which states have full control; the 24-mile contiguous zone over which the state has limited jurisdiction concerning various aspects of domestic law; the 200 nautical-mile EEZ over which states have resource and environmental jurisdiction; continental shelves with limited jurisdictional rights; international straits; and archipelagic waters subject to certain access constraints.

The enormous increase in the size of the ocean areas that now fall under national jurisdiction creates a host of resource and boundary disputes, some of which remain unsettled. Because ocean resources have the potential to generate wealth, disputes over their control can quickly lead to confrontation. In this, it is naive to believe that regulation and negotiation alone will resolve all these disputes. National interests are often so compelling that states find it necessary to take the law into their own hands to bring about a speedy solution, as Canada did during the 1995 Turbot crisis.

States were also given expanded rights to close off certain bays and inlets and deem them internal waters. All these have had the effect of reducing the ocean areas over which traditional high sea freedoms can be exercised. The new zones have created innumerable new boundaries, some of which are contentious, especially those where seabed resources exist. Because the seeds of escalation often lie within seemingly narrow disagreements, early resolution of maritime resource and boundary disputes serves the collective interests of the international community. Under some circumstances, this can make third-party intervention necessary for the common good. The complex South China Sea boundary issue is a good example of a maritime dispute with the potential for escalation and the use of military force.

Unrestricted freedom of the high sea, which is more than just freedom of navigation and includes the right to fish and conduct other activities including naval manoeuvres, can now only be enjoyed from the outer limit of the EEZ instead of from the outer limit of the territorial sea. To some this represents an enormous and sometimes unwarranted extension of territory. Even though control in the EEZ is not absolute, some states have already begun to declare a higher level of control in those areas than strictly allowed under the *Convention*. This has been seen as creeping jurisdiction whereby increasing amounts of the ocean fall under the direct control of the state. For instance, worried by the prospect of a repeat performance in Chilean waters of Alaska’s 1989 *Exxon Valdez* disaster, Chile passed its controversial *Presencial Sea Law* in September 1991 thereby advancing its ocean boundary 2,000 miles west to Easter Island, and south to the Antarctic zone. Chile now unilaterally embraces and claims jurisdiction over an area thought to be about one-fifth of the Pacific Ocean. This is an alarming precedent and one that has not yet been challenged internationally.

For good reason, many are apprehensive that other states will eventually follow Chile’s lead.

The *Convention* gave states functional sovereignty over some 32 percent of the world’s oceans. Within this new regime some restrictions are imposed on the freedom of navigation for warships. Whereas these areas were once “free”, they are now subject to control by a state or states. This denies other states the right to come and go as they please. Hence, a conflict now exists between the constraints imposed on the movement of ships

and the need of warships for mobility in conducting the business of their home state. The right of innocent passage through the territorial waters of another state has always existed, but *innocent* means that the transiting warship cannot engage in military operations while making that passage.

Navies can only wage war on the high seas and in the waters of a belligerent state, the waters of neutral states have to be respected. The problem now is that from one perspective, the new zones considerably reduce the ocean area in which naval operations can be conducted --- perhaps to the point that those rules form an unrealistic impediment. A recent interpretation of the laws of armed conflict at sea (*The San Remo Manual on International Law Applicable to Armed Conflict at Sea*, 1995) confirms that hostile actions may be conducted in the exclusive economic zone of a neutral state. Thus, the use of navies as extensions of the state, especially in support of diplomatic initiatives where warships are deployed through the waters of third parties, is now subject to a law of the sea that contains several inconsistencies.

The *Convention* is based on the principle that codification and development of the Law of the Sea will contribute to strengthening peace, security, cooperation and friendly relations among all states, but this has not happened. Although the *Convention* was created with the best of intentions, it failed to take all factors into consideration. As a result, it has now become a potential source of conflict when its original intention was to create a regime free of conflict. As one of its original architects, Arvid Pardo, admitted,

Not only does the 1982 Law of the Sea Convention contribute nothing substantial to arms control or disarmament in the marine environment but also, by the vagueness or ambiguity of many of its key provisions, it could foster controversy and contribute to increasing international tension.

There is also concern that while the *Convention* sets forth a legal regime for ocean management, it does absolutely nothing about enforcement. One only has to ask what it would take to get the UN or the International Maritime Organization (IMO) moving to stop illegal dumping of hazardous waste at sea to realize that the *Convention* is a far from perfect instrument and that both the IMO and the UN are bureaucracies without the resources to enforce the laws and actually prevent such abuses.

Although the *Convention* did not deal with naval issues very well, from the perspective of either the advocates of sea power or the disarmament community, it created an opportunity for many navies to re-define their purpose and their structure. The implicit need for good stewardship of the oceans caused many states to think more seriously about how they would exercise jurisdiction over the new areas. For those states that stood to gain enormous offshore responsibilities this became a particularly vexing problem because it meant that they would have to acquire forces to carry out these constabulary duties. In many cases the costs of implementation outweighed the benefits. In fact, the notion of designing navies on the basis of constabulary tasks instead of traditional capabilities became a major initiative of disarmament groups in Europe and North America. The dominant fallacy in many of those proposals was that only small ships would be needed for these duties. Later, the reality set in that the ocean 200 miles offshore is no less rough and demanding than that 2,000 miles distant.

The point here, simply, is that when something happens to trigger an international demand for action, the politicians will, as usual, look to navies to carry out the necessary surveillance and enforcement operations. Why? Because there are no other forces capable of doing the job!

THE DEMOGRAPHICS OF THE COASTAL ZONES

The sustainment of coastal communities is, perhaps, of a lower order of magnitude in the immediate security equation. However, when one stops to consider the percentage of the world's population that lives in the low-lying lands adjoining the oceans and the potential chaos that could be caused by a relatively small increase in sea height, the security of the coastal communities takes on a new dimension. In 1996, the significance of the coastal environment was summarized as follows:

Today, 50% of the world's population is located within 80 km of the shore. By 2030, with the projected doubling of the population, 75% will live within 80 km of the shore. Eighty percent of countries are not landlocked, and therefore have littoral borders. Eighty percent of the world's capitals are within 485 km of a coastline; 125 cities with populations of over one million are within 485 km of a coastline.

The point that stands out here is that the density of population in the coastal areas not only adds new meaning to longer-term environmental issues such as sea height, but also brings out the fact that a major conflict almost anywhere in the world is likely to have a maritime dimension. Also, as we saw in the recent Afghanistan War, military power can now be projected from the sea to a land-locked state.

MARITIME SECURITY ISSUES AND TRENDS

The following sections highlight the key issues and trends in modern ocean use and management with a particular focus on the various strategic considerations and threats to global maritime security.

Trade by Sea

The oceans are still the “great highway” upon which much of the world's business depends. This has been a fact of life for centuries and is not about to change. So, it is in the collective interest of the trading states to make sure that trade continues to flow without restriction. Because the movement of shipping can be constrained at any one of the choke or focal points through which it passes or by restricting the use of major ports, it is quite easy for one country (or even a group of individuals) to hold part of the world economy to ransom. Freedom of navigation, and unrestricted access to ports, are essential requirements to the smooth operation of the global economy, and constraints on shipping, created deliberately or by accident, will demand government response in a timely manner. The trading states and the multinational corporations naturally want to prevent any disruption of their trade and, should it happen, they want order restored as quickly as possible. Their motivation is a simple function of economics.

The global economy now depends on the uninterrupted flow of shipping among producers of raw materials and energy, component manufacturers, assembly plants, and consumers, most of which are often located not only in different countries but also on different continents. The adoption of a “just in time delivery” approach to shipping by most industries rather than continuing the previous policy of stockpiling or maintaining operating reserves of energy, raw materials, and key components means that a disruption or even a slow down in the flow of almost any item can have widespread implications for the overall market, as well as upon national economies.

Although we live in a global economy with transnational and, increasingly, supranational corporations controlling much of the flow of commodities, the golden rule of trade, “whosoever commands the sea commands trade; whosoever commands the trade commands the riches of the world, and consequently the world itself” (attributed to Sir Walter Raleigh), remains valid. The lessons of the last century of war at sea surely confirm the logic of that statement. For instance, German U-boat operations against shipping bound for Britain in the First and Second World Wars took enormous efforts to counter, and on both occasions the U-

boats had to be defeated before the war could be won. Similarly, American submarine operations against Japanese shipping in the period 1942-45 were instrumental in bringing the war in the Pacific to an end.

To understand the strategic importance of shipping we need to answer a series of questions on what is moved, between which places, and by whom.

What is moved?

Despite fluctuations in the financial aspects of the global economy and the significant changes taking place in the design of hulls and in cargo handling concepts, the amount of cargo being moved continues to grow steadily from year to year after a down-turn in 1998-99. Growth in the numbers of containers moved has been consistent. Using 2000 as a representative year, the major commodities moved by sea, totalling 5.88 billion tons, were:

- C 2.15 billion tons of crude oil and other petroleum product, of which 1.60 billion tons (74.4 percent) was crude oil, this trade reflects OPEC production variations and the resulting requirement for states to buy on the non-OPEC “spot” market;
- C 1.98 billion tons of bulk dry (non-container) cargo which includes high volumes of essential commodities such as iron ore, coal, grain, and a wide range of smaller quantities of item such as alumina/bauxite, fertilizers, steel and pig iron and forest products, and
- C 1.75 billion tonnes of other dry cargoes carried as break-bulk, ro-ro, and containerized traffic, with the contained industry continuing to lead in both volume and value of cargoes totalling some 50 million twenty-foot equivalent units (TEUs) shipped over the year.

The general ratio of cargo transported by sea is 58/40/2 in the dry/oil/gas categories. Only a tiny proportion of this, high-value general cargo, has the option of air transport and this is unlikely to change in the foreseeable future. Within the dry cargo category, the fundamental transport development of our generation is the worldwide adoption of the container.

It is hard to determine exactly what percentage of world trade by sea in terms of its monetary value is represented by the container industry. Some estimates have put it as high as forty-five percent, but the accepted figure is one-third. Whatever the amount, it is quite clear that the container industry is a very significant part of the global economy and thus has strategic significance. Although, it is largely tied to finished products, it cannot be completely separated from the various bulk cargoes because they both represent components of the industrial cycle. What we have, therefore, is a closely integrated global shipping system that directly impacts on the economic performance of a very large number of countries.

Between which places?

The container industry continues to evolve into a complex, yet logical operating concept on a “hub and spoke” port system with about 16 mega-ports each handling in excess of one million containers each year, and a huge network of smaller ports. Transshipment, where a container is off-loaded at a mega-port and transferred to a smaller carrier for onward movement, makes up about 30 percent of the movements. In the case of dedicated transshipment ports, such as Singapore and Hong Kong, the proportion will be higher. The other containers are moved from the port to inland and local consumers, giving rise to the need for efficient road and

line lines connecting the port to distribution centres. In 2000 there were a total of 200 million container movements worldwide, an increase of 132% over the previous decade.

In terms of movement patterns, the trade is truly global. But on the basis of 2000 statistics, trade between the developing countries, especially those of SE Asia, and the developed market economy states accounts for just over 90 percent of the cargoes handled. Much of this trade takes place on three routes:

- C trans-Atlantic;
- C trans-Pacific; and
- C North-South (predominantly containers between Europe and Asia) using both oceans and the Mediterranean.

The high volume container ports reflect the growing role of Asian production facilities in the global economy; for instance, in 2001 the six leading container ports were, Hong Kong (18.0 million TEUs handled); Singapore (15.5 million TEUs), Pusan, (7.9 million TEUs), Kaohsiung (7.5 million TEUs), Shanghai (6.3 million TEUs) and Rotterdam (5.9 million TEUs). For comparison, the largest Canadian container port, Vancouver, ranks 49th in handling 1.1 million TEUs.

Crude oil shipments follow the traditional routes between the main producers (Middle East, Caribbean/South America, North Sea) and industrialized consumers in Europe, North America, and Northern Asia. Integrated into the growing network of Middle East pipelines, the flow of medium sized (60,000 to 150,000 dwt) tankers through the Suez Canal and Mediterranean make up an increasingly important trade route. Recent increases in the capacity of the Canal emphasize the importance of this route.

Non-container, dry bulk cargoes are truly international, flowing in virtually every direction with only a few dominant routes for major commodities such as coal from North America into China, Japan, and Korea, and iron ore from Brazil and Australia (about two-thirds of world production) going to nearly all major steel producers.

By whom?

In 2000 the world merchant fleet had grown to 808.4 million deadweight tons (DWT) with about 10 percent of that number being new construction replacing a smaller number of old ships taken out of service. The average age of ships is around 14 years. In 2000, there were 2,573 fully cellular container vessels in operation with a total capacity of 4.285 million TEUs. (Compare this with 200 million lifts noted above. Therefore, on average, each fully laden container ship exchanges each container slot 47 times per year.) The top twenty owner-operators of container ships control 35.5% of the global container capacity by vessels and 54.1% by TEUs. This concentration is expected to increase.

The shift in the container trade to the “hub and spoke” concept was accompanied by a major change in the type of vessel in use. At the moment, the majority of the container ships fall within the beam and draught requirements to use the Panama and Suez Canals (Panamax). The next generation of container ships will be much bigger and operate only between the specific “hubs”, they will not be able to use the canals (post-Panamax). Many believe that the “spokes” will have to include land bridges, such as that across North America, as a means of offsetting the inevitable increase in canal charges.

The international merchant fleet is a complex structure of national and open registries (flag of convenience, or as ship owners call these: flag of necessity) in which some 29 thousand vessels (above 1,000

grt) are engaged in seaborne trade. Of these, nearly half (11,300) are registered in the major open registries of Panama, Liberia, Cyprus, Bahamas, Bermuda, and Vanuatu as well as in the unique (alternative) international ship registries of Norway and Denmark.

The erosion of national “flag” merchant fleets also raises the issue of who is ultimately responsible, or accountable, for a particular ship. For instance, consider the following facts with respect to the operations of the flag of convenience fleet:

- C Owners are often merely holding companies, frequently numbered Swiss bank accounts.
- C Their only assets, the ships, are registered as single-ship stand-alone companies with no cross liabilities. Each individual ship can be written off with little impact on the fleet as a whole.
- C Shipping agents are concerned only with the movement of a cargo, the ownership and destination of which can change in mid-voyage.
- C The ship’s master is little more than a vehicle driver with a tight schedule to maintain.
- C The crew is supplied by a crewing agent from international sources and often with short-term contracts.
- C It is doubtful, at best, if a concept of accountability on the part of the state of registry ever really existed.

The Cruise Ship Industry

Cruising has become the fastest-growing ocean industry. Not only are more and more people taking cruises to an ever increasing number of exotic places, but the number of cruise ships available is rising to unpredicted levels. As one would expect, the ships themselves are getting larger and more luxurious. While this growth may stimulate many economies, it also creates a number of unique problems.

A measure of the size of the industry can be gained from a 1999 article on the industry: “A few years ago, the cruise-ship size of 40,000 tons and guest capacity of 1,600 was considered average. Today, 80,000 tons and 2,500 guests are average. Beyond the year 2000, cruise ships of over 100,000 tons carrying 3,000 guests will be considered average. By the year 2010, cruise-ship size of 250,000 tons and 5,000 guests will be commonplace.” The trend is clearly towards floating towns and even small cities with all the associated problems. The recent launching of *The World* illustrates this trend.

The down side of this remarkable growth is the impact of the ships themselves on the marine environment, on ocean use, and in the demand for port facilities and shore-based recreation. Another concern is that each of the cruise ships is an island of considerable wealth with extensive extortion potential for criminals and terrorists. Hence, the industry creates its own security problems. But are these issues really important?

The impact of the industry on ports and their local communities is already a big factor. Port cities are now spending large amounts of money to make them even more attractive to cruise ships, Halifax is but one example. Inasmuch as the port city economy flourishes, the underground economy also reaps benefits requiring more policing to keep the city streets safe. Small communities, especially those with exotic facilities, are equally drawn into the cruise ship economy. Many smaller Caribbean islands have already experienced the pros and cons of this economic engine. When *Hurricane Floyd* ravaged the Bahamas a few years ago, many cruise ships had to change their plans. The economic impact of those ships not using the islands’ facilities was severe, but the cruise lines were among the first to send relief supplies to the islanders. Dependence on cruise ships a major component of a national or even local economy, carries its own risks. For instance, should the guests no longer find a particular port or other recreation stop appealing they will stop using the related company, and the company in turn will abandon the port or island. It is a fickle market and driven by the simple economic rule “keep the customer happy”. Luxury and adventure are the common denominators of the

cruise industry today, and guests expect the travel arrangements to and from the points of embarkation and debarkation to be equally smooth.

Safety in the cruise industry is a constant concern. For instance, a recent fire aboard Carnival's *Tropicale* left the 1,096 passengers adrift in the path of a hurricane. Accidents happen at sea despite extensive precautions, but the nature of the cruise industry carries additional responsibilities that can quickly cause a ship to be re-routed or to miss a particular port visit.

Safety at Sea

Declining profit margins in the shipping industry led to a condition whereby safety is often sacrificed in the interests of reducing operating costs by shifting to flags of convenience instead of using national registries. Unfortunately, the operation of the flag of convenience fleet is largely uncontrolled and unmonitored. Today, for instance, masters of vessels cannot always communicate with pilots and cannot always understand the regulations governing the ports their ships use. Often, members of crews cannot communicate with one another save in a rudimentary fashion. Masters, mates and engineers are often under-qualified and even have suspect certification, and vessels are often poorly maintained.

A related problem is that a merchant ship is no longer identifiable as an extension of a particular state, the modern merchantman is indeed a reflection of the global economy:

- C most ships today have multiple owners with complex international financial, legal, and operating arrangements that make it enormously difficult to determine who is actually responsible for the vessel (i.e. the beneficial owner);
- C a cargo, especially oil, can be sold or traded many times during a voyage;
- C certification of Masters, Mates, and Engineers is no longer an automatic control mechanism on professional standards, there are too many loop holes; and
- C crews are multinational and frequently hired at the lowest cost from impoverished countries; they are poorly fed and invariably badly treated.

The International Maritime Organization (IMO) is working hard and effectively at addressing precisely these issues and has made significant progress with international conventions, widely adopted, such as Safety of Life at Sea (SOLAS), Safety Management Systems (ISM/SMS) and certification of ship officers (STCW). However, this is a consensus forum with little or no enforcement power and the adoption of such standards requires the active support of member States. For many States, there is a wide gap between intentions and enforcement.

Not only is the present situation concerning the operation of the flag of convenience fleet a veritable safety time bomb over which there is inadequate control, but there are also a number of related security concerns including the right of protection of shipping in a crisis. Under international law, states are entitled to protect their own "flag" shipping where and when necessary. Protecting a "flag of convenience" vessel creates several problems, not least of which is the question of who should do it. This sometimes calls for the ownership of the cargo to be the determining factor rather than the traditional concern for the nationality of the ship itself. As we saw in the 1986-88 Tanker War in the Persian Gulf, the United States found it necessary to re-flag a number of Kuwaiti tankers to allow the US Navy to protect them. Although insurance frequently covers losses, it carries a high premium. A recent example of this, following the Sri Lanka airport attack, has seen insurance war risk rates so punitive as to stop trade in that area dead on its tracks. Also, when a cargo is

designated “strategic” by a state, such as sealift to support a military operation, other considerations come into play, including the reliability of the crew if flag of convenience shipping is used.

As already indicated, another important safety consideration stems from the fact that the use of the oceans for recreation has grown exponentially in the last decade. Current trends and investment indicate that the cruise liner industry in particular will continue to be a major economic factor for many states. But it carries with it new security implications such as criminal activity, pollution and safety. A fire at sea in one of the new liners has the potential for a disaster that would make the sinking of the *Titanic* seem like a minor incident. A related issue is the growing demand for “adventure tourism” including cruises into the environmentally sensitive Arctic and Antarctic waters with much higher risks to navigation and thus safety. Ironically, inasmuch as shipping is a vital element in the global economy, we now have a situation in which much of that shipping is vulnerable as a result of its own unsafe condition.

Disrupting the Flow of Trade

Disruptions in the flow of any of the major commodities or component parts have the potential to harm the economies of a number of states. As seen in the 1990-91 Persian Gulf War, a credible threat to the world’s oil supply will draw a very quick and powerful response. If those supplies are threatened again, a similar response will be made. That is a basic premise of US national strategy. Similarly, the Japanese cannot afford to have their oil supplies interrupted for very long. Japan has an energy-import dependence that constitutes a strategic vulnerability. The United States is also energy import dependent, but not to the point of vulnerability because reserves and alternative sources of supply exist. However, US interests are served by ensuring that the energy supplies continue to flow and are restored quickly in the event that they are disrupted. This overall approach may seem strange at a time when the world is actually in a state of energy surplus. One of the problems is that many of the under-utilized reserves are not yet in commercial production and it is likely that this will not happen for some time. Until such time as a more efficient market system evolves, oil and gas will continue to be moved by sea, and continue to be a strategic concern for most industrialized states.

Although energy is the biggest commodity moved by sea, large quantities of other natural resources are still shipped, the much touted environmental philosophy, “recover, recycle, and re-use”, has not yet made a significant impact on the global economy. We remain singularly inefficient and wasteful. In terms of the cash value of trade, the container industry leads and now represents a major dimension of the global economy in action. The importance of energy and container traffic essentially means that the “hub” container and bulk commodity ports as well as other focal points now form a vulnerable underbelly of the global economy. Also, we should not overlook the importance of marine transportation in contemporary crisis management, especially as the movement of food and other humanitarian aid items can be just as important as military sealift.

So, how is shipping disrupted?

By far the greatest threat to the continued flow of shipping is through the outbreak of war in a region through which shipping must pass or the ports of which form part of the global trade network. Not only are there risks of conflict on land spilling over into maritime areas, but there are greater risks that conflict on land will result in damage to marine facilities, to waterways, or create obstructions that result in shipping being diverted. In most cases, the shipping industry will rise to meet the challenge, as it did to the closure of the Suez Canal from 1967 to 1975 or the attacks on tankers during the Iran-Iraq War in 1986-88, but we cannot be sure that similar opportunities will always exist.

Also, the 1992 Kobe earthquake made it absolutely clear that a natural disaster can be as damaging to the infrastructure of a port as any man-made act of violence. So, it not just a question of terrorism or armed conflict; ports are vulnerable to many forms of violence.

Shipping Focal Points

A shipping focal point is a trade route whose geographic features are such that it can be closed or controlled with comparative ease. The criterion for the political exploitation of a shipping focal point are:

- C there must be no readily available alternative route or destination;
- C freedom to use that focal point (either a waterway or a port) must be vitally important to specific states; and
- C it must be able to be controlled by the forces of the would-be aggressor.

To have strategic potential, a focal point must be sufficiently valuable that the denial of freedom of use will draw international reaction. Under varying circumstances many straits, channels, canals, ports and even some capes and headlands can become shipping focal points.

Rather than go through the full list of shipping focal points (of which there are over 100 if key ports and canals are taken into account) to assess the opportunities for political leverage they provide, a couple of examples can be used.

The strategic importance of the Strait of Hormuz is self evident, it the world's primary oil supply route, about two-thirds of the sea borne oil trade passes through the Strait. The other factors are that no alternative route exists and it would take time to build pipelines by-passing the Strait; it is narrow and opens out into a gulf that is suitable for submarine operations; and it would only take a small number of submarines to mount an effective blockade. Thus, Hormuz has considerable leverage potential.

The Strait of Gibraltar is the main gateway to the Mediterranean through which over 200 ships pass each day. The Suez Canal is a secondary route, but cannot handle the volume of traffic to be a viable alternative route. On the other hand, having to divert shipping around the Cape would have some economic impact but not enough to draw a large response. The closing of the Suez Canal from 1967 to 1975, for instance, did not have an enormous impact on the world's economy. The Strait is narrow (8 n.m.) and submarine barriers could easily be established either to the west or to the east. The key issue is to determine which states would be hurt by closing the Strait. The European countries would probably not be greatly affected as they are connected to the continental transportation system. For them, closure would be more an inconvenience than a major economic factor. The North African countries might be hurt more because they have few alternative trade routes. But then, one has to ask who would want to take that drastic step. In short, it would require a strange set of circumstances to make the closing of the Strait of Gibraltar a feasible political option for anyone. The only realistic option for closure would be to deny the use of the Mediterranean to the US Navy.

If the Americans, and possibly their allies, were to become objects of widespread international hatred, several focal points could be used to apply political and military pressure. But for that to happen, a situation verging on war would have to exist. Unfortunately, this scenario is not impossible; there are circumstances, particularly if the Middle East situation deteriorates, that could lead to militant anti-Americanism.

The security of ports, their resilience to violence and disaster, and the ability of a port complex to recover are important concerns. One of the problems with the way the industry has embraced technology is the

potential for vulnerability it causes. It is enormously expensive to create a highly automated port and cargo handling facility, as in Rotterdam (Europort), and the need for redundancy is seldom taken seriously. But as the Kobe experience proved, a disaster can strike at any time and without warning. What would be the impact, for instance, of a major disruption in Vancouver? Would shutting down the port bring the city to its knees, or even the Province of British Columbia? It is unlikely that it would, but there are other ports, some even more sensitive to disruption, where a major economic, relief, or military operation could be jeopardized if the port closed. Ports of this nature become political targets for those opposed to the policies of the organization operating the port. The dependence on ports is every bit as great as the dependence on the sea lines of communication.

Closing a major port, such as Singapore, Rotterdam, New York, or Kobe might seem a logical way of applying political pressure because of the volume and scope of cargo handled. In reality, though, such action is more suited to terrorism than to a military operation. Again, the impact would be more in the line of a temporary nuisance than a lasting constraint because the larger ports are too diversified and there are numerous other links to the continental transportation system. Moreover, blockading large ports requires extensive resources to be effective, and in all probability those forces would have to operate a long way from home. Few navies have the capability to mount such an operation successfully. Even then, the political motivation for doing so is hard to imagine today. Hence the view that terrorism is the most likely reason for violent action against a port.

The main point about the leverage value of a shipping focal point is its relative importance to specific states or groups of states. In most cases, though, trade disruptions are not sufficiently important to have much leverage value, other than for oil. Even then the supply system would adapt to the new circumstances. For instance, the closing of the Suez Canal in 1967 was initially seen as a near disaster, but the obstacle was soon overcome without lasting effects. The exception is the Strait of Hormuz. If that were closed, there would be an international response in order to restore the flow of oil.

What emerges out of this discussion is that a number of vulnerable shipping focal points exist and that some are already the subject of disputes. Parts of the South China Sea, for instance, are claimed by no less than six states, and some cases small island groups or even individual islands have become fortresses in the process of staking claims. If the interests of the world are best served by maintaining order and stability over the major shipping lanes, then it is wise to include those lanes in our overall strategic calculus. Once aware of the extent to which a particular state has concerns over a body of water, it is much easier to shape one's own policies toward that state. Similarly, once you know your own vulnerability to trade disruptions in a certain part of the world, a coherent security policy (or strategy) is easier to develop. Shared interests will also exist, as they did in the Persian Gulf in 1990-91. Trade by sea now plays such an important part in the overall health of our economy that we must understand not only its potential for disruption but also what responses we might want to make should it happen.

Summary of Trade and Shipping Issues

Because the flow of cargo now has to be orchestrated with great care, reflecting not only the "just in time" shipping policy but also the volume of cargo being shipped, the related communications systems have become as important as the ships and ports themselves. We have reached the point where a port can be shut down by disrupting its communications with far greater effect and more easily than by physical damage. Port security thus has a new dimension.

Despite the widely-held view “that trade will always get through”, occasions arise when some form of government intervention is necessary, as in the 1986-88 Tanker War, to protect national interests by ensuring the uninterrupted flow of vital commodities. The industry is, in fact, remarkably resilient, as we saw during the closure of the Suez Canal between 1967 and 1975, but there is a cost involved in diverting trade. The need to ensure the flow of a vital commodity can lead to the use of military power to protect shipping and port facilities, including related communications. For example, one only has to ask how long the United States and other major industrial countries would stand by idly if Iran closed the Strait of Hormuz. Perhaps we should also concern ourselves over the implications of the closure, or threatened closure, of a key port in the global economy such as Rotterdam or Singapore.

The sum of these concerns puts the free flow of trade and thus the freedom of navigation firmly on the contemporary international security agenda, with the potential for the use of naval force in seeking resolution to problems. Traditionally, the naval concern has been over the protection of the sea lines of communication (SLOC). Today, keeping the many pieces of the global economic network stable is the primary security concern of the major trading and industrialized states. It is not trade, *per se*, that has to be protected, it is the overall system in which it takes place that has to be protected.

Canadian Trade by Sea

For comparison, Canadian statistics for 1996 (which is a realistic representative year) show that 357.7 million tonnes of cargo were handled at some 189 different Canadian ports in three categories:

- C overseas (48.0 percent);
- C with the United States (24.7 percent); and
- C internally between Canadian ports (27.3 percent).

Of these cargoes, 16.5 percent was made up of crude oil and petroleum products, the greater part of which was in Eastern Canada which is not energy self-sufficient, and 13.5 percent was coal and coke, most of which was trans-Pacific exports to Japan and Korea. Other major commodities were, iron ore and ferrous products, chemicals, grains and seeds, and forest products and paper.

Two major marine transportation systems exist in Canada:

- C The ***Western System***, which is almost entirely self-contained, dominated by the port of Vancouver and the Puget Sound focal area, and largely comprised of trans-Pacific trade in bulk commodities. This system accounts for nearly 36 percent of all Canadian international seaborne trade. The traffic flow is governed by a small number of focal points, and this creates a large potential vulnerability.
- C The ***Eastern System***, which is a looser knit of trade patterns to and from all parts of the world, and in which there are two major traffic patterns: (a) the Cabot Strait, a major sea route linking trans-Atlantic shipping routes to the St. Lawrence Seaway and the Great Lakes, and (b) the ports of Halifax and Saint John, which combined handle over 30 million tonnes of cargo every year. The Eastern system is far more diversified and thus has a much lower level of potential vulnerability.

Container traffic is similarly regionalised. Canadian ports handled 17.9 million tonnes of containerized cargo in 1996. Although this represents only five percent of all cargoes moved in Canada by tonnage, in terms of dollar value container trade becomes a very significant component of Canada’s sea borne trade. With important improvements in intermodal systems linking ports with land transportation systems, as well as

increases worldwide in containerized shipping, this represents a major area for growth into the next century. Three ports account for almost 90 percent of Canada's container trade: Montreal, Vancouver, and Halifax.

Resource Exploitation

Ocean resource exploitation activities (mainly oil, gas, seabed nodules, and fish) will continue to provide a potential source of inter-state disputes. As fish stocks are depleted or damaged through environmental disaster, the competition for this important source of protein will intensify. The other aspects of future resource exploitation of concern are the potential for environmental damage and the conflict between living and non-living resource exploitation activities. Similarly, as we burn off the remaining land-based oil reserves, offshore oil and gas will become increasingly important. However, global reserves of energy, oil in particular, have not dropped to levels which merit serious political concern. When that happens, the necessary political impetus to create new energy sources will certainly be provided. Until then, energy and the oceans will remain inseparably linked in terms of both resource development and transportation. Energy will remain very high, if not foremost, on the list of national interests of most maritime states for the foreseeable future. Here, too, conflicting concerns over ocean use, conservation versus exploitation, will require government action.

In much the same way that man traditionally assumed that the sea was his to travel upon freely as he thought fit, his attitude to ocean resources was one of a "right" of unrestrained exploitation. The latter part of the twentieth-century has clearly shown the folly of this philosophy. Although technology made the exploitation of ocean resources much easier and allowed the exploitation of off-shore oil and gas reserves as well as mine other minerals, it carried with it the seeds of its own demise. Simply, the fish stocks were not unlimited as we once thought. The high-tech harvesting of many species soon became unsustainable. Worse, the demands of populations for food coupled with the relative inefficiency of agriculture on land, made fishing a preferred way of getting enough protein. As fish stocks in the home waters were depleted or more tightly regulated, commercial fishing operations sought new areas -- frequently in parts of the world where conservation was not a major concern. The notion of the sea being a "common heritage" for mankind espoused by the advocates of the UN Law of the Sea Convention made absolutely no sense without universal regulation and enforcement of those rules. As explained earlier, the new regime of maritime boundaries created disagreements some of which had the potential for conflict. Some of these disputes are over ocean resources rather than territory, but territory is obviously the bottom line because territorial sovereignty permits control of resources.

Today, there are a number of potential confrontations over ocean resources that could escalate if care is not taken. We have already seen the volatile nature of some disputes over fish during the 1995 Canada-Spain confrontation over the lowly Turbot. Despite political assurances that this is no longer a problem, it remains a major problem because the fish stocks cannot sustain that level of commercial fishing. The Grand Banks are not the only such problem, other equally bad situations exist in the Pacific, off the coast of West Africa, and in much of Southeast Asia. The Europeans are also facing severely declining fish stocks. Competition for these fish stocks is becoming more intense, and this situation has enormous political implications. On the one hand, states have the means to impose regulations and expect other states to respect those regulations. On the other hand, national demands (including public opinion) may press for rigid controls and the exclusion of foreign fishing fleets despite presumptions for traditional "rights". Although the issues are, at heart, economic and legal, in reality they are political and often highly charged.

Offshore oil and gas resources are less contentious at the moment, but this situation is unlikely to continue: too many places exist where there are competing claims to the seabed. One of the most potentially troublesome is the South China Sea where the Spratly Islands are claimed (in part or in whole) by six states.

Their claims could probably be resolved if it were not for the fact that China has adopted a policy that lays claim to all “traditional Chinese territory”. If taken at face value this is an astronomical claim sweeping from Manchuria, to Tibet, and rolls up most of Southeast Asia including all of the South China Sea. Obviously, these claims will not go unchallenged, and China will have to back down on several aspects, but the policy established that China intends to stand up for what it believes rightfully its territory. The South China Sea, with its large deposits of oil and gas, may be the place at which China takes a stand. Thus, a risk of confrontation exists. Because the area is also a major shipping route, there is a wider concern for regional stability. Should that area erupt into violence, or threaten to, it will be a naval matter.

The Canadian Off-Shore Oil and Gas Industry

The international view of Canada’s energy potential is distinctly rosy. As a net energy exporter, mainly to the United States, Canada appears to be reaping the benefits of high global energy prices and an undervalued domestic dollar. In fact, energy accounts for almost two-thirds of Canada’s present trade surplus. For instance, in the first half of 2000, Canada was the second largest supplier of crude oil (at an average of about 1.3 million barrels a day) to the United States just behind Saudi Arabia and ahead of Mexico and Venezuela. However, longer-term forecasts show some problems that need attention. To begin addressing these, the industry is taking itself through a rationalization and reorganization, with much of the control shifting to a few large corporations but still with a significant number of new players entering the field.

Canada has proven oil reserves of around 5 billion barrels. Production averages about 2.7 million barrels a day, with domestic consumption averaging just under 2 million barrels a day. Alberta is still the leading producer but those reserves are declining. This is leading to the development of new energy sources, especially in Atlantic Canada and the Arctic.

The present estimate of proven East Coast reserves is just under 2 billion barrels of oil and 5 trillion cubic feet of natural gas. This is relatively small in comparison to total Canadian consumption (roughly 3 trillion cu.ft of gas per year and slightly less than 2 million barrels of oil a day B Canada is, after all, the seventh largest energy consumer in the world despite the relatively small population). Exploration is far from complete and there are high hopes of even larger reserves. In addition, British Columbia is reviewing its 28-year old moratorium on off-shore oil and gas exploration, and there is renewed interest in exploration in the Mackenzie Delta and in the Beaufort Sea. The point is that the present western reserves are finite and something will have to be done to replace them unless Canada is to become an energy importer. At the moment, the East Coast offers the best prospect for the future. Although the cast of players in the East Coast oil and gas industry reads like a “who’s who” of the international energy industry, there is a very clear trend to local companies taking control of the huge support sector. This would not happen though without some strong projects and prospects for new operations.

Environmental and Conservation Considerations

The threat to security posed by environmental damage is potentially huge and has now caught the public imagination. Massive oil spills, nuclear accidents, and lack of control over nuclear waste and other contaminants have the potential to cause irreparable damage to the oceans. In some instances, disasters of this nature have regional or even international implications. Preventing, containing, and countering these disasters has now become a collective concern. For instance, a recent US Navy presentation included the following statement:

Environmental degradation, resource scarcity, and related conditions such as increased population growth, urbanization, migration, and the spread of infectious diseases contribute to world instability and many times lead to conflicts that draw neighbours and allies into regional turmoil.

On a more ocean-specific note, the Australian government (a world leader in its commitment to good ocean management practices) explained the problem this way:

Looking to the future, we know that the oceans, while they will always be there, will not continue to serve our resource or environmental needs unless they are managed within a sensible framework, with due regard to conservation and sustainable resource use.

It is really quite easy to get carried away with the environmental security issue. It has immense popular appeal, it has a sense of urgency that can be exploited, and touches the consciences of those who enjoy a high standard of living. However, it should be borne in mind that 80 percent of marine pollution stems from land-based sources, including run-off, air pollution, and coastal development.

A forerunner in presenting the environmental security argument, Thomas Homer-Dixon, caught the public imagination a few years ago with a well-reasoned article that included the following synopsis of the problem:

How might environmental change lead to acute conflict? Some experts propose that environmental change may shift the balance of power between states either regionally or globally, producing instabilities that could lead to war. Or, as global environmental damage increases the disparity between the North and the South, poor nations may militarily confront the rich for a greater share of the world's wealth. Warmer temperatures could lead to contention over new ice-free sea-lanes in the Arctic or more accessible resources in the Antarctic. Bulging populations and land stress may produce waves of environmental refugees that spill across borders with destabilizing effects on the recipient's domestic order and on international stability. Countries may fight over dwindling supplies of water and the effects of upstream pollution. In developing countries, a sharp drop in food crop production could lead to internal strife across urban-rural and nomadic-sedentary cleavages. If environmental degradation makes food supplies increasingly tight, exporters may be tempted to use food as a weapon. Environmental change could ultimately cause the gradual impoverishment of societies in both the North and South, which could aggravate class and economic cleavages, undermine nuclear regimes, and spawn insurgencies. Finally, many scholars indicate that environmental degradation will "ratchet up" the level of stress within national and international society, thus increasing the likelihood of many different kinds of conflict impeding the development of cooperative solutions.

One might well ask, "What does that statement have to do with either sea power or maritime strategy?" The answer is that it has a lot in common with emerging maritime concepts. If one takes away the dramatic prose and gets down to the heart of the issue, what Homer-Dixon is saying is that we cannot go on accepting that the environment is benign. We do indeed have a host of problems and many of them have distinct maritime aspects. We have already seen the migration by sea of people from Viet Nam, Haiti, Cuba and other places. We have also seen the impact on naval exercises that animal rights groups have had in Canada, and we have seen the efforts of conservationists to stop ocean resource development on several occasions and in several places.

One of the more important aspects of the concern over environmental damage is the slow and very difficult process of curbing marine pollution and, as a related objective, of generally improving the standards

of ship safety. One of the principles adopted in ocean management is the expectation that ships will automatically comply with local rules requirements. Unfortunately, compliance systems, where the industry is expected to meet legal and management requirements, do not always work because compliance cannot be assumed in all cases.

One of the foremost issues is the problem of basic comprehension of orders and procedures by ship's crews. As Michel Pouliot, President of the International Maritime Pilots Association explained, "the Captain will hopefully speak some English (the mandated language of professional marine communications), and the other officers may speak a few words, but it would be impossible to hold a conversation of any sort." Even simple instructions and guidance are often enormously difficult to communicate. When the *Gold Bond Conveyor* foundered and sank with all hands in a severe storm off Canada's eastern seaboard a few years ago, concern was raised that the weather forecast provided to the ship just before sailing may not have been understood. The Master and Mates simply may not have understood enough English to comprehend the forecast. Moreover, in an era where ships must operate on very small profit margins, the cost of a delay in sailing may have to be borne by the Master. This is a powerful incentive.

Continuing to actively protect the marine environment by "improving the standards for ship and crew safety" requires very much more than the mere enactment of new regulations. Legislation without enforcement is meaningless, as is the passing of new laws without due thought to their actual enforceability. If Canada, or any state for that matter, is to be a good steward of its ocean domain, it has to spend the necessary money on the all-important enforcement and scientific programs that turn theory into good practice.

The much-vaunted global economy is a hard taskmaster, it is invariably more concerned with profit than with environmental issues.

Undersea Cables

Telecommunications, especially the use of fibre-optic landlines laid along the seabed, have security implications and create conflicts with other ocean uses including fishing and oil and gas exploration. The point of note here is that the "Information Age" has enormous demands for data transmission and the use of fibre-optic landlines at sea has the potential to provide a cost-effective solution. In fact, about 65 per cent of international data transfers now use fibre-optic landlines. One of the problems is that the laying of landlines on the ocean floor is largely unregulated and any organization can lay whatever lines it wishes over any route it chooses outside the territorial waters of a state. Because of the importance and real value of the data being transmitted, financial transfers for instance, the security of landlines creates a demand for dual systems (redundancy), which in turn adds to the scope of the problem. Secure telecommunications, especially sea-bed land-lines, are enormously important to the smooth operation of the global economy, and providing the necessary security will require government action in many cases. This will include solving the problem of competing ocean uses in littoral areas where land-lines run across fishing grounds and areas where oil and gas reserves lie. As with safety at sea, it will probably take a major incident, such as the cutting of a critical landline, to draw this problem to the notice of the politicians.

Crime at Sea

Crime at sea has become an enormously complex and many-faceted issue. Today, there is a growing disregard for both state and international law at sea: instances of illegal transportation of people and drugs are rising; illegal migrations, sometimes as acts of desperation but often in direct contravention of the law for the purpose of profit, are on the increase; piracy is growing in many areas; and the smuggling of drugs, arms, and

other contraband by sea is widespread. Yet, these issues and the spectre of maritime terrorism have not become widespread concerns within the international community. But this is beginning to change, and in those cases where national security is seen to be at risk or under direct threat, as in the smuggling of drugs, action is being taken. In addition, the International Maritime Organization (IMO) is seeking solutions, but does not have the means to take action. Instead, it has to rely on the navies and coast guards of concerned states to police the oceans. This may not seem an immediate concern of maritime strategy, but the trend toward greater use of navies for, or in support of, constabulary functions does change the equation, as we will see later.

The extent of increases in the illegal transportation of people and goods can be seen in the present rash of illegal migration by stowaways and by boatloads of people in the Adriatic and the Caribbean, and even in Canadian and US ports and waters. Drugs, arms and other contraband are moved by sea on a routine basis and their movement is hard to stop. The level of American effort presently put into countering the movement of narcotics by sea is enormous and barely dents the operation. As governments are discovering, if they want to stop the flow of illegal cargo they must be prepared to mount far-reaching interdiction operations at sea as well as in ports and on isolated shores. The cash return on a successful drug shipment is now sufficiently large that a high degree of risk is acceptable. Removing the incentive for crime, at sea or anywhere else, is a high impossible task.

Another area of concern relates to illegal fishing operations conducted without regard for the conservation of species or for national and international controls, and which take place in several parts of the world by vessels flying many flags. International agreements provide some measure of control when the states party to those agreements enter into them in good faith. But what happens when vessels operating under flags of convenience violate the law? With whom do you negotiate when a vessel flying a Liberian flag breaks the law? Liberia is in a state of political instability and a concept of accountability on the part of the registry never really existed. Clearly some other form of enforcement capability is needed. But who will authorize that action?

Yet another instance in which the law is being broken flagrantly is in the illegal dumping of pollutants and hazardous materials in the waters of impoverished states that are unable to police the areas under their jurisdiction. Why is nothing being done about it? Unfortunately, it is just too difficult politically at the moment and there has been no public outcry. Until some government or international organization decides to do something about it, the practice will continue unchecked.

Today, we must include the threat of terrorist action in the concerns for maritime security. It is an insidious threat, which in many ways defies definition. Although written almost 20 years ago, the following summary of the politics of terror and criminal coercion still makes sense:

terrorist activities are expressly designed to produce psychological and symbolic effects rather than to attain physical or material gains. Attacks aimed at innocent victims, for example, a rig crew or living resources in the ocean, could be especially effective in that these victims would become highly salient pawns in a tense bargaining situation. As a consequence, such perceptions could engender sympathy from the public and, coincidentally, increase pressure upon governmental authorities to succumb to terrorist demands. Herein is couched the Catch-22 paradox associated with terrorism generally. On the one hand, if a government reacts too vehemently or capriciously against terrorist activities (e.g., by suspending civil rights and liberties), then it may appear to the citizenry as being overly repressive and authoritarian. On the other hand, should a government's policy toward terrorism be perceived as weak, indecisive, or non-assertive, then it is very likely that response might foster further attacks over the short term.

HOMELAND SECURITY

The events of 11 September, 2001, brought home the inherent vulnerability of our national infrastructure. Although many people had long realized that the economy, and thus our standard of living, could be brought to its knees quite easily by well-orchestrated acts of violence just as easily as natural disasters, they were reluctant, at least until 11 September, to think of national security in those terms. Homeland security has now risen to the top of the security agenda in many states, including Canada. But despite calls for greater action to increase homeland security within days of the incident, subsequent actions have been reactive to the events rather than proactive in making genuine improvements in national security. In concert, a misguided belief has prevailed that the military can easily handle the new threats and thus does not require additional resources.

What, then, are the realistic threats to homeland security at and from the sea? In answering this question, one fact stands out: Those who would use violence against Canada are no longer just the military forces of another state, the new aggressors may have military training and use military equipment but they are much more likely to be members of terrorist, criminal, or other subversive groups motivated by the desire to inflict terror and instability.

Unfortunately, we cannot afford to overlook the fact that Canada's relative emptiness outside the main population centres provides easy venues for supporting and launching terrorist and criminal activities against not only our own cities but also those of the United States. Ideally, a state would prefer to prevent terrorist incidents from taking place, but this is an impossible undertaking. Some threatening situations can be contained or even avoided by preventive measures such as greater redundancy or through increased physical security or, under limited circumstances, by the careful application of economic assistance to countries and regions under stress. A great deal can also be done by greater surveillance.

An editorial in the 6 April, 2002, *Economist* summarized the trade security quandary facing the industrialized world as a result of 11 September in saying, "Containers have long been used to smuggle drugs, contraband and illegal immigrants." That is a well-established fact, but a cause for concern is that today a mere two percent of all containers are inspected physically. As the editorial then pointed out,

Terrorists surely know that containers offer an ideal way to move a nuclear weapon into a big city, exploiting the global shipping network much as terrorists last year exploited the global air network.

This fact has not escaped the US Coast Guard which has commenced a comprehensive program to tighten port security within the United States as well increase the overseas inspection process for containers and other cargoes bound for American cities. This action now involves Canada.

The Naval Dimension of Homeland Security

Before 11 September the accepted view was that threats to national security were predominantly non-military, with more public concern over the illegal use and abuse of our waters than about any potential violent challenge. Now, with terrorist threats to North America a reality, we have begun to look at the maritime dimension of homeland security in a very different light. Our domestic national security can be challenged in many ways and in many places. For the most part these places are enormously vulnerable because we simply have not yet established the necessary processes and systems to guarantee their safety. This is not the result of negligence, it is a reflection of the lower security priority assigned to those places and installations. In the contemporary security environment, there are six primary maritime concerns.

- C safety of shipping (including cargoes) using Canadian waters, including cruise ships which are particularly attractive terrorist targets;
- C vulnerability of port complexes and their related transportation networks;
- C security of off-shore installations, especially oil rigs and related pipelines;
- C safe operation of the fishery and other economic activities in the Exclusive Economic Zone (EEZ) and adjacent waters;
- C security of isolated and remote communities and installations as well as the security of uninhabited areas of the coast; and
- C security of under-sea cables (both fibre-optic communications cables and high-volume power cables) and their shore-side terminals.

To some, this approach to security will be seen as a siege mentality, but the reality of the present situation is that being secure requires a reduction of vulnerability. In this, the heart and soul of effective maritime security lies in knowing exactly what is happening in waters under Canadian jurisdiction. To do this, three criteria must be met:

- C know exactly who is using those waters;
- C maintain an unequivocal expression of government authority in those waters; and
- C be able to respond quickly and effectively to violations of the law or threats to national security.

Perhaps better known by the phrase, “surveillance, presence, and response”, this concept has withstood the test of time. A report in the January 1992 edition of *NAVY International* made the point succinctly:

Coastal and offshore protection is a complex scenario demanding constant attention. It cannot be easily dismissed as requiring just a few old patrol craft gleaned from the scrap heap and a few redundant aircraft hastily fitted out for maritime patrol. On the contrary, it requires a very carefully thought out mix of forces deploying sea, land and air platforms equipped with suitable sensors and weapons, the whole being sensitively co-ordinated by a combined maritime headquarters.

Enforcement and response are becoming highly specialized operations in which naval forces play a major but not the only role. Other government organizations are invariably involved at just about every level of homeland security operations and depend upon each other for support. For instance, although the law can be enforced at sea by the Coast Guard, as the “marine delivery arm” of the Department of Fisheries and Oceans (DFO), it can really only be credible when supported by the superior force and authority implicit in the Navy. Similarly, even though the Navy has a port defence capability, it cannot function in isolation, it needs to coordinate its activities with other organizations. Just as respect for our sovereignty is a function of the respect for our ability to use force as the means of last resort, law enforcement requires that there be sufficient force available to compel compliance with the law. On its own, a non-military coast guard cannot provide the necessary guarantee, and certainly would not be able to manage violence should the need arise.

States maintain military forces for three reasons:

- C defence of the homeland and thus the preservation of territorial sovereignty;
- C internal security; and
- C expeditionary operations, including contributions to collective security.

The first two reasons can be thought of as an obligation, an essential component of the price a state must pay for being sovereign. The third reason is a function of choice, choice of foreign policy.

It is evident today that few nations can afford to maintain one navy for domestic security and sovereignty enforcement and another to support foreign policy. Most maintain a single force with sufficient flexibility to undertake both roles. The problem is in determining how much naval capability is needed, which from a political perspective invariably becomes a function of determining the minimum capability. The basic naval requirement is to be able to exercise control over all activity in a specific area of ocean irrespective of whether the task is, sanctions enforcement, law enforcement, the protection of shipping, or supporting an intervention operation. Even though most ships, submarines, and aircraft can carry out at least one of the three key elements of sea control (surveillance, patrol, and response), it takes a combination of capabilities to exercise effective control over a given body of water. But this leads to a very logical question, "Is it absolutely necessary to have the full control ability?"

Unless one can actually respond to all challenges to national security, one's sovereignty at sea is probably in doubt. But it would be prohibitively expensive to maintain full control of all national waters all the time and not easy to justify under present circumstances. The compromise solution is to maintain a balance of capabilities that allows the government to carry out surveillance and still make a timely and appropriate response to any incident. By continuously gathering information, the surprise factor can be reduced thereby allowing a timely response to be made. Maintaining a selective presence by random patrols has both deterrent value and reduces response time. This requires a carefully crafted balance of ships, submarines, aircraft and shore-based surveillance systems supported by the necessary infrastructure. In fact, this provides the greatest flexibility at the lowest cost.

Canadian Responses

In February 2002, the Standing Senate Committee on National Security and Defence published a report on *Canadian Security and Military Preparedness* which covered many of the homeland security issues, especially port security. Written as a result of hearing considerable expert testimony as well as from information gained on field trips, the report made some logical recommendations, including:

- C undertaking a major review of port security in Canada;
- C conducting a related enquiry into the extent to which organized crime influences port activities in Canada;
- C adopting an internationally integrated port security and transportation system (the *Flynn* model); and
- C examining the security of Canada's coastlines.

The problem is that studies of that nature take time and are not inexpensive. Further, it requires a strong political commitment to implement the recommendations of such studies. In short, it will many years before Canada takes any concrete action to make major improvements in the maritime dimension of its homeland security. The government, it seems, has lulled itself into a false sense of security under the "it can't happen in Canada" security blanket.

GENERAL OCEAN SECURITY CONCERNS

The new political environment in which ocean issues and sea power are sited is complex and subject to widespread change. In the past, we took the oceans for granted, we cannot do that today. Not only are the oceans key components of the global economy, they also provide us with many of the resources needed to sustain life. But we have been forced to the point where we must manage the oceans responsibly in order to

guarantee that they continue to serve us well. In doing this, though, we have created a major divergence of concepts. On one hand are the “conservers” who would regulate and constrain the use of the oceans; opposing them are the “users” who believe that the seas should remain free for all to use, albeit with some rules to prohibit abuse. Historically, these two perspectives can be likened to the judicial debates that took place in the early 17th century over control of the oceans. The two schools of thought were aptly referred to as *Mare Clausum* and *Mare Librum*. Neither side won its case and a necessary compromise evolved. The same is true today, a compromise exists and must continue to exist. However, there are signs that many states favour the concept of creeping jurisdiction that allows them to exercise control over larger bodies of water than the Convention allows. In terms of the exercise of sea power, even in support of diplomatic and crisis management initiatives, this is not a good trend.

In summary, five potentially troublesome maritime security issues stand out:

- C the security of all forms of shipping, not just the physical protection of ships, cargoes and port facilities, but also in terms of its safety and responsible operation, as well as accountability in situations where accidents or damage occur;
- C the use of the global trade network to further the political objectives of terrorist groups;
- C environmental issues, in particular the damage to coastal communities and the marine eco-system as a result of natural and man-made disasters as well as through poor management;
- C the growth in criminal activity at sea; and
- C boundary disputes, especially where living and natural resources are concerned.

Although regulation has become the preferred means by which ocean-related problems should be resolved, the tendency to resort to force remains as the immediate solution, mainly because the regulatory process is just too slow. Moreover, a veritable plethora of laws governing the use of the ocean exists at several levels, international, regional, state, provincial or other state subdivision, and local. Unfortunately, respect for these laws is not universal and the need to intervene in the common interest will continue to exist. The number of states capable of being responsible stewards of their ocean domains will decrease as states collapse through internal strife or just bad economic management. As a result, occasions will arise when external action is warranted. To some, this will appear as an unacceptable intrusion into the internal affairs of a state and a crass violation of sovereignty. But one has to ask “When a state’s inability or refusal to take action to address a situation affects the interests of other states, when are those states whose interests are thereby put at risk justified in taking action?” In this respect, sovereignty is no longer an absolute right, today sovereignty is upheld by a state not just for its own good but also for the collective good.

Future ocean security concerns must also take the means of enforcement and military use into consideration.

Since the end of the Cold War the relative levels of naval power have changed in many parts of the world, and some governments believe that they can resolve their differences by force of arms at sea (by either threat or actual use of force) without fear of escalation. As a result, a less stable maritime environment is emerging.

A well-ordered society simply cannot allow some rogue state or group of individuals to hold any part of the collective economy to ransom. When things go wrong, or when there are warning signs that they might go wrong, it is in the majority interest that stability be restored as quickly as possible and thereby limit the damage. Ideally, this should be done without the use of force but this is not always possible. There are occasions when force is necessary to solve a problem quickly. Likewise, it is sometimes necessary to negotiate from a position of military strength. Many believe these to be enduring principles, but as discussed earlier, others believe that order can be maintained in the international system without having to resort to force.

Despite the hope that peaceful negotiation will solve the world's problems, the lessons of recent history constantly blunt that optimism with the result that we cannot yet dispense with military force, unless we are prepared to let violence and crime go unchecked.

FURTHER READING

Back issues of *Maritime Affairs* contain many editorials and articles covering specific maritime security and ocean use issues. The following are recommended:

The Maritime Dimension of Homeland Security, (Editorial), Winter 2002.

Canada's East Coast "Oil Patch", (Glen Herbert and Scott Coffen-Smout), Summer/Fall 2001.

The Other Side of Sea Power, (Editorial), Spring 2001.

Containerization and the Globalization of Sea-Borne Cargo Transport, (Heinz Gohlish), Spring 2001.

Canada's Off-Shore Oil and Gas Industry, (Editorial), Winter 2001.

Canada, technology, and the sea (Editorial), Winter 2000.

Submarine Cables: A Traditional "High Tech" Ocean Use, (Glen Herbert and Scott Coffen Smout), Winter 2000

Maritime Enforcement in Canada's Oceans, (Glen Herbert), Fall 2000.

The Cruise Industry: The new "mega" ocean industry, (Peter Haydon), Fall 1999.

Sovereignty at Sea, (Editorial), Fall 1999.

Safety of Life at Sea, (Editorial), Fall 1998.

Worldwide Piracy: Compiling the Facts, (David Griffiths), Fall 1998.

Canada: A Maritime Trading Nation, (Glen Herbert), Spring/Summer 1998.

North America's Great Inland Seas, (Geoff Nightingale), Spring/Summer 1998.

Our Maritime Future, (Peter Haydon), September 1996.