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**Creeping Uniqueness in International Straits:
A conflict analysis of the implementation of the navigation provisions of the 1982
Convention on the Law of the Sea**

by

EDWARD TUMMERS, B.Sc.(Hons.), M.S.

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of
Master of Arts
Norman Paterson School of International Affairs
Carleton University
Ottawa, Ontario

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Abstract

One of the most important provisions of the 1982 Convention on the Law of the Sea concerned the rights and obligations in straits used for international navigation. Although there was general agreement on the rules for a global straits regime, few states bordering straits have implemented them. Using the Fraser-Hipel Conflict Analysis model, the implementation process is analyzed to determine the stability of these current navigational regimes. The study concludes that the maritime powers will accept considerable restrictions on navigation as long as a minimum level of access through straits is guaranteed.

ACKNOWLEDGEMENTS

I had the help of a great many people in preparing this thesis. Professor Fen Hampson helped immensely in the early stages moving me from an ill-defined notion of maritime strategy to a rigorous analysis of the essential elements of mobility of navies as defined by the Law of the Sea. He and Professor David Long reviewed my early drafts and encouraged me to continue despite the many shortcomings. Professor von Riekhoff introduced me to the pleasures of game theory and supervised the entire process. His knowledge and insights were most valuable. Dr. James Moore of the Directorate of Strategic Analysis at the Department of National Defence helped me surmount the deficiencies of classical game theory by introducing me to the mathematical model used in the thesis. My thanks to him and to Dr. Keith Hipel at the University of Waterloo for helping me to understand conflict analysis. Professor George Neuspiel introduced me to the basics of international law; Commander William Fenrick from the Office of the Judge Advocate General instructed me on the Law of the Sea; and, Professor Donat Pharand came out of retirement to share his profound knowledge of the Northwest Passage with me. At Norman Paterson School of International Affairs, Brenda Sutherland, Vivian Cummings, Glendy Wong and Joan Boles helped greatly in guiding me through the administrative process and technicalities. Thanks also to Cary Honeywell at the Computer Centre at the Department of National Defence for helping me to become an expert in Word Perfect as well.

I owe my wife, Sandi, special thanks for all her support.

Special mention goes to the Navy which allowed me uninterrupted leave to pursue my academic studies and complete this thesis during a prolonged period of medical rehabilitation. Commander Bernie Power was especially helpful in making it all possible.

This thesis is dedicated to the sailors who endure long absences from family and loved ones to patrol the seas and protect the freedoms we take for granted.

I received much help, but the errors and omissions are entirely my fault.

Edward Tummers
Ottawa, Ontario
February 1994

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1 The Struggle for Advantage

"Disputes will continue, but there is a world of difference between conflict, even armed conflict, over the interpretation and implementation of an accepted law, and an anarchic struggle of all against all."¹

On May 15, 1946, the British cruisers ORION and SUPERB, while passing southward through the North Corfu Channel, were fired at by an Albanian battery. The United Kingdom Government at once protested to the Albanian Government, stating that innocent passage through straits is a right recognized by international law. The Albanian Government asserted that foreign warships had no right to pass through Albanian territorial waters without prior notification to, and the permission of, the Albanian authorities....²

Two fundamental principles of international law conflict: the principles of sovereignty and freedom of navigation.³ When the accepted limit of the territorial sea was only three miles, the 1958 Geneva Convention on the Territorial Sea guaranteed non-suspendible innocent passage in international straits less than six miles in width in

¹ Michael Howard, "Order and Conflict at Sea in the 1980s". Power at Sea III: Cooperation and Conflict Adelphi Paper 124 (London: IISS, 1976). p. 4.

² D.J. Harris, Cases and Materials on International Law, (London: Sweet and Maxwell, 1991), pp. 370-375.

³ The principle of sovereignty also conflicts with the principle of the common heritage of mankind. When UNCLOS III began, it was hoped that in the new international economic order the ownership and control of ocean resources would be shared internationally. Before UNCLOS III began, though, states were claiming jurisdiction over increasing areas of former high seas. One of the aims of the negotiations was to limit this extension of sovereignty. The principle of the common heritage of mankind has much in common with the principle of freedom of the seas where the general use of the oceans is for the benefit of all mankind.

order to resolve this conflict. With the extension of the limit of the territorial sea to 12 miles under the terms of the 1982 Convention, an international strait up to 24 miles in width could be enclosed by territorial waters. The maritime powers left no doubt that unless

unimpeded passage on, over and under straits used for international navigation was conceded to all commercial vessels and warships, including submarines, there was simply no possibility of coming to an agreement on the subject of national jurisdiction and other issues.⁴

The negotiators at UNCLOS III recognized this right in drafting the rules for transit passage in Part III of the 1982 Convention (See Annex C). In his statement on the Law of the Sea on 10 March 1983, President Ronald Reagan emphasized that

Unimpeded commercial and military navigation and overflight are critical to the national interest of the United States. The United States will continue to act to ensure the retention of the necessary rights and freedoms.

Furthermore, he added that

The United States will not, however, acquiesce in unilateral acts of other States to restrict the rights and freedoms of the international community in navigation and overflight.

There was a consensus at UNCLOS III that transit passage was necessary to avoid conflict in international straits. The maritime powers, and most notably the United States, have stated unequivocally their intention to exercise their rights of free navigation in straits.

Transit passage resolved the dilemma posed by the conflicting principles of sovereignty and freedom of navigation between coastal states and maritime states.

⁴ Stevenson and Oxman (eds.), "The Third United Nations Conference on the Law of the Sea: The 1974 Caracas Session", American Journal of International Law 69 5 (1975), p. 337.

Because transit passage was based on the function of the strait rather than the territorial ownership, international straits could be shared by a number of users for a variety of functions without generating conflict. The new rules of transit passage combined with the former rules of non-suspendible innocent passage would form the basis for a dual straits regime.

The implementation of the provisions of the 1982 Convention is on-going. States are in the process of harmonizing domestic legislation and the new treaty regulations. Previous patterns of usage are being formalized through acceptance of a specific navigational regime. In each case, states seek ways to implement from a given menu of regimes to institutionalize the existing patterns and preserve the status quo. This is known as "creeping uniqueness".⁵ User states take freedom of the seas in the former high seas corridors of these straits as the previous patterns of usage which must be preserved. Coastal states, on the other hand, claim that innocent passage through the territorial sea was the previous pattern to be preserved. These two opposing interpretations form the basis for conflict in straits.

This study examines the puzzle of why the rules of transit passage have been accepted in the 1982 Convention, but have not been widely implemented, despite their importance as a compromise solution between the conflicting principles of sovereignty and freedom of navigation in straits.

⁵ The phrase was coined by Lewis Alexander at the Workshop of the Law of the Sea Institute held at Honolulu from January 13-15, 1980. It represents the feeling by many nations that their geographic circumstances are somehow unique and therefore they are not bound to a strict interpretation of the 1982 Convention in one or more respects. It is a useful concept for exploring the potential problems that lie ahead for global navigation.

States are facing the challenges of their new rights and obligations. As they claim extension of the territorial sea, new patterns of usage are likely to evolve. With advances in technology, states are better able to monitor and enforce domestic legislation in the newly-claimed territorial seas. When a state reaches the point where it is no longer concerned with the threat to security in the strait, it is ready to take the final step and implement the provisions of transit passage as negotiated at UNCLOS III giving user states rights of unhindered passage through international straits.

This paper will not try to predict the future of the law of the sea in these uncertain times as the 1982 Convention is about to enter into force without having been ratified by the major maritime powers. Instead it will examine and analyze selected international straits by comparing some actual cases to a model developed to incorporate the decision making parameters facing policy-makers during this implementation period.

Chapter Two will explain different forms of ownership of the oceans and the associated navigational regimes. The international system is dominated by the goal-seeking behaviour of states in the absence of centralized, authoritative institutions. Interest in environmental protection and security has prompted coastal states to claim increasing jurisdiction over coastal waters. Interest in the free movement of trade and naval mobility has prompted user states to resist these claims. As international law evolves in an environment of international anarchy, there is cause for concern that the transit passage regime adopted by the 1982 Convention is not being implemented. The problem of creeping uniqueness is that no guidelines have been evolving to cope

with these restrictions other than routine objections or the occasional military challenge.⁶ The different configurations of national interests and political circumstances can lead to either international conflict or cooperation.

Chapter Three introduces the concept of game theory and applies it to the conflict of principles in international straits. First, the Corfu Channel case is analyzed as a conflict of principles without the benefit of an agreed regime of navigation. The simple two-player game is used to develop the concepts of game theory and to show the value of the Fraser-Hipel Conflict Analysis model. The analysis of the straits' models will show that regimes are essential to maintain the cooperative behaviour among the players and that without the norms, rules, and decision-making procedures of the international law of the sea to guide the behaviour of states, conflict is more likely.

The generalized bargaining model of the straits conflict is developed in Chapter Four. This model will be used in the subsequent case studies to simplify the decision-making process and generate a deeper understanding of the process of the implementation of the relevant provisions of the 1982 Convention. States further their own interests in the anarchic international system. Navigational regimes and zones of jurisdiction define the applicable rights and obligations within an international strait to bring about a mutually beneficial outcome. Because states' interests over navigation conflict most directly in the narrow confines of international straits, armed conflict is

⁶ Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms", in Ocean Development and International Law, Vol. 18, No. 3 (1987), pp. 333-342.

always a possibility.⁷ Regime theory provides a useful framework for studying the nature of this cooperation as it embodies the principles, norms, rules and decision-making procedures which guide the behaviour of states and make cooperation and agreement possible. The navigational regimes cause states to adopt joint-maximizing instead of self-maximizing behaviours. The nature of the navigational regimes has changed the goal of the struggle for advantage.

Chapter Five looks at three cases. In the first case, the Straits of Dover, transit passage has been formally adopted in accordance with the 1982 Convention. The next two cases are examples of creeping uniqueness: the Baltic Straits where the transit passage regime has been avoided by adopting alternate regimes; and the Northwest Passage where the status of the strait itself as an international strait is disputed.

The position of the user states on freedom of navigation has been stated consistently over several decades. On August 3, 1971, John R. Stevenson, legal advisor of the Department of State and U.S. Representative to the U.N. Seabed Committee submitted draft articles making it clear that freedom of transit in international straits was a non-negotiable right. Two reasons were given: first, security, in that the decreased naval mobility could "intensify the competition for strategic advantages" which could have a de-stabilizing effect and force nations to devote more attention and resources to security matters. Second, it was in the

⁷ Actual cases of armed conflict in recent times are rare. The Corfu Channel incident of 1946 was last case of actual force being used to close a strait. The Strait of Tiran during the Arab-Israeli war, the Strait of Gibraltar in 1973, and the Strait of Hormuz during the Iran-Iraq war all represent cases where force was a possibility, but was not actually used.

interests of international trade and commerce to guarantee unrestricted passage through straits.⁸

Table I Threat of creeping uniqueness.

Maritime powers will act to defend freedom of navigation.

However,

creeping uniqueness threatens freedom of navigation.

Therefore,

maritime powers will act to prevent creeping uniqueness.

The position of the user states that transit passage through straits is vital for their interest has not changed. Cooperation is based on the belief in the validity of the underlying law of the sea regime. If that is undermined, states' interests will come into direct conflict. According to the maritime powers, without the global straits regime, there will be conflict. As Chapter Five will show, examples of the implementation of the rules of transit passage are rare. One is led to believe, therefore, that conflict is likely. Table I summarizes the argument.

Chapter Six will test the hypothesis of this paper -- that creeping uniqueness will lead to conflict -- by means of a comparative analysis of three international straits governed by differing navigational regimes.

The study concludes that the maritime powers will accept considerable restrictions of freedom of navigation to accommodate coastal states' demands as long

⁸ H. Gary Knight, "The 1971 United States Proposals on the Breadth of the Territorial Sea and Passage Through International Straits", Oregon Law Review 51 (Summer 1972): 759-787.

as the vital interests of access and warship immunity are not threatened. If we accept that this is happening, then we are witnessing a major shift in the balance of power from maritime states to coastal states.

Because the interests of maritime states and coastal states come so directly into conflict in the bottlenecks created by international straits, cooperation between states can be rigourously tested. The conflict of the fundamental principles of sovereignty and freedom of navigation are basically irreconcilable,⁹ yet armed conflict in straits is rare. How states manage to handle the problem of recognizing coastal state jurisdiction and guaranteeing access for users in an issue area that relates directly to states' vital interests provides a deeper understanding of cooperation under conditions of anarchy. In 1976, during the Law of the Sea negotiations, Robert Osgood noted that:

"the military and commercial interests of the major maritime powers in the use of the ocean could become so important and so threatened that big states would be inclined to enforce their conception of their rights on small states, especially if the effort to establish a new ocean regime by treaty were to fail while the emerging consensus on these rights among maritime states gained the status of customary law."¹⁰

As the 1982 Convention is about to enter into force without the ratification of the major maritime powers, a deeper understanding of the issue will help us to

⁹ These two principles can be compared to the immovable object (coastal state jurisdiction) and the irresistible force (freedom of navigation). What happens when they come into direct contact is always a surprise.

¹⁰ Robert E. Osgood, "Military Implications of the New Ocean Politics", Power at Sea: The New Environment, Adelphi Paper 122, (London: IISS, 1976), p. 13. The navigation articles of the 1982 Convention are already considered by some policy-makers to be customary law. See Richard J. Grunawalt, "United States Policy on International Straits", Ocean Development and International Law Vol. 18, No. 4, (1987), pp. 445-458.

interpret the actions of states as they struggle for advantage in a new maritime world order.

2 The Legal Regime of International Straits

"The passage of warships through straits and archipelagic waters is of fundamental importance in relation to the law of the sea."

Judge Shigeru Oda
International Court of Justice
The Hague, Netherlands.¹¹

This chapter will look specifically at the conflict between the principles of freedom of the seas and sovereignty in international straits where territorial interests of neighbouring coastal states are most likely to collide with the interests of maritime powers in access through the straits. First, we will examine the various conflicting interests in straits. We will see that in the simplest case there are only two possible outcomes -- closed seas or open seas. We will then see that a law of the sea regime has been established reflecting the principles, norms, rules and decision making procedures governing the issue areas of navigation and territorial jurisdiction. Within this regime, the rights and obligations of member states are defined to reduce the likelihood of misunderstanding or conflict. The choice of regimes also expands the number of possible outcomes which can lead to the problem of creeping uniqueness.

The negotiations at the United Nations Convention on the Law of the Sea (UNCLOS III) produced a compromise dual regime solution based on the function of

¹¹ Judge Shigeru Oda, "The Passage of Warships Through Straits and Archipelagic Waters" in Van Dyke et. al. (eds.), International Navigation: Rocks and Shoals Ahead? (Honolulu: Law of the Sea Institute, 1988), pp. 155-158.

a strait to help avoid conflicts over territory.¹² But the term "strait used for international navigation" was never defined. As the 1982 Convention is about to come into force, all straits states will have to make decisions on the extent of territorial jurisdiction to claim and whether to adopt the transit passage regime. We will examine the difficulties of making these decisions in the absence of an agreed definition. It will be shown in the subsequent analysis that states bordering straits are reluctant to declare that the strait is used for international navigation and are choosing instead to entrench the previous patterns of usage in legislation, threatening to make every strait unique. This stage of implementation has been called "creeping uniqueness." The case studies have been chosen to reflect three categories of exceptions to the global straits regime, and the case where transit passage has been implemented.

THE CONFLICT OF INTERESTS

The question of ownership of the oceans has been debated throughout recorded history. The first formal pronouncements were the second century writings of the Roman jurist Marcianus in 529 A.D. which declared that the shoreline started at the high water mark and that there was no state jurisdiction to seaward.¹³ This represented the extreme interpretation of freedom of the seas. Ever since, there have been cycles and struggles between the principles of freedom of the seas and

¹² The dual regime refers to the two regimes proposed to govern navigation through straits used for international navigation. These are transit passage and non-suspendible innocent passage. These will be explained later in greater detail.

¹³ Sayre A. Swarztrauber, The Three-Mile Limit of Territorial Seas, (Annapolis, MD.: Naval Institute Press, 1972), p. 10.

sovereignty over the seas. By 1493, when the Catholic Pope claimed jurisdiction over all the world's oceans, he was able to divide the world between Spain and Portugal. Although this division of the world was protested, no other authority had a fleet which could challenge Iberian dominance of the oceans.¹⁴

The debate over freedom of navigation began in earnest in the early 17th century. The doctrine of freedom of the seas, also known as mare liberum or open seas, can be traced back to Hugo Grotius, who is considered in the western world to be the father of international law. His main contention was that the sea could not be owned by any state or private individual, but the seas were open to use by anyone. John Selden, a British scholar, challenged this by arguing for the recognition of oceanus brittanicus, in what came to be known as the doctrine of mare clausum, or closed seas. The Industrial Revolution, the search for new markets and new sources of raw materials, and the competition among European navies helped the idea of freedom of the sea gain almost universal acceptance over the next two centuries. But even as the 1958 Geneva Conventions were being drafted to codify the freedom of the seas, coastal states were unilaterally imposing constraints on the absolute control of the seas by the maritime powers.¹⁵ In each of these cycles of open and closed seas, maritime powers have always set as their non-negotiable minimum "warship immunity

¹⁴ Wolfgang Preiser, "History of the Law of Nations: Ancient Times to 1648", in Encyclopedia of Public International Law, Vol. 7. pp. 132-160.

¹⁵ Ironically, this trend was sparked by the issuing of the Truman Proclamation in 1945, in which the United States claimed jurisdiction and control over the natural resources on its continental shelf. The United States subsequently became the major opponent of unilateral claims to the oceans. See Kenneth Booth, Law, Force and Diplomacy at Sea, (London: George Allen and Unwin, 1985), p. 16.

and freedom of commercial navigation" along the sea lines of communication and especially through narrow straits.¹⁶

The law of the sea has attempted to prevent conflict between coastal states and user states by guaranteeing passage to shipping through international straits in times of peace and war subject to certain safeguards to prevent damage to the environment or threats to the security of the coastal state. Disputes and conflicts from maritime causes have been grouped under four headings: disputes over boundaries; disputes over rights within boundaries; disputes over rights in ocean areas beyond boundaries; and, disputes arising from non-ocean sources.¹⁷ The law of the sea negotiations produced four new ideas for international maritime law: the 200-mile exclusive economic zone; control over resources in the continental shelf; a 12-mile limit to the territorial sea; and, guaranteed rights of navigation through straits used for international navigation.

The straits issue is important because it represents, in a very direct way, the conflict between the latter two ideas. Territorial seas represent ownership of straits; guaranteed rights of passage represent access to straits. All four elements of maritime causes of disputes and conflict are present, but the main one of interest to us is the

¹⁶ John P. Craven, "Freedom of Navigation for War, Commerce and Piracy" in J. Van Dyke et. al. (eds.) International Navigation: Rocks and Shoals Ahead? (Honolulu: Law of the Sea Institute, 1988), p. 31.

¹⁷ Barry Buzan, A Sea of Troubles? Sources of Dispute in the New Ocean Regime, Adelphi Papers No. 143. (London: IISS, Spring 1978).

dispute over rights within boundaries. It is this issue which is "the one in which the interests of the naval powers and those of the coastal navies most diverge."¹⁸

Figure 1 Simplified conflict diagram in straits

The disputes in straits are shown diagrammatically in simplified form in Figure 1. There are three parties to the dispute, coastal state A, coastal state B and the user state U. Each of the coastal states wants to claim as much jurisdiction as possible with the extension of the limit of the territorial seas to 12 miles. In narrow straits, these claims can conflict whenever the width of the strait is less than 24 miles. The third party, user state U, wants guaranteed rights of passage through the strait. Therefore user state U may come into conflict with the territorial claims of either

¹⁸ Mark W. Janis, Sea Power and the Law of the Sea, (Lexington, Mass.: Lexington Books, 1976), p. 67.

coastal state A, coastal state B, or both. Complicating the dispute even more, coastal states A and B may also be user states, and user state U may be a coastal state. In these cases, the priorities will not always be clear in a given straits conflict situation.

Territory as an issue has always been a source of conflict. In a survey of conflicts in modern times, Holsti determined that as a single source of dispute between governments, territory was responsible for less than 10% of conflicts, but when combined with other factors involving territory, this rose to one third.¹⁹ Charles F. Doran of John Hopkins University, in a review of Holsti's book, concluded that "territorial disputes remain the most problematic issue facing states today".²⁰ The 1982 Convention legitimized creeping jurisdiction of about forty percent of the territory of the oceans while still trying to maintain the essential features of global naval mobility. This rush to claim jurisdiction has been called the "maritime territorial imperative."²¹ Coastal states are interested in expanding their jurisdiction for two main reasons: increased security, and environmental protection.²²

Recent examples of such disputes over navigation in territory claimed by a coastal state include Libya's claim to restrict international navigation in the Gulf of

¹⁹ Kalevi J. Holsti, Peace and War: Armed Conflicts and International Order 1648 to 1989, (Cambridge: Cambridge University Press, 1991), pp. 271-353. These other categories included strategic territory, boundaries, national liberation as state creation, national unification and consolidation, secession as state creator.

²⁰ Charles F. Doran, American Political Science Review, Vol. 86, No. 4 (1992), p. 1104.

²¹ Hedley Bull, "Sea Power and Political Influence", Power at Sea, I: The New Environment, Adelphi Papers No. 122 (London: IISS, Spring 1976), p. 8.

²² Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms", Ocean Development and International Law, Vol. 18, No. 3 (1987) p. 340. Other concerns listed were ideological protests, terrorism, resource use and regional action.

Sidra which was challenged by the U.S.; and the threatened closure of the Strait of Hormuz during the Iran-Iraq war.²³ Naval powers, particularly the U.S., have been concerned about the scope of interpretation of innocent passage. Any limits on innocent passage must be substantiated for navigational safety considerations, or when necessary, for protection of national security.²⁴

The United Nations Study on the Naval Arms Race examined the implications for the freedom of navigation and international shipping routes and described an interesting paradox. "Naval forces menace some states and safeguard others."²⁵ The study recognized the importance of the freedom of the high seas in accordance with Articles 87 and 88 of the 1982 Convention. Some of the necessary restrictions to this freedom are mine laying, covert submarine operations, blockades, restricted zones and exclusion zones. The nature of this interference can be an interruption or a hazard to shipping, a denial of access to fishing grounds, or a threat to the security of the coastal state. Nevertheless, naval force plays an important role in collective self-defence, terrorism, piracy and smuggling which is of general benefit.

Table II summarizes the conflict of interests. In a world where international institutions affect the prospects for cooperation only marginally, interests determine

²³ Kenneth Booth, Law, Force and Diplomacy at Sea, (London: George Allen and Unwin, 1985), p. 177.

²⁴ William J. Aceves, "Diplomacy at Sea: US Freedom of Navigation Operations in the Black Sea", Naval War College Review, (Spring 1993), p. 71. See also Department of State memorandum 31 Aug 1988 declassified 10 August 1989, and US Congress, Senate, Committee on Armed Services, Department of Defense Authorization for Appropriation for Fiscal Year 1989, Hearings, (Washington: US Government Printing Office, 1988), pp. 97-98 for details of the US Freedom of Navigation program to test the right of innocent passage.

²⁵ Study on the Naval Arms Race, 17 Sep 1985, UN DOC A/40/535, p. 75.

Table II Interests and outcomes in an anarchic world

<u>Interests</u>		<u>Outcomes</u>
Security	-->	Closed seas
Environmental protection	-->	Closed seas
Access	-->	Open seas

outcomes directly.²⁶ Coastal state's interests in security and environmental protection would result in a move to closed seas. In contrast, user states' interests in guaranteed rights of navigation and access would see a push for open seas. Where both parties were uncompromising in their demands, we can see a game of Chicken developing.²⁷ We will analyze this particular situation in more detail in Chapter 3 when we examine the Corfu Channel case.

Assuming the players are rational and do not want a head-on collision, there are several options for saving themselves.²⁸ The world chose the option of negotiating a comprehensive multilateral treaty leading to an agreement over regimes to govern conduct in straits.

²⁶ Kenneth Waltz, Theory of International Politics (Reading, Mass.: Addison-Wesley, 1979), pp. 115-116.

²⁷ The game of Chicken is explained in Annex A.

²⁸ H. Gary Knight, "Alternatives to a Law of the Sea Treaty" in Ryan C. Amacher and Richard James Sweeney (eds.), The Law of the Sea: US Interests and Alternatives, (Washington, DC: American Enterprise for Public Policy Research, 1976). These alternatives included: 1) acquiescence in other nation's acts or agreements; 2) use of force; 3) negotiation purchase; 4) limited international agreement; 5) domestic legislation; and 6) some combination of the above.

REGIMES

Overall, the 1982 Convention achieved a "nice compromise between traditional naval interests and contemporary political and economic cooperation regarding the

Figure 2 Regimes as intervening variables.

sea." It was considered a "satisfactory resolution of the tension, actual and potential, between naval mobility and creeping jurisdiction."²⁹ The concept of regimes governing jurisdiction and navigation then intervenes between interests and outcomes as shown in Figure 2.³⁰

An international regime has two basic components: normative prescriptions for state action within a certain issue area and the corresponding actual behaviour.³¹

Following what has become the standard definition of an international regime,³² the

²⁹ Kenneth Booth, "Historic Compromise or Paradigm Shift? Naval Mobility versus Creeping Jurisdiction in the 1982 UN Convention on the Law of the Sea", in Albert W. Koers and Bernard H. Oxman (eds.), The 1982 Convention on the Law of the Sea, Proceedings of the Seventeenth Annual Law of the Sea Institute Conference July 13-16, 1983, (Honolulu: The Law of the Sea Institute, 1984), p. 320.

³⁰ Stephen D. Krasner, "Structural causes and regime consequences: regimes as intervening variables", International Organization 41, 2 (Spring 1987), p. 185.

³¹ Volker Rittberger (ed.), International Regimes in East-West Politics (London: Pinter Publishers, 1990), p. 94.

³² Stephen D. Krasner, "Structural causes and regime consequences: regimes as intervening variables", International Organization 41, 2 (Spring 1987), p. 185.

normative prescriptions are classified as principles, norms, rules and decision-making procedures.³³ The actual behaviour is assessed in terms of effectiveness and durability. Effectiveness means the degree of compliance with these existing prescriptions and the extent to which the actual behaviour of the actors is guided by the norms and rules of the regime. Durability refers to the persistence over time of patterns of behaviour which reflect routine compliance with the rules of the regime.³⁴ The legal regimes of territorial jurisdiction and navigation can be assessed in terms of these two components.

PRINCIPLES

The two principles involved are the principle of freedom of the seas and the principle of sovereignty (with its corollary of territorial integrity). Let us see now how the concepts developed by UNCLOS III help link interests and outcomes. In Power and Interdependence, Keohane and Nye show how stronger states dominate weaker ones and determine the rules of the game.³⁵ History shows how freedom of the seas is always in the interests of the dominant maritime powers which depend on mobility and trade. It would appear, then, that regardless of the structure of the international system, the principle of freedom of the seas will always be defended by the major maritime powers and it will always be attacked by those seeking to weaken

³³ Friedrich Kratochwil, Rules, Norms and Decisions (Cambridge: Cambridge University Press, 1989).

³⁴ Volker Rittberger and Michael Zürn, "Towards regulated anarchy in East-West relations: causes and consequences of East-West regimes" in Volker Rittberger (ed.), International Regimes in East-West Politics (London: Pinter Publishers, 1990), pp. 9-63.

³⁵ Robert O. Keohane and Joseph S. Nye, Power and Interdependence, (Boston: Little, Brown, 1977).

the maritime powers. Other states may free-ride on the benefits obtained from freedom of the seas, but the costs of defending this principle will be borne by the major maritime powers. This conflict is most acute in narrow straits where international trade and strategic shipping converge. In these waters, the ships of user states are particularly vulnerable. To avoid making every passage a game of Chicken, navigational regimes have been adopted to reduce transaction costs and make the rules of the game clear to all players. The existence of regimes helps to determine the rights and obligations of the players and the payoff structure; it lengthens the shadow of the future and introduces the concept of reciprocity; and, it effectively reduces the number of players by grouping them into either a user state category or a coastal state category.

NORMS

The group of norms indicate the interests of the members of the regime. These include the protection of the environment, the conservation of marine resources, the reduction of pollution, the safety of shipping, the right of self-defence, the right to access, the obligation of non-intervention, reciprocity and the respect for the sovereignty of the coastal state and the user state. These norms can indicate the degree to which the members are expected to cooperate, but they may also be in conflict with one another. Table III will help us to understand how the concepts of coastal state ownership and navigational regimes are all based on the three main interests of security, environmental protection, and access.

Table III Ownership and rights of passage

<u>Regime of jurisdiction</u>	<u>Navigational regime</u>
Limited Jurisdiction ----->	High Seas (1)
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border-left: 1px solid black; height: 40px; margin-bottom: 5px;"></div> <div style="border-left: 1px solid black; height: 40px;"></div> </div> <div> + international -----> strait </div> </div>	Dual regime
Extension of territorial jurisdiction ----->	Innocent Passage
Internal waters ----->	Permission required (2)

(1) The navigational regimes for High seas and the Exclusive Economic Zone are the same for our purposes here. This corresponds most closely to the doctrine of open seas.

(2) User states have no rights of navigation in internal waters. This corresponds to the doctrine of closed seas.

RULES

In the issue area of navigation, rules are needed to ensure greater safety and less risk of harm to oceans and coasts throughout the world.³⁶ Part III of the 1982 Convention provides the rules which guide the behaviour of members in exercising their rights and obligations in international straits. Before we continue, though, let us define the terms we will be using. We have divided the world's states into two categories: coastal states and user states. Their rights and obligations vary depending on the distance from the shoreline. There are three offshore zones of interest in

³⁶ Susan Strange, "Who Runs World Shipping?", *International Affairs* 52 3 (July 1976): 347-367.

straits regarding navigation: high seas, territorial waters, and internal waters.³⁷ There are a special set of rules governing straits used for international navigation.

Coastal states and user states

Coastal states are those states which border the ocean.³⁸ User states are the maritime powers, trading nations, flags of convenience and others that use the oceans for transportation, fishing, exploitation of resources or any other purpose. In this paper, the term will refer specifically to the use of straits for navigational purposes. The rights of user states for navigation and overflight in the various zones of jurisdiction are summarized in Table IV.³⁹ User states are interested in freedom of the seas and unhindered passage through straits, whereas coastal states are concerned mainly with security and environmental protection in straits.⁴⁰

High seas

The term high seas means "all parts of the sea that are not included in the territorial sea or in the internal waters of a state".⁴¹ Part VII of the 1982 Convention

³⁷ Rights of navigation in high seas and exclusive economic zones (EEZs) are identical. For simplicity in the argument, we will ignore the EEZ.

³⁸ In this paper, we will be using the term to refer specifically to states bordering straits. Some authors refer to these as straits states, or less commonly, riparian states.

³⁹ Information for this table was compiled from J.R.V. Prescott, The Maritime Political Boundaries of the World (London: Methuen, 1985), pp. 36-44. See also K.L. Koh, Straits in International Navigation (London, Rome, New York: Oceana Publications Inc., 1982), pp. 167-170 for a detailed discussion and comparison of the transit passage regime and the innocent passage regime.

⁴⁰ Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms", Ocean Development and International Law, Vol. 18. No. 3. pp. 333-342.

⁴¹ Article 1 of the 1958 Geneva Convention of the High Seas; also Article 86 of the 1982 Convention.

Table IV Rights of user states for navigation and overflight in national maritime zones.

<u>Zone</u>	<u>Navigation (1)</u>	<u>Overflight</u>
High seas	All operators have equal rights. Art. 87(1)a.	Equal rights. Art. 87(1)b.
Exclusive Economic zone	User states have full navigation rights providing they observe safety zones designated around certain structures. Art. 58, 60(6).	User states have full overflight rights.
Territorial waters	Innocent passage providing they comply with legitimate laws and regulations adopted by the coastal state and with accepted international regulations to prevent collisions at sea. Art. 21. Must follow designated sea lanes and traffic separation schemes. Art. 22. Submarines must pass on the surface and show their flag. Art. 20.	No right of overflight.
Internal waters	No rights except where straight baselines have converted waters to internal status in which case the right of innocent passage remains. Art. 8(2). User state requires permission of the coastal state to navigate.	No rights of overflight. Coastal state permission required.

(1) Navigation includes surface ships, warships and submarines.

states the rights and obligations of states.⁴² Under the doctrine of mare liberum, or open seas, the principle of freedom of the seas grants full navigation rights, including the right of overflight and submerged passage for submarines. Coastal states have no special rights on the high seas.

Territorial waters

⁴² Articles 86-119. For the purposes of navigation, these same rights and obligations apply in the exclusive economic zone.

The width of the territorial sea was one of the most controversial questions in international law. The concept of territorial seas grew out of the need for coastal states to protect themselves. It was traditionally three miles, but this distance varied widely and was challenged frequently. It was not until the 1958 Convention on the Territorial Sea that the term was embodied in a treaty, and only with the 1982 Convention was an actual limit agreed upon. Before continuing, it will be helpful to examine what rights the coastal states and user states have within the territorial sea. In this way, it will be possible to understand the conflict of interests which has arisen between states concerning the width of the territorial sea; for it is this conflict of interest which is at the root of the legal controversies.⁴³

The coastal state's sovereignty over the territorial sea includes the following rights:

- (1) an exclusive right to fish, and to exploit the resources of the seabed and subsoil of the territorial sea;
- (2) exclusive use of the airspace above the territorial sea;
- (3) exclusive right to transport goods and passengers from one port of the coastal state to another (cabotage);
- (4) if the coastal state is neutral in time of war, belligerent states may not fight or capture merchant ships in the territorial sea of the coastal state;
- (5) foreign ships must obey regulations concerning navigation, health, customs, duties, and immigration;
- (6) powers of arrest over merchant ships exercising innocent passage;
- (7) powers to try crimes committed on merchant ships in the territorial sea;
- (8) the right to prevent non-innocent passage; and,
- (9) for security reasons, the right to suspend temporarily innocent passage in specified areas of the territorial sea except in areas that constitute "straits used for international navigation".⁴⁴

⁴³ Michael Akehurst, A Modern Introduction to International Law (London and New York: Routledge, Sixth Edition, 1992), pp. 171-173.

⁴⁴ Part II of the 1982 Convention.

When coastal states become more concerned about damage to the environment and threats to security, they tend to respond by claiming an extension of the territorial sea beyond the traditional three-mile limit. The coastal state must decide how much additional jurisdiction to claim, for with rights also come obligations. Where coastal states claim territorial seas, passage through the territorial sea is governed by the rules of innocent passage as stated in Part II of the 1982 Convention in Articles 17-32.⁴⁵ Article 19 (Meaning of Innocent Passage) states that passage is innocent "so long as it is not prejudicial to the peace, good order or security of the coastal state" and goes on to list twelve criteria for assessing the meaning of innocent. These criteria offer scope for a coastal state to challenge the passage of user states, despite Article 24 (Duties of coastal states) under which the coastal state "shall not hamper the innocent passage of foreign ships except in accordance with the Convention." Although there is some cause for concern on the part of user states that the interpretation of innocent passage may restrict shipping, in the past, the concept has worked reasonably well.⁴⁶ Innocent passage in international straits is, as we shall see, non-suspendible.

There are two main problems for coastal states in extending jurisdiction. First is the difficulty of monitoring innocent passage. In many cases, the means do not exist to determine whether a violation has taken place. Monitoring becomes even

⁴⁵ For a current interpretation of innocent passage, see Francis Ngantcha, The Right of Innocent Passage and the Evolution of the International Law of the Sea: The Current Regime of "Free" Navigation in Coastal Waters of Third States (London: Pinter Publishers, 1990).

⁴⁶ D.P. O'Connell, The Influence of Law on Sea Power (Manchester: Manchester University Press, 1975), pp. 139-145.

more difficult in the case of Article 20 (Submarines and other underwater vehicles) because of the advanced technology needed to detect and monitor submerged passage.⁴⁷ The other problem for the coastal state in extending jurisdiction in the territorial sea is the obligation incurred in enforcing national legislation.⁴⁸

Internal waters

Within a coastal state's internal waters, user states have no rights of navigation. Here the principle of sovereignty is fully recognized, and user states require permission to enter. Internal waters corresponds to closed seas doctrine; whereas high seas corresponds to open seas doctrine. There is one exception. Where straight baselines have converted waters to internal status, the previous patterns of usage are guaranteed and the right of innocent passage remains.⁴⁹ Permission is required to navigate in internal waters and users are subject to the complete jurisdiction of the coastal state. Internal waters represent the application of the doctrine of mare clausum, or closed seas.

Straits used for International Navigation

⁴⁷ Episodes in Scandinavian waters in recent years have shown how what were believed to be Soviet submarines evaded Swedish searchers in relatively confined waters with a sophisticated monitoring system. This is an even greater problem in larger straits such as the Northwest Passage.

⁴⁸ This includes measures to prevent, reduce and control pollution in the marine environment claimed in accordance with Part XII of the 1982 Convention as well as all other legislation. For example, what is considered piracy on the high seas in accordance with Part VII of the 1982 Convention becomes theft when committed in territorial waters and must be prosecuted by the coastal state. As we will see later, increased jurisdiction means greater need for coastal navies to patrol and enforce national legislation.

⁴⁹ Article 8(2) of the 1982 Convention. This will become an important point later as we examine Canada's claim to the Northwest Passage.

Because the regime of transit passage applies only in 'straits used for international navigation', we need to understand this term. In this section, we will determine the criteria for classifying a strait and the resulting navigational regime based on treaty law, customary law and state practice.

Criteria for classifying a strait. A legal strait is created when there is an overlap of territorial waters in the natural passage between adjacent land masses joining two parts of the high seas. In this case, a special legal regime becomes applicable. The decision of the International Court of Justice on the Corfu Channel Case in 1949 addressed this point, and is still the only international decision on the question. Therefore, this decision represents the best evidence of what the state of customary law is on the legal requirement of an international strait.⁵⁰ The International Court confirmed that an international strait had to meet two criteria, one pertaining to geography and the other, to the use or function of the strait.

The decisive criterion is rather its geographical situation as connecting two parts of the high seas and the fact of its being used for international navigation. Nor can it be decisive that this strait is not a necessary route between two parts of the high seas, but only an alternative passage between the Aegean and Adriatic Seas. It has nevertheless been a useful route for international maritime traffic.⁵¹

⁵⁰ D.J. Harris, Cases and Materials on International Law (London: Sweet and Maxwell, Fourth Edition, 1991), pp. 370-375. See also R.P. Anand, "Transit Passage and Overflight in International Straits", in Van Dyke et. al. (eds.) International Navigation: Rocks and Shoals Ahead? (Honolulu: Law of the Sea Institute, 1988) pp. 134-135. The Corfu Channel case will be analyzed in Chapter 3 to show how the outcomes are determined in the absence of a regime.

⁵¹ ICJ Reports (1949), pp. 28-29.

There are two parts to the definition: a geographical and a functional.⁵² A strait is defined geographically as a narrow stretch of the seas separating two land areas and linking two ocean areas.⁵³ In international law, the main focus of interest is the role of the strait for navigation by ships and overflight by aircraft. The function of the strait is the determining factor in defining it as an international strait.

Non-suspendible innocent passage. This decision of the International Court of Justice, which was incorporated in Article 16(4) of the 1958 Geneva Convention on the Territorial Seas, has been a foundation for the legal definition of international straits.

There shall be no suspension of innocent passage of foreign ships through straits which are used for international navigation between one part of the high seas and another part of the high seas or the territorial seas of a foreign state.

Nevertheless, coastal states were given the authority under Article 16(1) to take precautions to safeguard security and make rules concerning safe navigation, lighting and buoys to "take the necessary steps in its territorial sea to prevent passage which is not innocent." When the territorial sea limit was only three miles, most straits were wide enough to allow high seas passage. But with the allowed extension of territorial seas out to 12 miles, over a hundred straits would have been enclosed by territorial seas where the coastal state would have the power to declare any particular

⁵² A number of authors have laid out criteria for international straits in terms of other factors as well. See Donat Pharand, The Northwest Passage: Arctic Straits (The Hague: Martinus Nijhoff Publishers, 1984), and Lewis M. Alexander, "Geographical Perspectives on International Navigation", Van Dyke et. al. (eds.), International Navigation: Rocks and Shoals Ahead? (Honolulu: Law of the Sea Institute, 1988) pp. 73-82.

⁵³ Encyclopedia Britannica 21, (Chicago: Encyclopedia Britannica Inc., 1968), p. 285.

passage as non-innocent.⁵⁴ Accordingly, Part III of the 1982 Convention adopted two distinct legal regimes for international navigation in straits: first, the traditional regime of non-suspendible innocent passage (Article 45); and second, the new regime of transit passage (Articles 37 to 44).

Transit passage. In practical terms, transit passage and innocent passage differ in three ways.⁵⁵ First, transit passage may not be suspended.⁵⁶ Second, the right of transit passage also includes overflight of aircraft.⁵⁷ And third, the provisions of transit passage make no reference to warships, including submarines.

Table V Rights of user states for navigation and overflight in international straits.

<u>Non-suspendible innocent passage</u>	<u>Transit Passage</u>
No overflight (Art. 19).	Right of overflight (Art. 38).
Submarines must navigate on surface and show flag (Art. 20).	Right of submerged passage (Art. 39).
Coastal state determines innocence of passage (Art. 19, 25).	Coastal state shall not hamper transit passage. Non-suspendible (Art. 44).

⁵⁴ S. Houston Lay et. al. (eds.), "Widths of Selected Straits", New Directions in the Law of the Sea: Documents II (Dobbs Ferry, NY: Oceana Publications, 1973), pp. 885-891.

⁵⁵ Article 19 of the 1982 Convention lists in detail twelve criteria for innocent passage.

⁵⁶ Article 44, Duties of bordering states.

⁵⁷ Article 38, Rights of transit passage.

This has been widely interpreted by the maritime powers to mean that submarines have the right of submerged passage through international straits.⁵⁸ The rights of user states for navigation within international straits are summarized in Table V.

The concept of the transit passage regime was a compromise between the two conflicting principles of freedom of the seas and sovereignty.⁵⁹ This regime allows user states unhindered passage through straits while at the same time allowing the coastal states to exercise territorial jurisdiction over adjoining waters out to a maximum limit of 12 miles. The regime was introduced to reduce the likelihood of conflict in straits. It should be a significant example of cooperation under anarchy. The fact that so few straits are governed by the transit passage regime is an indication of the difficulty of achieving the conditions for such cooperation.⁶⁰

⁵⁸ The proposed interpretations were summarized in William Burke, "Submerged Passage Through Straits: Interpretation of the Proposed Law of the Sea Treaty", Washington Law Review, Vol 93., (1977) p. 52. For arguments in favour of this right, see John Norton Moore, "The regime of straits and the Third United Nations Conference on the Law of the Sea", American Journal of International Law, Vol. 74, (1980) pp. 77-121; and Kenneth Booth, Law, Force and Diplomacy at Sea (London: George Allen and Unwin, 1985), pp. 97-119. Booth concludes that state practice will settle the question on the basis of might is right (p. 78). On the question of whether the text gives adequate safeguards in favour of this right, see Michael W. Reisman, "The regime of straits and national security: an appraisal of international lawmaking", American Journal of International Law, Vol. 74 (1980) pp. 48-76.

⁵⁹ For an interpretation of transit passage, see W.J. Fenrick, "The Impact of the United Nations Convention on the Law of the Sea on the Mobility of Canadian Naval Forces", Director of Law/Training, National Defence Headquarters, (January 1984), pp. 23-33.

⁶⁰ See Kenneth R. Simonds (ed.), New Directions in the Law of the Sea (London, Rome, New York: Oceana Publications Inc., 1993), p. 9, p. 14, and p. 83. On 2 November 1988, France and the UK adopted the transit passage regime for the Strait of Dover. On 27 December 1988, the United States declared that all countries enjoy the right of transit passage in accordance with international law without naming any specific cases. Four other treaties are known to take account of the transit passage regime: 1) the 1978 bilateral treaty between Venezuela and the Netherlands concerning the delimitation of the maritime spaces between Venezuela and the Netherlands Antilles; 2) the 1978 treaty between Australia and Papua New Guinea about Torres Strait; 3) the 1985 Treaty of Rarotonga concerning Nuclear Free Zones in the South Pacific; and 4) the 1990 Protocol concerning Specifically Protected

(continued...)

There are seven problems surrounding the transit passage concept.⁶¹ First, Article 38 grants "all ships and aircraft" the right of transit passage. In the case of warships (including submarines) or military aircraft, there is room for disagreement whether the passage is "solely for the purpose of continuous and expeditious transit" or if it violates the provisions of the article. The passage of warships with sensors operating through a strait may be interpreted as a routine patrol with only self-defence in mind, or as a hostile act. Second, the interpretation of Article 39,

the duty to refrain from any threat or use of force against the sovereignty, territorial integrity or political independence of states bordering the strait, or in any manner in violation of international law embedded in the Charter of the United Nations

is ambiguous. When guns had to be trained fore and aft during transit, it was easy for an observer to see when a gun moved into a firing position. But for a missile launcher which is always loaded and ready for action, there is no time for a warning, and no way to observe the intention to threaten force. The mere presence of the launcher could be interpreted as a threat. Third, the nature of research or survey activities is open to dispute. Warships are always monitoring the air and sea space around them. The problem for coastal states again is determining when a violation has actually taken place. Fourth, the Convention provides no useful definition of

⁶⁰(...continued)

Areas of Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region. In the latter Protocol, Article 5(2)(c) specifically recognizes the right of transit passage.

⁶¹ See for example, Kenneth Booth, Law, Force and Diplomacy at Sea (London: George Allen and Unwin, 1985), pp. 77-78; Arvid Pardo, "The Convention on the Law of the Sea: a preliminary appraisal", San Diego Law Review Vol. 20, No. 3 (1983), pp. 489-503.

"straits used for international navigation".⁶² Fifth, there is no compulsory and binding settlement procedure regarding the determination of the proper status of a particular strait, and no corresponding Annex to the Convention listing those "straits used for international navigation". This leads to the problem of "creeping uniqueness" which will be discussed later. Sixth, there is no express right of submerged passage, as was explained earlier. And lastly, under Article 45, certain straits are exempt from the transit passage provisions, but which ones is not stated.

Unfortunately, an international strait was not defined, nor has a list of such straits been compiled. What happens when there is disagreement over the "international" status of a particular strait? We must then look to customary law for further guidance. Brownlie concludes that transit passage involves a substantial departure from the position of customary international law and cannot be invoked by non-parties to the treaty.⁶³ On the other hand, the United States has asserted that the right of transit is part of customary law on the basis that passage through these particular straits was always considered high seas passage which should not be restricted by the extension of territorial waters.⁶⁴ The U.S. interprets the phrase

⁶² As we shall see, this is a particular problem in the case study on the Northwest Passage. See Donat Pharand, The Northwest Passage (The Hague: Martinus Nijhoff Publishers, 1984); Donat Pharand, Canada's Arctic Waters in International Law (Cambridge: Cambridge University Press, 1988); Donat Pharand, "Canada's sovereignty over the Northwest Passage", Michigan Journal of International Law 10 (Spring 1989), pp. 653-678; and Philip J. Briggs, "The Polar Sea Voyage and the Northwest Passage Dispute", Armed Forces and Society: an interdisciplinary journal 16 (Spring 1990), pp. 437-452.

⁶³ Ian Brownlie, Principles of Public International Law (Oxford: Clarendon Press, Fourth Edition, 1990), p. 284.

⁶⁴ Said Mahmoudi, "Customary International Law and Transit Passage", Ocean Development and International Law 20 2 (1989), pp. 157-174.

"straits which are used for international navigation" more broadly. According to Schachte, this includes "all straits which are used or may be used for navigation".⁶⁵

As John Norton Moore said:

in the real world of ocean politics, it is nonsense to believe that either the United States or the Soviet Union would accept a law of the sea treaty that did not fully protect freedom of navigation through straits.⁶⁶

DECISION-MAKING PROCEDURES

The decision-making procedures can be found in the 1982 Convention as well. Article 279 requires settlement of disputes by peaceful means and it reproduces verbatim the United Nations Charter provisions (Art 2(3)) requiring members to settle their international disputes such that security and justice are not endangered. The dispute-settlement procedures are based on principles of sovereignty of nations in that all disputes shall be settled between the nations concerned. The International Court of Justice can intervene only according to Part XV when such a solution is recognized as impossible.

DURABILITY

Since the early 19th century, there have been discussions about the "internationalization" of the main straits that were indispensable routes for international navigation. Where necessary, special regimes have developed that apply the principle of freedom of navigation while respecting the legitimate concerns of

⁶⁵ Schachte, W.L., "International Straits and Navigational Freedoms", Ocean Development and International Law 24 2 (1993), p. 184. (emphasis mine).

⁶⁶ John Norton Moore, "The regime of straits and the Third United Nations Conference on the Law of the Sea", American Journal of International Law, Vol. 74 (1980), pp. 77-121. The dominant maritime powers throughout history have always protected freedom of navigation.

coastal states for security and control over maritime traffic near their coasts. The International Court of Justice in its 1949 judgement of the Corfu Channel case clarified the concept of an international strait.

EFFECTIVENESS

Effectiveness, in the sense of compliance with existing prescriptions is best verified on the level of rules which contain the most concrete injunctions.⁶⁷ This is easier said than done. The United Nations does not assess the implementation of the rules by participating states. It would be necessary to examine each individual case to determine the extent to which these regimes were implemented in the associated straits. According to Rittberger, this is the only way to assess effectiveness. By agreeing on principles, norms, and rules, coastal states and user states can reduce the likelihood of conflict in the issue area of navigation.

Any rules that are to develop within the law of armed conflict and the law of neutrality in this area must take into account that the strategic and tactical mobility of belligerents requires access to and the rights of passage through straits If they don't accommodate that need, the rules simply will not be of long life, because those are the fundamental requirements of belligerents.⁶⁸

The success of this effort will be seen when we look at actual outcomes and the effects of creeping uniqueness. The status of a given strait may be simply a legal strait, in which case there is no special status accorded. But, once it is determined that a strait is "used for international navigation", there are only two possible

⁶⁷ Volker Rittberger, International Regimes in East-West Politics (London: Pinter Publishers, 1990), p. 100.

⁶⁸ Captain R.J. Grunawalt, USN (Ret.), "Belligerent and neutral rights in straits and archipelagoes" in Thomas A. Clingan Jr. (ed.), The Law of the Sea: What Lies Ahead? (Honolulu: Law of the Sea Institute, 1988): p. 139.

outcomes: either an innocent passage regime or a transit passage regime. Let us now turn our attention to these outcomes.

OUTCOMES

Table VI Interests and outcomes with regimes as intervening variables

<u>Interests</u>	<u>Regimes of coastal state jurisdiction</u>	<u>Navigational regimes</u>	<u>Outcomes</u>
	High seas/EEZ	High seas passage	
Access	International strait	Dual regime	Rights and obligations in accordance with the provisions of the 1982 Convention
Security	Territorial waters	Innocent passage	
Environmental protection	Internal waters	Permission required	

The outcome, in terms of the resulting rights and obligations, will depend on how that state's concerns over access, security and environmental protection are satisfied by favouring either the principle of sovereignty or the principle of freedom of the seas. The effect of regimes on outcomes is summarized in Table VI. There are four possible navigational regimes in straits: high seas passage, transit passage, innocent passage, and permission required. However, in international straits, only non-suspendible innocent passage or transit passage is allowed.

In peacetime, there is little problem or concern over the difference. But maritime powers are unwilling to accept restrictions on naval mobility. The position of the maritime powers is clear:

The primary danger to the continuance of the ability of our warships and supporting aircraft to move, unhampered, to wherever they may be needed...presents itself in the great international straits of the world.⁶⁹

The position of straits in wartime will be reviewed for three cases: when the coastal states are neutral, when the coastal state is a belligerent, and for minelaying in straits.⁷⁰ First, there is no precedent for the closure of straits to the passage of belligerent warships. There are very few examples of neutrals imposing restrictions on warships. O'Connell cites only three possibilities.⁷¹ Second, when the coastal state is also a belligerent, the question relates to the passage of neutral warships and merchant ships. No restrictions have been imposed on merchant vessels except in limited areas for limited times.⁷² The third wartime situation concerns the laying of mines. When the strait is under the sovereignty of a neutral country, the laying of

⁶⁹ Arthur H. Dean quoted by S.G. Truver, The Strait of Gibraltar and the Mediterranean (The Hague: Sijthoff and Noordhoff International Publishers, 1980), p. 85.

⁷⁰ M. Ronzitti (ed.), The Law of Naval Warfare (Dordrecht, Martinus Nijhoff Publishers, 1988), pp. 13-26.

⁷¹ D.P. O'Connell, The International Law of the Sea (Oxford: Clarendon Press, 1982), pp. 324-326. Despite the 1881 Neutrality Decree of Chile, belligerents in both world wars have used the Straits of Magellan without protest from Chile. The second case of the Baltic Straits is more controversial. Incidents during the Russo-Japanese War in 1904 and both World Wars indicate that the straits could not be legally closed. The only significant closure was the Straits of Messina during Italy's period of neutrality in 1914.

⁷² D.P. O'Connell, The International Law of the Sea, (Oxford: Clarendon Press, 1982), p. 326. Italian territorial waters in the Straits of Messina were closed to all foreign warships during the Second World War; the Baltic Straits were mined by both Germany and the Allies during the Second World War with the exception of a single channel. The territorial waters of Sweden were kept open.

mines by a belligerent falls under the laws of neutrality. Indiscriminate and unnotified mining is clearly illegal under the rules in the Corfu Channel case.⁷³

O'Connell concluded that the extent to which mining is permitted depends on the extent to which the coastal state is required to exercise the right of self-defence, which will involve an appreciation of the specific circumstances of the hostilities.

In summary, the history of events in international straits is ambiguous, but it would appear to indicate that in peacetime, the major straits of the world have been completely open. Therefore, in practice, the quality of the rights of passage has approximated high seas passage rather than innocent passage.⁷⁴ In wartime, a corridor for transit has always been available, even if it is restricted and even if the quality of passage approximates innocent passage.⁷⁵ What history tells us is that "several straits of the world ocean will continue to breed contention because of their strategic and economic importance to navies and to trade, involving not only coastal and regional states, but also distant maritime powers."⁷⁶ It is not the straits themselves that will breed contention, but the conflict of the opposing principles of sovereignty and freedom of the sea within the narrow confines of these straits. This conflict manifests itself in practical terms in the debate over straits: first, is a strait used for international navigation?; and second, if so, will the rules governing passage

⁷³ D.P. O'Connell, The International Law of the Sea, (Oxford: Clarendon Press, 1982), pp. 326-327. See also the Nicaragua Case in I.C.J. Reports 1986, p. 14.

⁷⁴ D.P. O'Connell, The International Law of the Sea, (Oxford: Clarendon Press, 1982), p. 327.

⁷⁵ D.P. O'Connell, The International Law of the Sea, (Oxford: Clarendon Press, 1982), p. 327.

⁷⁶ G. Mangone in Gunnar Alexandersson, The Baltic Straits, (The Hague: Martinus Nijhoff Publishers, 1982), p. v.

favour a high seas regime or an innocent passage regime? For the coastal state, the crucial decision is where to draw the limits of jurisdiction.

CREEPING UNIQUENESS

When there is no choice of regimes in straits, there is a direct conflict between open seas and closed seas. But the wide choice of regimes and the lack of a definition of an international strait have led to the problem of creeping uniqueness.

This term, which was coined by the Law of the Sea Institute, has been defined as:

the proclivity of states to conclude that they have an interest that requires protection which they then set to accomplish even though the claim to do so is not recognized or established by the overall legal regime that is assumed to be prevailing at the time.⁷⁷

The various claims provide a basis for conflict between coastal states and user states, and between adjoining coastal states. John D. Negroponte, Assistant Secretary for Oceans and International Environmental and Scientific Affairs of the U.S.

Department of State described the problem of creeping uniqueness thus. By seeing the circumstances and waters off its coast as unique

the coastal state justifies assertions of new or broader forms of jurisdiction to satisfy its coastal appetite. This tendency -- which has been dubbed "creeping uniqueness" -- is the latest threat to the freedom of the seas.⁷⁸

The shifting emphasis among the competing claims makes the likelihood of conflict even greater. Yet cooperation does occur mainly because of the influence of the regime of the law of the sea.

⁷⁷ William T. Burke, "Threats to the Public Order of the oceans" in Van Dyke et. al., International Navigation: Rocks and Shoals Ahead? p. 384.

⁷⁸ John D. Negroponte, "Who Will Protect the Freedom of the Seas?" in Thomas Clingan Jr. (ed.), The Law of the Sea: What Lies Ahead? (Honolulu: Law of the Sea Institute, 1988), p. 127.

Adherence to the 1982 Convention has been deferred on provisions for deep-sea mining. The nations of the world are eager to affirm the treaty into law to settle the dispute mechanism and the detailed rights and obligations. Evidence that President Bush had started exploring possibilities of accommodation on the deep-seabed regime continue to mount and President Clinton seems likely to continue in this direction.⁷⁹ Multilateral talks are scheduled in 1994 to address these issues. With the 1982 Convention likely to enter into force soon, let us see how these provisions are being implemented.

CHOICE OF CASE STUDIES

Lewis M. Alexander identified 256 international straits in a recent survey.⁸⁰ Of these, 60 had a breadth of greater than 24 miles and a guaranteed high seas or EEZ corridor. A further 52 had a breadth of less than six miles with no possibility of a high seas corridor. Of the remaining 153 straits, about 60 important straits were threatened with being closed by extension of the territorial sea from 3 miles to 12 miles.⁸¹ One of the critical factors in guaranteeing access through international straits was the strategic significance of the ballistic missile firing submarine (SSBN). During UNCLOS III 16 straits of major significance to NATO would have been affected by

⁷⁹ John Tessitore and Susan Woolfson (eds.), Issues Before the 45th General Assembly of the United Nations (Toronto: Lexington Books, 1991), pp. 110-113. The possibility of achieving the necessary 60 ratifications to bring the 1982 Convention into force is likely in 1994.

⁸⁰ Lewis M. Alexander, "Navigational Restrictions Within the New LOS Context: Geographical Implications for the United States" (Peacedale, RI: Offshore Consultants, 1986).

⁸¹ Lewis M. Alexander, "The ocean enclosure movement: uncertainty and prospect", San Diego Law Review Vol. 20, No. 3, pp. 561-594.

the restrictions on submerged passage.⁸² However, with the advances in missile technology leading to increased ranges of the Trident missile, the strategic significance of these straits diminished. Although SSBN passage was "nice to have", it was no longer considered critical.⁸³ From an economic standpoint, only eleven straits are of major significance to the United States.⁸⁴ But in order to assess the effectiveness of the regimes and the extent of creeping jurisdiction, we need to determine a criteria to narrow the selection of straits. For this, let us go back to the rules of the regime.

Figure 3 summarizes the criteria for selecting the case studies. Article 35 defines the scope of this part of the 1982 Convention. "Nothing in this part affects:...(c) the legal regime in straits in which passage is regulated in whole or in part by long-standing conventions in force specifically relating to such straits." There is general agreement that this section applies to the Turkish Straits under the Montreux Convention, but there is controversy over all the others.⁸⁵

Article 36 makes an exception for "a strait used for international navigation if there exists through the strait a route through the high seas or through an exclusive

⁸² Robert E. Osgood, "U.S. Security Interests in Ocean Law", Ocean Development and International Law Vol. 2 (Spring 1974), pp. 1-36.

⁸³ The Strait of Gibraltar and the two Indonesian straits of Ombai-Wetar and Lombok are still considered critical for submarine operations.

⁸⁴ Robert E. Osgood, "Military Implications of the New Ocean Politics" in Power at Sea Part I: The New Environment, Adelphi Paper 122 (London: IISS, 1976), pp. 10-16. These include Florida, Dover, Hormuz, Mocambique, Gibraltar, Bab el Mandeb, Malacca, Lombok, Luzon, Bosporus-Dardanelles, Baltic.

⁸⁵ Lewis M. Alexander, "Exceptions to the Transit Passage Regime: Straits with Routes of Similar Convenience", Ocean Development and International Law Vol. 18, No. 4 (1987), p. 480.

Figure 3 Creeping uniqueness: criteria for selecting case studies

economic zone of similar convenience." As it turns out, there is no actual situation where an alternate route is preferable. In his survey, Alexander found 33 straits which would be affected by reduced territorial claims to allow a high seas corridor.⁸⁶

⁸⁶ Lewis M. Alexander, "Exceptions to the Transit Passage Regime: Straits with Routes of Similar Convenience", *Ocean Development and International Law* Vol. 18, No. 4 (1987), p. 481. Four of these are in the Baltic Straits: the Fehmarn Belt between Denmark and the former West Germany; the Kadet Channel between Denmark and the former East Germany; the Samsøe Belt in the northern approaches to the Great Belt which passes through Danish territorial waters, and the approaches to the Sound which passes between Denmark and Sweden.

Article 37 defines the scope of the section on transit passage as it applies to "straits used for international navigation". But nowhere is the term actually defined. Experts cannot agree on how few transits are needed to qualify for an exemption.⁸⁷

These three articles are likely to result in the majority of cases of creeping uniqueness as coastal states interpret the rules to maximize their gain during this interim period of implementation. One of the problems with creeping uniqueness is that no guidelines have been evolving to cope with it other than routine objections and occasionally a military challenge.⁸⁸

Alexander calls for a three-part solution: track these inconsistencies, catalogue them, and identify patterns and trends of creeping uniqueness. He concludes that what is really needed is a means to measure the results of what was agreed at UNCLOS III to "assess the progress in the era of implementation".⁸⁹ This is exactly what Rittberger said earlier was needed to assess the effectiveness of a particular regime. The three case studies that follow have been selected to represent the three categories of creeping uniqueness. The Strait of Dover represents the case of implementation of transit passage as envisioned by Section 2 of Part III of the 1982 Convention; the Baltic Straits have been chosen to represent the universe of straits under the exceptions of Articles 35 and 36; and, the Northwest Passage represents

⁸⁷ Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms" Ocean Development and International Law Vol. 18, No. 3 (1987), p. 335. This is especially true in the case of the Northwest Passage as we shall see.

⁸⁸ Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms", Ocean Development and International Law Vol. 18, No. 3 (1987), p. 342.

⁸⁹ Lewis M. Alexander, "Uncertainties in the Aftermath of UNCLOS III: The Case for Navigational Freedoms", Ocean Development and International Law Vol. 18, No. 3 (1987), p. 342.

the Article 37 exceptions. All of these straits are of major economic significance, or of potential economic significance to the United States. As the major user state, the U.S. could be expected to take positive action to defend its interests in these straits.⁹⁰

In the next two chapters we will develop the means to measure the results in the form of the Fraser-Hipel Conflict Analysis Model. After showing the shortcomings of traditional game theory in Chapter Three, the model will be developed for the simple case of the Corfu Channel where interests determined outcomes directly without the benefit of an intervening regime. After constructing a general model for the Straits Conflict in Chapter Four, we will apply it to the three cases to measure the effectiveness of the UNCLOS III regimes in international straits during the period of implementation.

⁹⁰ Robert E. Osgood, "Military Implications of the New Ocean Politics", Power at Sea: The New Environment, Adelphi Paper 122, (London: IISS, 1976), pp. 10-16.

3 Game Theory and International Regimes

"The ultimate promise of game theory lies in expanding the realm of rational-actor models beyond the restrictive confines of the traditional Realist perspective to a more complex world where concern is less exclusively with problems of conflict and as much with problems of cooperation"⁹¹

Duncan Snidal

INTRODUCTION

The 1982 Convention on the Law of the Sea (which is not yet in force) has important implications for maritime security by "providing uniformly applicable rules on the status and immunity of warships" and rules concerning "innocent passage of ships through the territorial sea and unimpeded transit for ships and aircraft in other seaward zones of national jurisdiction and beyond."⁹² This study is especially concerned with the implementation of the transit passage regime in straits used for international navigation. As we have already seen, two fundamental principles of international law come into direct opposition in the narrow confines of straits. Coastal states favour the principle of sovereignty while user states favour freedom of navigation. Having agreed international regimes governing rules of navigation makes the use of force to defend a favoured principle much less likely. But as the oceans are being enclosed by coastal states' claims to jurisdiction, the principle of freedom of navigation is being eroded. Elizabeth Young has argued that this enclosure of the oceans is "threatening to deprive sea power of its traditional quality of universality or

⁹¹ Duncan Snidal, "The Game Theory of International Politics", in Kenneth A. Oye (ed.), Cooperation Under Anarchy (Princeton: Princeton University Press, 1986), pp. 25-57.

⁹² Christopher Pinto, "Maritime Security and the United Nations Convention on the Law of the Sea", in Jozef Goldblat (ed), Maritime Security: The Building of Confidence, (New York: United Nations Publication, 1992), pp 9-54.

pervasiveness".⁹³ The major users of the sea also happen to be the major maritime powers who are in a position to force their will on weaker states in an international system based on anarchy. Hedley Bull argued in 1976 as the Law of the Sea negotiations were getting underway that "all talk of a viable international order is purely visionary."⁹⁴ He visualized that

as the Grotian regime of the freedom of the seas, which provided an order of sorts, gives place not to a curbing of freedoms by an international maritime authority, or even to an agreed and just partition of the oceans, but to an undignified scramble, all nations with sea power may come to exercise it more ruthlessly than they have done in the recent past.⁹⁵

But that does not appear to be what is happening. Instead, user states seem to be accepting the restrictions on freedom of navigation in straits. Although the approval of the transit passage regime was one of the main negotiating goals of the maritime powers, it has not become the global straits regime envisioned by the 1982 Convention. Why do powerful user states accept these restrictions on navigation in straits? Is Hedley Bull correct that maritime powers may again force their way through straits despite the objections of coastal states?

Gerard J. Mangone of The Center for the Study of Marine Policy at the University of Delaware has organized and edited a series of eight studies under the

⁹³ Elizabeth Young, "Military Implications of the Law of the Sea", Survival, November-December 1974, p. 267.

⁹⁴ Hedley Bull, "Sea Power and Political Influence" in Power at Sea: The New Environment, Adelphi Paper No. 122 (London: IISS, 1976), p. 9.

⁹⁵ Hedley Bull, "Sea Power", p. 9.

title "International Straits of the World".⁹⁶ This excellent series examines each of the straits in detail and the impacts of the changing Law of the Sea. It has provided a solid basis for the comparative study of straits which follows. I propose to examine selected straits from this study in order to compare the implementation of different regimes of navigation in those straits.

This chapter will explain why a game theoretical approach has been selected and, in particular, what contributions conflict analysis techniques can make to our understanding of the straits conflict. In the first part of the chapter, I will show how simple two-player game theory can be used to model the straits conflict where there is no agreed navigational regime. I will then show how the payoff structure changes by introducing a choice of regimes. The limitations of the two-player game will be examined in terms of the issue area of conflict in international straits. These limitations can be overcome by using the Fraser and Hipel conflict analysis techniques for multiple players with multiple objectives.⁹⁷ In the latter part of the chapter, I will develop a generalized conflict analysis model of the straits conflict for use in the case studies to follow. This model is then analyzed for stability and certain possible outcomes are shown to be stable equilibria for the players involved. A knowledge of

⁹⁶ This ongoing study includes the following books: W.E. Butler, Northeast Arctic Passage, 1978; M. Leifer, Malacca, Singapore and Indonesia, 1978; R.K. Ramazani, The Persian Gulf and the Strait of Hormuz, 1979; S.C. Truver, The Strait of Gibraltar and the Mediterranean, 1980; R. Lapidoth-Eschelbacher, The Red Sea and the Gulf of Aden, 1982; G. Alexandersson, The Baltic Straits, 1982; D. Pharand, The Northwest Passage: Arctic Straits, 1984; L. Cuyvers, The Strait of Dover, 1986. Under preparation are studies of the Turkish Straits, the Strait of Magellan, and the Korean Straits. All are published by Martinus Nijhoff Publishers.

⁹⁷ Niall Fraser and Keith Hipel, Conflict Analysis: Models and Resolutions, (New York: Elsevier Science Publishing Co., 1984).

the conditions leading to a stable equilibrium will help us to understand the possibilities for resolving the conflict in the straits. I intend to show the importance of previous patterns of usage in straits in determining the future rights and obligations of states in those straits and the role of technology in changing those patterns of usage. Knowing why powerful user states seem to accept these growing restrictions on navigation when there is no powerful central authority to enforce them will help us to understand the dilemma of sharing international straits.

WHY USE GAME THEORY?

Game theory is particularly appropriate as a framework for analyzing the issue of navigation through straits. Coastal states favour the principle of sovereignty. User states favour the principle of freedom of navigation. No international agency or institution exists to enforce or implement any rules of passage. The basic assumption of game theory is that the goal-seeking behaviour of players is conducted in the absence of centralized, authoritative institutions.⁹⁸ The implication of game theory is that "national policy-makers need to pursue opportunities for cooperative interactions even as they seek to protect against conflictual interactions."⁹⁹ In the case of navigation through straits, the open seas or closed seas stances are inherently conflictual. By changing from a territorial basis to a functional basis, the cooperative interactions of innocent passage and transit passage emerge.

⁹⁸ Duncan Snidal, "The Game Theory of International Politics", Kenneth Oye (ed.), Cooperation Under Anarchy, (Princeton: Princeton University Press, 1986), p. 35.

⁹⁹ Duncan Snidal, "Game Theory", p. 39.

Game theory is applicable to decision-making anytime.¹⁰⁰ The collapse of the Soviet empire and the end of the Cold War destroyed many theories. But the USA and USSR were cooperating on the issue of navigation through straits since the 1960s when both states found it in their mutual interest to preserve strategic mobility for their navies. The cycle of closed seas and open seas has a duration of many centuries. Game theory helps us to understand the decision-making process regardless of where we are in the cycle. It does not depend on power distribution, global structures, cultural affinities or other processes of international relations. It depends only on universal and timeless features of decision-making.

There are a variety of models, metaphors, and analyses which could be used to increase our understanding of the straits issue. In the following section, I will examine some simple models of 2 X 2 games which could be applied to the straits conflict. First, I will look at the game of Chicken, where the two players are the coastal state and the user state. Then I will look at the Prisoner's Dilemma where the two players are the coastal states bordering either side of a strait. After a discussion of the shortcomings of each of these models, I will introduce the Conflict Analysis Model which is being increasingly used to model the decision-making process in conflict situations of all varieties.¹⁰¹ A general conflict analysis model will be developed for use later on in the four case studies.

¹⁰⁰ Bruce Bueno de Mesquita and David Lalman, War and Reason: Domestic and International Imperatives, (New Haven and London: Yale University Press, 1992), p. 249.

¹⁰¹ Niall M. Fraser and Keith W. Hipel, Conflict Analysis: Models and Resolutions, (New York: Elsevier Science Publishing Co., 1984).

According to Kenneth Oye,¹⁰² cooperation under anarchy depends on three factors: the payoff structure, the shadow of the future and the number of players. He argues that payoffs affect the prospects for cooperation and present strategies to improve the prospects for cooperation by altering the payoffs. The prospect of continued interaction, or what Oye calls the shadow of the future, affects the likelihood of cooperation and strategies of reciprocity provide direct paths to cooperative outcomes under iterated conditions. Finally, Oye argues that cooperation becomes more difficult as the number of players increase.

Game theory has been used to explain how cooperation can evolve under anarchic conditions which lack supranational authority to enforce compliance.¹⁰³ The 2 X 2 game is ideally suited to examining the interactions between coastal states and user states and also for the interactions between two coastal states bordering an international strait. It simplifies the choice into unambiguous categories of cooperation and defection. It also shows how the game can change during the course of negotiations. Indeed, bargaining is precisely the effort to restructure preference orderings in the payoff matrix.¹⁰⁴ An abrupt change between decisions made in an

¹⁰² Kenneth Oye, Cooperation Under Anarchy. (Princeton: Princeton University Press, 1986), pp. 1-24.

¹⁰³ See the special issue of World Politics 38 (October 1985), edited by Kenneth Oye. See also R. Harrison Wagner, "The Theory of Games and the Problem of International Cooperation," American Political Science Review 70 (June 1983), pp. 330-346. The game-theoretic approach coupled with statistical and case-history analysis of consequences of domestic policy choices on foreign policy actions is well documented in Bruce Bueno de Mesquita and David Lalman, War and Reason: Domestic and International Imperatives. (New Haven and London: Yale University Press, 1992).

¹⁰⁴ Glenn H. Snyder and Paul Diesing, Conflict Among Nations: Bargaining, Decision-making, and System Structure in International Crises (Princeton: Princeton University Press, 1977).

anarchic structure and cooperative interaction is puzzling, but game theory provides a "foundation from which abrupt changes of behaviour can be understood even when underlying circumstances change only slightly or smoothly."¹⁰⁵ We will look at two situations initially: Chicken and Prisoner's Dilemma. Chicken describes the direct interaction between outcomes and interests in the case where there is no intervening regime and the principles of sovereignty and freedom of the seas come into direct conflict. Prisoner's Dilemma describes a second situation where two coastal states bordering a strait must choose the extent of jurisdiction to claim where neither state can unilaterally determine the resulting regime of navigation for the strait.¹⁰⁶ Let us re-interpret these games in terms of the straits conflict.

COASTAL STATE VERSUS USER STATE

Let us look at a two-player game where the players are called user state and coastal state. User state prefers the principle of freedom of navigation and coastal state prefers the principle of sovereignty. The user state is determined to pass through the strait to exercise his right of freedom of navigation while the coastal state is equally determined to prevent the user state from passing in order to assert his sovereignty over the strait. In effect, an irresistible force is about to meet an immovable object. In terms of the game of Chicken, neither player is willing to swerve. If each believes that the other will swerve, then each will be tempted to defect by maintaining his position. If user state insists on open seas and coastal state

¹⁰⁵ Bueno de Mesquita, War and Reason, p. 23.

¹⁰⁶ A more detailed description of these two games is provided at Annex A for the interested reader.

swerves and lets him pass through the strait, then user state is a hero and coastal state is a chicken. If coastal state stands firm and refuses to allow user state to pass, and user state finds an alternate route to his destination, then coastal state is a hero and user state is a chicken. In the situation where interests directly affect outcomes and there are no intervening regimes, the options for each player are limited. If both succumb to the temptation to defect, then the result is armed conflict in the strait. This appears to be what happened in the Corfu Channel Case of 1946.

Very briefly, relations between the United Kingdom (a user state) and Albania (a coastal state) following World War II were strained. In May 1946, two British warships passing down the North

Corfu Channel between the coast of Albania and the Greek island of Corfu were fired upon by an Albanian shore battery for violating Albanian sovereignty. The United Kingdom protested and threatened to return fire should passage again be restricted. In October 1946, a squadron of UK warships proceeded up the channel where two of them were damaged by mines which had been laid to close the channel to

Figure 4 The North Corfu Channel: A Game of Chicken.

		Albania	
		C	D
UK	C	3,3	4 2
	D	2 4	1,1

C: cooperate
 D: defect
 $DC > CC > CD > DD$

shipping. The case was eventually settled in the International Court of Justice which upheld the right of innocent passage through international straits. This was a landmark case in determining the future course of international law. An analysis of the case in the summer of 1946 looks very similar to the game of Chicken described above where the United Kingdom is the user state determined to pass through the North Corfu Channel and Albania is the coastal state determined to defend her sovereignty, even if it meant firing on British warships and mining the channel. The immediate consequences of mutual defection were the loss or damage to the warships and the casualties involved. The long-term effects were felt even during the Law of the Sea negotiations thirty years later. We can show this result in normal or matrix form as follows. In the normal form analysis, two outcomes are found to be rational for both players, as seen in Figure 4. These are the situations where only one player swerves and the other defends his favoured principle. The case where both players swerve is not rational since each has the incentive to defend his principle and win the game. But this outcome (CC) is a possible equilibrium. If both players are content to be live chickens, then there is no winner. Both players suffer some loss of prestige but less than that endured if one player alone played it safe by swerving. As we saw in Chapter 2, the introduction of the compromise solution of a transit passage regime at UNCLOS III made this outcome more likely.

But let us look at the game of chicken more closely. The model predicts that each player can choose to defend his principle (don't swerve) or compromise his principle to avoid a collision (swerve). Because of the fatal consequences of not

Figure 5 The North Corfu Channel Case: A Game of Deadlock.

		Albania	
		C	D
UK	C	2,2	4 1
	D	1 4	3,3

C: cooperate
 D: defect
 $DC > DD > CC > CD$

swerving, the model predicts that each player would prefer to swerve rather than collide. But this did not happen in the Corfu Channel case. Neither player swerved. The reason for this is simple enough to explain. When the game of Chicken begins, both players are still far enough apart that there is no risk of collision. Therefore at the start of the game, it makes sense that the outcome where both players do not swerve is the only equilibrium at that

time. As the players come closer together and there is a real danger of collision, then the players start to prefer swerving over not swerving and new equilibria appear. In normal form, this can be modelled in what Oye called Deadlock in Figure 5.

Clearly, the preferences of each player in the game of Chicken may change over time. Chicken is developed in game theory literature as a verbal description of a mathematical phenomenon. The preference structure is the main item of interest; the story about the car and the driver adds colour and intuition to the analysis, but it can sometimes be misleading. There are subtle differences between Deadlock and

Chicken and many of the other possible games such as the Prisoner's Dilemma and the Stag Hunt.

The Corfu Channel incident was an important case of armed conflict over the principles of sovereignty and freedom of navigation in straits. The ICJ affirmed the principle of innocent passage of warships in peacetime through international straits which allowed both players to swerve without losing face. The affirmation of the innocent passage regime changed the payoff structure and introduced a shadow of the future by strengthening the regime. By accepting certain obligations in international straits, both players were able to maintain the rights they sought to protect.

In the absence of regimes, we saw that coastal state concerns over environmental protection and security would have to be addressed on a case-by-case basis with each passing ship or aircraft. Each encounter would have the nature of a game of Chicken as the coastal state would be determined to protect its interests and the user state would be determined to pass through the strait. The existence of regimes reduces the transaction costs considerably because the applicable rights and obligations are transparent. When territorial seas were limited in extent to three miles, the innocent passage regime served as a fair compromise in determining rights and obligations in international straits and helped avoid further conflicts over these two principles. But pressure again began to build on the dilemma of open seas or closed seas as more coastal states began to claim 12-mile territorial seas. If the 12-mile territorial sea were to be universally implemented, over one hundred straits would lose their high seas corridors. All straits of widths between six miles and

twenty-four miles would be affected. It is this category of straits which is the focus of this paper. Rather than have states play endless rounds of Chicken, the concept of a transit passage regime for navigation in international straits was introduced to allow free transit for user states through the territorial waters of the straits which otherwise would be closed to certain forms of passage. The transit passage regime seemed like the perfect compromise solution. Let us examine some of the difficulties in adopting a transit passage regime in terms of the 2 X 2 game of Prisoner's Dilemma where two neighbouring coastal states must decide which regime will govern passage.

COASTAL STATE VERSUS COASTAL STATE

Neighbouring coastal states can not unilaterally determine the navigational regime of a strait. Either they act independently to further their own interests or they will cooperate to form a coalition against user states. The major compromise on navigation made at the 1982 Convention was that the coastal states were allowed to claim territorial jurisdiction out to a maximum distance of 12 miles. This was the first time in history that the limit of the territorial sea had been defined. In return, user states were guaranteed the right of passage through straits used for international navigation in peace and in war regardless of their status as friendly, belligerent or neutral.¹⁰⁷ The straits states determined the type of navigational passage by the extent of their territorial claim. Where the straits are less than 24 miles in width, and could be closed by maximum territorial claims of both straits states, the passage would be

¹⁰⁷ N. Ronzitti (ed.), The Law of Naval Warfare (Dordrecht: Martinus Nijhoff Publishers, 1988), pp. 13-26.

governed by the transit passage regime which would allow ships passage and aircraft overflight anywhere between the base lines. Where a high seas passage exists in the strait, passage and overflight would be restricted to the high seas route. The choice of extent of territorial jurisdiction would depend on how the strait state viewed its security dilemma.

Because the user states are guaranteed access through straits governed by one of three navigational regimes, it is up to the straits states to determine which regime. This decision must be reached by claiming territorial jurisdiction without the benefit of a coordinating regime. Because there are no authorities to make and enforce international law, policies of cooperation will bring mutual rewards if others cooperate, but may bring disaster if they do not. Anarchy encourages behaviour that leaves all concerned worse off than they could be.

The coastal state has two concerns. It wishes to claim as much territorial waters as possible up to 12 miles, but it also wants to keep user states as far away from its coast as possible. The dilemma is that if both straits states claim maximum jurisdiction, then the transit regime takes effect which allows the user state to approach or overfly right up to the base lines. It also allows submerged transit of submarines in the strait. By choosing a lesser extent of the territorial sea, it keeps the user state further removed. But the coastal state is also concerned about threats to its security from its neighbouring coastal state and wants a wide buffer zone. It does not want to bear the costs of user state access alone.

Annex A illustrated a typical Prisoner's Dilemma. This can be adapted to the straits situation as shown in Figure 6. Two straits states, A and B must decide how much territorial sea to claim in a strait that is less than 24 miles wide. In this case, cooperation (C) means limiting the claim to jurisdiction to allow a high seas corridor

Figure 6 Normal form of Straits Conflict as a 2 X 2 game.

		State B				State B	
		C	D			C	D
State A	C	High seas passage	Innocent passage High seas passage	C		3,3	4 1
	D	High seas passage Innocent passage	Transit passage			1 4	2,2

C: limit jurisdiction to allow high seas corridor
 D: claim maximum territorial jurisdiction

$DC > CC > DD > CD$

for user state passage. Defection (D) means unilaterally claiming maximum jurisdiction out to 12 miles or the median line of the strait. If the two coastal states cooperate (CC) and limit their jurisdiction slightly, then the user state will have its guaranteed passage restricted to the ribbon of high seas in the middle. But if they both defect (DD) and claim maximum jurisdiction to the centre line, then the transit

passage regime will govern passage which will allow the user state to approach to the base lines. If only one state limits its jurisdiction (CD), then the user state will be able to make a high seas passage on that side of the strait but will be restricted to innocent passage on the other side (which does not include overflight or submerged passage). The numbers in the box refer to the relative value of that outcome to the player with the higher value being a preferred outcome. This is known as a Prisoner's Dilemma. Because only one claim for territorial jurisdiction can be made which must apply to all user states regardless of their relationship to the coastal state, this game can only be played once and the rational response is to defect.

SHORTCOMINGS OF NORMAL FORM ANALYSIS

R. Harrison Wagner has examined how the Prisoner's Dilemma game and the concept of a security dilemma have been used to support the argument that much international conflict is the result of anarchy at the global level rather than the aggressive intentions of governments.¹⁰⁸ In that article, he argues that the Prisoner's Dilemma is usually an inadequate model of the problem it has been used to illuminate, and that a security dilemma as commonly defined need not have the implications ascribed to it. He argues further that more adequate models of enforcing agreements in a condition of anarchy will help us to better understand why international cooperation is more easily achieved in some areas than others. Using the case of international boundaries, Wagner shows three deficiencies in the

¹⁰⁸ R. Harrison Wagner, "The Theory of Games and the Problem of International Cooperation", American Political Science Review 77, June 1983, pp 330-346.

Prisoner's Dilemma that make it less helpful in thinking about the problem than is commonly supposed. Few games are a real Prisoner's Dilemma: first, players do not choose in ignorance of the other player's choice; second, players may choose more than once; and third, the most powerful actors are not constrained by external forces in an anarchic system. Only very simple situations can be modelled using this 2×2 matrix form of the game. Wagner concludes that a game matrix can accurately represent a situation only if it includes all possible strategies.¹⁰⁹

These game theory models have provided interesting descriptions of the conflict over international straits as it evolved since the end of World War II. But the models are lacking in helping us understand the real world cases and why powerful user states accept restrictions of the freedom of navigation in international straits imposed by weaker coastal states.

The game models discussed so far are lacking in four other ways. First, there are almost always more than two players involved in determining the outcome in a given strait. Reliance on the 2×2 game over-simplifies the situation at too early a stage of analysis and valuable information is lost. Second, the verbal descriptions are often misleading in the actual case. Thirdly, the payoff structure can be exaggerated to focus attention on the sub-optimality of outcomes that can result when agreements cannot be enforced or to make the situation fit the particular model chosen. Fourthly, the normal form eliminates a large number of possible strategies in an effort to

¹⁰⁹ R. Harrison Wagner, "The Theory of Games and the Problem of International Cooperation", American Political Science Review 77, June 1983, p 345.

provide a simple description. The conflict analysis methodology has been developed to overcome these deficiencies.

CONFLICT ANALYSIS

Conflict analysis is based on classical game theory.¹¹⁰ The methodology has been applied to a wide range of conflicts which include business, pipeline, water allocation, environmental, military, labour-management, political and peace treaty disputes.¹¹¹

The available information about the dispute is put into the model which is then used to predict possible solutions to the conflict. Based on the results of studying the conflict, a decision-maker can select a realistic course of action which could serve his purposes. This methodology can handle virtually any size problem by means of a straightforward and easy-to-use application of the technique. Another major advantage of conflict analysis is that the underlying theory does not need to be understood to apply the technique. Very quickly, an analyst can model even relatively complex conflicts using the decision-making support system. Because the

¹¹⁰ The shortcomings of some common 2X2 games were noted by R. Harrison Wagner in "The Theory of Games and the Problem of International Cooperation", 1983. Since then, much has been done to address these shortcomings. The methods of conflict analysis are described by Niall M. Fraser and Keith W. Hipel in Conflict Analysis, 1984. The exact mathematical relationships among important game theory methods point out many of the inherent theoretical advantages of conflict analysis. For a detailed mathematical description, see D.M. Kilgour, K.W. Hipel and N.M. Fraser, "Solution Concepts in non-cooperative games", Large Scale Systems 6(1) (1984), pp. 49-71. Also see L. Fang, K.W. Hipel and D.M. Kilgour, "Conflict models in graph form: solution concepts and their interrelationships", European Journal of Operational Research 41(1) (1989), pp. 86-100.

¹¹¹ For further examples, see Fraser and Hipel, Conflict Analysis, 1984; N. Okada, K.W. Hipel and Y. Oka, "Hypergame Analysis of the Lake Biwa Conflict" Water Resources Research, 21(7), (1985), pp. 917-926; S.J. Brams and D.M. Kilgour, Game Theory and National Security, (New York: Basil Blackwell, 1988); K.W. Hipel, L. Fang and D.M. Kilgour, "Game Theoretic Models in Engineering Decision Making", Manuscript March 1993 to be published in the Journal of the Japan Society for Civil Engineering.

computer handles the time-consuming calculations, the analyst can concentrate on interpreting the results. Using this model to analyze the real world cases in subsequent chapters will allow us to evaluate the transit passage regime for international straits.

THE CONFLICT ANALYSIS PROCESS

This section will introduce the methodology as applied to the simple case of a coastal state versus a user state over rights of passage in a strait.

THE MODELLING STAGE

The purpose of the conflict analysis is to make better decisions by understanding the factors affecting the decision and the stability of the resulting situation. The results will show what possible decisions may have been rejected which could have led to a better outcome. The first step is modelling the conflict. In this step, the information about a conflict is presented in a systematic manner that looks at the whole conflict at a particular point in time. The importance of the modelling stage of the conflict analysis has been emphasized by a number of authors.¹¹² Second, based on the model and the available data, possible resolutions to the conflict are determined. Since the possible resolutions must be stable for all participants, this step is referred to as stability analysis. Figure 7 shows the general

¹¹² See especially K.J. Radford, Strategic Planning: An Analytic Approach, (Reston, Virginia: Reston Publishing Co., 1980); P.G. Bennett and C.S. Huxham, "Hypergames and what they do", Journal of the Operational Research Society 33, pp. 41-50.; N. Fraser and K. Hipel, Conflict Analysis, 1984.

Figure 7 The Fraser-Hipel General Conflict Analysis Process.

conflict analysis process as developed by Fraser and Hipel.¹¹³

The process of modelling imposes a structure on the real world situation. The model generally starts off simply and becomes more complex as the analyst becomes more familiar with the case study. The more complex models can be constructed based on information gained from simpler models. The model is valid if it preserves the important characteristics of the real world conflict being analyzed. One or more models can be analyzed to provide stability results and then these can be compared to

¹¹³ Niall M. Fraser and Keith W. Hipel, Conflict Analysis: Models and Resolutions (New York: Elsevier Science Publishing Co., 1984).

the real world case. The United Nations Law of the Sea, which deals with the potential conflict situations of dividing the oceans, is suggested as an excellent conflict to be modelled using this methodology.¹¹⁴

A conflict, or game, is a situation where two or more groups are in dispute over some issue or resource. The participants in the game are called players. To be classed as a player, the participant must have some control over the final decision. The possible courses of action available to the players are called options. Any set of options available to a player is called a strategy. After each player has selected a strategy, the result is called an outcome of the game.¹¹⁵ If the players have a total of $<m>$ options, there are 2^m mathematically possible outcomes. Some of these will be impossible or highly unlikely. In this case, the outcome is infeasible. The infeasible outcomes are removed and the remaining feasible outcomes are ordinally ranked from most to least preferred for a given player in order to determine that player's preference vector. Let us re-examine the Corfu Channel case using the conflict analysis model.

Modelling the Corfu Channel Case

The first step is to select an appropriate point in time for which to model the conflict. Because a conflict is dynamic, player options and preferences can get mixed up as they change. The remaining information required is: the historical background of the conflict, the players, their options, and their preferences. The historical

¹¹⁴ Fraser and Hipel, Conflict Analysis, p. 4.

¹¹⁵ The model can also be used to predict whether a particular set of strategies will produce a stable outcome. The outcome can be real or hypothetical.

background was discussed earlier. The point in time selected was October 1946 as the British warships were preparing to enter the Corfu Channel for the first time after threatening the use of force in self-defence to keep the channel open. The players are Albania (the coastal state) and United Kingdom (the user state). Albania has two options: first, to maintain the position that the channel is closed to unauthorized shipping; and second, to allow the British warships to pass. For simplicity, we can reduce this to one option: to accept or reject the principle of closed seas for the neighbouring Corfu Channel.¹¹⁶

Similarly, the United Kingdom has two options: first, to accept Albania's claim to sovereignty over the channel and find an alternate route; or second, to carry out the threat to use the channel and return fire should passage be restricted. These

Table VII Players and Options in the Corfu Channel Case

<u>Players and Options</u>	<u>Comments</u>
Albania	
1. Closed seas	Claim territorial sovereignty over the channel
United Kingdom	
2. Open Seas	Direct shipping to pass through the channel

¹¹⁶ In this case, neither player could agree on the rights and obligations which would govern use of the strait. Without an agreed regime, interests directly affected outcomes. Only two outcomes were possible without some kind of agreement being reached.

can be stated for simplicity as accept or challenge Albania's claim. In effect, this is only one option. Selecting the option to accept the claim is the same as rejecting the option to challenge the claim. For simplicity, we will say that UK wants open seas. The players and options are shown in Table VIII.

Table VIII Players, Options and Outcomes in the Corfu Channel Case

<u>Players and Options</u>		<u>Outcomes</u>			
Albania					
1.	Closed Seas	0	1	0	1
United Kingdom					
2.	Open Seas	0	0	1	1
<u>Decimal Outcome</u>		0	1	2	3

Following the notation of Fraser and Hipel (1984), the selection of an option by a player is indicated by a <1> opposite it; a <0> indicates that the option is rejected. When either a 1 or a 0 is written opposite all of the options for a given player, this constitutes a strategy for the player. An outcome is formed by all the players choosing a strategy; therefore, in Table VIII, each column of 1s and 0s constitutes an outcome for the Corfu Channel case. In the text, these columns are written horizontally. In the final column on the right, the 1 opposite closed seas means that the Albanians have chosen this option to restrict passage through the Corfu Channel; the 1 opposite the open seas means that the UK has chosen to pass through

the channel, using force if necessary. Because there is only one option, the strategy selected is that option. By combining the strategies of Albania (1) and UK (1), the outcome (1,1) results (where the comma is used to separate each player's strategy).

The notation for outcomes using 1s and 0s is designed for convenient representation of each outcome, but shorter symbols are necessary in order to manipulate the outcomes easily. For this, the concept of a decimal outcome has been developed. These binary numbers are converted to decimal numbers using the formula adopted by Fraser and Hipel (1984). The decimal entry <1> at the bottom of the table is derived as follows. Let the top entry in a tabulated outcome be the lower order digit. This outcome (1,0), where Albania claims closed seas and the UK accepts the claim, is converted to decimal form as follows:

$$1 \times 2^0 + 0 \times 2^1 = 1 + 0 = 1$$

Similarly, the decimal entry <3>, representing the outcome (1,1) where Albania claims closed seas and UK claims open seas, is converted to decimal form as follows:

$$1 \times 2^0 + 1 \times 2^1 = 1 + 2 = 3$$

The decimal values of all the outcomes are listed below each outcome in the tables above. Outcome (1,1), for example, is referred to as decimal outcome 3.

Because each option can be either chosen or rejected, a conflict with <m> options has 2^m outcomes. As there are two options in this model, there are $2^2=4$ possible outcomes of the game. In practice, not all outcomes are possible or even likely. Let us examine each of the above four outcomes: (0,0), (1,0), (0,1), (1,1).

Outcome (0,0) means that Albania has chosen to reject the closed seas option and the UK has chosen to reject the idea of passing through the channel. In this outcome, both players have compromised from their initial position to avoid a conflict. The next outcome (1,0) has Albania enforcing the claim for territorial sovereignty and the UK accepting the position of Albania. The next outcome (0,1) has Albania allowing the British warships to pass through the channel. The final outcome (1,1) has each player choosing his preferred strategy; that is, Albania enforces the threat to close the Corfu Channel and the UK decides to pass through, by force if necessary. In this case, all outcomes are feasible and none are removed from the model.

Table IX Preferences and meanings for each player in the Corfu Channel case.

<u>Players and Preferences</u>	<u>Meaning</u>
Albania	
1	Albania closes channel
-2	UK does not attempt passage
United Kingdom	
2	UK attempts passage
-1	Albania does not close channel

The final step of the modelling process is to order the outcomes of Table VIII to reflect the preferences of the players. The preferences and their meanings are shown in Table IX. This table allows the analyst to input the importance vector. In

Table X Preference Vector for Albania in the Corfu Channel Case

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<u>Players and Options</u>	<u>Outcomes</u>
Albania	
1. Closed Seas	1 1 0 0
United Kingdom	
2. Open Seas	0 1 0 1
Decimal Outcome	1 3 0 2

Table XI Preference Vector for United Kingdom in the Corfu Channel Case

<u>Players and Options</u>	<u>Outcomes</u>
Albania	
1. Closed Seas	0 1 0 1
United Kingdom	
2. Open Seas	1 1 0 0
Decimal Outcome	2 3 0 1

Table IX, the numbers assigned to the preferences are explained as follows. The first player is Albania with a preference between two options. Option 1 was for Albania to choose closed seas. Option 2 was for UK to choose open seas. In the importance vector, a negative number means that the player prefers that option not to be chosen.

Albania's preference vector is $[1, -2]$ which can be interpreted to mean that Albania's first preference is to close the channel, but the second preference is for UK not to choose Option 2, that is an attempted passage of the Channel. If Albania can dissuade UK from making the passage, that is almost as good as closing the channel. Similarly for UK, the importance vector is $[2, -1]$, meaning that UK's first preference is to attempt the passage, and the second preference is to persuade Albania not to close the Channel. The decision-support system then orders the outcomes to reflect the preferences of the players. This has been done in Table X for Albania and in Table XI for the UK. In these tables, the outcomes are ordered with the most preferred on the left and the least preferred on the right. Each preference vector embodies a great deal of information about the conflict from that player's point of view. Preference vectors are very likely to be refined as the study evolves and the analyst learns more about the case.

The Albanian preference vector in Table X is based on the overriding concern for sovereignty over the territorial sea. Thus all outcomes in which Albania claims sovereignty are on the left, whereas the outcomes where Albania does not enforce the claim to sovereign territory are on the right. The most preferred outcome for Albania is $(1,0)$ where Albania enforces the claim without a direct challenge by the UK. The same reasoning applies to the UK preference vector in Table XI. The UK would prefer to be able to pass freely through the channel without Albanian interference.

This completes the modelling of this simplified conflict situation. So far, we have studied the details of the conflict from the historical background given and

determined the players, their options and their preferences. We will next move to an analysis of the conflict.

THE ANALYSIS STAGE

For any given feasible outcome, there are five types of stability that can be determined for a particular player.¹¹⁷ A unilateral improvement (UI) is an outcome to which a particular player can unilaterally move by a change in strategy, assuming that the other player's strategy remains the same. We will now turn to detailed definitions of stability before performing the stability analysis for the Corfu Channel case.

The five types of stability defined by Fraser and Hipel are: rational (r), sequentially sanctioned (s), unstable (u), simultaneously sanctioned (/), and cooperative (c).¹¹⁸

The first type of stability is called Rational (r). In this situation, the player has no UI to make from this outcome. The strategy already chosen is the best that can be taken given the strategy selection of the other player. A rational outcome is stable.

The second type of stability is called Sequentially sanctioned (s). This is the case when, for all UIs available to one player, credible actions by other players could result in a less preferred outcome than the one from which the player is improving.

¹¹⁷ Fraser and Hipel, Conflict Analysis. The mathematical theory governing these properties is also explained in detail in the text.

¹¹⁸ The definitions given are those for the n-player game of Niall M. Fraser and Keith W. Hipel, Conflict Analysis: Models and Resolutions (New York, Elsevier Science Publishing Co., 1984), p. 44. Definitions for the two-player game are given at p. 16. The fifth type of stability for the generalized model is explained at p. 185.

A credible action is one that results in a more preferred outcome for the player taking the action. The possibility that a worse outcome could result from a player changing strategy deters the player from unilaterally attempting an improvement in position. This type of stability is therefore sequentially sanctioned.

A third type of stability is Unstable (u). The player has at least one UI that is not deterred by credible actions on the part of the other players. The outcome is unstable because that player can always move to a preferred outcome without penalty.

A fourth type of stability is called Simultaneously sanctioned (/). This type of stability is calculated after the above three types have been determined for all of the outcomes for each player. When an outcome is unstable for at least two players, simultaneous action by more than one player could cause a less preferred outcome to occur, thereby inducing stability for an outcome previously thought to be unstable for a given player. This form of stability is not very common, but it is important in the analysis of certain situations and so should be assessed in a thorough analysis of a conflict.

Lastly, there is Stability by cooperation (c). When considering bargaining situations where cooperative outcomes are present, this fifth type of stability can be determined. If a cooperative outcome without UIs is preferred by the player to the least preferable equilibrium outcome that does not exhibit the selection of the cooperative option, it is stable by cooperation. Similarly, all cooperative outcomes that are less preferable than the least preferable non-cooperative outcome are unstable, even if they were previously determined to be sequentially or simultaneously stable.

Other cooperative outcomes retain the stability or instability assigned to them before stability by cooperation was assessed.

Table XII Stability Analysis for the Corfu Channel Case

<hr/>				
Albania				
1.	Closed seas	0	1	0 1
United Kingdom				
2.	Open Seas	1	1	0 0
Decimal Outcome				
		2	3	0 1
Unilateral Improvements				
				2 3
Stability for Albania				
		u	r	u r
Stability for UK				
		r	r	u u
Overall Stability				
		X	E	X X

* Outcomes ordered from left to right by preference of United Kingdom.

Analyzing the Corfu Channel Case

The procedure for determining the foregoing types of stability is straightforward. If there are no unilateral improvements that a player can make to the outcomes, they are rational and marked $\langle r \rangle$. Each remaining outcome in the preference vectors can be assessed for stability for each player. In Table XII, decimal outcomes 2 and 3 were rational for the UK and outcomes 1 and 3 were rational for Albania. In this example, there are no sanctioned outcomes, but there are two unstable outcomes for each player. Decimal outcome 2 (0,1), where Albania does not enforce the claim and the UK passes through the channel, is unstable for Albania. This is unstable because Albania can improve her position by claiming the

closed sea since the UK will pass through the Channel anyway. Albania has nothing to lose by changing options. Both sides defend their favoured principle until the next challenge.

After labelling all the outcomes $\langle r \rangle$, $\langle s \rangle$, $\langle u \rangle$ for one player at a time, simultaneous stability can be calculated for each outcome that is unstable for both players. Consider outcome 0 (0,0) in Table XII. In this outcome, UK has the strategy (0). To achieve a UI by moving to outcome 2, it must change strategy to (1). Albania has the strategy (0) in outcome 0 and can change to strategy (1) in outcome 3. The new outcome resulting from both players changing to (1) is (1,1) or outcome 3. Outcome 3 is preferred by both players to outcome 0, which remains unstable for both players.¹¹⁹

If an outcome possesses some type of stability for all the players in a game, it is called an equilibrium and this outcome constitutes a possible resolution to the conflict. For example, outcome 3 is rational for both Albania and UK.¹²⁰ This means that the model represents the real world situation correctly: the scenario where Albania chooses to assert her claim to territorial sovereignty and the UK chooses to pass through the channel using force if necessary would be likely to persist until the players change their preferences (See Table IX). Every encounter would be dealt with based on the will of the two players to enforce their favoured principle at the time. There is no other equilibrium in this model. All other outcomes are unstable

¹¹⁹ These calculations are performed automatically by the computer program Decision Maker.

¹²⁰ Rational is used here to refer to the type of stability as defined earlier. The term "rational" is not used as a subjective interpretation of the political situation.

for at least one player.¹²¹ As we saw in the Corfu Channel case, UK made the next challenge less than a month later with a much larger show of force.¹²² This equilibrium could continue until the force of one player to defend his principle overwhelmed the other player and changed the options. Because there are only four options in this simplified version of the game, it can be modelled using the normal form as shown in Figure 8. Marking

Figure 8 The Corfu Channel Case shown in matrix form.

		Albania	
		C	D
UK	C	2, 2	4 1
	D	1 4	3, 3

C: cooperate (UK accept closed seas, Albania accept open seas)
D: defect (UK demands open seas, Albania demands closed seas)

$DC > DD > CC > CD$

DC is rational for each player. DD is also a rational outcome for each player where neither compromises.

the rejection of an option as C, and the acceptance of an option as D, (1,0) becomes DC; (1,1) becomes DD; (0,0) becomes CC; and (0,1) becomes CD. Decimal outcomes in order of preference for the UK were 2, 3, 0, 1 which, in normal form, can be read as $DC > DD > CC > CD$. Compare this normal form to the game of Deadlock shown earlier in Figure 5. Using the game theory metaphor, the game

¹²¹ "Unstable" refers to the definition on page 86.

¹²² The Royal Navy began minesweeping operations on November 17 1946 in Albanian waters. See D.J. Harris, Cases and Materials on International Law (London: Sweet and Maxwell, 1991), pp. 374-375.

being played is the early stages of Chicken, the game called Deadlock, where neither player has any incentive to swerve. In this case, we used a conflict analysis model based on the decision-makers, their options and preferences and calculated the equilibrium outcome. The analysis was objective and clear and did not mislead us into thinking of the game first as Chicken and then discovering the subtle differences which made it Deadlock. The conflict analysis model is even more powerful as the complexity of the game increases.

So far, we have looked at non-cooperative games where the players have no prior communication. Cooperative games, on the other hand, allow complete freedom of preplay communication to make joint binding agreements.¹²³ Because the conflict analysis model is able to incorporate both situations, it will allow us to use the same model to compare non-cooperative and cooperative resolutions to the straits conflict. In the next chapter, we will begin to build the model which will be used in the case studies.

¹²³ R.D. Luce and H. Raiffa, Games and Decisions, (New York: John Wiley and Sons, 1957).

4 The Straits Conflict

THE STRAITS CONFLICT MODEL

The Corfu Channel case showed how conflict occurs because players cannot agree on the rights and obligations to be observed within straits. Once the International Court of Justice was able to pass judgement and the parties to the dispute agreed on the terms of the innocent passage regime, the conflict ended. Let us examine the general case where neighbouring coastal states must determine how much jurisdiction to claim in the adjacent waters of a strait of interest to user states. This is an expansion of the previous discussion of the Prisoner's Dilemma where we first introduced the concept of a regime as an intervening variable. In that case, we simplified the game to a 2 X 2 matrix to examine the decision-making process of the two coastal states only. But the user state is still a player which can not readily be assumed away as we did in that explanation. The game is actually a conflict among three groups of states. State A and State B represent the groups of coastal states bordering the strait. The user state represents all possible users of the strait that wish the strait to remain open for free passage of shipping for trade and mobility purposes. The 1982 Convention has been signed by some of the players, but not necessarily all. It has not been ratified by some of the players that signed it. Transit passage is a possible governing regime for navigation in the strait. There are three other possible regimes for navigation: high seas passage, non-suspendible innocent passage and suspendible innocent passage. With this minimum background information, let us build the model identifying the players, their options and preferences.

PLAYERS, OPTIONS AND PREFERENCES

Table XIII Players and Options for the Straits Conflict model in the three-player game.

<u>Players and Options</u>		<u>Comments</u>
State A		State bordering the strait
1.	Corridor	Claim less than maximum allowable jurisdiction leaving a high seas corridor.
2.	Territorial	Claim territorial sovereignty to median line or maximum of 12 miles.
3.	Self-defence	Use force to enforce claim.
State B		Neighbouring state bordering strait
4.	Corridor	Claim less than maximum allowable jurisdiction leaving a high seas corridor.
5.	Territorial	Claim territorial sovereignty to median line or maximum of 12 miles.
6.	Self-defence	Use force to enforce claim.
User State		State wanting to use strait for shipping
7.	Challenge legally	Challenge straits states claims in court.
8.	Self-defence	Use or threaten force to challenge territorial claim by straits states.

In this model, the three players are the two coastal states, State A and State B, and the User state. The options available to the two coastal states are identical. They have three options: they can claim territorial jurisdiction out to a maximum of 12 miles; they can claim a lesser territorial jurisdiction leaving a high seas corridor in part of the strait; or they can use force in self-defence to enforce their territorial claims. Doing nothing (rejecting all options) is, in effect, a fourth option of choosing to accept the status quo. The coastal state can come into conflict with the neighbouring coastal state if the territorial claim is deemed excessive and it can come into conflict with the user state if there are inadequate provisions for passage. The

user state has three options: it can challenge the claims of the coastal states legally; it can use force in self-defence during the passage; or, it can comply. Rejecting options 7 and 8 (-7, -8) is the same as complying with the coastal state's claims. These options are summarized in Table XIII.

OUTCOMES

Outcomes are written as columns of 1s and 0s listed opposite an ordering of players and options, where a 1 indicates that an option is taken by the player in the outcome, and a 0 indicates that the option is not taken. In the text, the outcomes are written horizontally corresponding to some meaningful ordering of options. An outcome is the final situation where each player has selected a strategy. For simplicity, the outcomes are given decimal numbers corresponding to the unique ordering of 1s and 0s.

For the straits conflict, the eight options in Table XIII mean that $2^8=256$ outcomes are mathematically possible. This number of outcomes begins to get cumbersome to write down. According to Fraser and Hipel, 25 to 50 outcomes is the preferred maximum to work with because this allows for a more complete stability analysis to be done either by hand or using the computer.¹²⁴ Let us demonstrate a comprehensive outcome removal scheme using the straits conflict as an example.

Five different types of outcomes can be removed: logically infeasible for one player; preferentially infeasible for one player; logically infeasible between players; specific strategy choices for two or more players that are preferentially infeasible for

¹²⁴ Fraser and Hipel, Conflict Analysis, p. 34.

Table XIV Outcomes removed from the Straits Conflict Model

<u>Removable outcomes</u>	<u>Reasons</u>	<u>Outcomes remaining</u>
<u>Type 1 Outcomes for removal</u> (logically infeasible)		
(11,---,--) (---,11,--)	Mutually exclusive legal claims for straits states	112 Type 1 outcomes removed to leave 256-112=144 outcomes.
<u>Type 2 Outcomes for removal</u> (Preferentially infeasible for one player)		
(001,---,--) (---,001,--) (1-1,---,--) (---,1-1,--) (---,---,11)	Claim to status quo will not be enforced by force. Claim for a high seas corridor will not be enforced by force. User state will not use force when a claim is being legally challenged.	96 Type 2 outcomes removed leaving 144-96=48 outcomes.
<u>Type 3 Outcomes for removal</u> (logically infeasible between players)		
(000,000,1-) (000,000,-1) (--1,--1,--)	User state will not challenge status quo Coastal states will not challenge each other by force.	4 Type 3 outcomes removed leaves 48-4=44 outcomes.
<u>Type 4 Outcomes for removal</u> (preferentially infeasible between players)		
(-1,---,1-) (---,-1,1-)	User state will not accept forced closing of the strait.	6 Type 4 outcomes removed leaves 38 outcomes.
<u>Type 5 Outcomes for removal</u> (cooperative outcomes)		
(1--,---,-1) (-1-,---,-1) (---,1--,,-1) (---,-1-,,-1) (--1,---,-0) (---,-1-,,-0) (1--,---,1-) (---,1--,1-) (-1-,1-,1-)	User state will not use force to challenge a legal closing of the strait. Coastal states will not close strait by force if user state does not threaten force. User states will not legally challenge if a corridor is left open. User state will not challenge if the closure of the strait by territorial seas includes a transit passage regime.	29 Type 5 outcomes removed leaves 38-29=9 outcomes.

at least one player; and, cooperative outcomes. Table XIV summarizes the process of outcome removal. We will examine each type in detail.

Type 1 Outcomes are the safest and easiest outcomes to identify for removal since they are logically infeasible for a single player. For example, a coastal state

can not make more than one legal claim for jurisdiction in the same part of the strait. Either it chooses to maintain a high seas corridor, or it chooses to close the high seas corridor by a territorial sea claim. Only the width of the corridor is left open to decide. Doing nothing is maintaining the status quo of passage through the strait. Force can be used in self-defence to enforce a challenge to a legal claim. Some logically infeasible outcomes for a single player that can be removed are (110,000,00) and (000,110,00) representing two situations where either coastal state tries to make two legal claims simultaneously. By letting a dash represent both a 0 and a 1, these outcomes can be depicted more economically as (11-,---,--) and (---,11-,--). Specified options are represented by either a 0 or a 1; a dash indicates that it does not matter which option is chosen. Therefore all Type 1 infeasible outcomes are represented by the two shown. Out of 256 possible outcomes, 112 Type 1 outcomes have been eliminated to leave 144 possible outcomes.

Type 2 outcomes, those that are preferentially infeasible for one player because of the possible strategy choices, are the next surest outcomes for removal. These are outcomes that a player would not be expected to take under any circumstances. For example, we can expect that coastal states would not enforce a claim for a high seas corridor or for the status quo by force. This would eliminate outcomes (001,---,--), (---,001,--), (1-1,---,--) and (---,1-1,--). We can also expect that a user state would not simultaneously use force while a legal challenge was being pursued. This eliminates outcomes (---,---,11). A further 96 Type 2 outcomes have been eliminated leaving only 48 possible outcomes.

Somewhat riskier to remove are Type 3 outcomes which are logically infeasible between players. Examples can include the allocation of an indivisible resource where the players cannot both acquire the resource. Logically infeasible outcomes can also involve dependencies between players. For example, where a user state has accepted the status quo situation in the strait, it would be logically infeasible for a user state to then challenge the status quo (000,000,1-) and (000,000,-1). Also, there have been no cases of neighbouring states challenging each other's territorial claims in straits by force so this outcome is removed (--1,--1,--). Since a state could certainly indicate a willingness to challenge a neighbour's claim by force, information could inadvertently be lost by removing this outcome. A further four Type 3 outcomes have been eliminated leaving 44 possible outcomes.

Type 4 Outcomes are the most dangerous outcomes for removal since these involve specific strategy choices for two or more players that are preferentially infeasible for at least one player. For instance, if a coastal state asserts territorial jurisdiction over the strait by force, user states can be expected to use force automatically to open the strait. Both parties can claim that the use of force is in self-defence of a favoured principle. Therefore outcomes contained in the sets (--1,---,1-) and (---,--1,1-) would probably be considered preferentially infeasible from the point of view of the user state who would expect the guarantee of retaliation by force to deter the coastal states from closing the strait by force. It might turn out that outcomes of this type could come about as the conflict unfolds to its eventual resolution as, in fact, it did in the North Corfu Channel case. However, these

outcomes are unlikely to lead to an equilibrium. In this example, the fact that extensive negotiations were held at the Law of the Sea talks makes a repeat of this use of force unlikely and we can feel reasonably confident in eliminating these six outcomes. But remember that no matter how unlikely outcomes of this type may seem, under certain conditions the possibility that one of them may occur would affect the actions of the other players. Ideally, preferentially infeasible outcomes depending on the strategy choices of two or more players should only be removed if there are still a large number of feasible outcomes remaining after the first three types have been eliminated. Removal of these six Type 4 outcomes leaves 38 possible outcomes. "When more than 25 to 50 feasible outcomes are still remaining, outcomes of the fourth type should be removed carefully, keeping in mind the possible consequences upon the forthcoming analysis of the remaining options."¹²⁵ With this warning in mind, we will eliminate further outcomes to simplify the example for stability analysis.

According to the generalized conflict analysis model,¹²⁶ type 5 cooperative outcomes exist which are not present in the conventional conflict analysis model. Cooperative options would include the option to compromise for both players. They are similar to Types 1 and 3 above as they are strictly logically infeasible, but they are distinct from either of these. For a compromise to be reached on technical grounds, all players must agree to compromise. One player cannot unilaterally

¹²⁵ Fraser and Hipel, Conflict Analysis, p 36.

¹²⁶ Fraser and Hipel, Conflict Analysis, p 185.

compromise while others do not. Any outcomes in which the players do not either all select the option or all reject the option are infeasible. Like type 1 outcomes, type 5 outcomes are completely safe for removal. Type 5 outcomes always concern at least two players. Recall type 3 outcomes involve independent options by the players and not cooperative ones like those found in type 5 outcomes. Recall also that type 1 outcomes are infeasible for a single player and do not involve another player. The remaining outcomes are eliminated on the basis that force will not be used between the parties to enforce claims and the user state will accept any combination of claims that guarantees relatively unhindered passage through the strait. The following outcomes are infeasible: if the user state will not use force to challenge legal claims by coastal states (1--,---,-1), (-1-,---,-1), (---,1--,-1) and (---,-1,-1); if coastal states agree not to close the straits by force when the user state has not threatened force (--1,---,-0) and (---,-1,-0); the user state will not legally challenge if there is a high seas corridor of any kind (1--,---,1-) and (---,1--,1-); and a user state will not legally challenge the closure of a strait by territorial waters if the transit passage regime is implemented in accordance with the 1982 Convention (-1,-1,1-). Removal of these 29 outcomes leaves 9 feasible outcomes for analysis. This is a manageable number for demonstrating the process of stability analysis.

Once infeasible outcomes are removed, it is necessary to determine the remaining feasible outcomes. The computer program Decision Maker performs this simply to give the result in Table XV. The techniques for removing these outcomes

Table XV Feasible outcomes for the Straits Conflict Model

Coastal state A									
1. Corridor	0	1	0	0	1	0	0	1	0
2. Territorial	0	0	1	0	0	1	0	0	1
3. Self-defence	0	0	0	0	0	0	0	0	0
Coastal state B									
4. Corridor	0	0	0	1	1	1	0	0	0
5. Territorial	0	0	0	0	0	0	1	1	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome	0	1	2	8	9	10	16	17	18

by hand are described in detail elsewhere.¹²⁷ The decimal outcomes 0, 1, 2, 8, 9, 10, 16, 17, and 18 remain for analysis. The possibilities for state A are: outcomes 2 and 10 equate to innocent passage; outcomes 0, 1, 8, 9, 16 and 17 equate to high seas passage; and, outcome 18 is the same as transit passage.

The list of feasible outcomes are ordered numerically as decimal outcomes in Table XV. The preference vector for each player is obtained by ordering the decimal outcomes from most preferred on the left to least preferred on the right for each player. Unilateral improvements (UIs) are determined as outcomes to which a player can improve by changing the options under his control, given that the other players' strategies remain the same. The meanings of the decimal outcomes are interpreted by referring to the binary translations.

¹²⁷ Fraser and Hipel, *Conflict Analysis*, p. 37.

2

MICROCOPY RESOLUTION TEST CHART
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STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO TEST CHART No. 2)

Table XVI Preferences and their meanings for each player in the Straits Conflict Model

Decision makers and preferences	Meanings of preferences
Coastal state A	
-5 (most preferred)	B does not claim maximum territorial sea.
2 (second choice)	A claims maximum territorial sea.
1 (third choice)	A claims high seas corridor.
-4 (fourth choice)	B does not claim high seas corridor.
-3 (fifth choice)	A does not use force
-6 (sixth choice)	B does not use force
-7 (seventh choice)	User does not challenge legally
-8 (last choice)	User does not use force
Coastal state B	
-2 (most preferred)	A does not claim maximum territorial sea.
5 (second choice)	B claims maximum territorial sea.
4 (third choice)	B claims high seas corridor.
-1 (fourth choice)	A does not claim high seas corridor.
*Note (1)	
User state	
-5 (most preferred)	B does not claim maximum territorial sea.
-2 (second choice)	A does not claim maximum territorial sea.
-1 (third choice)	B does not claim high seas corridor.
-4 (fourth choice)	A does not claim high seas corridor.
*Note (1)	
(1) Options (-3,-6,-7,-8) can be placed in any order without affecting the outcome. For brevity, they have been deleted.	

PREFERENCES

A number of considerations determine the ordering of the outcomes in the importance vectors in Table XVI. First, consider the preference structure of coastal state A. The importance vector is determined by ordering the options from most preferred to least preferred. In Table XVI, there were eight possible options. These can be either accepted (a positive number) or rejected (a negative number). For State

Table XVII Preference Vector for coastal state A in the Straits Conflict Model.

<hr/>									
Coastal state A									
1. Corridor	0	0	1	1	0	0	0	1	0
2. Territorial	1	1	0	0	0	0	1	0	0
3. Self-defence	0	0	0	0	0	0	0	0	0
Coastal state B									
4. Corridor	0	1	0	1	0	1	0	0	0
5. Territorial	0	0	0	0	0	0	1	1	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome *	2	10	1	9	0	8	18	17	16

* Outcomes listed in order of preference from left to right.

A, the importance vector is determined to be $(-5, 2, 1, -4, -3, -6, -7, -8)$.¹²⁸ The options - 3, -6, -7, and -8 can be ordered in any way or deleted because they have no bearing on the preference vector and the outcomes. With this input, the decision support system orders the outcome to reflect the preferences of the players. This has been done in the following table for the two coastal states and the user state. In this table, the outcomes are ordered with the most preferred on the left and the least preferred on the right. Each preference vector embodies a great deal of information about the conflict from each player's point of view.

¹²⁸ Note that the importance vector has been simplified to contain only four preferences, even though there were eight options. The options 3, 6, 7, and 8 can be ordered in any preference or even be deleted because they have no bearing on the outcomes.

Table XVIII Preference vector for user state in Straits Conflict Model.

Coastal state A									
1. Corridor	0	0	1	1	0	0	0	1	0
2. Territorial	0	0	0	0	1	1	0	0	1
3. Self-defence	0	0	0	0	0	0	0	0	0
Coastal state B									
4. Corridor	0	1	0	1	0	1	0	0	0
5. Territorial	0	0	0	0	0	0	1	1	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome *	0	8	1	9	2	10	16	17	18

* Outcomes listed in order of preference from left to right.

The preference vector for State A is shown in Table XVII, which is based on the over-riding concern to discourage coastal state B from claiming territorial sea jurisdiction which would eliminate the high seas corridor for the user state on B's side of the strait and which would extend B's jurisdiction closer to A. Thus, all outcomes where B claims territorial sovereignty are least preferred and placed to the right. The most preferred outcome for A is for A to claim a territorial sea to the maximum extent so that any user state would be passing through A's portion of the strait under terms of innocent passage, and for B to maintain the status quo of very limited territorial jurisdiction in the strait so that user states seeking unrestricted passage would pass through waters closer to state B. Similarly, B's analysis would reflect identical coastal state concerns.

The user state has a different preference vector as shown in Table XVIII.

User states want to maintain maximum freedom of navigation within the strait. Recall from our earlier discussion that warship immunity and rights of passage were a non-negotiable minimum for user states, whose interests are defended, in general, by maritime powers. Therefore, the preference is for neither coastal state to claim maximum territorial jurisdiction in the strait. Failing that, the preference would be for neither state to claim even limited territorial jurisdiction, even if it left a narrow high seas corridor. The most preferred outcome for the user state is to maintain the status quo in the strait with high seas passage rights.

Some of the outcomes are equally preferred. For example, when coastal state A claims a maximum extent of territorial sea, it makes little difference overall whether coastal state B maintains the status quo or leaves a lesser high seas corridor for the user state to use because in both cases unwanted shipping will be kept out of A's waters and B will not have jurisdiction directly bordering A. In the two most preferred outcomes for A (2 and 10), the user state would support the claim since it is guaranteed high seas passage. Equally preferred outcomes are indicated by a bridge or overbar drawn over the outcomes involved. Similarly, for outcomes 0, 1, 8, and 9, the result is a wide high seas corridor separating the coastal states with guaranteed high seas passage for the user state. These outcomes can also be bridged because they are equally preferred. The two least preferred outcomes for A (outcomes 17 and 16) can also be bridged because in both cases B makes a maximum territorial sea claim and high seas passage for the user state is diverted to A's side of the strait.

Similar reasoning can be used to bridge corresponding outcomes for coastal state B and the user state.

STABILITY ANALYSIS

Table XIX Stability Analysis of the Straits Conflict.

Outcomes ordered by preferences for Coastal state A:									
Coastal state A									
1. Corridor	0	0	1	1	0	0	0	1	0
2. Territorial	1	1	0	0	0	0	1	0	0
3. Self-defence	0	0	0	0	0	0	0	0	0
Coastal state B									
4. Corridor	0	1	0	1	0	1	0	0	0
5. Territorial	0	0	0	0	0	0	1	1	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome	2	10	1	9	0	8	18	17	16
Overall stability	X	X	E	E	E	E	E	X	X
Stability for A	r	r	s	s	s	s	r	u	u
Stability for B	u	u	s	s	s	s	r	r	r
Stability for user	r	r	r	r	r	r	r	r	r

All of the outcomes in Table XV must be analyzed for stability for each of the three players. The five types of stability presented earlier are: rational (r), sequentially stable (s), unstable (u), simultaneously stable(/) and cooperative (c).¹²⁹

The algorithm for the stability analysis of a conflict with "n" players has been

¹²⁹ To review the definitions, see page 85.

developed elsewhere.¹³⁰ The computer program Decision Maker calculated the stability analysis tableau for the straits conflict as shown in Table XIX. In order for an outcome to be a possible resolution to the conflict, it must possess some type of stability for each player. In Table XIX, Outcome 18 is rational for all three players, and therefore an E is written above the stability analysis for the individual player. Outcomes 0, 1, 8, and 9 are sequentially sanctioned for both coastal states and rational for the user state. Sequential sanctions means that the player is deterred from taking a UI from this outcome because credible actions by other players could result in a less preferred outcome for each of the player's possible UIs from the particular outcome. For example, A could improve from outcome 1 to outcome 2 by extending territorial jurisdiction to the maximum limit. But then B would do the same which would result in outcome 18, which is less preferred for A. So, outcome 1 is sanctioned for A as shown by the <s> in the individual stability analysis.

The only special consideration when performing an analysis in which equally preferred outcomes are included is the assessment of sanctions. If a possible sanction is under the same bridge as the outcome being examined, the outcome is sanctioned even if it is physically located to the left of the outcome in the player's preference vector.

There are five equilibria: outcomes 0, 1, 8, 9 and 18. The sanctioned equilibria suggest that should neither coastal state claim maximum territorial jurisdiction, any other option would be acceptable to all other players. Outcome 18 is

¹³⁰ Fraser and Hipel, Conflict Analysis, p. 188.

the only outcome that is rational for all three players. This is the outcome whereby both coastal states claim maximum territorial jurisdiction which, in effect, closes the strait except for innocent passage.¹³¹ However, in this case, this equilibrium must be analyzed as a cooperative equilibrium because of the manner in which infeasible outcomes were removed. This equilibrium is rational only if the user state will not challenge. The way that infeasible outcomes were removed created a situation where user states would not challenge if the transit passage regime were adopted. The special case of cooperative equilibria will be examined next.

Outcome 18 is actually a cooperative equilibrium. Recall that the user state would agree to allow the strait to be enclosed by territorial seas if and only if a transit passage regime were adopted. The coastal states must cooperate to adopt such a regime. If the transit passage regime is not adopted, then the user state is likely to challenge, in which case those outcomes which had been removed as infeasible would have to be re-introduced to the model. Outcome 18 is less preferred for the coastal states than the least preferred non-cooperative equilibrium outcomes involving a high seas corridor; therefore, it is determined to be an unstable equilibrium. Given the importance vectors of the individual players, an equilibrium that does not require cooperation is preferable to outcome 18.

If we look at Table XIX with the bridges there are four distinct outcome preferences. If we analyze these, we can represent them in normal form for the two coastal states, since the user state will accept any claim that guarantees unhindered

¹³¹ It will be explained in the next paragraph why this is not transit passage.

passage through the strait. The four possibilities for State A are: innocent passage (outcomes 2, 10); high seas passage (outcomes 1, 9, 0, 8); transit passage (outcome 18); and high seas passage (outcomes 16, 17). Compare this to the Prisoner's Dilemma shown above in Figure 6. The description of the transit passage regime is explained by traditional 2 X 2 game theory which is consistent with the results as determined by the conflict analysis model. The conflict analysis model has allowed us to make a rich interpretation of this simplified case of conflict in straits without having to determine ahead of time what the game was, the two most important players or the two most important options. By modifying the model slightly to account for changes in preferences or additional players and options, we can derive the possible equilibria or resolutions to the conflict. We will build on this simple model as we further develop the analysis.

SUMMARY OF THE CONFLICT ANALYSIS PROCESS

The general conflict analysis model for analyzing multi-player conflicts over navigation in straits is summarized as follows. First, develop background information about the conflict. Second, model the conflict for a particular point in time as a game with players and options to create a meaningful ordering of options. Third, determine the feasible outcomes to the game by performing outcome removal and fourth, create preference vectors for each player of the game. If deemed necessary, a number of alternative models can be developed by repeating the above steps. One or more of the most appropriate models can be analyzed at the stability analysis stage. Fifth, conduct stability analysis by constructing the analysis tableau for each player, listing

the decimal preference vectors for each player, indicating equally preferred outcomes by bridging, determining stability for each outcome, and noting equilibria. If the stability analysis results from one or more models suggest that modifications are required, the appropriate steps above can be repeated.

SENSITIVITY ANALYSIS

The preceding analysis of the straits conflict determined a Prisoner's Dilemma situation. A powerful tool for assessing the relative validity of the results of a conflict analysis is called sensitivity analysis. Ideally, a sensitivity analysis should also indicate in what manner the results are most sensitive to errors in information.¹³² Fraser and Hipel described a number of different approaches to sensitivity analysis, including adopting more conservative criteria for sequential stability, hypergame analysis, coalition analysis, and performing multiple analyses with different preferences for the players. For the purposes of studying the straits conflict we will restrict ourselves to the latter method.

The technique of sensitivity analysis which will be used in this paper consists of performing a stability analysis a number of times to observe the results for different models and the way the conclusions differ. Players, options, preferences, or any combination of these, can all be changed. For example, Table XX lists a different possible preference vector for the straits conflict with the same equilibrium outcome as before. Compare this to Table XVI shown previously. We can make the model more complex by replacing all the infeasible outcomes removed earlier

¹³² Fraser and Hipel, Conflict Analysis, pp 99 - 130.

Table XX Multiple analysis techniques: changing the importance vector for each player.

<u>Player and preference</u>	<u>Equilibrium</u>	<u>Explanation</u>
Coastal state A 2, 1		The importance vectors have been changed to reflect individual preferences for coastal states without regard for the action of the neighbouring state. The user state prefers the status quo.
Coastal state B 5, 4	(010,010,00) Outcome 18	
User state -5, -2		

involving the use of force or a legal challenge. In one particular case, 76 of the 256 possible outcomes were analyzed compared to the 9 outcomes analyzed in the previous sections. Using the same preference vectors as above on the larger set of outcomes, it was found that there were only three equilibria that were rational for all players: outcomes 10, 17 and 82. Outcomes 10 and 17 in binary form are (010,100,00) and (100,010,00), which respectively allow one state to claim maximum territorial jurisdiction while the other leaves a high seas corridor; outcome 82 (010,010,10) is the case where both coastal states claim maximum territorial jurisdiction but the user state challenges this legally to preserve a transit passage regime in the strait.¹³³ All other outcomes are sanctioned by at least one player. Where force is feasible, some kind of high seas corridor is always included in the equilibrium outcome.

¹³³ The reader may recall that this option was identified earlier as a cooperative solution. When we replaced all infeasible outcomes to make the model more complex, this restriction was removed.

Using the same 76 feasible outcomes, in all variations of preference vectors where all players want freedom of navigation, the status quo turns out to be the only rational equilibrium. This equilibrium is highly insensitive to changes in the preference vectors.

Analysis of the Straits Conflict indicates that it would be desirable for the two coastal states to form a coalition against the usually stronger user states. At first glance, the coalition analysis techniques would appear to hold considerable promise. In general, however, it can be shown that independent coastal states are unlikely to cooperate to form a coalition to keep the straits open. They could form a coalition to close the straits, but there are no empirical cases of this occurring.¹³⁴ Bargaining is more appropriate for analyzing cooperation among states.

BARGAINING

According to Fraser and Hipel¹³⁵, bargaining involves special kinds of conflict where the participants attempt to reach mutually acceptable contracts. The basic ideas of conflict analysis can equally well apply to such bargaining problems. Bargaining is defined as "the technical process by which two or more parties attain a mutually agreed contract concerning limited resources".¹³⁶ In the case of straits, the limited resource is the territory under question. The mutually agreeable contract by the

¹³⁴ For the reader who is interested, Annex B discusses the use of the Fraser-Hipel model in coalition analysis and explains why it can be safely disregarded here. Where agreement occurs in international law, it can better be explained by the generalized conflict analysis model which includes bargaining between states.

¹³⁵ Fraser and Hipel, Conflict Analysis, pp 175-190.

¹³⁶ Fraser and Hipel, Conflict Analysis, p 176.

neighbouring coastal states and the possible user states determines the navigational regime that will govern passage through the strait and the resulting rights and obligations of the parties involved. When these are mutually acceptable, a stable equilibrium results. The question to be answered in the bargaining problem is what will be the best or expected agreement to a particular bargaining situation.

Answering this question should give us a good explanation of why user states accept restrictions on freedom of navigation in straits.

The key characteristic that distinguishes the bargaining problem from a conventional conflict analysis is that the players in a bargaining situation are not strictly competitive. Usually, they prefer to come to an agreement on a contract or result rather than do nothing. Also, they cannot act unilaterally to achieve agreement. They must act in concert, whether by signing a contract or treaty or making some other commitment. One way of cooperating and acting in concert was to form a coalition of two or more players in a game. However, the coalition approach did not describe well the straits conflict because it ignored the competitive aspects of the bargaining situation.

In the straits conflict, user states and coastal states are battling over fundamental principles of international law, the principles of sovereignty and freedom of navigation. Also, neighbouring coastal states are bargaining over the limits to territorial jurisdiction over adjacent waters in the strait. The transit passage regime is the resulting outcome which can only be achieved by mutual agreement between the neighbouring coastal states. By cooperating to claim maximum territorial jurisdiction

in the strait, and by allowing the user state the rights and obligations of transit passage, the players have achieved a cooperative outcome.

For any given feasible outcome in a bargaining situation, there are five types of stability which can be determined for a game with n players where each player has a finite number of options from which to choose.¹³⁷ Once the non-cooperative outcomes have been assessed for equilibrium, the stability of the remaining cooperative outcomes can be determined. Cooperative outcomes that are less preferable than the least preferred non-cooperative outcome are unstable, even if all the UIs are deterred. Players are only interested in bargaining contracts that offer more than they could achieve without bargaining. If they get a better bargain through cooperation, they are likely to pursue a cooperative outcome. The least preferable equilibrium outcome for a player can be interpreted as the worst thing that could happen if no bargain were struck. Any cooperative outcome that is less preferable than this default situation will not be tenable to the player. On the other hand, any stable contract preferred to the least preferable non-cooperative equilibrium might be a plausible arrangement for the player and is thus a viable stable outcome. Cooperative equilibria are formed when an outcome is stable for all players.

In general, the equilibria that are determined as a result of the complete stability analysis form the negotiating set for the bargaining or conflict situation.¹³⁸ In some situations, there will be no clear indication which of the equilibria will be the

¹³⁷ Fraser and Hipel, Conflict Analysis, see especially Chapters 2 and 8.

¹³⁸ Fraser and Hipel, Conflict Analysis, p 189.

eventual resolution to the problem. In the straits conflict, the transit passage regime is an equilibrium. But there are other outcomes, all of which contribute to the growing problem of creeping uniqueness. These less preferable outcomes are called Pareto sub-optimal. Pareto optimality is generally considered to be an important consideration in games in which the players can communicate. Any equilibrium that is less preferable than the cooperative equilibrium is not likely to be stable in a game in which cooperation is a viable factor. If the players can cooperate together to reach an outcome that is preferred by both of them, they will do so. The model of the straits conflict will include the cooperative outcome.

The basic principle of the generalized conflict analysis algorithm that includes bargaining is that a cooperative outcome is unstable for a player if it is less preferable than the least preferred non-cooperative equilibrium, but it is stable if it is preferred to the least preferable non-cooperative outcome. The principle of Pareto-optimality can be used to distinguish preferred equilibria in bargaining conflicts. When cooperative outcomes are present, there will always be at least one equilibrium. The transit passage regime for international straits may be the Pareto-optimal outcome in theory, but other equilibria are found in practice. The case studies which follow will examine other equilibria for clues as to why user states accept restrictions on the freedom of navigation in straits.

SUMMARY

The generalized bargaining model of the straits conflict would be too complex to cover all of the possible combinations of numbers of players, options and

preferences. As we examine the case studies, we will determine first if, in fact, cooperative outcomes are present. In many cases, players will try to act unilaterally, or at least, independently. The Law of the Sea provides a framework for decision-making; the various regimes help to limit the number of options and define the rights and obligations of each player once a strategy has been selected; communication among players helps prevent misunderstandings. But there is no central authority to implement or enforce the decisions. In a state of international anarchy, the players must cooperate to prevent conflict. During the Pax Britannica, all states cooperated in preserving freedom of navigation by recognizing the three-mile limit to the territorial sea. The transit passage regime was negotiated at the United Nations Law of the Sea talks to preserve freedom of navigation as coastal states asserted sovereignty out to a 12-mile limit. However, the transit passage regime has not been adopted as the global straits regime. For the over one hundred straits affected by this increased jurisdiction, there is no common regime being implemented to indicate the rights and obligations of states in the straits. The result is what has been called "creeping uniqueness". The case study of the Strait of Dover will show how France and the United Kingdom have implemented the transit passage regime and the technology and resources required to induce cooperation. The case studies of the Baltic Straits and the Northwest Passage are examples of creeping uniqueness in the implementation of the straits provisions of the 1982 Convention. The model will show that this stage is stable until the order of preferences changes, at which time there will be pressure to find a new equilibrium. Using the conflict analysis model to determine the stability

of existing arrangements, we will see that as long as a minimum right of access is guaranteed for navigation, "creeping uniqueness" provides a stable transition period during which states can accommodate themselves to the rights and obligations demanded by the global straits regime.

5 Creeping Uniqueness

A stable passage regime through and over straits used for international navigation is essential for world trade and order.¹³⁹

Myron Nordquist

INTRODUCTION

In this chapter, we will analyze the three case studies using the Fraser-Hipel General Conflict Analysis Model as developed in the previous chapter. Each case study represents a similar universe of straits in which coastal states are implementing the provisions of the 1982 Convention. The Strait of Dover represents those straits in which the transit passage regime, as envisioned by Part III of the 1982 Convention, is actually applied.¹⁴⁰ Where Part III was supposed to describe the conditions for a global straits regime, instead we see creeping uniqueness and different conditions for navigation even in parts of the same international strait. The Baltic Straits represent those straits in which exceptions are being claimed as a result of Articles 35 and 36. The Northwest Passage represents those straits claiming an exception according to Article 37. When the 1982 Convention comes into force in the near future, many of

¹³⁹ Myron Nordquist, "The Innocent Passage Regime", in Choon Ho Park (ed.), The Law of the Sea: Problems from the East Asian Perspective (Honolulu: Law of the Sea Institute, 1987), p. 41.

¹⁴⁰ Kenneth R. Simmonds (ed.), New Directions in the Law of the Sea (London, Rome, New York: Oceana Publications Inc, 1993), Transcript of U.6.9 Law of the Sea Report of the Secretary-General (of the United Nations). Progress made in the implementation of the comprehensive legal regime embodied in the United Nations Convention on the Law of the Sea, 5 November 1992, from UN Document A/47/512. France and UK adopted the transit passage regime for the Strait of Dover on 2 November 1988 (see Law of the Sea Bulletin No. 14 (December 1989), p. 14.). The United States is the only other state to officially adopt the transit passage. In a declaration of 27 December 1988, the United States declared that "all countries enjoy the right of transit passage in accordance with international law as reflected in the applicable provisions of the Convention." (see The Law of the Sea: Current Developments in State Practice 1 (United Nations Publication, Sales No. E.89.V.7.), p. 83.) At the time of writing, only four other treaties even took account of the transit passage regime.

these coastal states will be in contravention of international law.

In his paper "The Legal Regime of Straits in the 1982 Convention on the Law of the Sea", Hugo Caminos describes existing state practices. The transit passage regime, for example, has not been implemented in the Straits of Malacca, Hormuz, Gibraltar or Bab al Mandeb, even though the strait states in each case are allowing free navigation. Each state though, for its own reasons, is reluctant to formally proclaim a transit passage regime.

In many other cases, exceptions are being claimed as a result of long-standing conventions (Art. 35(c)) or the presence of a high seas corridor (Art. 36). It is universally accepted that the 1936 Montreux Convention governs passage through the Bosphorus and Dardanelles. The exception for the Strait of Magellan is based on an 1881 Treaty and specifically mentioned in the 1984 Treaty of Peace and Friendship between Chile and Argentina. As we will see in the case studies to follow, there is some disagreement in the Baltic Straits to the limits of the 1857 Sound Dues Convention. It definitely no longer applies in the Little Belt. It definitely does apply in the narrow portion of the Sound less than six miles wide between Denmark and Sweden where non-suspendible innocent passage rules are accepted. However, in the approaches to the Sound and in the Great Belt it is less clear. A number of other

strait states are claiming exceptions under Article 35(c). These include Australia and Papua New Guinea with the 1978 Torres Strait Treaty, Egypt and Israel with the 1979 Peace Treaty governing passage through the Strait of Tiran, and Sweden and Finland in the Aaland Strait.

Where states are unable to claim this exception, or are unsure of the acceptance of this exception, they can leave a high seas corridor under Article 36 and avoid a transit passage regime. This is what Sweden, Denmark and Germany have done in the Sound and the Great Belt. Japan, Korea and others have also left high seas corridors in straits which could become international straits were territorial seas to be extended to the maximum allowable.

As in the case of the Northwest Passage, many states refuse to accept that adjoining straits are international straits. These states are claiming an exception according to Article 37. Russia has done this with four straits in the Northeast Passage. China and some other states also wish to keep foreign shipping away from their coasts by requiring permission to transit through some straits. K.L. Koh in Straits in International Navigation provides various lists of up to 220 straits which could be considered as international straits. Although the importance of most of these straits as routes for international shipping is now small, we have no way of predicting which ones are subject to change of status in the future as sources of supply and

destinations change.

The case studies will help us determine the nature of the conflict over straits. Each case will be modelled and analyzed according to the Fraser-Hipel model. After a brief historical background to the implementation of a particular straits regime, the players, options and preferences will be identified. Using the model, we will perform a stability analysis. Each case will be analyzed separately and any relevant conclusions will be noted. In the final chapter, we will compare the findings. We will see that in all cases the unique arrangements are stable. When technological improvements have caused a change in the preference ordering, then we are likely to see a move to change the regime of navigation.

THE STRAIT OF DOVER

Map 1 The Strait of Dover and approaches.

HISTORICAL BACKGROUND

Throughout much of its history, the legal regime of the Strait of Dover (See Map 1) was "shrouded in uncertainty because of the British claim to the sovereignty of the adjacent sea."¹⁴¹ As Cuyvers explains, the practice of not clearly defining the extent of British Seas had a practical purpose. When the Royal Navy had command of the seas, no rules were required because any rule could be enforced; but when naval strength was inadequate, there was no risk of harming the national honour by being unable to defend fixed boundaries.¹⁴² When the coasts on either side of the Strait of Dover were in English possession, King John issued an ordinance in 1201 asserting sovereignty of the sea.¹⁴³ The limits of the English Sea were extended to the point where England claimed absolute sovereignty over all the claimed waters. These claims were justified in Mare Clausum, first published in 1635, in which the Englishman John Selden argued that the seas could become the exclusive property of nations just like land. Selden even included a map of the claimed British Seas. It was even proposed at one point to levy tribute to all foreign ships passing through the English Sea, but this policy was never pursued. As the Royal Navy gained in strength leading up to the 18th century, the debate over open or closed seas was superseded by the concept of a territorial sea. Through the practice of the maritime states, this came to be accepted as a three-mile limit.¹⁴⁴ The Territorial Waters Act of

¹⁴¹ Luc Cuyvers, The Strait of Dover (Dordrecht: Martinus Nijhoff Publishers, 1986), p. 51.

¹⁴² Luc Cuyvers, The Straits of Dover, n100.

¹⁴³ T. W. Fulton, The Sovereignty of the Sea (Edinburgh and London: William Blackwood and Sons, 1911) as quoted by Cuyvers, The Straits of Dover, p. 51.

¹⁴⁴ G.J. Mangone, Law for the World Oceans (London: Stevens and Sons, 1981), pp. 21-22.

1878 marked the first official mention of a three-mile distance, while carefully avoiding defining a limit to the territorial sea.¹⁴⁵

France also followed the three-mile rule in practice, but did not define the limit. Only in 1971 did France officially adopt a 12 mile territorial sea.¹⁴⁶ Article 3 of the French law provided for a modification of the 12 mile limit in the Strait of Dover to allow a zone of high seas sufficient for navigation. The law stated that "regulations may be issued in order to ensure free maritime and aerial navigation, subject to the provisions of international convention, and, if need be, after an agreement has been reached with the concerned states." This provision has been regarded as an expression of France's view that the right of passage through straits is indispensable.¹⁴⁷ This was written several years before the concept of transit passage was even introduced at the Law of the Sea negotiations. During the 1974 session of UNCLOS III, the British delegate stated that British interests "require that ships and aircraft should be able to move freely, safely and expeditiously through and over straits..."

Britain and France, as maritime powers, are both strong supporters of freedom of navigation through straits. But as coastal states, they also have an interest in a 12 mile territorial sea to improve vessel safety and pollution from collisions and

¹⁴⁵ Luc Cuyvers, The Straits of Dover, p. 53.

¹⁴⁶ Law No. 71-1060 of 24 December 1971 concerning the delimitation of the French Territorial Sea. See the Journal Officiel de la Republique Francaise 30 Dec 1971 for the official French text.

¹⁴⁷ J.P. Queneudec, New Directions in the Law of the Sea III (Dobbs Ferry, NY: Oceana Publications, 1985), see Chap. 22 on France, especially p. 260.

groundings. These two countries have borne the brunt of some of the world's worst oil spills. It is not surprising, therefore, that both are strong supporters of the transit passage regime. Neither Britain nor France intends to restrict navigation unnecessarily through the Strait of Dover since they would not wish to see reciprocal restrictions placed on their shipping in other straits. It is important to understand their concerns as coastal states about vessel safety and pollution in order to explain the outcome.

Collision Avoidance

The Strait of Dover is one of the busiest waterways in the world.¹⁴⁸ Shipping between Northern Europe and Scandinavia and most of the rest of the world passes through the Strait of Dover. The remaining shipping is cross-channel traffic connecting the United Kingdom to various mainland ports. International regulations to prevent collisions at sea have been adopted and updated since the original 1840 rules.¹⁴⁹ Traffic separation schemes were introduced in 1967 by the International Maritime Organization to separate opposing streams of traffic to reduce risk of collision. When the 1972 Collision Regulations entered into force in 1977,

¹⁴⁸ D.R. Johnson, "Traffic in the English Channel and Dover Strait: Traffic Flows", Journal of Navigation 26 (January 1983) No. 1., pp. 75-92; National Physical Laboratory, Marine Traffic in the Dover Strait (NPL Report 1-71, 1971); J.H. Beattie, "Traffic Flow Measurements in the Dover Strait", Institute of Navigation London Journal (24 July 1971) No. 3. pp. 325-340.; Anglo-French Safety of Navigation Group (AFSONG), Study of Marine Traffic in the English Channel (London: Department of Industry, 1977), p. 7.; R.F. Chalk, Survey of Marine Traffic in the Dover Strait from Radar Film, January 1982 (National Maritime Institute, NMI TM 76, August 1982).

¹⁴⁹ C. John Colombos, The International Law of the Sea (London: Longman Group, 1967), p. 353.

observation of these traffic separation schemes became compulsory.¹⁵⁰ To identify vessels contravening Rule 10 of the 1972 Collision Regulations, the English and French had to set up a system to monitor traffic in the traffic separation scheme.¹⁵¹ Both states invested considerable effort and expense to improve the safety of the Strait of Dover by installing surveillance radars, navigational aids, direction-finding and data-processing equipment to allow for the automatic tracking of shipping in the strait.¹⁵² Violators are identified and reported to the flag state for action. The investment has paid off in reducing the number of accidents.¹⁵³ The Strait of Dover is now considered one of the safest in the world.¹⁵⁴ The control and management of vessel traffic in the traffic separation schemes of the Strait of Dover has contributed to the safety of navigation and reduced concerns about accidents. It has been shown that international regulation of shipping can be effective without extensive coastal state claims or extensive regulations. It also shows the effort and dedication required on the part of coastal state authorities in making international cooperation and enforcement effective.

Vessel Pollution

¹⁵⁰ A. N. Cockroft and J.N.F. Lameyer, The Collision Regulations (London: Stanford Maritime, 1982).

¹⁵¹ Anglo-French Safety of Navigation Group (AFSONG), Safety in the Channel (London: Department of Trade, 1978).

¹⁵² "Automatic Monitoring of Shipping Through Dover Strait" Dredging and Port Construction (July 1982), pp. 8-10.

¹⁵³ A.N. Cockroft, Collision Statistics and Analysis of the Causes of Collisions (London: IMO, September 1981) NAV 26/4/1.

¹⁵⁴ Luc Cuyvers, The Straits of Dover, p. 76.

It is relatively easy, where there is radar coverage, to observe whether a vessel is in contravention of collision regulations when passing through a traffic separation scheme. It is much more difficult, if not impossible, to know whether the vessel is structurally sound, adequately manned or illegally polluting as it passes. Aerial surveys and remote sensing technologies will allow vessel fingerprinting and continuous monitoring, but the costs are still prohibitive. Although large scale accidents such as the grounding of the Torrey Canyon in 1967 or the Amoco Cadiz in 1978 have not happened, vessel source pollution continues to be a major problem.¹⁵⁵ Both France and the United Kingdom are in a position to take steps to implement various international measures to reduce such pollution in their territorial seas.¹⁵⁶ But violations by foreign ships in international waters can only be reported to the flag state of the offending vessel for prosecution in domestic courts. Because the coastal state bears the brunt of pollution within the confines of the strait, coastal states have an interest in extending their jurisdictions against offending foreign vessels. One method of accomplishing this was through the Paris Memorandum of Understanding on Port State Control, approved in Paris on 26 January, 1982.¹⁵⁷ Port state control, on a regional basis with most of the west European states participating, allows all

¹⁵⁵ Advisory Committee on Pollution of the Sea, Annual Report 1982 (London, 1983), p. 10.

¹⁵⁶ Luc Cuyvers, The Straits of Dover, p. 107.

¹⁵⁷ This was the culmination of a series of international agreements including: 1954 International Convention for the Prevention of Pollution of the Sea by Oil with amendments in 1962 and 1969; 1966 International Convention on Load Lines; 1972 Convention on the International Regulations for the Prevention of Collisions at Sea; 1973 International Convention for the Prevention of Pollution by Ships and the 1978 Protocol; 1974 International Convention for the Safety of Life at Sea; 1978 International Convention on Standards of Training, Certification, and Watchkeeping; and so on.

signatory states to perform inspections on visiting shipping and enforce agreed-upon standards to keep offending ships out of European waters. Another method of extending jurisdiction was to increase the extent of the territorial sea to the maximum limit so that any shipping using the channel could not avoid coastal state jurisdiction by staying on the high seas. With the legal regime of transit passage as defined in the 1982 Convention, France and England could extend their jurisdiction to close the strait to offenders and polluters. At the same time, the regime of transit passage allows the free passage of shipping through the traffic separation schemes, overflight of aircraft, and submerged passage of submarines as for any other strait used for international navigation. The techniques and technologies for monitoring safety had proven their worth. International agreements had improved the safety of the Strait of Dover. By cooperating to implement a transit passage regime, France and the United Kingdom would enhance their ability to reduce pollution without interfering with the freedom of navigation in the strait. The transit passage regime in the Strait of Dover was officially adopted on 2 November 1988,¹⁵⁸ even though the 1982 Convention has not been ratified.

MODELLING THE STRAIT OF DOVER AGREEMENT

There are four steps in the modelling process: selection of an appropriate point in time; selection of decision makers and options; option combinations for specifying infeasible outcomes and preferences for each of the decision makers.

¹⁵⁸ Joint Declaration by the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the French Republic of 2 November 1988, United Kingdom Foreign and Commonwealth Office press release no. 100 of 2 November 1988.

Several important decisions were made along the way, including the signing of the 1982 Convention¹⁵⁹ and the 1982 Paris Memorandum of Port State Control. The date selected for modelling is November 1988 as both France and the United Kingdom have agreed to implement the transit passage regime in the Strait of Dover. In the next step, we must determine the decision makers and their options. As noted in Chapter 3, it is often advisable to construct a number of alternative models for the situation being studied. In this situation, there were a large number of domestic players representing various interest groups, the member states of the European Community, the European Commission itself, and the large number of user states which had an interest in the regime governing navigation in the strait. It would be possible to construct complex models for this situation where there are many players and options. On the other hand, we can look at this as a simple bargaining problem between France, the UK and the user states as the only players with any decision making capability. The other players may influence the decision, but in the end, each government had to decide which options served their interests best. Any decision by the players therefore reflects the best judgement of the weight of all of the other interests on the national interest.

The preference vectors for each player are summarized in Table XXI. Preferences for each of the individual players are expressed in terms of the option number with a positive or negative value reflecting a preference for that option being exercised or not. For example, the preference for option 1 means that it is preferred

¹⁵⁹ But as of 1993, neither Britain nor France have ratified the 1982 Convention.

Table XXI Preferences and their meanings for each player in the Dover Strait agreement.

Decision makers and preferences	Meanings of preferences
United Kingdom	
2 (Note 1)	UK claims maximum territorial seas
5	France claims maximum territorial seas
-1	UK does not claim corridor
-4	France does not claim corridor
-7	Users do not challenge legally
-8	Users do not use force
-3	UK does not use force
-6	France does not use force
France	
5	France claims maximum territorial sea
2	UK claims maximum territorial sea
-4	France does not claim corridor
-1	UK does not claim corridor
-7	User states do not challenge legally
-8	User states do not use force
-3	UK does not use force
-6	France does not use force
User States	
1	UK claims corridor
4	France claims corridor
-7	User state does not challenge claim
-8	User state does not use force
-3	UK does not use force
-6	France does not use force
2	UK claims maximum territorial sea
5	France claims maximum territorial sea

Note 1: Preferences listed in order of importance from top to bottom.

that the UK claim only enough territorial jurisdiction to leave a high seas corridor.

The preference for option -1 means that it is preferred that the UK not leave a

corridor, or that UK rejects option 1. The importance of these options is reflected by

their proximity to the top of the list for that player. The preferences shown were the final ones determined after several iterations of the model. At the results stage, interaction with the experts increased understanding of the case so that the original model could be revised. The importance vectors were: for UK, (2,5,-1,-4,-7,-8,-3,-6); for France, (5,2,-4,-1,-7,-8,-3,-6); and for the user states, (1,4,-7,-8,-3,-6,2,5). These importance vectors can be explained as follows. The two coastal state players have considered the user state interests very carefully, since they are both maritime states with an interest in reciprocal treatment in other straits. As coastal states, they share identical concerns over pollution. Security concerns appeared to be secondary, despite the Cold War and their membership in NATO. At the point of decision, the Strait of Dover has a corridor of high seas.¹⁶⁰ A well-functioning traffic management system has significantly reduced collisions; however, vessel source pollution is a joint cause for concern. Either state could do nothing to change its territorial jurisdiction and rely on strengthening other measures and regulations to reduce pollution. Or either state could unilaterally extend its territorial jurisdiction hoping to keep offenders further away from its own shoreline. But this would jeopardize the success of the traffic separation schemes by redirecting traffic patterns without reducing the risks and dangers of pollution in the narrow strait. By jointly extending their jurisdiction, France and UK were able to enclose the Strait of Dover by territorial seas; by invoking the transit passage regime as defined in the 1982 Convention, this could be done without interfering with the rights of navigation for user states.

¹⁶⁰ In the Baltic Straits case study, this was shown to be a very strong equilibrium.

ANALYSIS OF THE STRAIT OF DOVER AGREEMENT

When this information is entered into Decision Maker the outcome preferences for each player are calculated and a stability tableau is displayed. Three types of

Table XXII Stability Analysis for the 1988 Strait of Dover agreement

Outcomes ordered by preferences for United Kingdom:									
United Kingdom									
1. Corridor	0	0	0	0	1	0	0	1	1
2. Territorial	1	1	1	0	0	0	0	0	0
3. Self-defence	0	0	0	0	0	0	0	0	0
France									
4. Corridor	0	0	1	0	0	0	1	0	1
5. Territorial	1	0	0	1	1	0	0	0	0
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome	18	2	10	16	17	0	8	1	9
Overall stability	E								
Stability UK	c	r	r	u	u	u	u	u	u
Stability France	c	u	u	r	r	u	u	u	u
Stability for user	c	r	r	r	r	r	r	r	r

stability as defined earlier in Chapter Three are of interest here: rational (r), unstable (u) and cooperative (c). The results are shown in Table XXII. The preferred outcome for both coastal states is decimal outcome 18. This is not the most preferred for the user state, but it is a rational outcome for all players. More than that, it is a cooperative outcome for all players based on the agreement of the rules of transit passage as stated in Part III to the 1982 Convention. There is no other preferred

outcome that the layers can reach unilaterally that results in an equilibrium. When we perform the sensitivity analysis, we find that this outcome is resistant to drastic changes in the importance vector. All that is required is that the three players agree that the user state will not challenge enclosure of the strait by territorial seas in return for a guarantee of some minimum rights of passage.

INSIGHTS

When France extended the territorial sea in 1971, Article 3 provided for a modification to allow an exception for the Straits of Dover to ensure free navigation and overflight. In this respect, France and the UK were leading the rest of the world in terms of responding to the growing concerns for safety and pollution in offshore zones. In the jargon of contemporary law of the sea, however, it would be said that the period from 1971 to 1988 was marked by an Article 36 exemption, an interim stage of unilateral action in preserving high seas freedoms in the Strait. In other words, this represents a period of creeping uniqueness.

The development of the capability to monitor and enforce regulations in the Strait shows the resources required to bring about a cooperative approach to implementing the transit passage provisions of the 1982 Convention. It took 17 years of concerted effort between good friends and allies. This provides a good indication of the length of time and effort involved in moving to the final stages of implementation of the global straits regime. But as the Fraser-Hipel model has shown, this cooperative outcome is a very strong equilibrium and a stable end-state in resolving the conflict of principles of sovereignty and the freedom of the sea.

The bordering states, France and Britain, are not only coastal states, but also major maritime powers interested in reciprocal rights for their own shipping. France and Britain both recognized the rights of unimpeded transit passage through the Strait of Dover, as well as the right of overflight for aircraft. The two states agreed to cooperate closely, both bilaterally and through the International Maritime Organization in the interests of ensuring the safety of navigation. Through the development of technology, they were able to improve the safety record in the Strait of Dover by introducing navigational aids, traffic separation schemes, radar monitoring of traffic, and radio control of vessels.¹⁶¹ An improved knowledge of the existing environment may, on its own, be sufficient to raise the level of cooperation, simply by reducing the risk and unpredictability.¹⁶² They were mutually concerned about pollution, especially after the major oil spills and both states had the resources and the will to enforce standards through a system of generally accepted rules and regulations. The role of the European Community (EC) was instrumental in improving marine safety and pollution standards. The EC was again a major factor in implementing the Common Fisheries Policy where jurisdiction for fisheries was taken from the coastal states by the EC. Improvements in communications and the institutionalization of regular inter-state consultations also raise the level of cooperation.¹⁶³ The strategic significance of the Strait is its location near most of the

¹⁶¹ Luc Cuyvers, The Strait of Dover, (Dordrecht: Martinus Nijhoff Publishers, 1986).

¹⁶² Stephen Gill and David Law, The Global Political Economy: Perspectives, Problems and Policies, (Baltimore: The John Hopkins University Press, 1988). p. 34.

¹⁶³ Gill and Law, The Global Political Economy, p. 34.

major ports of western Europe. Both France and UK were members of NATO and the Strait of Dover was the focus of its own NATO Command. But unlike the Baltic Straits, which were the only access for the Warsaw Pact navies, the Strait of Dover was not of such strategic concern to the Soviet Union. NATO efforts included defense of oil platforms, hydrographic surveys, maritime surveillance, fishery inspection and pilotage which all contribute to the safety of the flow of commerce.

Technology has enabled the coastal states to monitor violations and enforce standards of conduct. Britain and France are less concerned with their self-defence, and more concerned with safety, pollution and conservation in the straits. Although the norms of the navigational regime have not changed, the order of preference has. The two straits states have developed conditions of interdependence defined in terms of "mutual vulnerability"¹⁶⁴ for which it is in their interests to accept jurisdiction. The form of passage of user states is no longer of any importance to the coastal states as long as it is in accordance with the rules for the applicable regime. Advances in technology made cooperation not only desirable, but necessary.

The ordinance of 1201 claiming sovereignty over the Strait of Dover had long been superseded by a mutual desire by both neighbouring states for maximum freedom of navigation consistent with demands for safety and the prevention of pollution. The conflict over territory in the Strait of Dover had been transformed into

¹⁶⁴ John Volger, "Regimes and the politics of space technology." Paper 10, Global Organization, D312, Milton Keynes Open University, 1989. quoted in Roger Tooze, "Regimes and international cooperation." p. 212. in A.J.R. Groom and Paul Taylor (eds), Frameworks for International Cooperation, (London: Pinter Publishers, 1990), pp. 201-216.

a working agreement among user states and neighbouring coastal states over peaceful uses of this vital waterway.

THE BALTIC STRAITS

Map 2 The Baltic Straits.

HISTORICAL BACKGROUND

The Baltic Straits are one of the busiest waterways in the world, providing ocean access between the coastal states bordering the Baltic Sea and the rest of the trading world (See Map 2). It is generally accepted that the strategic significance of

the Baltic Straits reflects the rise and fall of European great powers.¹⁶⁵ Throughout history, the dominant Baltic Sea power has tried to establish a mare clausum against the assertions of outside great powers to defend the principle of mare liberum.

Denmark has been in a unique position controlling the Baltic Straits. For over 400 years, Denmark had collected tolls, known as the Sound Dues, from all ships passing through the Baltic Straits. This practice was discontinued with the signing of the Copenhagen Convention on the Sound and the Belts by the European shipping nations and by the Convention Concerning the Redemption of Sound Dues signed in Washington with the United States in 1857.¹⁶⁶ This guarantee of "free passage" into the Baltic was reiterated in the Treaty of Versailles in 1919. The 1857 treaties influenced the text of the 1982 Convention which recognized, in Article 35(c), an exception to the regime of transit passage for straits regulated by long-standing international convention.¹⁶⁷

This case study will analyze the 1979 decision by Sweden to extend territorial jurisdiction in the Baltic Straits to the maximum possible and the subsequent withdrawal of that claim only five months later. A short history of the Baltic Straits will highlight some of the relevant legal issues. The analysis will be done in two

¹⁶⁵ Commander Kurt B. Jensen, "The Baltic Sea and the Post Cold-War World", Naval War College Review 46 4 (Autumn 1993), p. 30.

¹⁶⁶ For a detailed history of the Sound Dues, see Gunnar Alexandersson, The Baltic Straits (The Hague: Martinus Nijhoff Publishers, 1982); Rainer Lagoni, "The Baltic Straits" in R. Bernhardt (ed.), Encyclopedia of Public International Law (Amsterdam, London, New York, Tokyo: Elsevier Science Publishers, 1992), pp. 321-328; Hugo Tiberg, "Sweden's Baltic Boundaries", German Yearbook of International Law Vol. 34 (1992), pp. 92-107.

¹⁶⁷ Although Denmark and Sweden claim Art 35(c) applies to the Baltic Straits, there is no universal agreement.

parts: first, the background to the July 1979 decision followed by a separate analysis of the subsequent December 1979 decision to withdraw the claim. This section will conclude by summarizing the highlights of the analysis and the historical events following the decisions. The importance of preserving previous patterns of usage will become apparent as the analysis proceeds.

Table XXIII Rights and obligations in the Baltic Straits

<u>Strait</u>	<u>Legal regime</u>	<u>Navigational regime</u>	<u>Rules</u>
Little Belt	Internal waters 1966 Ordinance (1)	Suspendible Innocent passage	Notification and permission required
Great Belt	Territorial sea	Non-suspendible innocent passage	1976 Ordinance (3)
Fehmarn Belt (Denmark/FRG)	EEZ	High seas corridor	IMO rules (4)
Kadet Channel (Denmark/GDR)	EEZ	High seas corridor	IMO rules (4)
The Sound Denmark/Sweden	1857 Treaty	Non-suspendible innocent passage	1966 Royal Notice (2) 1976 Ordinance (3)
Approaches to the Sound	EEZ	High seas corridor	IMO rules (4)

(1) 1966 Danish Ordinance established straight baselines enclosing certain routes in internal waters.

(2) 1966 Swedish Royal Notice. No notification required. Submarines must pass on the surface. Freedom of overflight.

(3) 1976 Danish Ordinance. Notification for more than three naval vessels. Submarines must pass on surface. Permission for overflight required.

(4) IMO rules and traffic separation schemes and rules governing pilotage and apply independently of other restrictions noted.

The Baltic Straits are actually three alternate approaches to the Baltic Sea known as the Sound, the Great Belt, and the Little Belt. The only other approach for sea-going ships from the North Sea to the Baltic Sea is through the Kiel Canal which passes through Northern Germany. In 1857, Denmark declared the "entire freedom of the Sound and the Belts" and in return for a large cash payment, ceded all future

claims to collect tolls in the Baltic Straits.¹⁶⁸ Ships of all states, whether coastal or not, have the right of innocent passage through the Belts and the Sound and approaches to these straits. Neighbouring states have an obligation not to hamper the innocent passage of foreign shipping through these straits. The right of innocent passage applies to all foreign ships and sea-going vessels including warships. There shall be no suspension of innocent passage through these straits. The non-suspendible right of innocent passage through straits used for international navigation is guaranteed by Art. 16(4) of the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone. The International Court of Justice (ICJ) recognized this right for warships as well.¹⁶⁹ The neighbouring states have taken account of the non-suspendible right of innocent passage in their laws and practices as shown in Table XXIII.

Denmark provided in Art. 3 of its Ordinance No. 437 of 1966 that the establishment of straight baselines "shall involve no restrictions in the existing right of passage for foreign vessels through those parts of internal waters in the Samsøe Belt, the Little Belt, the Great Belt and the Sound, which are normally used for such passage." This was in accordance with Art. 5(2) of the 1958 Geneva Convention on the Territorial Sea and corresponding customary international law.

¹⁶⁸ Article 1 of the Convention Concerning the Redemption of the Sound Dues, signed in Washington 1857.

¹⁶⁹ As we discussed earlier in the Corfu Channel case, the ICJ invented the term "straits used for international navigation". See ICJ Report 1949, p. 28.

Passage through the Swedish part of the Sound is regulated by Royal Notice No. 366 of June 3, 1966, Concerning the Admission to Swedish Territory of Foreign Warships and Military Aircraft. Foreign naval ships are free to pass according to the rules of innocent passage without giving notice (Art. 4). Submarines must move on the surface and show the flag. Foreign military aircraft have freedom of overflight in the Sound (Art. 5).

The Ordinance of 27 Feb 1976 Covering the Admission of Foreign Warships and Military Aircraft to Danish Territory in Time of Peace made a distinction between the Little Belt and the other traditional straits (the Sound and the Great Belt). The Little Belt is the westernmost approach and the least important. It is only 700 metres wide at its narrowest point and subject to strong currents. In 1935, a bridge was built across the Little Belt, further restricting navigation to small coastal vessels. Since 1966, the Little Belt and its approaches have been completely enclosed as internal waters.¹⁷⁰ The narrow and winding nature of the Little Belt justified the special requirement of notification through diplomatic channels of any passage as set forth in the Danish Ordinance.¹⁷¹

The Great Belt passes among the Danish Islands. At its smallest point, it is almost six miles wide with a minimum 17 foot draft. A shipping route (known as Route T) has been established leading through the waters of differing legal status. This is known as a compound strait which includes the Samsøe Belt as the northern

¹⁷⁰ Art. 3 of Ordinance No. 437 of 1966. See Rainer Lagoni, "The Baltic Straits", p. 324 for detailed explanation of the implications.

¹⁷¹ Gunnar Alexandersson, The Baltic Straits, p. 83.

approach, the Great Belt, the Fehmarn Belt, and the Kadet Channel. The strait consists of certain sections of high seas corridors and certain sections of territorial seas where different rules of passage apply. Measures have been taken to ensure the safety of navigation and reduce the risk of pollution from collision or grounding. Traffic separation schemes have been established upon recommendation of the International Maritime Organization (IMO) at congested sections of the shipping route. In November 1975, the IMO (then known as IMCO), recommended certain standards of equipment for large ships. The Danish Government provides navigational services such as radio, telecommunications, navigational aids, pilotage and ice-breaking on Route T. The Great Belt is considered as a strait used for international navigation passing through the Danish territorial sea.¹⁷² The approaches at either end are considered shipping routes through an exclusive economic zone. The Fehmarn Belt between Denmark and the former Federal Republic of Germany and the Kadet Channel between Denmark and the former German Democratic Republic form the southern approaches to the Great Belt. In order to preserve high seas routes providing freedom of navigation and overflight through these straits used for international navigation, the coastal states have not extended their territorial seas beyond three miles. These approaches are all less than 24 miles wide and would be enclosed by territorial seas were the neighbouring coastal states to claim maximum territorial jurisdiction.

¹⁷² Note that the regime governing navigation is non-suspendible innocent passage and not transit passage.

The Sound between Denmark and Sweden is less than three miles wide at its narrowest point. The traffic volume in the Sound is large enough to warrant IMO traffic separation schemes. In addition, a large volume of cross-traffic between the two countries complicates the traffic flow. Large ships can enter the harbours of Copenhagen and Malmo from the north, but insufficient depths divert deep-draught vessels through the Great Belt. The boundary between Sweden and Denmark was agreed in 1932 and generally coincides with the median line.¹⁷³ The rules of innocent passage of naval vessels apply to the Sound and the Great Belt with the exception of the Copenhagen harbour parts of the Drogden and Hollander Deep which are claimed to be internal Danish waters. More than three naval vessels of the same nationality passing through the straits simultaneously require permission from Danish authorities through diplomatic channels. Foreign submarines must under all circumstances move on the surface and show the flag in Danish territorial waters. Foreign military aircraft must file an ordinary ICAO flight schedule before receiving permission through diplomatic channels to fly across Danish territory.¹⁷⁴

The Baltic Straits were the only access to the open sea for the fleets of the Warsaw Pact navies. In the case of hostilities where Denmark itself was not at war with the belligerents, Denmark would have a security interest in closing the Drogden Channel which passes through the harbour area of Copenhagen and which is claimed as internal waters. Shipping could still pass through the Sound near the mid-line of

¹⁷³ See Gunnar Alexandersson, *The Baltic Straits*; Rainer Lagoni, "The Baltic Straits"; and Hugo Tiberg, "Sweden's Baltic Boundaries" for more information.

¹⁷⁴ Ordinance of 27 Feb 1976.

the passage as far away from both coasts as possible.¹⁷⁵ Belligerent warships would retain the right of innocent passage through the straits.¹⁷⁶ Yet in the case of self-defence, the coastal state concerned may close the strait to enemy warships.¹⁷⁷

Background to the June 1979 decision

In the late 1970s, many of the Baltic states widened their claims to 12 mile territorial seas under the influence of the ongoing Law of the Sea negotiations. On July 1, 1979, Sweden passed the Act on Sea Territory which unilaterally extended the territorial sea to 12 miles or the median line whichever was closer. This appears to have been done without public debate or discussion. But five months later, after consulting with Denmark, Sweden withdrew the claim in the approaches to the Sound to three miles from the median line to maintain a high seas corridor. The arguments which were given for and against the widening of the territorial sea are instructive.¹⁷⁸ Three arguments were made for a 12 mile limit. First, reference was made to an instance where the Coast Guard detected a ship spilling oil but had no authority to act because the spill occurred in international waters. A wider territorial sea would give better protection against oil spills and pollution. Second, foreign military activities would be restricted in the wider territorial sea. Although it was not specifically mentioned, the Soviets stationed permanent patrol vessels just outside territorial limits

¹⁷⁵ Gunnar Alexandersson, The Baltic Straits, p. 83.

¹⁷⁶ Permanent Court of International Justice, Series A, No. 1, p. 25 (1923), The Wimbledon Case.

¹⁷⁷ *Ibid.*, p. 23.

¹⁷⁸ The debate on bill 1979/80:16 by the Foreign Relations Committee, The Quick Records of the Riksdag, Friday 18 Dec 1979, Georg Aberg, Liberal, Speech 28, pp. 46-49.

which would have to be moved further from the coast. Third, there was the possibility that the concept of transit passage would never be accepted or ratified. Sweden had argued against transit passage and in favour of innocent passage at UNCLOS III. However, it was in the interests of the maritime powers to restrict naval mobility as little as possible.¹⁷⁹ It has also been suggested that the Cabinet crisis over nuclear energy triggered by the March 1979 accident at Three-Mile Island created concerns over similar nuclear accidents in Swedish coastal waters and led to the quick adoption of the 12 mile limit just before Parliament was dissolved for the September 1979 election.¹⁸⁰

MODELLING THE BALTIC STRAITS CONFLICT

There are clearly two distinct points in time where important decisions were made regarding territorial claims in the Baltic Straits between Sweden and Denmark. The first was June 1979 when Sweden unilaterally extended its territorial jurisdiction to the maximum allowable under the on-going UNCLOS III. The second situation in December 1979, which followed discussions with Denmark, led to the withdrawal of the territorial claims to three miles from the median line in order to leave a high seas corridor in the approaches to the Sound. The modelling and analysis of the Baltic Straits conflict at these two points in time are best done separately to provide insights into the conflict.

¹⁷⁹ The Quick Records of the Riksdag, Friday 18 December 1979, Social Democrats, Jan Bergqvist, Speech 27, pp. 41-46, and Berger Rosqvist, Speech 29, pp. 49-50.

¹⁸⁰ Stig Hadenius, Swedish Politics During the 20th Century (Stockholm: Swedish Institute, 1990), pp. 147-149.

Extension of the Territorial sea July 1979**Table XXIV Players and options in the July 1979 Extension of the Territorial Sea**

<u>Players and Options</u>	<u>Comments</u>
Sweden	State bordering the strait
1. Corridor	Claim less than maximum allowable jurisdiction leaving a high seas corridor.
2. Territorial	Claim territorial sovereignty to median line or maximum of 12 miles.
3. Self-defence	Use force to enforce claim.
Denmark	Neighbouring state bordering strait
4. Corridor	Claim less than maximum allowable jurisdiction leaving a high seas corridor.
5. Territorial	Claim territorial sovereignty to median line or maximum of 12 miles.
6. Self-defence	Use force to enforce claim.
User States	State wanting to use strait for shipping
7. Challenge legally	Challenge strait's states claims in court.
8. Self-defence	Use or threaten force to challenge territorial claim by straits states.

The final arrangement of players and options for the July 1979 "extension game" are shown in Table XXIV. Sweden is an obvious player since they made the decision to enact legislation. Denmark is a player as the neighbouring state in the Sound because any unilateral action taken by Denmark could affect Sweden's outcomes. Although NATO, the Warsaw Pact, the USSR and USA and other user states may have had an important influence in the decision, none of them challenged the claim. Because all user states acted in concert with one voice, we can consider

them all as one player. We will use the three-player game as developed for the Straits Conflict in the previous chapter.

Table XXV Preferences and their meanings for the July 1979 decision.

Decision makers and preferences	Meanings of preferences
Sweden	
-5 (Note 1)	Denmark does not claim maximum territorial sea.
2	Sweden claims maximum territorial sea.
1	Sweden claims high seas corridor.
-4	Denmark does not claim high seas corridor.
Denmark	
-2	Sweden does not claim maximum territorial sea.
5	Denmark claims maximum territorial sea.
4	Denmark claims high seas corridor.
-1	Sweden does not claim high seas corridor.
User state	
-5 (Note 2)	Denmark does not claim maximum territorial sea.
-2	Sweden does not claim maximum territorial sea.
-1	Denmark does not claim high seas corridor.
-4	Sweden does not claim high seas corridor.

(1) These numbers refer to the options listed in the Table of players and options. They are ranked in order of preference from top to bottom. A positive number means that the option is selected. A negative number means that the option is rejected.

(2) The order of each pair of options is not important to the outcomes. The same results are achieved if Sweden and Denmark are reversed.

The players, options and preferences in Table XXV are identical to the model except that we call State A Sweden and State B Denmark.

In this case, the resulting stability analysis as presented in Table XXVI is identical to the model developed earlier. Sweden's preferred outcome is decimal outcome 2 where Sweden extends the territorial sea to the maximum extent possible

Table XXVI Stability Analysis for the July 1979 decision.

Outcomes ordered by preferences for Sweden:									
Sweden									
1. Corridor	0	3	1	1	0	0	0	1	0
2. Territorial	1	1	0	0	0	0	1	0	0
3. Self-defence	0	0	0	0	0	0	0	0	0
Denmark									
4. Corridor	0	1	0	1	0	1	0	0	0
5. Territorial	0	0	0	0	0	0	1	1	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Legal challenge	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome	2	10	1	9	0	8	18	17	16
Overall stability	X	X	E	E	E	E	E	X	X
Stability Sweden	r	r	s	s	s	s	c	u	u
Stability Denmark	u	u	s	s	s	s	c	r	r
Stability for user	r	r	r	r	r	r	c	r	r

and then all other players do nothing but accept the claim. The model predicts that this outcome will be unstable for Denmark, but that user states will not protest. As was shown earlier, this can also be portrayed as the Prisoner's Dilemma. Decimal outcome 18 is actually a cooperative equilibrium as was explained earlier in the Straits Conflict model because both states must agree to implement a transit passage regime if they both chose to extend their territorial jurisdiction to close the strait. In this case, both Sweden and Denmark are against the concept of transit passage. Outcome 18 is less preferred for the two coastal states than the least preferred non-cooperative equilibrium outcome involving a high seas corridor. Therefore decimal outcome 18 is determined to be an unstable equilibrium. Given the importance

vectors of Denmark and Sweden, an equilibrium exists that does not require cooperation is preferable to outcome 18. As events unfolded, the unstable decimal outcome 2 could not last and was revoked less than five months later. Let us now analyze the subsequent December 1979 decision to withdraw the claim to an extended territorial sea.

Withdrawal of the claim to territorial seas December 1979

The arguments for withdrawing the claim were based on the application of the transit passage regime in straits used for international navigation and the changes that would be made to the existing patterns of usage in the Sound and its approaches. As we have already seen, transit passage is less restrictive than innocent passage. With maximum claims to territorial seas by both Sweden and Denmark, a much larger area would become an international strait. Foreign naval vessels and aircraft would be allowed transit passage rights through and over the waters of the entire strait area from baseline to baseline; they would no longer be restricted to a corridor in the middle of the channel. Passing warships would not be prohibited from exercise or practice with weapons, submarines would not be required to navigate on the surface, and the coastal state would be precluded from requiring user state vessels to give notification of intended passage. Sweden decided that a withdrawal of the claim to three miles from the mid-line would leave Sweden with up to nine miles of territorial sea adjacent to the high seas corridor in which to exercise enhanced jurisdiction. Sweden reached an understanding with Denmark through which Sweden abstained from claiming maximum jurisdiction, leaving a high seas corridor, on the

understanding that Denmark would do the same, if and when territorial jurisdiction were extended beyond three miles.¹⁸¹

Table XXVII Preferences and meanings for the December 1979 decision.

Decision makers and preferences	Meanings of preferences
Sweden	
1	Sweden leaves a high seas corridor.
3	Denmark leaves a high seas corridor.
-4	Denmark does not claim maximum extent.
-2	Sweden does not claim maximum extent.
Denmark	
-2	Sweden does not claim maximum extent.
1	Sweden leaves corridor.
3	Denmark leaves corridor.
-4	Denmark does not claim maximum.

As we saw in the previous analysis, the unilateral Swedish extension of territorial sea limits was unstable. Both Sweden and Denmark knew that as long as no further restrictions were placed on shipping than those already in effect through the regime of innocent passage, any outcome would be acceptable to the user states. Although both states were prepared to understand each other's concerns, they were not prepared to cooperate to sign a joint agreement. The navigational regime would be determined by unilateral declarations made by each of the players with reasonable certainty of what the other player would do. Force was not an option. The players and options for this decision are the same as shown before in ?. The preferences and

¹⁸¹ Ministerial notes concerning traffic in the Straits of Denmark, 21 Dec 1979, Documents on Swedish Foreign Policy (1979), p. 207.

Table XXVIII Stability analysis for the December 1979 decision.

Outcomes ordered by preferences for Sweden:

Sweden									
1. Corridor	1	1	1	0	0	0	0	0	0
2. Territorial	0	0	0	0	0	0	1	1	1
3. Self-defence	0	0	0	0	0	0	0	0	0
Denmark									
4. Corridor	1	0	0	1	0	0	1	0	0
5. Territorial	0	0	1	0	0	1	0	0	1
6. Self-defence	0	0	0	0	0	0	0	0	0
User state									
7. Challenge legal	0	0	0	0	0	0	0	0	0
8. Self-defence	0	0	0	0	0	0	0	0	0
Decimal outcome	9	1	17	8	0	16	10	2	18
Overall stability	E								
Stability for A	r	r	r	u	u	u	u	u	u
Stability for B	r	u	u	r	u	u	r	u	u
Stability for user	r	r	r	r	r	r	r	r	u

their meanings for the December 1979 decision are different, though, and are shown in Table XXVII. We have only shown the first four preferences for the two coastal states. As it turns out, the order of the remaining preferences is irrelevant to the outcome as demonstrated in the sensitivity analysis performed. The user state preference is for any option that does not enclose the straits and is insensitive to any changes in ordering. In the stability analysis, shown in Table XXVIII, the outcomes proved to be remarkably insensitive to drastic changes in the preference ordering. In all cases where the preferences 1 and -2 were present for both players, decimal outcome 9, the mutual high seas corridor, was the preferred outcome for both players

and the only stable equilibrium. It did not matter what the order was, or what the other preferences were. Each player can achieve this outcome by a unilateral declaration of territorial limits to the width of the high seas corridor in use at the time. This very strong equilibrium is likely to persist according to the model. Seven outcomes in the middle are bridged together because they all involve unstable equilibria where a high seas corridor is available for user states. Outcome 18, the enclosure of the strait by territorial seas, is always unstable because it is not accompanied by a transit passage regime.

INSIGHTS

Swedish regulations are slightly different than Danish regulations. We will see why in a moment. But first, we must consider the legal regime of transit passage and its application to the Sound and the Belts. Although some legal scholars consider that the transit passage regime applies, the prevailing opinion is that the Baltic Straits will not be affected by Part III of the 1982 Convention because the regime of passage in these straits is partly regulated by the 1857 treaties abolishing Sound Dues.¹⁸² Accordingly, it was the understanding of Denmark and Sweden at UNCLOS III that the exception from the transit passage regime provided for in Art. 35(c) of the 1982 Convention would apply to the Sound and the Belts as well.

The Swedish-Danish understanding of the Sound leaves the passage through the narrow part of the Sound governed by the 1857 treaties. Passage through the approaches to the Sound, on the other hand, is through the high seas corridor. In this

¹⁸² Rainer Lagoni, "The Baltic Straits", p. 324. Art. 1(1) of the 1857 Treaty prevents any vessel "from being subject to detention or hindrance of any sort in the passage of the Sound or the Belts".

case, the coastal states can claim an exemption from the transit passage regime on the basis of Article 36. This formed the rationale for the coastal states' claims in other parts of the Baltic Straits, and could set precedents for other international straits of the world.¹⁸³

Both Swedish and Danish regulations are in agreement with existing international law, the 1958 Geneva Conventions and customary law.¹⁸⁴ Threat perceptions and security interests account for the differences.¹⁸⁵ Sweden, as a neutral country, had to deal with the need to guarantee the Soviet Union and the Warsaw Pact naval fleets access to the open sea. The main threat to Sweden was a conflict between NATO and the Warsaw Pact, not one bloc in particular. On the other hand, Denmark, as a member of NATO, was in a position to prevent the Warsaw Pact from using the Baltic Sea to launch military operations against the Central Front.¹⁸⁶ The Soviets criticized the Danish regulations for ignoring important interests of the littoral states of the Baltic Sea and especially denounced the exceptional rules for exercises by NATO navies.¹⁸⁷ Soviet efforts to turn the Baltic Sea into a neutral zone, or "Sea of Peace" were never realized. The Baltic Sea has not become a mare clausum or closed

¹⁸³ Gunnar Alexandersson, The Baltic Straits, p. 85.

¹⁸⁴ Gunnar Alexandersson, The Baltic Straits, pp. 82-86.

¹⁸⁵ Sweden's Total Defence 1982-1987 A summary of the final report of the 1978 Parliamentary Committee on Defence, November 1981.

¹⁸⁶ Nils Andren, "National Threat Perception: The Case of Sweden", Sverre Lodgaard and Karl Birnbaum (eds.), Overcoming Threats to Europe: A New Deal for Confidence and Security (Oxford: Oxford University Press, 1987), p. 146. This analysis was based on the 1984 Defence Committee Report.

¹⁸⁷ Gunnar Alexandersson, The Baltic Straits, p. 83.

sea. The German Democratic Republic extended its territorial sea south of the Kadet Channel in 1985, but was careful to preserve the shipping route as a high seas corridor. Since the unification of Germany, these high seas corridors have remained in effect. The actions of other coastal states in the Baltic Straits to preserve high seas corridors for shipping while extending their territorial seas was predicted by the very strong equilibrium in the model. But when the 1982 Convention comes into force,¹⁸⁸ Part III provides that in straits used for international navigation "all ships and aircraft enjoy the right of transit passage, which shall not be impeded."¹⁸⁹ If applied to the Baltic Straits, this would be in conflict with existing Swedish and Danish laws. The restrictions on shipping mentioned above in Table XXIII could be challenged by user states.

In summary, the coastal states of the Baltic Straits have rejected the transit passage regime. In narrow parts of the Straits, such as the Sound, the 1857 treaties grant non-suspendible innocent passage to shipping. This was claimed by the coastal states in applying the exception of Art. 35(c) of the 1982 Convention. Where passage is through Danish territorial waters, as in the Great Belt, non-suspendible innocent passage applies.¹⁹⁰ In other sections of the straits where the width is less than 24

¹⁸⁸ One year after ratification by 60 states, expected to be by 1995.

¹⁸⁹ Article 38.

¹⁹⁰ The rights of passage are based on the 1857 treaty, the 1958 Convention on the Territorial Sea, the 1982 Convention and customary law. There is no dispute over its status as a strait used for international navigation, but there is a growing dispute over the scope of the rights of passage and the relevance of the less convenient routes through the Sound. See International Legal Materials 32 1 (January 1993), in particular the International Court of Justice Order Discontinuing the Proceedings in the Case Concerning Passage Through the Great Belt (Finland v. Denmark) 10 Sep 92 at p. 101.

miles, Germany, Sweden and Denmark have all adopted the same approach and have limited their territorial claims to ensure that a high seas corridor is maintained for shipping. In accordance with Art. 36 of the 1982 Convention, the straits are not considered international straits and transit passage does not apply. The withdrawal of Sweden's claim to a 12 mile territorial sea to leave a high seas corridor set an important precedent for the Baltic Straits and perhaps other straits in a similar situation. Most of the decisions regarding territorial claims were unilateral declarations by one of the coastal states. With no protests from user states or neighbouring coastal states, these declarations have been accepted. The outcome of this stage of implementation has been shown to be a very strong equilibrium which preserves the previous patterns of usage for shipping by maintaining a regime of navigation which all states will accept.

Thus, the Baltic Straits have undergone their version of creeping uniqueness. The relevant provisions regarding the extension of the territorial sea have been implemented in accordance with domestic laws. The previous patterns of usage have been maintained without protest by user states. By claiming Article 36 exemption, the coastal states were able to avoid the transit passage regime.

We have seen in the case study on the Strait of Dover the extent of the technology that was required to move on to the final stage of implementing transit passage. As it stands, insufficient technological mechanisms are in place to induce cooperation. Lacking the means, the coastal states have acted unilaterally to protect their security interests and the coastal environment.

THE NORTHWEST PASSAGE

Map 3 The Northwest Passage.

HISTORICAL BACKGROUND

The Northwest Passage has long been of interest to the European trading nations as a possible shortcut to the Orient (See Map 3). Jacques Cartier's voyages of 1535 and 1541 in the St. Lawrence River were motivated by the search for a route to Asia. For the next few hundred years, explorers continued the search without success. By the mid-1880s, it was realized that the Northwest Passage would have little commercial value because of the difficulties of navigating through the ice. It was not until 1906 that the Norwegian explorer, Roald Amundsen completed the first voyage through the passage entirely by water. Since then, only a few dozen full transits have been counted. In the meantime, in 1880, Great Britain transferred to

Canada all her British possessions in North America not already included within the Dominion of Canada as well as all the islands adjacent to any such territories or possessions with the exception of Newfoundland. This included all of the Arctic that Great Britain had discovered and explored up to that time. The transfer was effected by Order-in-Council dated 31 July 1880.¹⁹¹ Following Amundsen's voyage, Canada felt the need to consolidate its title to the Arctic islands and its control over the water areas through regular patrols by the Royal Canadian Mounted Police.¹⁹² Following World War II, the United States began to show an interest in the passage for national security reasons, and following the discovery of oil in Alaska in 1968, for economic development of the area. With the successful transit of the U.S. ice-strengthened tanker Manhattan in 1969, Canada was forced to articulate its legal position on the passage as internal waters in response to the challenge over the status and usage of the passage. In 1973, Canada claimed that "the waters of the Canadian Arctic Archipelago are internal waters of Canada, on an historical basis, although they have not been declared as such in any treaty or by any legislation."¹⁹³ On the contrary, the U.S. believes strongly in freedom of the seas.¹⁹⁴ When the concept of transit passage

¹⁹¹ Donat Pharand, The Northwest Passage: Arctic Straits, (Dordrecht, Boston, Lancaster: Martinus Nijhoff Publishers, 1984), p. 38.

¹⁹² Pharand, The Northwest Passage, p. 44.

¹⁹³ 12 Canadian Yearbook of International Law (1974), p. 279. quoted in Pharand, The Northwest Passage, p. 88.

¹⁹⁴ Colin S. Gray, Maritime Strategy, Geopolitics, and the Defense of the West, (New York: Ramapo Press, 1986), p. 13.

was introduced at UNCLOS III¹⁹⁵, Canada responded in 1975 by saying that "Canada's Northwest Passage is not used for international navigation and since Arctic Waters are considered by Canada as being internal waters, the regime of transit does not apply to the Arctic."¹⁹⁶ In his 1984 study on the status of the Northwest Passage, Pharand examined the validity of Canada's position that the Northwest Passage is not an international strait and what rights of passage and jurisdiction might apply.¹⁹⁷ He concluded by formulating five main propositions of interest to us for this case.¹⁹⁸

First, the Northwest Passage is not an international strait, because it has never been used for international navigation. Second, the Northwest Passage is a legal or territorial strait, since there is an overlap of territorial waters in its various routes, based on the supposition that the waters of the passage are not internal waters. Third, the right of innocent passage in favour of all ships applies, but subject to limitations which render it suspendible for protection of Canadian security or the environment. Fourth, since international shipping could begin sometime, the passage could become an international strait unless Canada succeeded in taking appropriate preventive measures and in exercising adequate control over foreign ships. And lastly, if the Northwest Passage were to become an international strait, the right of transit passage

¹⁹⁵ For an explanation of the strategy surrounding the negotiations, see D.M. McRae, "The Negotiation of Article 234", Franklyn Griffiths (ed.), Politics of the Northwest Passage, pp. 98-114.

¹⁹⁶ Canada, Proceedings of Standing Committee on Indian Affairs and Northern Development, No. 24, 22 May 1975, p. 6. quoted in Pharand, The Northwest Passage, p. 89.

¹⁹⁷ Pharand, Northwest Passage, pp. 88-121.

¹⁹⁸ Pharand, The Northwest Passage, pp. 120-121.

provided by the 1982 Convention, when in force, would apply in favour of all ships, including submarines in their normal submerged mode of navigation and this right could not be suspended or impeded.

The 1985 Polar Sea voyage quickly became a test case for Canada to demonstrate "appropriate preventive measures" and for the United States to show its commitment to freedom of the seas.

In August 1985, the U.S. Coast Guard icebreaker Polar Sea transitted the Northwest Passage from east to west via the Parry Channel and the Prince of Wales Strait to conduct resupply operations in Alaska.¹⁹⁹ Considerable sailing time was saved by using this route instead of the Panama Canal. Permission for the voyage was not obtained from the Canadian government because the U.S. claimed that the Northwest Passage was an international strait open to shipping and freedom of the seas applied. Canada claimed that the passage lay within sovereign territory. Canada was notified of the transit, Canadian observers were aboard the Polar Sea for the voyage, and it was agreed to conduct the re-supply operation on a cooperative basis without prejudicing either state's legal position. The government under-estimated the strength of public opinion and came under intense pressure to assert Canadian sovereignty in the Arctic²⁰⁰.

¹⁹⁹ For a detailed account of the dispute, see Philip J. Briggs, "The Polar Sea and the Northwest Passage Dispute", Armed Forces and Society, (Spring 1990), pp. 437-452.

²⁰⁰ In response, on 10 September 1985, Secretary of State for External Affairs the Rt. Hon. Joe Clark made a statement in the House of Commons concerning Canadian sovereignty in the Arctic. Statement of Canadian Sovereignty 10 September 1985, Canada, Parliament, House of Commons, Debates 33rd Parl., 1st Sess., Vol. 128, 6462-4 (10 September 1985).

Public protest and editorial pressure²⁰¹ followed the comments of the Baffin Regional Inuit Association, whose president complained that allowing a foreign ship to pass through Lancaster Sound without permission would be "the start of something that we simply cannot allow to happen."²⁰² Comparisons were drawn between the Soviet Union's Northeast Passage and Canada's Northwest Passage. The Soviet government supported Canada's position that the Northwest Passage was Canadian internal waters just as they believed that the Northeast Passage belonged to them. On January 1, 1986, the Canadian government established straight baselines around the perimeter of the Canadian Arctic archipelago. This Order-in-Council defined the baselines which formed the outer limit of Canada's historic internal waters, which now definitely included the Northwest Passage.²⁰³ The government also announced its intention to construct a class 8 polar icebreaker, increase surveillance of its Arctic waters by aircraft, and plan naval exercises in the eastern Arctic. It was also about this time that the government began studying the possibility of acquiring nuclear submarines.

It should have been no surprise that the U.S. would reject Canada's claims. Shortly after the signing of the 1982 Convention (which the U.S. did not sign), the U.S. indicated its commitment to maintain "the rights and freedoms of the

²⁰¹ See for example, "Group Plans Confrontation with U.S. Ship on Arctic Ice", Toronto Star, 6 August 1985, p. A1, A5; Editorial "All in the Family", Globe and Mail (Toronto), 8 August 1985, p. 6.; and letters to the editor in various newspapers from 7 - 9 August 1985.

²⁰² Christopher S. Wren, "U.S. Ship's Arctic Voyage Draws Heat in Canada", New York Times, 1 August 1985, p. 2.

²⁰³ Briggs, "The Polar Sea Voyage and the Northwest Passage Dispute", p. 443.

international community in navigation and overflight and other related high seas uses."²⁰⁴ The U.S. went one step further and established an exercise-of-rights program to challenge coastal state claims which exceeded what was permitted by international law.²⁰⁵

The U.S. rejection of Canada's claim was based on the position that international law did not support the Canadian claim.²⁰⁶ Given this impasse, Canada and the U.S. began immediate talks on cooperation in Arctic waters to reconcile the two conflicting principles of international law. These talks resulted in the Agreement on Arctic Cooperation which was signed on 11 January 1988. The two key passages include the U.S. pledge that all navigation by U.S. icebreakers within waters claimed by Canada to be internal would be undertaken with the consent of Canada and that the agreement did not prejudice either state's legal positions. This Agreement was put to the test in October 1988 when the Polar Star sought permission to transit through the Northwest Passage after having been trapped in the ice near Alaska.

According to Briggs, "the 1988 Agreement represents a pause rather than an end to the Northwest Passage dispute as military, economic and environmental pressures increase in the entire region. Continued creative diplomacy and joint efforts

²⁰⁴ "United States Oceans Policy", Weekly Compilation of Presidential Documents 19, (14 March 1983), p. 383.

²⁰⁵ William J. Aceves, "Diplomacy at Sea: U.S. Freedom of Navigation Operations in the Black Sea", Naval War College Review, (Spring 1993), pp. 59-79.

²⁰⁶ Briggs, "The Northwest Passage Dispute", p. 445.

will be necessary to avoid future problems.²⁰⁷ These future problems are likely to revolve around the status of the Northwest Passage as an international strait.²⁰⁸

MODELLING THE NORTHWEST PASSAGE DISPUTE

There are four steps in modelling the conflict: 1) selection of an appropriate point in time; 2) decision-makers and options; 3) option combinations for specifying infeasible outcomes; and, 4) preferences for each of the decision-makers. The following information obtained from the background to the dispute was entered into the Decision Maker computer program.

The first step in modelling the conflict is the selection of a point in time to be analyzed. Several important conflict decisions were made in this dispute. One of the early official decisions was Canada's statement in 1973 which claimed the waters as internal waters. It was clear at that time that the U.S. would not accept restrictions on freedom of the seas. However, no immediate conflict resulted. A possible second decision point could be in August 1985 when the U.S. did not request permission for the voyage of the Polar Sea. However, Canada was notified of the passage and agreed to cooperate without prejudice to either state's legal position. At that time, the strength of the public outcry was not foreseen. This led to a third decision point: the September 10, 1985 Canadian declaration of baselines around the Arctic islands and the immediate rejection of the claim by the U.S. Subsequent discussions in the

²⁰⁷ Briggs, "The Northwest Passage Dispute", p. 449.

²⁰⁸ Pharand, The Northwest Passage, p. 121. See also Donald R. Rothwell, "The Canada-U.S. Northwest Passage Dispute: A Re-assessment", Cornell International Law Journal 26 2 (Spring 1993): 331-372.

following two years led to the fourth decision to sign the Arctic Cooperation Agreement of 1988. September 11, 1985 has been chosen as the point of time for modelling and analysis. Canada has taken a firm stand on the principle of sovereignty and the U.S. has taken an equally firm stand on the principle of freedom of navigation. Let us see what insights the model can reveal about this dispute.

The second step in modelling is to decide on the decision-makers and their options. As noted in Chapter 3, it is often advisable to construct a number of alternative models for the conflict being studied. In this conflict, there were a large number of domestic players on both sides of the border, as well as a number of states, including the Soviet Union, interested in the outcome. It would be possible to construct complex models for this dispute where there are many players and options. On the other hand, a very simple model can be developed by considering the main groups of players to be Canada and the United States. A number of possible models were actually considered; the model that possessed just enough complexity to represent the dispute realistically is described in this section and then analyzed.²⁰⁹ The two players involved in this dispute are Canada and the U.S.

Canada, this decision-maker or player, includes the federal government, several government departments, and public protest groups. This player could be subdivided to reflect the differing goals of the sub-groups, but this would complicate

²⁰⁹ In this case, there is only one coastal state, Canada. Therefore the generalized three-player Straits Conflict model developed in Chapter Three had to be modified to eliminate the second coastal state. The model described was found preferable in that it was better able to differentiate the options actually available to the players as determined by the experts on the case. This demonstrates the great flexibility of this model in adapting itself to changing circumstances in a given scenario.

the analysis without contributing any understanding or insight to the problem of navigation in the Northwest Passage. Any decision made by Canada would have to reflect the relative weight of concerns voiced. The primary goal of this player is to assert Canadian sovereignty in the Arctic. The Straits Conflict model developed in Chapter 3 can be modified to reflect the uniqueness of this dispute.

In his 1984 study, Pharand examined four measures that Canada could take to prevent the internationalization of the Northwest Passage.²¹⁰ These included implementing an international shipping policy, sovereignty through legislation, technological sovereignty and user agreements. He concluded that an international shipping policy was unlikely. The second measure of sovereignty by legislation was the one chosen by the Canadian government in September 1985 which precipitated the dispute under investigation.

By technological sovereignty, the third measure examined, Pharand meant that Canada must develop the full range of sea and land-based services to ensure that control of the passage. Of the services he listed, icebreaking and pilotage were deemed the most important for asserting control. Eventually, Canada would establish and enforce a transit management system to ensure control over shipping. The announced construction of a class 8 polar icebreaker and increased surveillance of Arctic waters by aircraft would be means that Canada could use to exercise this option. The fourth measure, bilateral user agreements, would recognize Canada's control over the passage and provide for the conditions to be met by foreign shipping.

²¹⁰ Pharand, The Northwest Passage, pp. 110-114.

Based on the reaction of certain American participants at a 1981 workshop on Arctic Ocean issues, Pharand concluded that such agreements would not be too difficult to negotiate. Canada had stated previously that it was determined to open up the Northwest Passage to safe navigation subject to necessary precautions. It was not Canada's intention to close the passage. The government announced its intention to commence immediate talks with the United States on cooperation in the Arctic. However, Canada seemed prepared to use or threaten the use of force in self-defence to back up the legal claim. The increased surveillance by aircraft, naval exercises in the eastern Arctic, proposed construction of nuclear submarines and underwater surveillance arrays provided a third set of options to the government.

The final option was to withdraw the order-in-council and accept the territorial status of the passage. The worst option for Canada, based on the supposition that the claim was not upheld and the waters of the passage were not internal, would be the right of innocent passage in favour of all ships subject to two limitations described earlier: 1) that innocent passage could be suspended if essential for protection of national security; or, 2) special measures could be adopted because of the fragile nature of the ice-covered environment. This option would postpone the confrontation with the U.S. until the question of the international status of the Northwest Passage was raised again. Pharand concluded that when traffic in the Passage eventually

becomes more frequent, its status as a strait used for international navigation and the associated regime of transit passage would inevitably become an issue.²¹¹

Table XXIX Decision makers and options in the Northwest Passage dispute

<u>Players and Options</u>	<u>Comments</u>
Canada	State bordering the strait.
1. Technology	Technological sovereignty, most notably icebreaking capability, increased surveillance and pilotage.
2. User agreements	Specify conditions for passage.
3. Self-defence	The actual use of or threat of force, including increased surveillance, naval exercises and nuclear submarines.
4. Withdraw claim	Withdraw claim of internal waters as limited by the baselines announced and return strait to territorial status.
United States	User state.
5. User agreements	Specify conditions for passage.
6. Self-defence	Implement exercise-of-rights program, challenge through World Court, or use force, if necessary, to maintain freedom of navigation.

The options for Canada at the decision point under study can be grouped into four basic categories: technological sovereignty, user agreements, self-defence or withdrawing the claim as listed in Table XXIX.

The United States, the decision-maker or player, represents the President, Congress, and Navy. The primary objective of this player is to avoid acquiescing to

²¹¹ See also Franklyn Griffiths, *Politics of the Northwest Passage*, (Montreal and Kingston: McGill-Queen's University Press, 1987), pp. 242-253 for a discussion of alternative futures for the Passage.

coastal state claims for jurisdiction beyond that allowed by international law so that maximum freedom of the seas is maintained. The options are listed as options 5 and 6 in Table XXIX. Rejecting options 5 and 6 (-5,-6) is the same as accepting Canada's claim. As indicated above, as early as 1981 there seemed to be support for bilateral user agreements that spelled out specific conditions of transit through the passage. What was needed was an event to trigger the negotiation of such an agreement. The second option for the U.S. would have been to implement their exercise-of-rights program and challenge the claim, using force in self-defence if necessary. As Ambassador John D. Negroponte, Assistant Secretary for Oceans and International Environmental and Scientific Affairs, has stated: "we have not been bashful about exercising the rights we claim."²¹² If the United States were to reject both of these options, that would be the same as accepting Canada's claim. Each decision-maker must decide which options he wants to take or reject in order for an outcome in a dispute to come about. Depending on the nature of the conflict, some of the options are infeasible. The objective of this stage is to specify special relationships among the options so that infeasible outcomes can be removed from further modelling and analysis. With six options, there are $2^6=64$ possible outcomes. Table XXX lists all the outcomes that can be removed from the Northwest Passage dispute.

²¹² From an address by Ambassador John D. Negroponte, Assistant Secretary for Oceans and International Environmental and Scientific Affairs, Current Policy, no. 819, (Washington, D.C.: U.S. Department of State), pp. 1-2, as quoted in Briggs, "The Northwest Passage Dispute", p. 443.

Table XXX Outcome removal for the Northwest Passage dispute

<u>Removable outcomes</u>	<u>Reasons</u>
Type 1 (logically infeasible) none	
Type 2 (Preferentially infeasible for one player) (--11,--) (-11,--) (1-1,--)	Canada will not use force with other option.
Type 3 (logically infeasible between players) (---1,-1)	U.S. will not challenge Canada if claim is withdrawn
Type 4 (preferentially infeasible between players) none	
Type 5 (cooperative outcomes) (-1--,0-) (-0--,1-) (--1-,1-)	User agreements must be negotiated bilaterally. Canada will not use force if U.S. chooses user agreements.

Type 1 outcomes are logically infeasible for a single player. In this case, there are none. Type 2 outcomes are preferentially infeasible for one player because of the possible strategy choices. Canada would not be expected to combine the use of force with any of the other options, so these outcomes can be safely removed (--11,--), (-11,--), and (1-1,--). On the other hand, the U.S. might be expected to challenge the claim at the same time that user agreements are being negotiated, so these cannot be removed. Type 3 outcomes are logically infeasible between players and are somewhat dangerous for removal. In this case, if Canada were to withdraw the claim of internal waters, the U.S. would not challenge the claim, because there would be no claim to challenge. We can feel quite safe in removing (---1, 1). There are no type 4

outcomes in this case. Type 5 outcomes include the option to compromise and are completely safe for removal. We can say with certainty that user agreements must be negotiated bilaterally so that both parties must accept or reject this option together. These outcomes can be safely removed: (-1--,0-) and (-0--,1-). We can also say that if the U.S. were to choose user agreements as an option, then Canada would not use force to back up the claim. Thus we can remove (--1-,1-).

Table XXXI Feasible outcomes for the Northwest Passage dispute

<u>Player and Option</u>	<u>Outcomes</u>														
Canada															
1. Technology	0	1	0	0	1	0	1	0	1	0	1	0	0	1	
2. User agreements	0	0	0	0	0	1	1	1	1	0	0	0	1	1	
3. Self-defence	0	0	1	0	0	0	0	0	0	0	0	1	0	0	
4. Withdraw claim	0	0	0	1	1	0	0	1	1	0	0	0	0	0	
U.S.															
5. User agreements	0	0	0	0	0	1	1	1	1	0	0	0	1	1	
6. Self-defence	0	0	0	0	0	0	0	0	0	1	1	1	1	1	
Decimal outcome															
	0	1	4	8	9	18	19	26	27	32	33	36	50	51	

Once the infeasible outcomes have been removed, Decision Maker calculates the remaining possible outcomes. These remaining outcomes are displayed in Table XXXI, where the binary form of each outcome has been converted to its

decimal representation as described in Chapter 3. Thus, the outcome (1100,10) in binary notation, has a decimal equivalent of

$$1X2^0 + 1X2^1 + 0X2^2 + 0X2^3 + 1X2^4 + 0X2^5 = 1+2+16 = 19.$$

Table XXXII Preferences and meanings for each decision maker in the Northwest Passage dispute.

Decision-makers and preferences	Meanings of preferences
Canada	
-4 (most preferred)	Canada does not withdraw claim.
-6	U.S. does not challenge claim.
-3	Canada does not use force to back up claim.
5	U.S. chooses user agreements.
2	Canada chooses user agreements
1 (last choice)	Canada chooses technological sovereignty
United States	
4 (most preferred)	Canada withdraws claim.
5	U.S. chooses user agreements.
2	Canada chooses user agreements.
1	Canada chooses technological sovereignty.
6	U.S. challenges claim.
3 (last choice)	Canada uses force to back up claim.

The preferences were entered into Decision Maker as importance vectors shown in Table XXXII. The preference information was obtained from the available source material, and where possible, verified by an expert. Preferences for individual decision makers are expressed in terms of options. The importance of these options is indicated in a vertical list of the option numbers from most important at the top to least important at the bottom. A negative sign before an option means that the

decision maker prefers that option not to be taken. The preferences listed in Table XXXII were the final ones determined after several iterations of the model. At the results stage, interaction with the experts increased understanding of the case so that the original model could be revised. The importance vector for Canada was (-4, -6, -3, 5, 2, 1) and for the U.S. it was (4, 5, 2, 1, 6, 3).

The importance vectors can be explained as follows. On September 10, 1985, Canada had made a claim to the waters of the Arctic archipelago as internal waters enclosed by the announced baselines. What were Canada's preferences the next day after the U.S. had rejected the claim? The first preference was to stand by the claim and defend it, hoping that other states would recognize it. The -4 in this case indicates that Canada most preferred not to withdraw the claim. The -6 indicates Canada's preference that other states, but especially the U.S., not challenge the claim. That is, at this point, Canada wanted to have the claim recognized without opposition. The -3 indicates that Canada preferred not to use force to back up the claim. The remaining parts of the importance vector indicate that Canada preferred the U.S. to choose user agreements, in which case Canada would negotiate. The least preferred choice would be to establish technological sovereignty because of the time lag in implementing icebreaking and pilotage services. Nevertheless, the announcement was made to start design of a class 8 polar icebreaker.

The U.S. would have preferred that Canada had chosen option 4 and had bowed to the pressure of the rejection of the previous day and withdrawn the claim, that is option 4 in the importance vector. The U.S. position was that there was no

basis for the claim in international law and that Canada would withdraw the claim once this had been pointed out. The second preference of the U.S was option 5, to obtain user agreements. At first, the U.S. viewed the possibility of Soviet penetration of the Canadian Arctic as preferable to acknowledging the Canadian claim over the passage.²¹³ This would have placed the option 6 in second place. This would make sense in that it would enhance other national claims such as Libya's claim to the Gulf of Sidra. But, according to Philip Briggs, the strategic concerns of the U.S won out over the sovereignty concerns. The development of a new generation of Soviet nuclear submarines capable of sustained operations in the Arctic tipped the balance. Briggs went on to explain how two developments in the spring 1987 accelerated the movement toward user agreements. First was the Canadian-U.S. summit conference in Ottawa where Reagan and Mulroney agreed to inject new impetus into the discussions regarding the dispute. The second was the publication of the 1987 White Paper, in which Canada was committing itself to an increased defense of the Northwest Passage in terms of surveillance arrays and nuclear submarines (Canada's option 3). Once the U.S had decided that user agreements was the preferred option to a direct challenge, the next preference was for Canada to choose user agreements. Following this, the preferences for the U.S. were, in order, Canadian technological sovereignty, a challenge to the claim, and lastly, the use of force by Canada to defend the claim. Pentagon officials were reluctant to help Canada build vessels that could

²¹³ Briggs, "The Northwest Passage Dispute", p. 446.

be used against U.S. submarines.²¹⁴ When this information was entered into Decision Maker, the outcome preferences for each player were calculated and displayed in the stability analysis tables. Having completed the modelling stage, we are ready to analyze the Northwest Passage dispute.

STABILITY ANALYSIS OF THE NORTHWEST PASSAGE DISPUTE

The entering of preferences into the computer program Decision Maker completes the specification of the conflict analysis model. The program then automatically carries out the stability analysis and decides if an outcome is stable for a particular decision maker. Generally speaking, an outcome is stable if it is not advantageous for the decision maker to move away unilaterally from the outcome by changing his selection of options. Even though the decision maker may be able to move to a preferred outcome by selecting different options under his control, other decision makers may be able to put him in a less preferred situation by choosing other options. Therefore the outcome is stable and the decision maker prefers to stay where he is. When the outcome is stable for all decision makers, it is referred to as an equilibrium outcome because it is a possible resolution to the conflict. All of the outcomes, when analyzed for stability for both players, indicated that outcomes 51 and 33 were equilibria.

Outcome 51 in Table XXXIII is the situation where Canada has chosen to seek technological sovereignty, negotiate user agreements, refrain from the use of force and reject a withdrawal of the legal claim.

²¹⁴ John F. Burns, "Canada may lose nuclear submarine plan", New York Times, 27 November 1987, A21.

Table XXXIII Stability Analysis for the Northwest Passage Dispute.

Outcomes ordered by preferences for Canada:													
Canada													
1. Technology													
1	0	1	0	0	1	0	1	0	0	1	0	1	0
2. User agreements													
1	1	0	0	0	1	1	0	0	0	1	1	0	0
3. Self-defence													
0	0	0	0	1	0	0	0	0	1	0	0	0	0
4. Withdraw													
0	0	0	0	0	0	0	0	0	0	1	1	1	1
United States													
5. User agreements													
1	1	0	0	0	1	1	0	0	0	1	1	0	0
6. Self-defence													
0	0	0	0	0	1	1	1	1	1	0	0	0	0
Decimal outcome													
19	18	1	0	4	51	50	33	32	36	27	26	9	8
Overall stability													
Stability Canada													
r	s	r	s	s	c	u	r	u	u	u	u	u	u
Stability for U.S.													
u	u	u	u	u	c	r	r	r	r	r	r	r	r

The U.S. has chosen to negotiate user agreements but uphold the challenge. This turns out to be a cooperative equilibrium because the two players must negotiate together to obtain user agreements. Because there is no non-cooperative equilibrium that is more preferred, this is a stable outcome (Compare to Table XXXIV).

This is what actually happened. On 11 January 1988, the Agreement on Arctic Cooperation was signed. Recall the disclaimer that "nothing in this agreement of cooperative endeavour between Arctic neighbours and friends nor any practice

Table XXXIV Stability Analysis for the Northwest Passage Dispute.

Outcomes ordered by preference for United States:

Canada

1. Technology

1 0 1 0 1 1 0 0 1 1 0 0 0 0

2. User agreements

1 1 0 0 1 1 1 1 0 0 0 0 0 0

3. Self-defence

0 0 0 0 0 0 0 0 0 0 1 0 1 0

4. Withdraw

1 1 1 1 0 0 0 0 0 0 0 0 0 0

United States

5. User agreements

1 1 0 0 1 1 1 1 0 0 0 0 0 0

6. Self-defence

0 0 0 0 1 0 1 0 1 0 1 1 0 0

Decimal outcome

27 26 9 8 51 19 50 18 33 1 36 32 4 0

Overall stability

E

E

Stability Canada

u u u u c r u s r r u u s s

Stability for U.S.

r r r r c u r u r u r r u u

thereunder affects the respective positions...".

However, the model points out a second equilibrium, outcome 33, this one without user agreements by either side. If we look back carefully at the 1988 Arctic Cooperation Agreement, paragraph 3 refers only to U.S. icebreakers. There is no reference to warships or any other military vessel, including submarines or military aircraft. The agreement has been criticized for this shortcoming, but according to the stability analysis, a user agreement on submarine passage or overflight was not required for an equilibrium outcome. The Canadian claim is still not accepted by the

U.S., but until the preference vector changes, the situation is in equilibrium.²¹⁵ The preference vector is unlikely to change until international shipping uses the strait in sufficient numbers to warrant the internationalization of the Northwest Passage. Until that time, it would seem that both parties are content to abide by the current equilibrium where they agree to disagree. The signing of the user agreement concerning icebreakers and the omission of submarines from the agreement are consistent with the predictions of the model.

These equilibrium outcomes are surprisingly resistant to changes in the ordering of preferences or removal of infeasible outcomes. A number of variations of this model were tested with quite similar results. It is quite surprising that a situation in which both parties disagree could have such a simple, stable outcome. The U.S. has made some concessions on freedom of navigation. And the "Canadian sovereignty claim has probably been bolstered by the consent clause - despite the inclusion of a disclaimer in the same agreement - and further enhanced by the 1988 U.S. permission request for the Polar Star."²¹⁶ However, it was the concern over strategic interests in the Arctic which swayed the U.S. away from confrontation in 1985. With the end of the Cold War, the U.S. might place less emphasis on the alliance and their own security interests in the Arctic. Concerns over creeping uniqueness and restrictions on freedom of navigation may prompt the U.S. to

²¹⁵ See Franklyn Griffiths, Politics of the Northwest Passage, pp. 242-253. Other possibilities discussed include internationalization of the Passage, a shared-access zone, a closed Canadian waterway, an open Canadian waterway, or as is. When this was written, the 1988 Arctic Agreement had not yet been signed.

²¹⁶ Briggs, "The Northwest Passage Dispute", p. 448.

implement its exercise-of-rights program in the Northwest Passage. However, it is beyond the scope of this paper to use the conflict analysis model to speculate on possible outcomes.

INSIGHTS

The modelling and analysis of the Northwest Passage dispute revealed the following information about the September 1985 decision to assert Canadian sovereignty in the Arctic. The number of key participants in the dispute were restricted to two decision makers, one coastal state and one user state. Canada's options were identified as technological sovereignty, user agreements, self-defence or withdrawal of the claim. The United States could negotiate user agreements, challenge the claim or accept the claim.

Although the 1880 Order-in-Council transferred the Arctic to Canada, it said nothing about jurisdiction over the waters between the Arctic islands. There is no treaty or convention we can turn to for determining previous patterns of usage. What we have seen is a history marked by way of few actual transits of the passage, and none for commercial shipping. The status of the Passage as an international strait under Article 37 is disputed. Security concerns were important, especially as related to submarine passage between the Arctic and the Atlantic (both for NATO navies and the Soviet Union). For submarines and icebreakers, the only other alternatives involve lengthy diversions either through the Panama Canal or the Norwegian Sea. The Northwest Passage is also considered a special case because of its ice-covered

nature. Article 234 of the 1982 Convention makes special reference to ice-covered areas.

The results of the analysis indicated that the 1988 Arctic Cooperation Agreement represented a pause in the dispute rather than an end. Military, economic and environmental pressures will likely change in the entire region which will require continued creative diplomacy to avoid future confrontation. The conflict between the principles of sovereignty and freedom of the seas in the Northwest Passage has yet to be resolved. But creeping uniqueness has postponed conflict by guaranteeing the United States certain minimum rights of passage without prejudice to either party's legal claim. This is clearly an interim stage in the implementation of the provisions of the 1982 Convention, albeit one which could last a considerable length of time until the actual use of the strait by commercial shipping forces the players to resolve the conflict by implementing the transit passage regime.

6 Sharing International Straits

The real importance of the Law of the Sea Convention is not to be found either in the sum of its parts or in its extraordinarily comprehensive whole, but rather in its demonstration that 160 sovereign states can work out rational accommodations of their vital and diverse interests.²¹⁷

R.P. Anand

There is a certain irony to the present situation where the United States is the major defender of the principle of the freedom of the seas after having initiated the trend towards more coastal state control with the Truman Proclamation of 1945. The conflict between the principles of sovereignty and freedom of the seas exists even domestically in states because of the various coastal state interests and user state interests which must be resolved internally. Not all coastal states are user states, although they may depend on free navigation through straits more than they realize for delivery of goods on which their economies depend.²¹⁸ Therefore, they can afford to be more single-minded about their goals. But most user states are also coastal states and must resolve the domestic conflict as well as the international conflict of principles.

Freedom of navigation in straits was one of the vital principles upheld by the 1982 Convention. In order to allow coastal states to claim an extension of the territorial seas to 12 miles, the maritime powers demanded, and received, a guarantee of transit passage in international straits. The rules of transit passage were agreed by

²¹⁷ R.P. Anand, "Odd Man Out: The United States and the U.N. Convention on the Law of the Sea" in Jon Van Dyke (ed.), Consensus and Confrontation: The United States and the Law of the Sea Convention (Honolulu: Law of the Sea Institute, 1984), p. 123.

²¹⁸ Fred Chernoff, "Can NATO Outlive the USSR?", International Relations 11, 1 (April 1992), p. 6.

consensus at UNCLOS III among some 120 states. Transit passage provided an effective compromise between the conflicting principles of sovereignty and freedom of navigation in straits. Yet, there remained the puzzle of why the rules of transit passage have not been implemented more widely. Instead, we are witnessing the spread of creeping uniqueness as states bordering straits claim unique circumstances in order to avoid implementing a transit passage regime.

We started with the hypothesis that creeping uniqueness would lead to conflict in international straits. We first looked at the case where the conflict over principles was handled without the benefit of an agreed regime of navigation as in the Corfu Channel case. We saw that without an intervening regime, this case resembled a game of Chicken and was very likely to lead to conflict. We then looked at the problem faced by neighbouring coastal states in determining how much territorial jurisdiction to claim. We discovered that this presented a Prisoner's Dilemma to the coastal states. After a discussion of the limitations of 2 X 2 game theory, we developed a three-player model of the Straits Conflict based on the Fraser-Hipel conflict analysis model. With this model, we were able to analyze three examples in international straits of different solutions to resolve the conflict of principles. Each solution has avoided a direct conflict among the players, but for some reason, the provisions of Part III of the 1982 Convention were not implemented as the preferred solution. But creeping uniqueness has not led to conflict in straits. What we have seen in the case studies is that maritime powers will accept considerable restrictions

on freedom of navigation to satisfy the coastal state demands as long as vital interests of access are not threatened. Let us now summarize our findings.

We can agree that use of all straits is governed by one or more of the accepted law of the sea regimes. Regimes, therefore, are important as intervening variables acting between interests and outcomes. As we saw in each case study, the previous patterns of usage were formalized in the choice of regime. In most cases, this required claiming an exception to the transit passage regime.

In the first case, France and Britain were interested in achieving the maximum freedom of navigation for shipping, but also in exerting increased control over offending vessels for safety and pollution. An elaborate system of traffic management, port state control, monitoring and surveillance was implemented. Only when this was in place were they able to implement the transit passage regime. Technology allowed both France and Britain to implement the more regulatory aspects of coastal state control without interfering with freedom of navigation. France and Britain were both convinced enough of the merits of the transit passage regime in affecting rights and obligations in the Strait of Dover that they did not even wait to ratify the 1982 Convention before implementing the agreement.

The United States is also in this position of declaring the transit passage regime as the global straits regime although they have neither signed nor ratified the 1982 Convention. Again, it was the impact of technology which allowed the United States to do this. Technology increased the range of submarine launched missiles so that submerged transits to firing sites were no longer vital. This reduced the strategic

significance of a large number of straits for both the superpowers. Technology also allowed the acoustic monitoring of straits so that violations or submerged transits could be detected. Therefore, the United States as a coastal state was more confident of detecting intruding submarines and could allow more freedom of navigation in its own straits.

In the case of the Baltic Straits, passage through the narrow part of the Sound was covered by the 1857 treaties. Denmark and Sweden stated, when signing the 1982 Convention, that they understood that this would continue to be respected in accordance with Art. 35(c). In the approaches to the Sound, where high seas passage had been routine, the coastal states left a high seas corridor for shipping, claiming an exception to the transit passage regime under Article 36. By claiming these exceptions, they were able to avoid the internationalization of the Straits and maintain the status quo.

This status quo has been accepted by the user states, but the 1982 Convention is not yet in force. What will happen, especially in the Great Belt which is claimed as territorial seas of Denmark, depends on the willingness of the user states to make an issue out of navigation through these straits when the present system seems to meet their minimum demands for access. The status of the Little Belt as internal waters could be challenged on legal grounds, but because of the hazardous nature of the passage and its limited use to shipping, this is unlikely to become an issue.

In the third case we studied, the Northwest Passage, previous patterns of usage were quite limited. Canada would like to keep it that way and keep control of foreign

shipping through the Passage. As far as the United States is concerned, the previous patterns of usage gave unrestricted freedom to their submarines to use the Passage. The 1988 Arctic Cooperation Agreement explicitly stated that there was no prejudice to either side's claims. By agreeing on the terms of use, they were able to avoid a conflict and maintain the previous patterns of usage without interference. The issue of internationalization of the Northwest Passage has been postponed to the future. The status of the Little Belt and the Great Belt in the Baltic Straits could provide valuable models for the possible outcomes for the Northwest Passage.

In effect, power is still the overriding concern, but technology distributes the power differently. Technology allows more regulation because violations can be monitored and rules can be enforced. Technology acts as a great equalizer in many ways. Although only wealthy and powerful states are able to exercise power at sea, technology enhances the power of small states. A single missile battery can discourage overflight; a single submarine can discourage unwanted intrusions. The cost of technology also means that large navies can afford fewer units, which can then be deployed to fewer places to influence events. The rights of coastal states in an extended territorial sea also bring obligations, for which coastal states must acquire naval capabilities to police and protect.

The United States is the unchallenged maritime power in the world today and one of the champions of the transit passage regime because it offers the fewest restrictions on naval mobility through straits. So what will be the US reaction to the creeping uniqueness? As we saw in the Straits Conflict model, the stability of the

equilibrium outcome always depended on the user state's acquiescence to a certain minimum guarantee of access, but not necessarily "free" access.

R.P. Anand noted that the concept of the freedom of the sea is undergoing a transformation. In the past, it had been accepted as an "incontrovertible principle, almost a religious dogma, which could not be questioned."²¹⁹ Anand predicted that with the most recent technological developments and phenomenal changes in the uses of the sea, the principle of the freedom of the seas would have to be drastically modified, if not abandoned. Gary Knight predicted that the unrestricted freedom of the seas would evolve through reasonable and regulated use of the seas to something eventually approaching property rights, or mare clausum.²²⁰ Elizabeth Young forecasted a final stage of mare clausum in which the new regime would provide government, law and order including a monopoly on the limited use of force.²²¹

There is a general belief that power is shifting to the coastal state and creeping uniqueness will spread. The territorial imperative will dominate over the common heritage of mankind. Freedom of navigation in straits will come under more IMO rules and will evolve into a system much like ICAO runs for air traffic safety. Coastal states will assume more and more of the obligations for environmental protection in adjacent waters. The growing navies of middle-ranked powers will

²¹⁹ R.P. Anand, Origin and Development of the Law of the Sea: History of International Law Revisited (The Hague: Martinus Nijhoff Publishers, 1982), p. x.

²²⁰ Gary Knight, "The law of the sea and naval missions", United States Naval Institute Proceedings 103, 6 (June 1977), pp. 34-43.

²²¹ Elizabeth Young, "New laws for old navies: military implications of the law of the sea" Survival 16, 6 (Nov, Dec 1974), pp. 262-267.

assume more importance. Development of new shipping routes will further shift power to the coastal states. The law of the sea provides the norms for behaviour and the means for settling disputes. It will be used to "ameliorate the harsher effects of anarchy" at sea.²²²

The implementation of a global straits regime depends on the will of the user states to challenge the equilibrium solutions that are being implemented in straits around the world. The United States is the major likely challenger. M.T. Owens has suggested that the U.S. is in an unchallenged position to adopt a maritime grand strategy like Great Britain did during the Pax Britannica. But, he says, just as creeping uniqueness of jurisdiction did not affect Britain, it should be no impediment to the U.S. in pursuing its own maritime strategy.²²³

As we saw in Chapter 2, the United Nations does not assess the implementation of the 1982 Convention. This study looked only at three broad categories of straits based on certain articles in Part III of the 1982 Convention. Lewis Alexander has identified the need to assess creeping uniqueness and the progress of the implementation of the 1982 Convention.²²⁴ The only way to assess the effectiveness of the straits regime is to examine each individual case.²²⁵ The Fraser-

²²² Robert Jervis and Robert J. Art (eds.), International Politics: Anarchy, Force, Political Economy and Decision-making (Toronto: Little Brown and Co., 2nd edition, 1985), p. 6

²²³ M.T. Owens, "Towards a Maritime Grand Strategy: Paradigm for a new security environment", Strategic Review (Washington, DC: United States Strategic Institute, Spring 1993), pp. 7-19.

²²⁴ Lewis M. Alexander, "The Case for Navigational Freedoms", p. 342.

²²⁵ Volker Rittberger, (ed.), International Regimes in East-West Politics, p. 100.

Hipei conflict analysis model has provided a means to measure the stability of the equilibrium for each of the straits in the case studies. The model has great potential as the tool to identify patterns and trends of creeping uniqueness for all straits of interest.

Some provisions of Part III of the 1982 Convention have vague or uncertain meanings which could cause some trouble. The definition of a strait used for international navigation is certainly lacking. There is always the possibility of trouble being directly caused by disputes over the drawing of demarcation lines. Conflicting interest groups will argue over the ambiguities of the text. But in the final analysis, "the navigation articles do not impose unreasonable burdens on the naval powers, nor adversely affect legitimate interests of the coastal states."²²⁶ Creeping uniqueness has provided a successful formula for sharing international straits.

²²⁶ Commander Dennis R. Neutze, "Whose Law of Whose Sea", United States Naval Institute Proceedings (January 1983), pp. 43-48.

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ANNEX A

Basic Games Theory

The structure of payoffs in a given round of play is fundamental to the analysis of cooperation.¹ The benefits of mutual cooperation (CC) relative to mutual defection (DD), and the benefits of unilateral defection (DC) relative to unrequited cooperation (CD) are compared. For a mutual benefit to exist, players must prefer mutual cooperation (CC) to mutual defection (DD). For coordination to be necessary to the realization of mutual benefit, players must prefer unilateral defection (DC) to unrequited cooperation (CD). These preference orderings are consistent with the games of Chicken and Prisoner's Dilemma in which cooperation is desirable but not automatic. The ability of states to cooperate under anarchy to achieve mutually beneficial courses of action without resort to a central authority is vital to the realization of the common good. The payoff structure affects the likelihood and robustness of the cooperation. To understand why, consider each of the games in conjunction with the story that gives its name.

PRISONER'S DILEMMA

Most game theoretic studies of international cooperation and regimes have focused on the Prisoner's Dilemma,² which can produce cooperative behaviour under 'realist' conditions. The existence of a network of regimes and transnational relations

¹ The following explanation of payoff structures is based on Kenneth Oye, Cooperation Under Anarchy, (Princeton: Princeton University Press, 1986).

² Haggard and Simmons, "International Regimes", p. 505.

in the issue area of navigation makes

this approach particularly useful in

revealing the conditions which

enable cooperation and stability.

The original game goes like this.

Two prisoners are suspected of a

major crime. The authorities

possess evidence to secure

conviction on only a minor charge.

If neither prisoner squeals, both will

draw a light sentence on a minor

charge (CC). If one prisoner squeals and the other stonewalls, the rat will go free

(DC) and the sucker will draw a heavy sentence (CD). If both squeal, both will draw

a moderate sentence (DD). The preference ordering for each prisoner is: $DC > CC$

$> DD > CD$ (Figure 4).³ Each prisoner will be better off squealing than

stonewalling, no matter what his partner chooses to do ($DC > CC$ and $DD > CD$).

The temptation of the rat payoff and the fear of the sucker payoff will drive single-

play Prisoner's Dilemma to mutual defection. If both prisoners act on this reasoning,

they will draw a moderate sentence on the major charge, while cooperation could

have led to a light sentence on a minor charge ($CC > DD$). In this case, individual

rational actions produce a collective sub-optimal outcome.

A

		B	
		C	D
C		3, 3	4 1
D		1 4	2, 2

C: cooperate

D: defect

$DC > CC > DD > CD$

4 Prisoner's Dilemma

³ The numbers assigned to the preference orderings are relative preferences only.

CHICKEN

In the traditional interpretation of the game of Chicken, two drivers race down the centre of the road from opposite directions. In Figure 5 if one swerves

		B	
		C	D
A	C	3, 3	2, 4
	D	4, 2	1, 1

C: cooperate
D: defect

$DC > CC > CD > DD$

5 Chicken

driver's preference ordering is: $DC > CC > CD > DD$. If each believes that the other will swerve, then each will be tempted to defect by continuing down the centre of the road. Better to be a live hero than a live chicken. If both succumb to this temptation, however, defection will result in a collision. The fear that the other driver may not serve decreases the appeal of continuing down the centre of the road. In single-play Chicken, the temptation of unilateral defection is balanced by the fear of mutual defection.

PAYOFF STRUCTURE

(Cooperates - C) and the other does not (Defects - D), then the first will suffer the stigma of being a chicken (CD), while the second will enjoy being known as the hero (DC). If neither swerves, both will suffer grievously in the ensuing collision (DD). If both serve, damage to the reputation of each will be limited (CC). Each

Changes in the value attached to outcomes can transform situations from one ordinaly defined class of game into another. Second, under iterated conditions, the magnitude of differences among payoffs within a given class of game can determine the level of cooperation. The more substantial the gains from mutual cooperation, and the less substantial the gains from unilateral defection, the greater the likelihood of cooperation. States can alter situations by modifying the payoff structures to increase the likelihood of cooperation.

ANNEX B

Coalition Techniques

In the next section, I will show why we can safely disregard the coalition analysis techniques. Where agreement occurs in such cases of international law, it can better be explained by the generalized conflict analysis model which includes bargaining between states.

There are several characteristics that are usually found when coalitions are significant in a conflict. First, there must be at least three players in the game: it takes at least two players to form a coalition and for there to be a conflict, there must be an opposing player. Second, individual players who form a coalition do not forfeit their independence as they would if the coalition were considered to be a single player in the ordinary sense. Each member of the coalition is able to choose from the available options without serious interference from other members of the coalition. If this is not the case, and one party is totally dominated by another, then the two participants would best be considered as a single player rather than as a coalition. For example, for most issues concerning freedom of navigation, the U.S. so dominates the conflict that all user states are represented by the single player reflecting mainly U.S. interests. Few other states are able to act so independently. Third, coalitions are characterized by shared goals. The members of a coalition generally have a common objective although they may differ on details. For example, coastal states A and B in the straits conflict may find it sensible to form a coalition because they both want to restrict user state access to the strait and they both

A resolution test chart featuring various patterns of horizontal and vertical lines of different thicknesses. Each pattern is accompanied by a numerical value representing its resolution. The values include 1.0, 1.1, 1.25, 1.4, 1.6, 1.8, 2.0, 2.2, 2.5, 2.8, 3.2, 3.6, 4.0, 4.5, 5.0, 5.6, 6.3, 7.1, 8.0, 9.0, 10, 11.2, 12.5, 14, 16, 18, 20, 22.5, 25, 28, 32, 36, 40, 45, 50, 56, 63, 71, 80, 90, 100, 112, 125, 140, 160, 180, 200, 225, 250, 280, 320, 360, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1120, 1250, 1400, 1600, 1800, 2000, 2250, 2500, 2800, 3200, 3600, 4000, 4500, 5000, 5600, 6300, 7100, 8000, 9000, 10000.

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
ANSI and ISO TEST CHART No. 2)

want maximum jurisdiction within the strait while still allowing some passage rights to the user state. Or a user state may form a coalition with a coastal state that wanted maximum freedom of navigation against a coastal state that wanted to restrict passage. Fourth, the formation of coalitions is made easier when a similarity exists in the structure or characteristics of the individual players. For example, in the straits conflict, a player like the International Court of Justice is unlikely to form a coalition with any other player because it is structurally different.

Coalition analysis allows the determination of the change in the nature of the game stability when a player or a player's opposition cooperates. Generally, players act independently to obtain preferred outcomes without cooperating among themselves. But when they share the same general objectives with respect to a specific conflict, such as the straits issue, the players do cooperate. The conflict analysis treats the coalition as a single player. Certain UIs may be determined in the coalition preference vector that lead from one outcome to another that is bridged to (in the same block as) the first. UIs between bridged outcomes are treated like any other UI; that is, they can make an outcome unstable for the coalition as well as induce sequential stability for another player.

The underlying principle for determining the coalition preference vector is that an outcome is not preferred by the coalition to another outcome if any member of the coalition does not prefer it.⁴ In order for an outcome to be preferred to a particular

⁴ N. Howard, Paradoxes of Rationality, (Cambridge, Mass: MIT Press, 1971), as quoted in Fraser and Hipel, Conflict Analysis, p. 104.

outcome by the coalition, all members of the coalition must prefer it. Let us examine the straits issue using the coalition algorithm to see if it can help explain cooperation under anarchy.

The straits conflict matches the four characteristics that are usually found when coalitions are significant. The three players are coastal state A, coastal state B and user state as before. Second, the individual players retain their independence in decision-making. One of the fundamental issues at stake is sovereignty which is strengthened by being able to choose without interference from other members of the coalition. Third, the coastal states share a common objective to restrict user state passage and claim maximum jurisdiction, although they differ on the details. And lastly, all players are sovereign states. In the previous analysis of the straits conflict, there was no coalition and the only equilibrium that was rational and stable for all three players was outcome 18. However, this equilibrium was unstable by cooperation. There were four other equilibria which were bridged, all of which involved various high seas corridors, which were also sanctioned by the coastal states. This was analyzed as a Prisoner's Dilemma. Let us now perform a coalition analysis for the same conflict.

The description of coalition analysis is rather lengthy⁵ but once familiar with it, the process is simple to perform. The aim is to create a single coalition preference vector by combining all of the individual preference vectors of the merging players taking account of the ordinality of each player's preference vector. In this case, the

⁵ Fraser and Hipel, Conflict Analysis, pp 112 - 125.

two coastal states form a coalition to determine the navigational regime which will govern passage through the strait.

Each preference vector can be broken into four main blocks representing high seas corridors (outcomes 0, 1, 8, 9), transit passage (outcome 18), and two combinations of innocent passage and high seas passage in the strait (outcomes 2, 10 and 16, 17). The preference vectors for the two coastal states are identical in that each state prefers the other to allow the high seas corridor to pass close to its coast. However, when the individual preference vectors are matched up, the differing strengths of preferences show the fundamental disagreements between the members of the coalition. Each state's preferred outcome is for the other to bear the burden of allowing user state passage and to restrict its jurisdiction. There is only one ordinal outcome group in this case which indicates a very unlikely coalition. The model tells us that independent coastal states are unlikely to cooperate by forming a coalition to keep the strait open. When we re-examine the issue for the case where the two coastal states form a coalition to restrict passage through the strait as much as possible, we find that two equilibria emerge from the stability analysis: outcome 32 (010,010,10) where the territorial claims by both coastal states to restrict passage are challenged legally by user state to enforce transit passage; and outcome 182 (011,011,01) where the claims to territorial seas are backed by force and the user state challenges the claims by force. This tells us that the coalition will try to restrict passage as much as possible to see what the user state will do. This particular model does not tell us how readily the coastal states will accept a transit passage regime if

the legal challenge is made. But when the legal challenge is unsuccessful in enforcing a transit passage regime, the players are likely to resort to force to back their claims. The coalition preference vector gives the outcomes in order 82, 182, 150, 178, 150, 146. Thus the game reduces to the simple game of Deadlock, which as we saw earlier, was the early stages of Chicken. When the risk of force becomes a reality, the payoff structure will again change to the later stages of the game of Chicken. However, no empirical cases could be found to test this model.

Coalition analysis techniques provide useful information in analyzing certain conflict situations. For our purposes here, they add little. We will rely on the multiple analysis techniques discussed earlier. Coalition analysis is a valuable tool in determining the usefulness of a model and its sensitivity to changes. It provides some insights to the straits conflict and a method of interpreting the cooperation seen when states act independently to achieve common objectives. But in the cases where states cooperate by mutually agreed contracts, other techniques are more appropriate. These cases involve bargaining among the players and are examined in the main text.

ANNEX C

Law of the Sea Extracts

Part III concerning Straits Used for International Navigation (Articles 34-45).

SECTION 1. GENERAL PROVISIONS

Article 34. Legal status of waters forming straits used for international navigation

1. The regime of passage through straits used for international navigation established in this Part shall not in other respects affect the legal status of the waters forming such straits or the exercise by the States bordering the straits of their sovereignty or jurisdiction over such waters and their air space, bed and subsoil.

2. The sovereignty or jurisdiction of the States bordering the straits is exercised subject to this Part and to other rules of international law.

Article 35. Scope of this Part

Nothing in this Part affects:

- (a) any areas of internal waters within a strait, except where the establishment of a straight baseline in accordance with the method set forth in article 7 has the effect of enclosing as internal waters areas which had not previously been considered as such;
- (b) the legal status of the waters beyond the territorial seas of States bordering straits as exclusive economic zones or high seas; or

- (c) the legal regime in straits in which passage is regulated in whole or in part by long-standing international conventions in force specifically relating to such straits.

Article 36. High seas routes or routes through exclusive economic zones through straits used for international navigation

This Part does not apply to a strait used for international navigation if there exists through the strait a route through the high seas or through an exclusive economic zone of similar convenience with respect to navigational and hydrographical characteristics; in such routes, the other relevant Parts of this Convention, including the provisions regarding the freedoms of navigation and overflight, apply.

SECTION 2. TRANSIT PASSAGE

Article 37. Scope of this section

This section applies to straits which are used for international navigation between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone.

Article 38. Right of transit passage

1. In straits referred to in article 37, all ships and aircraft enjoy the right of transit passage, which shall not be impeded; except that, if the strait is formed by an island of a State bordering the strait and its mainland, transit passage shall not apply if there exists seaward of the island a route through the high seas or through an exclusive economic zone of similar convenience with respect to navigational and hydrographical characteristics.

2. Transit passage means the exercise in accordance with this Part of the freedom of navigation and overflight solely for the purpose of continuous and expeditious transit of the strait between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone. However, the requirement of continuous and expeditious transit does not preclude passage through the strait for the purpose of entering, leaving or returning from a state bordering the strait, subject to the conditions of entry to that State.

3. Any activity which is not an exercise of the right of transit passage through a strait remains subject to the other applicable provisions of this Convention.

Article 39. Duties of ships and aircraft during transit passage

1. Ships and aircraft, while exercising the right of transit passage, shall:

- (a) proceed without delay through or over the strait;
- (b) refrain from any threat or use of force against the sovereignty, territorial integrity or political independence of States bordering the strait, or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations;
- (c) refrain from any activities other than those incident to their normal modes of continuous and expeditious transit unless rendered necessary by *force majeure* or by distress;
- (d) comply with other relevant provisions of this Part.

2. Ships in transit passage shall:

- (a) comply with generally accepted international regulations, procedures and practices for safety at sea, including the International Regulations for Preventing Collisions at Sea;
 - (b) comply with generally accepted international regulations, procedures and practices for the prevention, reduction and control of pollution from ships.
- 3. Aircraft in transit passage shall:
 - (a) observe the Rules of the Air established by the International Civil Aviation Organization as they apply to civil aircraft; state aircraft will normally comply with such safety measures and will at all times operate with due regard for the safety of navigation;
 - (b) at all times monitor the radio frequency assigned by the competent internationally designated control authority or the appropriate international distress radio frequency.

Article 40. Research and survey activities

During transit passage, foreign ships, including marine scientific research and hydrographic survey ships, may not carry out any research or survey activities without the prior authorization of the States bordering straits.

Article 41. Sea lanes and traffic separation schemes in straits used for international navigation

1. In conformity with this Part, States bordering straits may designate sea lanes and prescribe traffic separation schemes for navigation in straits where necessary to promote the safe passage of ships.

2. Such States may, when circumstances require, and after giving due publicity thereto, substitute other sea lanes or traffic separation schemes for any sea lanes of traffic separation schemes previously designated or prescribed by them.
3. Such sea lanes and traffic separation schemes shall conform to generally accepted international regulations.
4. Before designating or substituting sea lanes or prescribing or substituting traffic separation schemes, States bordering straits shall refer proposals to the competent international organization with a view to their adoption. The organization may adopt only such sea lanes and traffic separation schemes as may be agreed with the States bordering the straits, after which the States may designate, prescribe or substitute them.
5. In respect of a strait where sea lanes or traffic separation schemes through the waters of two or more States bordering the strait are being proposed, the States concerned shall co-operate in formulating proposals in consultation with the competent international organization.
6. States bordering straits shall clearly indicate all sea lanes and traffic separation schemes designated or prescribed by them on charts to which due publicity shall be given.
7. Ships in transit passage shall respect applicable sea lanes and traffic separation schemes established in accordance with this article.

Article 42. Laws and regulations of States bordering straits relating to transit passage

1. Subject to the provisions of this section, States bordering straits may adopt laws and regulations relating to transit passage through straits, in respect of all or any of the following:

- (a) the safety of navigation and the regulation of maritime traffic, as provided in article 41;**
- (b) the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait;**
- (c) with respect to fishing vessels, the prevention of fishing, including the stowage of fishing gear;**
- (d) the loading or unloading of any commodity, currency or person in contravention of the customs, fiscal, immigration or sanitary laws and regulations of States bordering straits.**

2. Such laws and regulations shall not discriminate in form in fact among foreign ships or in their application have the practical effect of denying, hampering or impairing the right of transit passage as defined in this section.

3. States bordering straits shall give due publicity to all such laws and regulations.

4. Foreign ships exercising the right of transit passage shall comply with such laws and regulations.

5. The flag State of a ship or the State of registry of and aircraft entitled to sovereign immunity which acts in a manner contrary to such laws and regulations of other

provisions of this Part shall bear international responsibility for any loss or damage which results to States bordering straits.

Article 43. Navigational and safety aids and other improvements and the prevention, reduction and control of pollution

User States and States bordering a strait should by agreement co-operate

- (a) in the establishment and maintenance in a strait of necessary navigational and safety aids or other improvements in aid of international navigation; and
- (b) for the prevention, reduction and control of pollution from ships.

Article 44. Duties of States bordering straits

States bordering straits shall not hamper transit passage and shall give appropriate publicity to any danger to navigation or overflight within or over the strait of which they have knowledge. There shall be no suspension of transit passage.

SECTION 3. INNOCENT PASSAGE

Article 45. Innocent passage

1. The regime of innocent passage, in accordance with Part II, section 3, shall apply in straits used for international navigation:

- (a) excluded from the application of the regime of transit passage under article 38, paragraph 1; or
- (b) between a part of the high seas of and exclusive economic zone and the territorial sea of a foreign State.

2. There shall be no suspension of innocent passage through such straits.

END

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