INTERNATIONAL COURT OF JUSTICE

PASSAGE THROUGH THE GREAT BELT

(FINLAND v. DENMARK)

MEMORIAL OF THE GOVERNMENT OF THE REPUBLIC OF FINLAND

DECEMBER 1991

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MEMORIAL OF THE GOVERNMENT OF THE REPUBLIC OF FINLAND

PART I
INTRODUCTION

1. The present Memorial is submitted to the Court in pursuance of the Court's Order of 29 July 1991, in which the Court fixed the time-limit of 30 December 1991 for the submission of the Memorial of the Republic of Finland in this case.

2. This case concerns the right of passage of ships and vessels, including offshore craft and other special ships, to pass through the international strait of the Great Belt. This right, enjoyed by Finland, is threatened by the Danish plan to build a high-level bridge over the strait with a maximum clearance of 65 metres over the median-water level. The question that is posed to the Court is whether Denmark, as the coastal sovereign, is entitled unilaterally to undertake building works in an international strait so as to restrict the right of passage in the Great Belt to ships with a maximum height of 65 metres or less.

3. To that extent, the case is essentially about the application of general international law regarding straits to the circumstances of the Great Belt. What is the scope of the right of passage in an international strait? A particular aspect of this case, however, relates to the geographical situation of Finland in relation to the Danish straits. Finland possesses a coastline only in the Baltic. The straits are the only natural waterway between the Baltic and the North Sea. In a sense, the freedom of navigation, for Finland, is only as wide - or narrow - as the right of free passage in the Danish straits.

4. A bridge height of 65 metres will be able to accommodate most but not all existing ships. There are types of special ships and carriages whose passage will be obstructed by such a bridge. These include certain ultra-large crude carriers (ULCCs), very large cruisers, drill ships, self-propelled semisubmersible drill rigs, and crane vessels. In addition, passage by heavylift transport ship or under tow of certain types of mobile offshore drill rigs and cranes will be prevented by a bridge at a height of 65 metres. Such passages occur as a matter of routine between Finland and locations outside the Baltic.

5. The bridge is intended to stay in place for at least 100-150 years. It is therefore reasonable to take into account foreseeable trends in ship design and size. There are many kinds of ships under construction or design whose dimensions vastly exceed the height of 65 metres.

6. It has sometimes been argued that an alternative passageway - the Sound (Öresund) - will remain open even after the completion of the Great Belt bridge and that passages obstructed in the Great Belt can be compensated there. This cannot be accepted. In the first place, it is uncertain whether the existence of an alternative passage-way is sufficient, in law, to justify curtailing existing passage rights in what is undoubtedly an international strait (Cf. *Corfu Channel* case, *ICJ Reports 1949* p. 28). In the second place, a significant physical circumstance for this case is that the only deep-draught passage-way between the Baltic and the North Sea exists in the Great Belt. While the Great Belt is traversed by the IMO recommended "Route T" which has a minimum depth of 17 metres, the main alternative passage-way - the Sound - has a depth of only 7,7 metres. The Danish bridge plan will thus make it physically impossible for ships of more than 65 metres high and with a draught approaching 7,7 metres to navigate between Finland and world oceans.

7. The legal issues posed to the Court are relatively simple. There is no dispute about the jurisdiction of the Court. Nor is there any dispute regarding the character of the Great Belt as an international strait. Finland and Denmark agree also that navigation in the Great Belt is covered by a regime of free passage. But they construe the right of free passage in different ways. The Court is requested to give an authoritative interpretation regarding the meaning of "free passage" and what liberty this leaves to the coastal State to engage in unilateral projects with the result of limiting existing passage.

8. There is no dispute between Finland and Denmark about the latter's right to connect two parts of its land territory so as to improve its internal traffic conditions. Finland is not

disputing Denmark's right to build a bridge over the Great Belt. The difference of opinion relates to what considerations Denmark should take into account when undertaking such construction.

9. It has been generally recognized that unhampered passage through international straits constitutes an indispensable safeguard for the undisturbed development of international trade. All States have an interest in a regime that enables ships to pass through outlets which can be classified as "international straits". On the other hand, it has likewise been affirmed that coastal States have a legitimate interest in ensuring that straits passage does not pose an unacceptable threat to their interests. The existing law is the outcome of a reconciliation between these two sets of considerations.

10. The right of passage in the Great Belt is derived from several sources. The special regime of the Danish straits is a combination of the *1857 Copenhagen Treaty on the Redemption of the Sound Dues* and general customary international law. Both provide for unhampered passage. The relevant provision of the former is Article 1 which, in its authoritative French text, provides that

> "Aucun navire quelconque ne pourra desormais, sous quelque pretexte que ce soit, être assujetti, au passage du Sund ou des Belts, à une détention ou entrave quelconque;"

This is complemented by the general customary law regarding passage through international straits and providing for non-suspendable innocent passage. As this Court observed in 1949:

> "It is, in the opinion of the Court, generally recognized and in accordance with international custom that States in time of peace have a right to send their warships through straits used for international navigation between two parts of the high seas without the previous authorization of a coastal State, provided that passage is innocent. Unless otherwise prescribed in an international convention, there is no right for a coastal State to prohibit such passage through straits in time of peace". (*ICJ Reports 1949* p. 28.)

The standard of non-suspendable, innocent passage was adopted in the *1958 Convention on the Territorial Sea and the Contiguous Zone*, ratified by Denmark and Finland. The relevant provision is Article 16 (4):

> "There shall be no suspension of the 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 sea of a foreign State."

The issue of straits passage was also one of the central elements in the reform of the law of the sea undertaken by the Third United Nations Conference on the Law of the Sea. Though the *1982 Convention on the Law of the Sea* is not yet in force, and the extent of its applicability in the present dispute is unclear, there is no doubt that the deliberations of the Conference have had an effect in developing an emerging customary right of an even more liberal regime of passage.

11. In the Finnish view, it is not strictly necessary to form an opinion about the relative precedence between these various sources governing passage rights in the Great Belt. Each of them prohibits unilateral action of the kind contemplated by Denmark.

12. On the Danish side, it has been argued that the right of free passage in the Great Belt extends only to "existing ships" and that therefore it is not enjoyed by the various types of large or special ships, including existing offshore craft (drill ships, semisubmersible or jack-up rigs) and ships that might conceivably be constructed in the future.

13. Whatever the merits of this argument, a bridge of 65 metres' free clearance excludes several types of existing craft unquestionably classified as "ships", such as certain ultra-large oil tankers, crane vessels and drill ships which may have an air draught of 80 metres or even more. But free passage was never restricted to certain types of ships only, or to ships only with certain kinds of cargo. As a matter of practice as well as theory, free passage has been enjoyed by very large special craft, whether moving by their own propulsion, towed, or carried on heavylift transport ships.

14. The concept of a "ship" lacks a precise definition in international law. In a way, this follows as a matter of course from the fact that any such definition would be dependent on the types of technology available at the time of definition. Much of the argument between Finland and Denmark has been about whether certain special craft, in particular semisubmersible drill rigs and jack-up rigs, can be classified as "ships" or otherwise enjoy a right of passage. In the Finnish contention they are indeed classified as "ships". And in the law of most maritime States they are held to be "ships", albeit sometimes possibly ships with certain special characteristics.

15. Looking at the applicable law solely from the perspective of an abstract definition, however, would be somewhat too doctrinaire a perspective on a matter of high practical importance. Therefore, it is the Finnish contention that whatever the result of the definitional exercise, there is no basis for denying that the normal rules of navigation apply to these craft in the same way as they apply to more conventional types of ships. Indeed, the practice of the most important coastal States fully confirms this. There is not one single case in which a coastal State has denied that a semisubmersible drill rig or jack-up in transit enjoys the right of free (innocent, transit) passage through its territorial waters or an international strait.

16. Likewise, international practice fully confirms that the right of free passage is not subjected to qualifications or limitations upon the types of carriage other than those which flow from the requirement of "innocence". That the vessel has exceptional dimensions is not a criterion for its "non-innocence". Nor is the right of passage restricted to existing types and sizes of vessels. If it were, development in shipbuilding would have been, and would be, seriously hampered. Finland accepts, however, for the purposes of this case, that the criterion of "foreseeability" is sufficient to safeguard the coastal State's interests while allowing for technical and economic innovation.

17. It has sometimes been claimed on the Danish side that Denmark's interests in constructing a bridge so vastly outweigh Finland's interest in maintaining free passage that it would be unreasonable to uphold Finland's rights in their full extent. This argument is untenable for two reasons.

- First, the balance between the interests of the community and those of the coastal State regarding passage rights in international straits has been set by international customary law as well as the several treaties applicable to particular situations. The Court is not called upon to establish an *ad hoc* balance but to apply the law. And it should apply the law because the law itself is an expression of the agreed balance.
- Second, the Danish view miscasts the opposing interests. Finland is not arguing that Denmark should abandon its project but rather that Denmark should carry it out in such a way that the right of passage is not violated. This would be possible by means of an opening in the East Bridge, for example. The question is not whether Denmark may construct its fixed link but whether it should construct it as planned or with a modification upholding existing Finnish right.

18. In addition, the importance of the economic and social consequences of the bridge plan to Finland must be stressed. Finland has an important shipbuilding industry. The competitiveness and survival of this industry is largely based on its orientation towards the

construction of special ships many of which have large physical dimensions. Among these are offshore craft. Were the bridge to be built in its planned form, much of the security of shipbuilding and those companies and individuals that depend on it would be threatened and offshore industry in Finland would be finished.

19. The Court's judgment in the *Corfu Channel* case contained an authoritative statement on the right of innocent passage in international straits. The *Great Belt* case will have an equally important significance in clarifying the extent to which that right extends to large and special vessels, including craft used in offshore exploration, exploitation and related purposes.

20. Article 59 of the Court's Statute provides, of course, that judgments have no binding effect except between the parties and in respect of each particular case. Nevertheless, as a fact of legal history and juristic reason, the Court's statements enjoy a privileged authority in clarifying the content of general international law. Its judgment in this case will thus have immediate significance in determining the law regarding navigational conditions enjoyed by special ships in international straits worldwide. It will also have a bearing on the carrying out of plans to establish links across other international straits.

21. This Memorial has been organized as follows: Part II will lay down the factual background of the case. It will describe the geographical, historical, technical and economic aspects of the case. Part III sets out the applicable law in three chapters: the right of passage in the Great Belt, the ships enjoying that right and an examination of the argument that Finland acquiesced in the current Danish project. The submissions are contained in Part IV.

PART II
THE FACTS

CHAPTER I

ASPECTS OF GEOGRAPHY

Section I. The Geographical Perspective: Finland's Position

1. As Erik Brüel notes in his famous lectures on the Danish straits, the straits not only separate parts of Danish territory but also link together pieces of territory otherwise separated by the sea. He continues by outlining what is probably the most significant geographical aspect of the present case:

> "Pour les Etats de la Baltique, notamment pour ceux qui n'ont accès à la mer qu'exclusivement - ou presque exclusivement - comme la Finlande, par les détroits (ou par le canal de Kiel), ceux-ci revêtent une importance vraiment vitale, au point de vue tant économique que politique."[1]

2. The three Danish Straits at the only entrance to the Baltic have always formed an important channel for international navigation between the Baltic and the North Sea. For some countries, such as Finland, the straits form the only natural waterway between their coasts and world oceans (Cf. *Map 1: The Baltic Sea*). For those countries, any change in the conditions of passage in the Danish straits is a matter of great importance.

3. Despite its geographically disadvantaged position at the eastern end of the Baltic Sea, however, Finland is also a maritime country with an important shipbuilding industry and a marked dependence on maritime transports for its economy. About 90 per cent of Finnish exports and 80 per cent of Finnish imports are carried by sea. Out of the transports of 1990, 45 per cent passed through the Danish straits.

4. The conditions of passage in the Danish straits are thus a matter of great concern for the Finnish economy and society. In the following paragraphs, those conditions are surveyed from the perspective of navigational geography.

Section II. The Geography of the Straits: A General Description

5. The entrance from the North Sea to the Baltic consists of six straits: The Kattegat, Samsø Belt, the Sound, Little Belt, Great Belt and Fehmarn Belt. Out of these, the first two can also be described as part of the North Sea proper. Both of them - unlike the other four - contain a relatively wide high seas channel in the middle. Fehmarn Belt forms a waterway between the island of Fehmarn and the German North Coast. It is not a direct connection between the North Sea and the Baltic. In addition, the Kiel Canal forms an important artificial waterway linking the North Sea with the Baltic at the city of Kiel in Germany *(Map 2: The Danish straits)*.

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[1] Erik Brüel, "Les détroits danois au point de vue de droit international", 55 *Recueil des Cours* (1936 I), p. 604.

6. It is common to treat as the Danish (or Baltic) straits the more limited group of three straits consisting of the Sound and the two Belts, Little Belt and Great Belt[1] - the "Baltic Sea Accesses".[2]

Section III. The Great Belt (Storebælt)

7. The Great Belt is situated between the Danish islands of Fyn-Langeland in the west and Sjaeland-Lolland in the east. Its total length is about 60 kilometres. It is delimited in the north (as against Samsø Belt) by a line from Fyns Hoved to Rosnaes and in the south (as against Fehmarn Belt) by a line from Gustav Flak to Kappel Church (*Map 3: The Great Belt*).

8. The width of the Great Belt varies between 18.5 and 28.2 km. It is divided in the middle by Sprogø island into two channels, the *West Channel* (Vesterrenden) between Nyborg (Fyn) and Sprogø, and the *East Channel* (Østerrenden) between Sprogø and Halsskov (Sjaeland). The navigable route in the West Channel is about 3,3 km wide and in the East Channel about 1,7 km wide. The depth of the Great Belt varies between 20 and 25 metres but extends to 66 metres at Langeland.

9. Tidal variations in the depth of the Great Belt are insignificant, ranging from 0 to 0.4 metres. More important causes of water-level variation are wind and atmospheric pressure. Persistent westerly wind forces water from the North Sea through the Kattegat further down into the Sound and the Great Belt, "resulting in an overall rise of the sea level. Under extreme conditions, up to 2,0 m above mean sea level have been registered at several locations. Strong easterly winds have the opposite effect (negative stow)".[3] Also the flow of rivers and streams emptying in the Baltic contributes to what has been described as a "complex pattern of variation in the water column everywhere in the Baltic approaches".[4] The Great Belt is relatively well protected from waves. The probability of variations in wave height exceeding 1 m is only about one per cent.

10. Wind and changes in the water level may cause currents and current changes in the different parts of the strait. The current speed may exceed 1.5 metres/second. Cross currents and sudden current changes may make navigation more difficult, especially in narrow parts of the strait.

11. In normal conditions, navigation through the Great Belt does not pose particular difficulties. Nevertheless, weather and climatic conditions may cause problems. For this reason, and because of increased vessel size and volume of traffic, the Danish Government established the internationally recognized navigation route - the Route T - in 1975, which passes through the Great Belt (cf. further Section V below).

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[1] Erik Brüel, "Les détroits danois au point de vue de droit international", 55 *Recueil des Cours* (1936 I), p. 599; Gunnar Alexandersson, *The Baltic Straits*, (1982) p. 69.

[2] Harald Löschner, "Shipping Routes to and within the Baltic Sea", 30 *Außenpolitik* (1979), p. 277.

[3] Anker Nissen, "Route T. A Major Danish Waterway", 72 PIANC - AIPCN - Bulletin, (1991). See Annex 1.

[4] *Ibid.*

Section IV. A Comparison of the Navigational Geography of the Straits

12. To understand the significance of the Great Belt it is useful to look briefly into the characteristics of the alternative waterways, and the considerations of law and geography which have made the Great Belt the most significant of the straits for heavy international traffic.

13. *The Little Belt* is enclosed within the baselines of the Danish territorial sea and is a part of Danish internal waters. It is situated between Als (Jutland) and Aerø (Fyn) and delimited in the north by a line from Aebelø to Bjørnsknude and in the south from Pøls-Puk to Vejsnes nakke. The passage has a length of 68 miles and a minimum depth of 11.8 metres. The width of the Little Belt varies between 700 metres and 27.5 km.[1]

14. In May 1935, a bridge was opened over the Little Belt at Snaeveringen, connecting the Jylland peninsula with the island of Fyn. The bridge restricted passage to ships with a maximum height of 33 metres.

15. *Navigational conditions in the Little Belt can be difficult. The northern section of the* Little Belt is deep and narrow but in the central section detached shoals restrict navigation somewhat. Also, "The current is strong in the Belt, up to three metres per second. 'Eddies' are formed."[2] This, too, may cause difficulties for navigation.

16. *The Sound* (Øresund/Öresund/Sund) is the easternmost of the three entrances from the Kattegat to the Baltic (cf. *Map 4: the Sound*). It is situated between Sjaeland and the southwest coast of Sweden (Skåne). It is delimited in the north by a line from Gilbjerg Hoved (Sjealand) to Kullen (Sweden) and in the south from Stevns Klint light (Sjaeland) to Falsterbo (Sweden). Its width varies between 4 and 47 km.

17. The Sound is divided in its northern part into an eastern and a western channel by the island of Ven. *The 8.3 km wide western channel between Ven and Sjealand is the more* commonly used. In its southern part, the Sound is divided again into two channels: the Drogden on the Danish side, Flintrännan on the Swedish side. Drogden is situated between the islands of Amager and Saltholm and passes by Kastrup (Copenhagen Airport).

18. The Sound is the shortest route between the eastern Baltic and the North Sea, but the draught of the vessels using it is limited by the depths of its principal channels in the southern part. The deeper channel is Drogden on the Danish side. Its depth is 7.7 metres, while that of the Swedish Flintrännan is only 7.1 metres.

19. The Drogden Channel is approximately 4 miles long and has a minimum breadth of 290 metres. In 1900 the Drogden was dredged from 6 to 7 metres and in 1923 from 7 to 7.7 metres, which is its current depth.

20. On 23 March 1991 a Treaty was signed between Denmark and Sweden on the construction of a fixed link over the Sound[3]. According to the present plan, the link will be completed as a combined rail and road bridge except for a section of Drogden at Kastrup-southern Saltholm, where the link is to be placed in a submarine tunnel.

21. *Kiel Canal.*[4] The 99 km long Kiel Canal was opened under the name of Kaiser-Wilhelm-Kanal in 1895 and is situated fully within German territory. It has been dredged

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[1] US Defense Mapping Agency, *Sailing Directions (Enroute) for the Baltic Sea (Southern Part)*, Pub. No. 194, 5th ed., 1989.

[2] Gunnar Alexandersson, *The Baltic Straits*, (1982), p. 65.

[3] Cf. Annex 2.

[4] Cf. Rainer Lagoni, "Kiel Canal", Bernhardt (ed.) 12 *Encyclopedia of Public International Law*, (1987) pp. 200-202.

and broadened several times. Its present mimimum depth is 36 feet (11 m). There are nine bridges over the Canal which have a clearance of 42 m. For ships with dimensions exceeding those of the Canal and its bridges, the Danish straits are the only access to and from the Baltic.

22. By the Treaty of Versailles of 28 June 1919, the Kiel Canal was internationalized. The Canal was to remain open for the ships of all States in peace with Germany on the basis of full equality. In 1936 Germany declared that it was no longer bound by the the relevant Articles of the Versailles Treaty noting, however, that navigation on German waterways remained free on condition of reciprocity. This declaration has not been revoked by Germany. Today, foreign merchant ships in the Canal are accorded the same treatment as ships in German internal waters, except that ships in transit are exempt from customs duties. Warships and other public non-commercial ships must obtain prior permission through diplomatic channels for passage through the Canal.

Section V. Route T: The Primary Significance of the Great Belt

23. The Great Belt is the only deep-water passage between the Baltic and the North Sea. It has therefore always been used by large ships. By the early 1970's, traffic in the Great Belt had vastly increased and the average size of ships had grown. Concern was then directed at the need to prevent collisions or groundings of large vessels, and particularly tankers, in the narrow waters of the Belt.[1]

24. To avoid collisions and groundings with a potential for causing environmental catastrophe, it was decided to establish an internationally surveyed and well-marked transit route with a guaranteed minimum clearance. International Maritime Organization (IMO) Resolution A.339 (IX) was adopted in November 1975 with the title "*Recommendation on navigation through the entrances to the Baltic Sea*"[2]. The Resolution recommended that a routing system be established so that ships over 40.000 DWT or having a draught of 13 metres or more might safely navigate between the area of Skagen (the northern tip of Jylland peninsula) and Gedser Rev (Fehmarn). Pilotage services were recommended for ships with a draught of 13 metres or more. The Resolution noted the possibility of draughts being reduced by as much as 2 metres due to unknown moving obstructions.

25. Subsequently, the Danish authorities issued a booklet on Route T. This was the transit route between Skagen and the area North-East of Gedser, with a minimum depth of water of 17 metres. The direction of Route T is marked on Map 3. Route T passes through the East Channel of the Great Belt.

26. Though the official depth of Route T is 17 metres, the under-keel clearance recommended is 2 metres, so that the effective draught for ships using the Route T is 15 metres[3]. The route is marked by light buoys and lights. There are 14 lighthouses at the entrance to and in the interior of the Great Belt. Danish pilot assistance is available and recommended for large vessels. Because of heavy traffic, ships are expected to participate in a radio reporting service (SHIPPOS).

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[1] Cf. also Annex 1.

[2] Annex 3.

[3] For the underkeel clearance, see Annex 4.

27. One of the traffic separation schemes in Route T - "Between Korsør and Sprogø" - is situated in the Eastern Channel precisely at the point which the projected bridge is intended to cross. At that point, the southgoing traffic is directed into a navigational channel 550 metres wide and 19 metres deep, and northgoing traffic into a channel 600 metres wide and 17 metres deep.

28. On 19 November 1987 a new resolution was adopted by the IMO on navigation through the entrances to the Baltic Sea[1]. This Resolution was adopted on the initiative of the Governments of Denmark and Sweden. It repeats the contents of the 1975 Resolution and adds a provision concerning ships carrying a cargo of class 7 radioactive materials as specified in the International Maritime Dangerous Goods Code.[2]

29. Despite the establishment of Route T, the Government of Denmark has continued to express concern about the possibility of pollution due to collisions or groundings in the area. The use of pilots has been recommended, and Denmark has taken steps internationally to introduce compulsory pilotage for all ships exceeding 20.000 GRT carrying dangerous cargoes in bulk when traversing the entrances to the Baltic Sea.[3]

30. The navigational route into Finland's deepest harbours - the harbours at Pori and Kotka and the oil harbour at Sköldvik - has a draught of 15.3 metres. As explained in Annex 4, this corresponds to the effective draught of Route T, taking account of the recommended underkeel clearance of 2 metres. In fact, the depth of Finland's deep-water channels has been specifically measured to accommodate all ships that are able to enter the Baltic *via* the Route T. The channels leading to other important commercial harbours in Finland apart from those already mentioned also have a draught far in excess of the 7.7 metre draught of the Drogden.

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[1] Annex 5.

[2] Cf. *Routeing of Ships. Navigation through the Entrances to the Baltic Sea. Note by the Governments of Denmark and Sweden.* International Maritime Organization, *Sub-Committee on Safety of Navigation, 32rd Session*, Agenda Item 3, Doc. NAV 32/3/2, 24 January 1986.

[3] Cf. *Proposal for certain mandatory use of pilotage services for ships over 20.000 GRT carrying dangerous cargoes in bulk in the Baltic Sea Area, submitted by Denmark.* Baltic Marine Environment Protection Commission - Helsinki Commission, *Maritime Committee, 17th Meeting, Hamburg, Germany 24-27 September 1991*, Doc. MC/17/5/1, 19 August 1991.

CHAPTER II

THE GREAT BELT IS AN INTERNATIONAL STRAIT

31. The two problems that have given rise to most discussion among jurists regarding the law of international straits are the definition of an "international strait" and the character of the regime applicable in such a strait. As regards the former question, it seems clear that the Great Belt is an international strait - despite the fact that it is enclosed within Denmark's territorial sea. This part of the memorial will give a brief historical overview of the development of the international status of the Danish straits and its recognition by Denmark.

Section I. The International Status of the Baltic and the Law of the Straits

32. The navigational regime of the Danish straits is a function of the status of the Baltic Sea. Were the Baltic a closed sea *(mare clausum)*, there would be no reason to assume, *a priori*, the existence of a right of free passage in the straits. Conversely, were there no freedom of passage in the straits leading to the Baltic, the Baltic would by that very fact become a *mare clausum*.

33. Nowadays, the Baltic is an international sea which encloses large areas of high seas. There is a history to the openness of the Baltic - a history which underlines the international character of the passage regime in the Danish straits. This history can be recapitulated under two headings:

- The abolition of the Sound Dues;
- The rejection of the idea of *dominium maris Baltici*.

A. THE ABOLITION OF THE SOUND DUES

34. The early history of the regime of passage in the Danish straits is dominated by the question of the Sound dues.[1]

In 1429, the Danish King Eric of Pomerania began to levy a duty on international shipping passing through the straits, thus asserting full Danish dominance over straits passage.[2] A long line of Danish kings followed his example, in order to ease their financial situation. At their peak, the dues constituted some two-thirds of the Danish State budget.

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[1] There is a very extensive literature on the question of the Danish Sound Dues. For the following text, see in particular the following sources: "Aflosningen af Sund- och Belttolden. Aktstykker trykte som Manuskript for Medlemmerne of Rigsraadet og meddelte med Udenrigsministerns tillaadelse.", *Historisk Tidsskrift 3:1*, (1858-1859), pp. 455-558; Marcus Rubin, "Sundtoldens Aflosning", *Historisk Tidsskrift* 7:6, (1905-1906), pp. 172-311; Henning Henningsen, *Skippere. Klarerere och Toldere*, (1970); *Suomen Taloushistoria III (Historiallinen tilasto)*, (1983); B.R. Mitchell, *European Historical Statistics 1750-1970*, Abridged Edition, (1978); Feddersen, *Danmark og Nordamerika omiresund*, (1856); *Letters on the Sound-Dues Question*, (1855); C.E. Hill, *The Danish Sound Dues and the Command of the Baltic*, (1928).

[2] For the purpose of levying a duty for passage in the straits, Eric qualified the Sound and the Belts as parts of "Danish watercourses" ("courses de l'eau du royaume de Danemark"), thus asserting the sovereign's traditional right to impose duties on foreigners entering his realm. Cf. M. De Taube, "Le statut juridique de la mer Baltique jusqu'au debut du xixe siecle", 53 *Recueil des Cours* (1935 III), p. 487.

41. In October 1855 the Danish Government then sent notes to the Governments of the countries involved in the traffic through the straits. These notes contained the Danish proposal to end the dues in return for the payment of a capital sum to Denmark, and an invitation to an international conference in Copenhagen.

42. The proposed total sum, capitalized over 25 years and with 4 per cent interest added, amounted to 56.2 million Danish Dollars. However, it was impossible to persuade the countries involved to raise a sum of that size. After extensive deliberations in several meetings that lasted over a year, the sum was lowered to 35.0 million Danish Dollars, which sum constituted the basis for the calculation of the shares of the different nations. Each country had to pay its share in instalments over a period of twenty years. On this basis, the Treaty on the Redemption of the Sound Dues was signed on 14 March 1857. Ratifications were exchanged on 30 March 1857.

TABLE 1: THE CALCULATION OF THE SHARES OF THE VARIOUS COUNTRIES
(See opposite page.)

43. The Sound dues have been very widely discussed in legal literature. The prevailing opinion is that by the time of their abolition in 1857, they were already somewhat of an anachronism. The law of the sea had by then developed in the direction of providing for free passage in international straits, or at least of casting serious doubt on the coastal State's right to exact duties from ships or goods passing through such straits. The situation is perhaps best summarized by Brüel:

> "le traité en question fait une application positive, en ce qui concerne le passage des détroits danois, en temps de paix, des règles générales du droit international sur le passage des détroits internationaux en temps de paix, c'est à dire: Droit de passage inoffensif des navires de commerce par les eaux territoriales...".[1]

B. THE REJECTION OF ATTEMPTS AT DOMINIUM MARIS BALTICI

44. In addition to the Danish attempt to explain the Sound dues - and thus the straits regime - as a part of the Danish King's *dominium*, there were other aspects of straits passage that were directly related to views regarding the status of the Baltic.

45. Thus, there was a prohibition on foreign warships using the straits without the Danish King's permission. This lasted until 1658, when Denmark's Swedish provinces - among them the province of Scania, or the southern part of Sweden proper - were ceded to Sweden. By that fact, Denmark lost its former position as the sole coastal State able to control passage in the straits. In the *Treaty of Roskilde of 26 February 1658*, Denmark and Sweden decided upon joint control of passage by warships through the straits (Article III).[2] This joint control was put into effect during the wars of 1691-3.

46. The *Treaty of Nystad (Uusikaupunki) of 30 August 1721* put an end to Swedish dominance in the Baltic and started a period of Russian supremacy. Russia had the same interest as other dominant powers in the Baltic in barring outside naval powers from the Baltic. Hence, in a *Convention respecting the Baltic between Russia and Sweden of 9 March*

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[1] Erik Brüel, "Les détroits danois au point de vue du droit international", 36 *Revue Générale de Droit International Public (1929)*, p. 116.

[2] Cf. Parry, *Consolidated Treaty Series*, vol. 5, p. 30.

35. At first, the dues were paid by the owner or master of the ship itself; the cargo was not used as a ground for determining the duty. In the time of Christian I (1426-81), however, the dues were determined according to the weight of the cargo. At one period it was forbidden to sail through the Great Belt, but by 1560, the Danish authorities began to watch this channel as well, at the city of Nyborg. The dues collected there, however, never formed more than one or two per cent of the revenue from the castle of Kronborg at Elsinore, and the Sound remained the main source of income throughout the history of these customs. [1]

36. Some states were treated as privileged ones, while others were termed unprivileged, which naturally meant that for different countries there were varying grounds for determining the dues, much depending on the political situation of the day.[2]

37. Towards the beginning of the 17th century, the European sea powers, Britain, Holland and some others, began to show a marked interest in the Baltic. The reason was that the natural resources of many Baltic countries provided raw materials for the wooden sailing navies of the day. This connection between forests and sea power sent thousands of British and Dutch ships into the Baltic to fetch the goods their countries needed: timber, tar, pitch and hemp. At the close of the 18th century Dutch ships began to lose ground to their competitors and British ships began to dominate the Sound.

38. The unpopularity of the Sound dues increased steadily in the nineteenth century. During the 427 years of their existence the dues had never been very popular but the protests had been previously more subdued than they became during the last half-century which preceded the Treaty which ended the dues.

39. On April 14th, 1855 the U.S. Ambassador to Copenhagen, Henry Bedinger, was instructed to send a note to the Danish Government, informing it that from the 14th of April, 1856 onwards the Americans were not going to pay any further dues for their ships or cargoes passing the Danish Straits. This initiative, from a nation which was by no means the most important of the countries using the Sound for their merchant ships (the American ships did not even reach the number of 100 annually on the average), induced more international protests. Consequently the Danish Government drew up the outlines of a plan to put an end to the Sound dues and to provide suitable compensation to Denmark.

40. The first problem for the Danish Foreign Ministry was to determine the size of the compensation. Payments during the period of 1842-1853 were taken as a basis for this calculation.[3] There were several kinds of dues and fees paid during this period, the most important being the actual customs dues, which were paid for the transit of different commodities in the cargoes of the ships, and the lighthouse fees, which were paid by the ships irrespective of whether they were loaded or ballasted.

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[1] Smuggling was a great problem for the Danish authorities. It is impossible to estimate the amount of goods transported through the Sound without proper declaration, but duty evasion seems to have gone on all the time. To counteract this, the Danes stipulated that 4 per cent of the duty paid was to go to the master of the ship, while the remainder, of course, went into Danish cashboxes. This stipulation had the effect that the captain had an interest in seeing to it that the complete cargo was declared properly.

[2] At the Peace of Stettin (1570) Sweden and its provinces were liberated from the Sound dues altogether.

[3] Later, it was decided to leave the period of 1848-1850 outside the basis of calculation, on the grounds that the political and economic balance of Europe was disturbed in those particular years, owing to the wars and revolutions taking place then, thus affecting the amount of dues flowing in.

Table 1

THE CALCULATION OF THE SHARES OF THE VARIOUS COUNTRIES IN PAYING THE COMPENSATION TO THE DANISH GOVERNMENT IN ACCORDANCE WITH THE TREATY OF THE ABOLITION OF THE SOUND DUES

1759 the two powers - while promising to protect commercial navigation of all countries into and within the Baltic - decided to take action to prevent the entry of foreign warships into the Baltic.[1] Denmark acceeded to this Convention on 17 March 1760.

47. The end of pretentions to close the Baltic came with the attempt to establish a *League of Armed Neutrality in 1780-3 and 1800*. The First League was established following a declaration by Empress Catharine II of Russia of 28 February 1780. It had do to mainly with a strict definition of contraband goods. Many powers accepted the declaration. Pursuant to it two Conventions were concluded with an identical content, one between Russia and Denmark, and the other between Russia and Sweden. The Netherlands later acceded to this "double convention". These two Conventions contained the principle that the Baltic "est une mer fermée, incontestablement telle par sa situation locale" (Article I).[2] In an attempt to isolate ("neutralize") the Baltic a *Danish-Swedish Convention of 27 March 1794* provided expressly that "La Baltique devant toujours être regardée comme une mer fermée et inaccesible à des vaisseaux armés des Parties en guerre éloignées", (Article 10).[3]

48. Catherine's son, Paul I, attempted to renew the League of Armed Neutrality in 1800 with a series of treaties concluded between Russia and Denmark-Norway, Sweden and Prussia.[4] After the Napoleonic wars and the bombardment of Copenhagen in 1807, however, it became clear that Denmark was not in a position alone to guarantee the closure of the straits to the navies of outside powers.

49. Attempts to close off the Baltic have always related to some Baltic nation's wish to keep belligerent warships away from its coasts. They have never amounted to an effective denial of the right of *commercial ships* to use the Baltic in the same way as any other part of world seas. During the 20th century, there has been no serious attempt to deny the international character of the Danish straits and the right of all countries, in time of peace, to send their commercial vessels through them on a perfectly equal footing.

50. The Danish straits regime was the subject of international deliberations at the *Versailles Peace Conference 1918-9*. The Versailles Peace Treaty limited Germany's right to erect fortifications close to the straits area. This was done, as was stated in Article 195 of the Treaty, "[i]n order to ensure free passage into the Baltic to all nations"[5]. Particularly interesting is the fact that the provision ascribes the free passage right to "all nations" and not simply to the states parties to the 1857 Copenhagen Treaty. As one commentator has observed:

> "..c'est ainsi que la liberté d'accès, base du statut juridique de la Baltique, a été posée au Traité de Versailles..." [6]

51. During the inter-war era, several codification attempts, based on Article 23 (e) of the League Covenant, were undertaken so as to enhance the freedom of navigation and

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[1] Parry, *Consolidated Treaty Series*, vol. 41, p. 285.

[2] Parry, *Consolidated Treaty Series*, vol. 47, p. 345.

[3] Parry, *Consolidated Treaty Series*, vol. 52, p. 191.

[4] Cf. Convention Between Russia and Sweden for the Re-Establishment of an Armed Neutrality, 4/16 December 1800. Denmark acceeded to it on 27 February 1801. The Russo-Danish Convention of 5/16 December 1800 and the Russo-Prussian Convention of 6/18 December 1800 have the same content. Cf. Parry, *Consolidated Treaty Series*, vol 55, p. 411.

[5] For text of Art. 195, cf. Annex 6

[6] Pusta, "Le statut juridique de la Mer Baltique à partir du XIXe siècle", 52 *Recueil des Cours* (1935 II), p. 159.

Table 1

THE CALCULATION OF THE SHARES OF THE VARIOUS COUNTRIES IN PAYING THE COMPENSATION TO THE DANISH GOVERNMENT IN ACCORDANCE WITH THE TREATY OF THE ABOLITION OF THE SOUND DUES

	COUNTRIES	Average dues for goods traffic through the Sound 1851–1853						The percentages in col. 6 applied to the average goods dues in the Sound and the Belts 1842–47 and 1851–53	Lighthouse dues 1851–53. Percentages	The percentages in col. 8 applied to the average lighthouse fees 1842–47 and 1851–53	The figures in 7 and 9 added together and multiplied by 25.	The figures of col. 10, reduced proportionately to lower their total to 35 000 000.	The figures of col. 11 in percentages of the total	
		Imported to Baltic ports	Exported from Baltic ports	Exported to Baltic ports	Imported from Baltic ports	Col 1–4 put together								
		to or from countries below		To or from non-Baltic ports in countries below		Absolute figures	In percentages of total							
		Danish Dollars	Danish Dollars	Danish Dollars	Danish Dollars'	Danish Dollars		Danish Dollars		Danish Dollars	Danish Dollars	Danish Dollars		
		1	2	3	4	5	6	7	8	9	10	11	12	
1	Denmark with colonies	115 000	3 900	2 524	2 250	123 674	2,94	61 692	6,93	10 396	1 802 200	1 122 078	3,21	1
2	Sweden	80 000	78 000	14 150	6 700	178 850	4,25	89 179	8,67	13 003	2 554 550	1 590 503	4,55	2
3	Russia	697 700	537 900	2 206	582	1238 388	29,44	617 752	5,33	7 995	15 643 675	9 739 993	27,83	3
4	Prussia	240 000	278 700	378	118	519 196	12,34	258 934	17,54	26 316	7 131 250	4 440 027	12,69	4
5	Mecklenborg	10 000	20 500	–	–	30 500	0,72	15 108	5,93	8 898	600 150	373 663	1,07	5
6	Lubeck	10 000	1 500	–	–	11 500	0,27	5 665	0,63	952	165 425	102 996	0,29	6
7	*Baltic Sea in general*	30 000	–	–	–	30 000	0,71	14 899	–	–	372 475	231 909	0,66	7
8	Norway	–	–	31 500	19 050	50 550	1,20	25 180	11,79	17 686	1 071 650	667 225	1,91	8
9	Hamburg	–	–	11 850	1 150	13 000	0,31	6 504	0,25	371	171 875	107 012	0,31	9
10	Bremen	–	–	19 150	8 150	27 300	0,65	13 640	0,27	403	351 075	218 585	0,62	10
11	Oldenborg	–	–	24	198	222	0,01	210	1,07	1 597	45 175	28 127	0,08	11
12	Hanover	–	–	40	1 876	1 916	0,05	1 049	4,58	6 878	198 175	123 387	0,35	12
13	Great Britain and Ireland with colonies	–	–	584 940	641 170	1 226 110	29,15	611 666	25,95	38 935	16 265 025	10 126 855	28,93	13
14	The Netherlands with colonies	–	–	77 826	78 548	156 374	3,72	78 057	8,27	12 404	2 261 525	1 408 060	4,02	14
15	Belgium	–	–	14 350	24 300	38 650	0,92	19 305	0,04	62	484 175	301 455	0,86	15
16	France with Algeria	–	–	86 800	64 908	151 708	3,61	75 750	1,71	2 565	1 957 875	1 219 003	3,48	16
17	Spain with colonies	–	–	127 554	3 774	131 328	3,12	65 468	0,05	63	1 638 275	1 020 016	2,91	17
18	Portugal with Madeira	–	–	24 602	10 532	35 134	0,84	17 626	0,02	30	441 400	274 823	0,79	18
19	Sardinia	–	–	2 612	426	3 038	0,07	1 469	–	4	36 825	22 928	0,07	19
20	*Toscana*	–	–	1 188	2 200	3 388	0,08	1 679	–	4	42 075	26 196	0,08	20
21	The Sicilies	–	–	28 226	334	28 560	0,68	14 269	0,30	444	367 825	229 013	0,65	21
22	Austria	–	–	2 764	1 228	3 992	0,09	1 889	–	2	47 275	29 434	0,08	22
23	Greece	–	–	178	–	178	–	88	–	2	2 250	1 401	–	23
24	Turkey	–	–	4 606	68	4 674	0,11	2 308	–	–	57 700	35 925	0,10	24
25	USA	–	–	64 650	25 650	90 300	2,15	45 114	0,67	1 003	1 152 925	717 829	2,05	25
26	Mexico	–	–	962	–	962	0,02	420	–	–	10 500	6 537	0,02	26
27	*St. Domingo*	–	–	1 482	–	1 482	0,04	839	–	–	20 975	13 059	0,04	27
28	Venezuela	–	–	736	–	736	0,02	420	–	–	10 500	6 537	0,02	28
29	New Granada	–	–	482	–	482	0,01	210	–	–	5 250	3 269	0,01	29
30	Uruguay	–	–	–	170	170	–	84	–	–	2 100	1 307	–	30
31	La Plata-states	–	–	–	268	268	0,01	210	–	–	5 250	3 269	0,01	31
32	Brazil	–	–	63 420	1 646	65 066	1,55	32 525	–	2	813 175	506 295	1,15	32
33	Peru	–	–	–	52	52	–	25	–	2	675	420	–	33
34	Buenos Ayres	–	–	–	–	–	–	–	–	1	25	16	–	34
35	Chile	–	–	–	48	48	–	23	–	–	575	358	–	35
36	China	–	–	474	–	474	0,01	210	–	–	5 250	3 269	0,01	36
37	Other, vaguely defined countries outside the Baltic	–	–	13 026	25 104	38 130	0,91	19 095	–	–	477 375	297 221	0,85	37
		1 182 700	920 500	1 182 700	920 500	4 206 400	100,00	2 098 561	100,00	150 018	56 214 475	35 000 000	100,00	

Source:
Marcus Rubin: Sundtoldens Aflösning. **Historisk Tidsskrift 7:6. Copenhagen 1905–1906.** This table has been compiled on basis of the material, which was presented to the Conference on the Sound dues and has been printed in the **Historisk Tidsskrift 3:1 (Copenhagen 1858–59)** These documents in printed form were first presented to the members of the Danish Government.

commerce. One example was the *Barcelona Convention and Statute on Freedom of Transit*, adopted on 20 April 1921. The Convention and Statute are applicable to all territories under the sovereignty or authority of States parties, and including their territorial waters. The parties agree to facilitate free transit of persons and goods in their territories. A reservation is made, however, regarding the customary conditions regarding transit in their territorial waters (Article 2). The Convention and Statute were ratified by Denmark on 27 October 1922 and their provisions were implemented by Danish decree No. 197 of 19 April 1923. (Lovtidende 1923 A II 1205.)

52. The position in the inter-war era is summarized by Brüel as follows:

> "...depuis la guerre, il se manifeste une tendance très nette à restreindre l'exercise des droits de l'Etat riverain neutre sur les passages qui ont une importance pour les communications internationales".[1]

53. In so far as the straits regime can be inferred from views regarding the status of the Baltic Sea, the occasional suggestions to restrict passage to the Baltic by ships of noncoastal States have only concerned warships and these suggestions have never amounted to a change in the legal status of the Baltic into a closed sea. In the following two sections the status of the straits is examined from the perspective of Danish law and regulations. Part III of the memorial will elaborate on the present international law applicable in the straits.

54. It may be appropriate to end this section by referring to the *Report from the Nordic Senior Officials Group assigned to Study the Prerequisites for a Nuclear-Weapon-Free Zone in the Nordic Area*[2]. This Report was prepared by high governmental officials from all the Nordic countries, including Finland and Denmark, and it was submitted to the Nordic Foreign Ministers at their meeting in Karlshamn, Sweden, on 22 March 1991. The Report notes that the Danish straits are "international straits" and that

> "...the Nordic countries' interpretations of the right of passage, as formulated in national regulations for straits, are in full agreement with the concept of 'innocent passage' in the 1958 Convention [on the Territorial Sea and the Contiguous Zone]". (Sect. 8.3.)

55. The open sea character of the Baltic and the international status of the straits is unambiguously recognized. The Report observes that the establishment of a nuclear-weapon-free zone (i.e. the closing of the Baltic from access by certain types of ships)

> "would require that nuclear-weapon powers approved the renunciation of their rights to 'innocent passage', as guaranteed by international law". (Sect. 8.3.)

It concludes that

> "Today, a large proportion of the Baltic Sea consists of international waters. A limited group of States - like the Nordic countries - cannot legally decide on its status in the same way as they can regarding their own land territories and internal waters. Furthermore, even in their territorial waters, the law of the sea would...not allow coastal states the right to prohibit nuclear weapons on board the vessels of foreign states which are making 'innocent passage'... circumstances concerning passage into the Baltic Sea cannot be regulated by coastal states irrespective of international law.". (Sect. 8.7.)

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[1] Erik Brüel, "Les détroits danois au point de vue de droit international", 55 *Recueil des Cours* (1936 I), p. 679.

[2] Annex 7.

Section II. Denmark's Territorial Sea
(See also *Map 5: Danish territorial waters*)

56. Denmark has a territorial sea of 3 nautical miles (5.556 Km). The baselines of its territorial sea are determined by Ordinance No. 437 of 21 December 1966[1] and Ordinance No. 189 of 19 April 1978 (containing minor modifications in the baseline). At its narrowest point, the Great Belt is enclosed within Denmark's territorial sea. The Little Belt is a part of Danish internal waters. The waters in the Sound are in part Danish territorial sea, but a part of internal waters reaches up to the line of delimitation established in the Danish-Swedish Declaration of 30 January 1932[2]. Ships cannot pass the Sound on the Danish side of the international boundary without passing through Denmark's internal waters.

Section III. The Danish Straits Navigation Regime under Danish Law

57. The Treaty on the Redemption of the Sound Dues of 14 March 1857[3] abolished the payments due to the Danish King for ships and cargoes traversing the straits. As Oppenheim noted:

> "With these dues has disappeared the last witness of former times when free navigation on the sea was not universally recognised"[4]

58. In the 20th Century, Danish territorial waters regulations have always assumed free passage in the three straits. Two points are relevant in this connection:

a) Most of the regulations concern passage by warships. Though they are not directly relevant to passage by commercial vessels, they are still important in showing a kind of minimum right of passage in the straits based on general customary law. It is generally held that the 1857 Treaty did not cover passage of warships, but that this question is regulated by general customary law and the relevant Danish regulations. Because the intention of the 1857 Treaty was not to restrict but rather to liberalize passage rights, it can be inferred that whatever the rights which commercial vessels may enjoy under the 1857 Treaty, they must be at least as liberal as the basic standard governing warships.

b) The relevant regulations show that Danish law itself makes a legally significant distinction between "ordinary" Danish waters (territorial sea and internal waters) on the one hand and the "natural waterways" existing in the straits on the other hand.

59. Here is a rapid survey of the relevant Danish regulations:

1) *The Royal Decree of 20 December 1912* regarding Danish neutrality in time of war[5] established the main rule of free access for belligerent warships to Danish territorial waters. The King, however, reserved the right to prohibit their entry into Danish internal waters "in particular circumstances and for the protection of the sovereign rights of the Kingdom and the restitution of its neutrality" (Chapter I.1 (c)). "Internal waters", again, were defined as

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[1] Annex 8.

[2] Annex 9.

[3] Annex 10.

[4] L. Oppenheim, *International Law. A Treatise.*, vol. I Peace, 3rd ed. (ed. by F. Roxburgh), (1920), p. 350.

[5] Annex 11.

"ports, entrancies to ports, roadsteads, bays, territorial waters situated between and on the inside of islands, islets and reefs that are not permanently submerged". An exception to this definition of internal waters was made, however, in respect of that part of the Kattegat, the Sound, the Great Belt and the Little Belt "which forms a natural passage-way between the North Sea and the Baltic...".[1] The roadstead of Copenhagen (Hollaenderdyb and Drogden) was, however, exempted from free passage (Ch.I.1 (a)).

2) It was explicitly stated in Denmark's answer to the questionnaire prepared for the League of Nations' 1930 Conference on the Codification of International Law that Denmark recognized the international status of the straits and that the regime came under general customary law. Denmark explained that it was the purpose of the 1857 Treaty on the Sound Dues:

> "to bring these waters henceforward under the general rules of international law relating to straits connecting two portions of the open sea".[2]

3) *The Royal Decree of 31 May 1938* on Danish Neutrality Rules[3] followed closely the neutrality decree of 1912. It prohibited the entry of belligerent warships and submarines into Danish internal waters with the exception of that part of Danish waters in the straits which form the natural route for traffic ("voies de trafic naturelles") between the North Sea and the Baltic.[4] Again, access to the port and roadstead of Copenhagen remained prohibited (Article 2(1), 2 (2)in fine).

4) *Ordinance No. 356 of 25 July 1951* Respecting the Admission of Foreign Warships and Military Aircraft to Danish Territory in Time of Peace[5] contained both a definition of the Danish territorial sea and internal waters and regulations for the passage of foreign warships.

a) As far as the definition of internal waters ("inner territorial waters") was concerned (Article 3), an exception was made regarding the Sound and the Great Belt in which only ports, entries to ports, docks, bays and fjords plus certain specifically enumerated areas were regarded as internal waters. The main channels of the two straits (but not the Little Belt) were thus defined as territorial sea.

b) As regards passage by warships, the Ordinance established as the main rule that no advance notice of passage by foreign warships through Denmark's territorial sea was needed unless the duration of passage in Danish waters exeeded two whole days (Article 6). Internal waters were to be completely closed for foreign warships (Article 10).

A special provision concerned entry to the port areas of Frederikshavn, Elsinore and Copenhagen which required special permission - nevertheless, an advance notice sufficed if the warship intended only to pass through the Drogden or the Hollaenderdyb (Article 8).

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[1] "...dans la partie des eaux territoriales danoises du Kattegat, du Sund, du Grand et du Petit Belt, qui forme les voies de trafic naturelles entre la Mer du Nord et la Mer Baltique...", Règles de neutralité établies par ordonnance Royale du 20 décembre 1912. Martens, *Nouveau Recueil Général* 3ème séries, Tôme 7, p. 90.

[2] Annex 12.

[3] Annex 13.

[4] Annex13. See also law No. 297 of 1 September 1939 Prohibiting Entry of Belligerent Warships into Danish Harbours or Territorial Waters which established, in accordance with Art. 2, sec. 4 of the former Ordinance, certain areas in which the entry of belligerent ships was forbidden. Straits passage, however, remained unaffected. For English text, cf. UN Legislative Series, Laws and Regulations on the Regime of the Territorial Sea, ST/LEG/SER.B/6, p. 372.

[5] Annex 14.

5) *Ordinance No. 437 of 21 December 1966* (amended by Ordinance No. 189 of 19 April 1978) Governing the Delimitation of the Territorial Sea is silent on passage rights. It contains the normal distinction between the territorial sea (sometimes also called "external territorial waters") and internal waters. The main channel in the Great Belt and parts of the Sound are defined as part of the territorial sea. There is nothing to indicate that free passage would not be applicable in these sea areas. An interesting provision concerns internal waters. Article 3 of the Ordinance provides that this (i.e. the fact that a part of the sea is a part of internal waters) "shall involve no restrictions in the existing right of passage for foreign vessels through those parts of the the internal waters in the Samsø Belt, the Little Belt, the Great Belt, and the Sound, which are normally used for such passage".[1]

6) The present rules on the passage of foreign warships are contained in *Ordinance No. 73 (1976)* Governing the Admission of Foreign Warships and Military Aircraft to Danish Territory in Time of Peace[2]. Foreign warships "shall enjoy the right of passage through the territorial sea subject to advance notification being given through diplomatic channels...". In regard to the Great Belt, Samsø Belt and the Sound, however, notification shall *not* be required except in the case of simultaneous passage of more than three warships of the same nationality (Article 3). For passage through internal waters, advance permission is required, except, *inter alia*, for passage through Hollaenderdybet/Drogden for which only advance notification applies (Article 4).

60. In other words, *the regime of straits is distinguished from the general regime of the Danish territorial sea*, and is subject to more liberal rights of passage. There is no requirement of advance notification for passage of warships through the straits as a general rule. Even where the parts of the strait are a part of internal waters the regime of navigation by warships is more favourable, not requiring advance permission, than in other parts of internal waters.

61. In *conclusion*, it may be noted that as far as passage by ships other than warships through the Great Belt is concerned, there are no special provisions in force. The fact that warships are given a more liberal treatment in the Great Belt than in those parts of Denmark's territorial sea not part of international straits shows that Denmark itself makes the relevant distinction. The straits possess a special status; a status enjoyed by ships of all nations.

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[1] The text uses the English translation in *UN Legislative Series, National Legislation and Treaties relating to the Territorial Sea, the Contiguous Zone, the Continental Shelf, the High Seas and to Fishing and Conservation of the Living Resources of the Sea*, ST/LEG/SER.B/15, pp. 71-76 which is also contained in Annex 8. Another translation of the same Ordinance is contained in the more recent UN Publication, *The Law of the Sea, Baselines: National Legislation with Illustrative Maps*, United Nations, New York 1989, p. 122 reproduced on p. 60 of the Finnish Application. The latter differs significantly from the former, however, and appears confused. It defines Denmark's territorial sea as "consisting of external and internal territorial waters". These expressions are not, however, used in the rest of the translation at all which speaks of "external territorial sea" and "internal territorial sea". A literal translation of the original Danish text would use the expressions "external territorial waters" and "internal territorial waters". As this distinction, however, does not convey any difference in respect to the internationally established distinction between "territorial sea" and "internal waters" as referred to in the 1958 Convention on the Territorial Sea and the Contiguous Zone, the former translation is preferable. Also, it corresponds more closely to the vocabulary used in the translation of the 1976 Ordinance Governing the Admission of Foreign Warships and Military Aircraft to Danish Territory in Time of Peace, published in UN Legislative Series, National Legislation and Treaties relating to the Law of the Sea, ST/LEG/SER.B/19, 13 June 1978 pp. 142-144 and provided to the UN by the Danish Ministry of Foreign Affairs in a Note Verbale of 11 October 1977 (Annex 15).

[2] Annex 15.

Section IV. The Great Belt is a Strait "Used for International Navigation"

62. In the *Corfu Channel* case, this Court characterized an international strait as a "strait used for international navigation between two parts of the high seas" (*ICJ Reports 1949* p. 28). Since then, academic commentary has distinguished between "functional" (use-related) and "geographical" criteria for the definition of an international strait. During the preparatory work for UNCLOS I, the International Law Commission discussed the question of the definition at some length. The debate concentrated sometimes on the functional, sometimes on the geographical part of the definition. The result, as is well known, became Article 16 (4) of the 1958 Convention on the Territorial Sea and the Contiguous Zone, which made reference to "straits which are used for international navigation between one part of the high seas and another part of the high seas, or the territorial sea of another State". To this definition the 1982 UN Convention on the Law of the Sea added a reference to the new conception of the exclusive economic zone (EEZ) and a number of geographical exceptions which, however, are of no consequence to this case (of more consequence is the exception in Article 35c, but that does not touch upon the question of the *definition*).

63. It is not necessary to take a definite stand on the legal status of the "functional" criterion. There can be no doubt that the Great Belt is an international strait, inasmuch as it is a very widely used passage-way.

64. With an annual number of ship passages through the Danish straits in excess of 130.000[1], the Danish straits are the second most heavily navigated straits in the world - next only to the English Channel. The Great Belt is a strait used - and "normally" used - for international navigation between two parts of the high seas. Though the Sound may still have a larger traffic if measured in numbers of ships, the Great Belt has the larger traffic in terms of net tonnage.

65. The traffic in the Great Belt has been steadily increasing. Here are the tables regarding the number of North/South passages of ships of over 50 GRT in the Great Belt and the Sound during the years 1981-1984 (more recent data has not been available)[2] :

Year	The Great Belt	The Sound
1981	19816	25728
1982	18596	24588
1983	20238	26110
1984	19763	26098

Today, over 20.000 ships of over 50 GRT pass every year longitudinally through the Great Belt. Of these, over a thousand have been larger than 40.000 DWT. About 7 per cent

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[1] Uwe Jenisch, "Recent Law of the Sea Development in the Baltic Sea", 38 *Außenpolitik* (1987), p. 362.

[2] Farvandsdirektoratet 1985, *Farvandvæsenets trafikanalyse 1984*, p. 12.

of the ships have a navigating draught of over 10 metres. In other words, for a significant number of ships that pass through the Baltic Sea accesses the only available waterway is the Great Belt, the Sound being too shallow.

Section V. Conclusion

66. Whether assessed by reference to history, Danish law or its actual use for international navigation, the Great Belt is an international strait. *Prima facie*, at least, there seems no reason to deny the application of general rules of passage in international straits in the Great Belt. Whether this is so and what qualifications might be needed to this conclusion will be further discussed in Part III.

CHAPTER III

THE SOUND IS NOT A RELEVANT ALTERNATIVE

67. It has been argued from the Danish side that the obstructions caused by the fixed link over the Great Belt can be compensated by directing traffic into the Sound (eg. statement by Ambassador Fergo, 2 July 1991). Whatever basis this reference to an alternative passage may have in law (and it is contended that it has none in the circumstances of the Great Belt), the argument is incorrect as a point of fact. The navigational conditions of the the Sound, the legal status of its main waterway (Drogden), and the plans to build a fixed link over it, make it a much less useful route into and from the Baltic than the Great Belt.

68. The combined environmental implications of the Great Belt project and the plan for a fixed link over the Sound have given rise to much concern in the two coastal States (Sweden and Denmark) as well as elsewhere in the Baltic region, including Finland. As discussions on those aspects of the two projects are continuing and information on the effects is still incomplete, Finland will refrain from taking this aspect of the matter up at this stage.[1]

Section I. The Depth of the Sound is only half of that of the Great Belt

69. The Sound is a relatively narrow and a very shallow waterway between Denmark and Sweden (cf. Map 4). Though its northern part is deep enough to accommodate passage by any existing ship, this is not the case in respect of the two available channels in its southern part, the Drogden on the Danish side and the Flintrännan on the Swedish side. The deeper of these is Drogden, which is situated between the Danish islands of Amager and Saltholm. Drogden is 290 metres wide and has a guaranteed minimum depth of 7.7 metres.

70. Navigation in the Sound presents no particular difficulties in good weather. There are several navigational lights and the narrow parts of the strait are well buoyed. Nevertheless, the official draught of 7.7 metres in the Drogden is measured at mean water level and may be further reduced. The tidal variation is insignificant. But wind and currents may have a significant effect: "the water level is liable to considerable seasonal variations and may rise or fall as much as 7 feet (2,1 m) above or below the mean level".[2] Gales may also lower the water level 2 to 3 feet (0,6-0,9 metres) below mean water level.[3]

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[1] Cf. however, the Statement on the Influence of the Permanent Road Connections across the Danish Sounds on the Baltic Environment. Submitted by Finland. Baltic Marine Environment Protection Commission – Environment Committee (EC) – Second Meeting, Gdynia, Poland, 9–13 September 1991. EC 2/2/4. 4 September 1991. Annex 16.

[2] Commander H. Kennedy, *A Brief Geographical and Hydrographical Study of Straits Which Constitute Routes for International Traffic*, UN Doc. A/CONF.13/6 and Add.1, United Nations Conference on the Law of the Sea, Official Records Vol I: Preparatory Documents, Geneva 1958 p. 142. According to United States Defense Mapping Agency, *Sailing Directions (Planning Guide) For the North Sea and the Baltic Sea*, Pub. No. 190, 3rd ed., 1990, p. 124, water-level variations are as follows: *Variation caused by East/Westerly Wind* in The Sound: -2.9- plus 2.7 feet (-0.88-plus 0.82 m); *Extreme Water Levels in the Sound and Bælterne 1916-40*: The Sound max: plus 3,6-5,9 feet (1.10-1.80 m) min: minus 1,5-2,3 feet (0.46-0.70m).

[3] United States Defense mapping Agency, *Sailing Directions (Enroute) for the Baltic Sea (Southern Part)*, Pub. No. 194, 5th ed., 1989, p. 6.

71. There is a 130 km advantage in using the Sound instead of the Great Belt when navigating between the North Sea and the northern parts of the Baltic. When planning the route, however, in addition to economic and time factors other considerations are taken into account. These include the risk caused by traffic and seasonal or weather conditions.

72. The risks in the Sound are particularly evident during the winter months when currents, decreased visibility, lack of buoys and problems caused by ice must be taken into account. During normal winters ice covers even the southern parts of the Baltic. Ice is most widespread in February and March. While the Sound is then covered by an even ice surface, there is scattered drift ice in the Great Belt. Even thin ice may affect the steering of a ship with no or little ice strengthening. Due to the narrowness of the Sound, ice tends to pack - a fact which makes navigation still more difficult.

73. The route through Drogden has the additional disadvantage of passing by several large cities, including Copenhagen. Traffic is heavy and dangerous goods carried by large container vessels increase the risk of serious damage arising from collisions. Because of groundings and several near accidents several shipping companies have advised ships in excess of 3.000-4.000 DWT to use the Great Belt.

74. Drogden also passes by Kastrup airport. Aeroplanes fly in over the navigational route to land. Ships with a height in excess of 35 metres must notify flight control two hours before passing by Kastrup so as to avoid collisions.

A. UNDERKEEL CLEARANCE

75. The Danish-Finnish discussions on the "Drogden alternative" have been complicated by uncertainty regarding the necessary underkeel clearance (UKC) and thus the *effective draught* in the Drogden. The concept of the underkeel clearance is dealt with in more detail in *Annex 4*. The following points are relevant in this connection:

1) The draught of 7.7 metres is the measure of the *actually existing water column*. Unlike the case in some other countries (including Finland), no extra water can be added to the notified clearance of 7.7 m. The effective clearance, then, is calculated by subtracting the required UKC from the draught of 7.7 metres.

2) There are no compulsory international or national rules on the calculation of the UKC in the Baltic Sea accesses. In the final analysis, it will be for the master of a ship to determine what measure of clearance is needed, having regard to the precise circumstances of the particular voyage (e.g. the type of the ship, the speed, water-level conditions etc.). Nevertheless, some guidance is provided from both Danish and international sources.

3) The required UKC for Drogden may be measured in various ways. The Danish Government sometimes requires a two-metre UKC. Nothwithstanding the official 17 metre depth in the Great Belt, Danish Pilots have been instructed that "ships with a draft of more than 15 metres (49 ft.) under normal conditions will not be able to pass through the entrances of the Baltic Sea."[1] Two metres UKC is also implied in the relevant IMO Resolutions.[2] Applied to the Sound, this would mean that the Drogden has an effective depth of only 5.7 metres. On the other hand, some information suggests that in the Drogden the recommended UKC is only 0,4 metres - but even that would mean that in the eyes of the Danish maritime authorities 7.3 metres must be the maximum draught of vessels using it. This, however, is

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[1] United States Defense Mapping Agency, *Sailing Directions (Planning Guide) for the North Sea and the Baltic Sea*, Pub. No. 190, 3rd ed., 1990, p. 308.

[2] A.339 and A.620, cf. Annexes 3 and 5.

insufficient for the purposes of many of the ships which actually pass through the Danish straits.

4) The recommendations given by the PIANC (Permanent International Association of Navigation Congress)[1] for the UKC of large vessels would, when applied to the Sound, give an underkeel clearance of 0.9 m (15 per cent of the depth of the channel). The effective draught would then be 6.8 metres.

5) Some further guidance can be had from instructions given by coastal States in comparable straits. Recommendations for the English Channel and the Dover Strait list a UKC of 5.0 - 7.6 metres[2]. The recommended UKC for deep-draught vessels navigating *through the Straits of Malacca and Singapore is "at least 3.5 metres".*[3] *Malaysia, Indonesia* and Singapore have, however, recommended a UKC of 2.5-4.5 m for vessels passing those straits.[4]

6) In addition, special circumstances should be taken into account. According to the recommendation by Det Norske Veritas[5]:

> "Sufficient underkeel clearance should be ensured during tow. A minimum underkeel clearance of ten per cent of the maximum draught or 5 metres, whichever is larger, should be ensured plus a motion allowance considering roll, pitch, heave, wind, towing loads, etc. A smaller underkeel clearance may be acceptable upon evaluation of the extent and method of survey for the towing route."

In conclusion, it is contended that for towage purposes, underkeel clearance should be 5 m, while for other purposes, a 2 m clearance is sufficient. The effective draught of the Drogden is 5.7 m. Even if the PIANC recommendation is followed, a maximum draught of 6.8 m received is which is significantly less than the 15 m applicable in the Great Belt.

B. OTHER

76. The Drogden has been dredged several times during the present century. The possibility of further dredging has sometimes been discussed. To dredge it to the same depth as the Great Belt (17 metres) would be unrealistically expensive. A 45 km channel would have to be dredged, and the amount of dredged spoils would exceed 50 million cubic metres.

77. In any case, it is very unclear whether a further dredging of the Drogden would be an environmentally acceptable alternative. Much of the domestic and international discussion regarding the planned Danish-Swedish fixed link over the Sound has concentrated on the effects on the whole of Baltic of changing the physical conditions of the waterflow between the North Sea and the Baltic.

78. Account must also be taken of the fact that the planned project for a fixed link in the Sound is intended to include a tunnel under the Drogden. This would make dredging to a

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[1] Cf. Appendix 1 of Annex 4.

[2] United States Defense Mapping Agency, *Sailing Directions (Planning Guide) for the North Sea and the Baltic Sea, Pub.* No. 190, 3rd ed., 1990, p. 294.

[3] Annex 17.

[4] Koh, *Straits in International Navigation; Contemporary Issues*, (1982), p. 84.

[5] Veritas Marine Operations, *Standard for Insurance Warranty Surveys in Marine Operations, Recommended Practices*, RP2 Sea Transportation for Self Floating Towing, sec. 5.8.2.1., cf. Annex 4, Appendix 2.

depth in excess of 10 metres impossible, as that is the depth at which the roof of the tunnel is planned to be.

79. The other navigational route in the Sound passes east of Drogden, in the Flintrännan. This has a guaranteed depth of 7,1 metres. The current is stronger here than in the Drogden. Especially under southern currents, ships must take care not to collide with the fixed lighthouses at the sides of the route. The fact that the Drogden is indeed the principal alternative route to the Great Belt is manifested by existing use: out of the 20.000 vessels that pass through the Sound annually, about 87 per cent use Drogden.

80. Whatever plans there are for the use of the Sound, the depth of the Drogden will remain significantly less than that of the internationally recognized Route T traversing the Great Belt. Route T is also wider and easier to navigate than the 290-metre wide Drogden. It is therefore much more appropriate for large ships and transports - precisely the kinds of passages that the East Channel bridge would prevent, if completed.

81. As Brüel noted in 1936:

> "...ni la passe de Flinterende, qui dans sa partie la moins profonde n'a que 7 metres, ni le Drogden - dont la profondeur, qui autrefois ne dépassait pas 6 m 50, atteint aujourd'hui 8 mètres grâce à des travaux d'approfondissement effectués depuis la guerre -, ne sont praticables pour les grands navires. Ceux-ci doivent, par conséquent, faire le détour par le Grand Belt..."[1]

Section II. The Drogden is Danish Internal Waters

82. The most significant *legal* difference between the Great Belt and the deepest passage of the Sound - the Drogden (a part of the roadstead of Copenhagen) - is that while the former is a part of Denmark's territorial sea, the latter is enclosed within Denmark's internal waters. Though Danish Ordinance No. 437 (1966) Governing the Delimitation of the Territorial Sea[2] provides that there is no restriction on the right of foreign ships to pass through those parts of the Danish straits which are internal waters and "which are normally used for such passage" (Article 3), the difference between the regimes remains considerable.

83. In Chapter II, section III above, it was pointed out that the various ordinances regarding the passage of warships always treated the roadstead of Copenhagen as a special case in which freedom of passage was more limited than in other parts of the straits area. Thus, according to Ordinance No. 73 (1976) Concerning the Admission of Foreign Warships and Military Aircraft in Danish Territory in Time of Peace[3], no advance notification is required when less than three warships of the same nationality pass through the Great Belt. Notification is, however, required in case of passage through Drogden (sect. 4 (2)).

84. From the perspective of international law, the main difference between the two channels is that while the right of passage in the Great Belt is also governed by general customary law regarding passage through international straits, passage rights in the Drogden, as a part of internal Danish waters, can arguably be said to derive only from local custom to which effect is given by the relevant Danish ordinances.

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[1] Erik Brüel, "Les détroits danois au point de vue de droit international", 55 *Recueil des Cours* (1936 I), p. 602.

[2] Annex 8.

[3] Annex 15.

Section III. The Proposed Fixed Link over the Sound

85. On 23 March 1991 Denmark and Sweden signed a Treaty Concerning a Fixed Link over the Sound[1]. The Governments thereby agreed on the construction and operation of a fixed rail and road link between Copenhagen, the Danish capital, and Malmö in Sweden.

86. Studies on fixed links between Denmark and Sweden have been in progress more or less continuously since the 1950s. In the summer of 1973 the Swedish and Danish Governments were in a position to sign a treaty concerning fixed links over the Sound. The treaty was, however, rejected by the Danish Parliament, primarily because of its connection with the controversial question of Copenhagen's airport being located on the island of Saltholm off Copenhagen.

87. In 1984 it was agreed that fresh talks between Sweden and Denmark on fixed links over the Sound should start without delay. A Commission set up by Sweden to engage in these talks was charged with drawing up, jointly with the corresponding Danish Commission, a draft treaty. However, no draft was presented, because no decision on a fixed link over the Great Belt, which was considered an important pre-condition by the Danish side, had been taken.

88. The talks were resumed in the late 1980s. The existing material was supplemented in certain respects. A joint draft for an inter-governmental treaty was prepared by mid-March 1991.

89. According to the Treaty, a fixed link over the Sound is planned to leave the Danish mainland at Kastrup and join the Swedish coast at Limhamn. From Kastrup the link would be led into an approximately 2-km submarine tunnel under the Drogden channel. The tunnel would be located in such a way that the depth of water in the shipping transit lane at mean water level could be increased from the present 7.7 metres to at least 10 metres across a width of 600 metres[2].

90. An artificial islet south-west of Saltholm would provide a site for the interchange between the tunnel and a low bridge.

91. In the waters on the Swedish side of the Sound there are two transit lanes, the Flintrännan and Trindelrännan channels. The fixed link would be built as a high bridge with a clearance of at least 50 metres over Flintrännan, the channel normally used by vessels not choosing the Drogden channel, and at least 32 metres over Trindelrännan. It is proposed that the transit lane in the Flintrännan channel, which is about 230 metres wide, would have a navigable width of at least 300 metres. The corresponding navigable width in the Trindelrännan channel would be at least 200 metres. The exact navigable widths, as well as the clearances needed, remain to be worked out in the subsequent planning stages.

92. The contracts for the building of the link over the Sound will be offered internationally for tender. The aim is to begin the construction in 1993. It would then be possible for the link to be opened for traffic by about the year 2000.

93. The fixed link over the Sound will be owned by the Swedish and Danish states, in equal shares, through national companies. The latter are to work together in a consortium, which is to own and be responsible for all activities relating to the link.

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[1] Annex 2.

[2] For illustration, cf. Annex 18.

Section IV. Conclusion

94. The Sound is not a relevant alternative for the Great Belt as an international passage for large ships. First, the depth of the Sound is insufficient. If the internationally recommended underkeel clearances are followed, the Drogden can be passed only by ships with a draught significantly less than 7 metres. Second, the legal status of the Drogden provides for more limited rights than are guaranteed for foreign ships in the Great Belt. Third, it is unclear whether the conditions of the Sound can be maintained if the proposed fixed link is built over it.

95. It is doubtful whether the mere presence of an alternative passage is sufficient as a justification to curtail the right of passage in an international strait[1]. In any case, it would not seem possible to replace a natural channel by an artificial one[2]. In short, if there were a feasible alternative to passage through the Great Belt, this case would never have been commenced.

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[1] *Corfu Channel, Merits, Judgment, ICJ Reports 1949*, p. 28.

[2] Cf. Max Sørensen, Statement of 29 January 1962 to the Great Belt Committee, Part II. See Annex 19.

CHAPTER IV

THE DEPENDENCE OF FINLAND ON THE CONDITIONS OF PASSAGE THROUGH THE GREAT BELT: AN HISTORICAL EXCURSUS

96. There is a socio-economic background to the Finnish claim regarding the right of passage in the Great Belt. About 90 per cent of Finnish exports and over 80 per cent of Finnish imports are transported by sea. Out of the total amounts transported in 1990 (52,5 million tons), 46 per cent passed through the Danish straits.

97. The proposed bridge over the East Channel of the Great Belt is intended to stay in place for at least a century, and probably for longer. Its blocking effect will extend far beyond today's economic interests and technological knowledge. A historical perspective on the development of the Finnish interest is thus compelled by the very subject itself. For the question is not, as Denmark has sometimes claimed, about a juxtaposition of an important Danish interest in the long-term development of its internal transport and traffic connections alongside the transitory interests of Finnish companies. At stake is an essential condition of Finland's foreign trade. Though the immediate consequences of the bridge plan would - as follows from the nature of the matter - indeed fall on Finnish private industry, the long-term consequences, though unforeseeable in detail, would clearly impinge on the very substructure of the Finnish economy.

98. To set this matter in perspective, this section will briefly review the history of Finland's role as a user of the Danish straits over a period approximately as long as the projected life-time of the bridge.

Section I. Finland and the Sound Dues

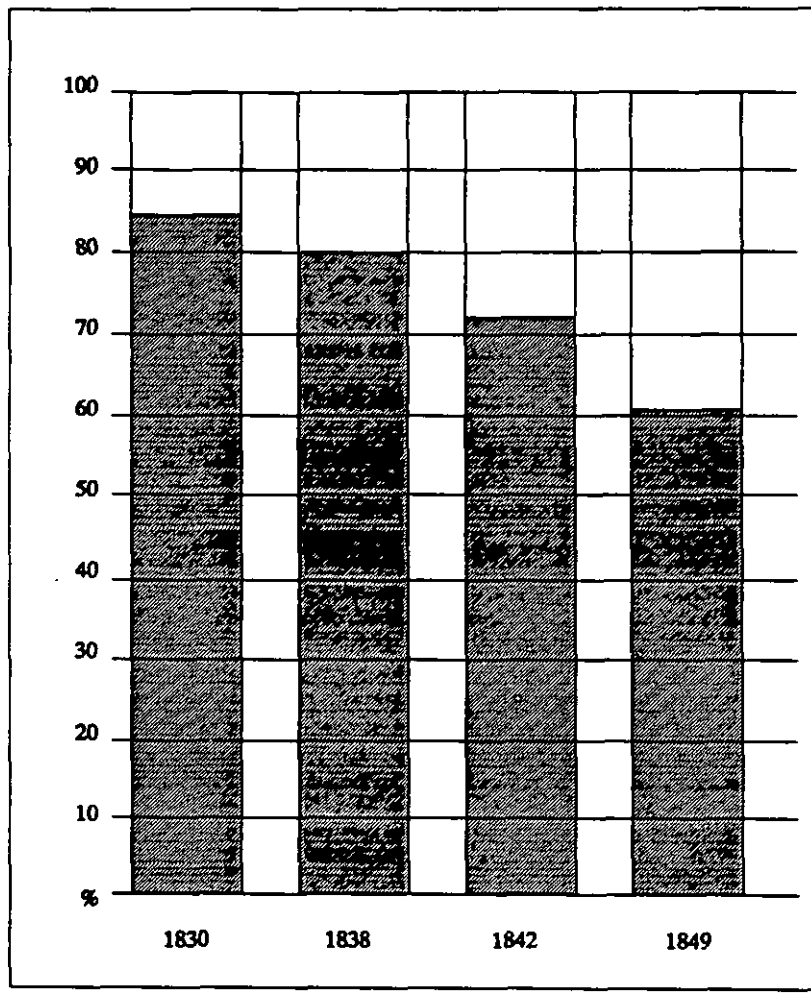
99. The abolition of the Sound dues was discussed in section B.I.1. above. Here the intention is to look at Finland's contribution to the straits traffic and to the Russian part of the compensation paid to Denmark.

100. The total number of ships passing through the straits grew steadily after the institution of the dues in 1429. While the annual number of ships transiting the straits in the 16th century was only about 300 and 1500 in 17th century, around 5000 ships passed through each year in the middle of the 18th century and over 10.000 at the beginning of the 19th century. In the 1840's the figure was about 20.000, and the highest number before the abolition of the dues in 1857 was 24.648 ships in 1853.

101. Compared to the number of ships under various other flags in the Sound, those under the Russian flag were not numerous. Their number varied between around 300 in 1830 to slightly over 750 towards the middle of the 19th century. But a remarkable fact was that of all the ships under Russian flag in the Baltic, very few actually originated in Russia proper. The proportion of Finnish-origined ships within the Russian total varied between 80 and 60 per cent, and of the remainder, most were ships from the Russian Baltic provinces of Estonia, Latvia and Lithuania. The ships originating in Russian Baltic ports were insignificantly few.[1]

[1] It is possible to count the relative shares of the home ports of the ships by studying the meticulously kept books of the Danish customs authorities at the National Archives of Copenhagen. Each ship is given an individual entry in them, registering the port of loading, the port of destination, the home port, the name of the skipper, the composition of the cargo, the amount paid in customs dues and lighthouse fees and finally the date of passage.

TABLE 2: PERCENTAGE OF FINNISH MERCANT SHIPS IN THE SOUND COMPARED TO TOTAL NUMBER OF SHIPS UNDER RUSSIAN FLAG IN THE YEARS 1830, 1842 AND 1849.



102. The basis of the calculation of the compensation sum of 35 million Danish Dollars to Denmark has been discussed above (Chapter II, section 1 A). For Russia, the result of the Treaty of Copenhagen was that in exchange for the right of free passage through the Danish Straits the Russians had to pay 9.793 993 Danish Dollars (which equals 7 million Russian silver Roubles). This represented 27.83 per cent of the total compensation paid by the 15 countries which were signatories of the Treaty of Copenhagen.

103. Among the ships under the Russian flag, as was noted above, the percentage of Finnish ships and ships from Russia's Baltic provinces was very large. The Finnish maritime tradition, which had its roots in the period when Finland belonged to Sweden, was strong. This meant that after 1809, when Finland became a Russian Grand Duchy, Finns gradually achieved prominent positions within the Russian Empire in maritime affairs, both as captains of merchant ships and as naval officers. The situation changed somewhat during the last decades of the 19th century when large steamships became common in international traffic and Finland was unable to raise the capital needed to buy them.

104. In March 1858, Finnish authorities were notified that the Emperor had decided that the Finns were to contribute 400, 000 silver Roubles to the Russian component share (7 million silver Roubles) of the compensation for Denmark. This amounted to 5.71 per cent of the Russian contribution. Moreover, Finland would have to pay an additional 4 per cent interest on that sum. In 1859, on the 22nd January an Imperial decree was published, in which the Finns were ordered to institute a special import duty to finance the abolition of the Sound Dues[1]. This was to be collected in conjunction with the normal import duty. The Finns paid the revenue from this duty to the Russian Crown for twenty years.

105. The sums paid by Russia and Finland respectively, when calculated per capita in relation to the populations of the two countries, are in no proportion to each other. The Russian population in 1857 is estimated as 71.3 million, whereas the population of Finland was 1.7 million.[2] Thus, Finland paid 0.2 silver Roubles per capita, whereas the corresponding figure for Russia is only 0.09 silver Roubles. In other words, Finland was an important contributor to the Russian share of the compensation to be paid for Denmark for the redemption of the Sound dues and the establishment of free passage rights to all nations.

Section II. Finland's Dependence on Passage in the Danish Straits since 1857

106. Around the middle of the 19th century, when the Sound dues were abolished, Finland was a rather poor and peripheral country. But its economy was already in some degree integrated with the West European "core". From the early 17th century, Finland had been emerging as an important producer of "naval stores" such as "Stockholm" tar and timber, and the principal buyers of such products were found in the Netherlands, Great Britain, and later even in the Iberian Peninsula and the Western Mediterranean. On the other hand, Finland also depended on certain imported goods, above all salt, which came mainly from Southern Europe. All these were relatively cheap and bulky goods, the transport of which involved a high volume of tonnage. Thus, it was no wonder that during the early 19th century Finnish ships comprised the majority of vessels sailing under Russian flag from the Baltic.

107. During the "last golden days of sail", the vast majority of Finnish-owned tonnage was engaged in long-distance trading outside the Baltic and even between foreign ports. For example, both in 1853 and 1861, the reports from coastal towns indicate that no less than 80% of their total tonnage was away on voyages at the end of the year. Since winter-time navigation within the Baltic was very rare, practically all of the ships in question must have been sailing beyond the Danish straits. In fact, Finland then had probably three times more tonnage than was needed to carry its own exports and imports. The primary market for Finnish shipping lay in "blue-water" traffic outside the Baltic.[3]

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[1] Cf. Annex 20.

[2] Russian population statistics, B.R. Mitchell, *European Historical Statistics 1750-1970*, Abridged Edition, (New York 1978) p. 10, note 54. Finnish Population Statistics, *Suomen Taloushistoria III*, Table 1.3.

[3] Unless indicated otherwise, the description of shipping before 1914 is based on Kaukiainen, *Sailing into Twilight. Finnish Shipping in an Age of Transport revolution, 1860-1914*, (1991).

108. For Finland's shipping industry the four decades before the First World War were far from happy. Merchant tonnage began to shrink and the tonnage of steam ships increased extremely slowly. By about 1913, steam ships only accounted for 24% of total Finnish seagoing tonnage - by far the lowest figure anywhere in Europe or North America. In spite of this decline, Finnish shipping continued to rely on long-distance trading. In 1912-13, for example, close to 75% of Finnish shipping income originated from transports which operated outside the Baltic waters.[1]

109. The period between the two World Wars saw the definitive transition from sail to steam. Because trade with postrevolutionary Russia almost stopped, Finland's trade and maritime contacts became even more oriented towards the west than they had been before. Great Britain became the most important destination of Finnish exports, with a share of over 40% (by value). This increased the relative importance of maritime transport. While about 70% of Finland's exports were carried in ships before 1914, this percentage rose to 95% after 1918.[2] Of all ships cleared in Finnish ports with cargo, the following proportions had destinations beyond the Baltic:[3]

1920/21	71.4%
1929/30	77.1%
1937/38	71.4%

110. Finland's merchant tonnage suffered great losses during World War I. Consequently, during the early 1920s Finnish ships were able to transport less than a third of all Finnish exports and imports. After 1925, Finnish merchant tonnage grew fairly fast, and the share of sailing vessels shrank to less than a tenth of the total. Because of low manning costs, Finnish vessels were able to make a profit even during the years of low freight charges. Not only did they manage to increase their share of export and import transportation to 35-40%, but even their share of foreign cross-trading expanded.[4]

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[1] Thus, both Finland's foreign trade and shipping were extremely dependent on the passages between the Baltic and the North Sea. As typical ship sizes were still below 1,000 tons net, and vessels over 3,000 tons were rare, almost all of this traffic passed through the Sound (in those days, the typical draught of a fully loaded steamer of 3,000 net tons was 7–7.5 meters). Only in 1895 did a viable alternative appear, as the Kiel (or Kaiser Wilhelm) Canal was opened. Many Finnish liner steamships sailing to or from Belgium and the Netherlands began to pass the Canal, but for sailing vessels and tramp steamers carrying cheap bulk goods this was too expensive an alternative. Neither did liners destined from Finland to Hull use it regularly, since it shortened the voyage only by some 100 miles. A qualified guess would be that, just before the war, between a quarter and a fifth of all cargo between Finland and ports beyond the Baltic passed the Kiel Canal.

[2] Pohjanpalo, *Suomen kauppamerenkulku*, (Helsinki 1949), p. 108-113; Oksanen-Pihkala, *Suomen ulkomaankauppa 1917-1949. Kasvututkimuksia VI*, (1975), p. 22.

[3] *Finnish Official Statistics, ser. IB (shipping).*

[4] Ahvenainen-Kaukiainen-Viitaniemi, "Liikenne", *Suomen taloushistoria* 2, (1982), p. 280-283.

TABLE 3. PROPORTIONS OF FINNISH SHIPPING REGULARLY ENGAGED IN TRADING BEYOND THE STRAITS, 1920-1938:

Percentage of gross income accumulated by tonnage sailing beyond the Baltic, of corresponding total Finnish shipping income.

A = export and import shipping B = cross-trading

Time	A	B	ALL
1921/22	59	83	64
1929/30	70	85	74
1937/38	81	81	81

Source: Finnish Official Statistics, ser. IB (Shipping).

111. Table 3 reveals that the proportion of shipping income derived from traffic beyond the Baltic was slightly lower during the early 1920s than it had been just before the War. However, it rose steadily during the period, parallel with the growth of tonnage, and exceeded 80% before the Second World War. It seems that Finnish shipping concentrated on British and Atlantic trades more than ever before, and to an even greater extent than did Finnish foreign trade in other sectors.

112. Since the Second World War, Finnish trade relations have experienced a gradual change. The Soviet Union became one of its most important trade partners. Since an important share of this trade goes by rail, the development of maritime transport has not closely followed the growth of foreign trade. Other factors have contributed to the same effect. First, the physical volume of Finnish exports has grown more slowly than their value, because products of relatively high added-value have been substituted for cheap bulk exports. On the other hand, the import of crude oil has grown to such dimensions that the total volume of Finnish imports approached that of exports and actually surpassed it during the early 1960s. Thus, a fundamental change in the demand for shipping was brought about.

113. The growth of Finnish foreign trade was so fast (on average 6.3% a year between 1950 and 1985) that even the demand for maritime transport expanded vastly. From 1950 to 1985 the physical volume of Finnish seaborne exports and imports, expressed in tons, grew over fivefold, or on average at a rate of 4 . 8% per annum.[1] At the same time, however, the geographic distribution of Finnish foreign trade was changing. Crude oil shipments within the Baltic increased shipping movements between the Soviet Union and Finland; and the trade with another neighboring country, Sweden, has grown in importance. On the other hand, Britain has lost its former position; its share of Finnish exports has declined from about one quarter to one tenth, and its share of imports has been lower still. This change is also to be seen in the volume of shipments. In the mid-1950s only about a third of Finnish seaborne transports were confined within the Baltic, but this share grew to over 50% during the late 1980s. However, in actual volume, transports beyond the Danish straits have trebled. It must also be remembered that a substantial part of the huge growth in inter-Baltic shipping resulted from booming car-ferry traffic between Finland and Sweden.

[1] *Sotakorvauksista vapaakauppaan. Kauppa- ja teollisuusministeriön satavuotisjuhlakirja*, (1988), s. 65-68, 122.

114. Table 4 shows that income from shipping beyond the Baltic, although increasing in actual figures (the Finnish merchant tonnage grew rapidly during the 1960s and 1970s), has declined in proportion to total freight revenue.

115. However, if only goods transports are taken into account, the decline is not so dramatic. In 1975, for example, almost 20% of all income originated in passenger traffic, which was then (and still is) confined to the Baltic area. Thus, almost 70% of income from goods transport was still earned in other than Baltic trades. It is true that there was a slight decline during the 1980s, when increasing amounts of crude oil were imported from Russia; but with the decline of Russian exports the trend has already been reversed.

TABLE 4: PROPORTIONS OF FINNISH SHIPPING REGULARLY ENGAGED IN TRADING BEYOND THE BALTIC, 1955-1975.

Percentage of gross income accumulated by tonnage sailing beyond the Sound, of corresponding total Finnish shipping income.

A = export and import shipping B = cross-trading

Time	A	B	ALL
1955	74	59	71
1965	60	62	60
1975	49	73	54

Source: Finnish Official Statistics, ser. IB (shipping).

116. For the period from the early 1980s onwards it is not meaningful to calculate similar percentages, because of the massive "flagging-out" of Finnish tonnage. This has occurred particularly in relation to tankers and dry bulk cargo ships, with the result that the proportion of passenger and other special cargo income has grown disproportionately as far as the tonnage still sailing under the Finnish flag is concerned. While it is an undeniable fact that Finnish shipping beyond the Baltic has grown more slowly than shipping east of the Danish straits, certain vital transports continue to rely totally on free passage through them.

117. During the last 50 years or so the general increase in ship sizes has forced an increasing number of ships to sail through the Great Belt instead of the Sound. Modern tankers and dry cargo vessels, and even larger ro-ro ships, have been diverted from their traditional passage past Copenhagen and Elsinore. No statistics reveal which fairways Finnish ships have been using when sailing from or to the Baltic, and this development can only be described indirectly.

TABLE 5: GROWTH OF SHIP SIZES IN FINNISH MERCHANT FLEET.

1 = Average gross tonnage (excluding ships under 100 GRT)
2 = Total tonnage (1,000 GRT) of ships over 10,000 GRT

Year	1	2
1950	1,224	1.0
1960	1,943	169.5
1970	3,077	761.9
1980	6,305	1,833.0

Source: Finnish Official Statistics, ser. IB (shipping).

The figure for 1980 represents a vessel which, when fully loaded, has a draught of about eight metres. On the other hand, ships of over 10,000 tons gross, which normally require a passage about 9 metres deep, represented over 50% of total Finnish tonnage by 1970 and, ten years later, their proportion was close to 80%. Although many ships which cannot pass the Sound were able to clear the Kiel Canal, many of them cannot use it because of its insufficient depth or air clearance or because reasons of economy. A substantial part of Finnish shipping moved from the Sound to the Great Belt during the 1960s and 1970s. With the continuing increase of ship sizes - dictated by the economics of scale (the need for increased cargo and passenger space) the prospect of a fixed limitation of 65 metres in ship height will become an externally imposed and arbitrary limitation to the development of Finland's trade relations.

CHAPTER V

A DESCRIPTION OF THE DANISH PLANS TO MODIFY THE NAVIGATIONAL CONDITIONS IN THE GREAT BELT

118. Over the years, several plans have emerged for the construction of a fixed link over the Great Belt. The social and economic importance of these plans is based on the fact that the Great Belt lies between two almost equal halves of Denmark. The traffic over the Great Belt has traditionally been organized by a very efficient ferry service.

Section I. Early Plans

119. Plans for connecting Sjaeland and Fyn have existed for a very long time .[1] In 1936 - a year after the Little Belt bridge was completed - a suggestion was made by the engineering firm Christiani & Nielsen/ Højgaard & Schultz and Kampsax to build a motorway over the Great Belt. The suggestion prompted the first official project planned by the DSB's (The Danish Railways) bridge office - the office that had been responsible for the administration of the Little Belt project. The project was suspended because of World War Two.

120. During the exceptionally cold "ice winter" of 1947 difficulties were caused for ferry traffic in the Great Belt. A Danish Governmental Commission was set up in 1948 (The Great Belt Commission) to study the possibilities of a fixed link over the strait.

121. The Commission issued a preliminary Report in 1956 and a final Report in December 1959 (Report 237/1960). Among the conclusions of the Report was a suggestion to build a bridge for both road and rail traffic from Halsskov Rev on Sjaeland, over Sprogø island, to Knudshoved on Fyn. The Commission had also considered the effect of the project on free passage in the Great Belt. In accordance with a statement by the then legal adviser to the Danish Foreign Ministry, Mr Max Sørensen, the Commission concluded that considerations of international law did not prevent the building of a fixed link as long as it allowed unhampered passage by all existing ships through the Great Belt.[2]

122. No final decisions were made at the governmental level at this time. Instead, a Working Group was set up in 1960 to carry out a series of exploratory drillings and other seismic and hydrological tests, as well as a new traffic analysis. A new report regarding the traffic in the neighbourhood of Copenhagen was published in 1961 by a committee of civil servants established by the Danish Ministry for Public Works. The Committee suggested, *inter alia*, that a bridge should be built over the Great Belt, to be brought into use by 1975.

123. In 1965-67 the Working Group organized an international design competition following a suggestion by the Danish Engineering Association. This aroused great interest, and 144 suggestions for tunnel and bridge alternatives were presented. Many suggestions contained a combined bridge-tunnel alternative.

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[1] For the history of the various projects, a useful source has been the final report of the Danish State Company Statsbroen Storebælt which was established to carry out the bridge project under law 414 of 13 June 1973 and was dismantled on the suspension of the project in 1978. Cf. *En Redegørelse for de af Statsbroen Store Bælt i medfør af lov nr. 414 af 13. juni 1973 om anlæg af broen over Store Bælt undforte forberedende arbejder 1977-1979.*

[2] Annex 19.

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[2] Annex 19.

124. The Working Group's final report was published in 1968 (Report 508/1968). Relying heavily on economic considerations, the Working Group suggested the construction of a bridge with a combined two-track railway plus a six-lane motorway, all on one floor. The question of the implications of the plan for the right of free passage in the Great Belt was discussed and studies were carried out regarding the highest air draughts of existing ships. In a further paper, Max Sørensen reiterated his view that there would be no legal difficulty with the project to the extent that the navigational clearance took account of the highest ships then existing.[1] In his view the intervening 1958 UN Conference on the Law of the Sea had not brought a change in the navigational regime of the strait.

125. In 1970, however, a Technical Working Group (The Jespersen Group) was established to update the various technical and economic reports. Special consideration was to be given to a combined car-train alternative. In 1972 the Jespersen Group suggested that the most economical way to build the suggested fixed link was to construct a low bridge over the West Channel and a two-rail car-train tunnel under the East Channel.

126. Nevertheless, a *Law on the Great Belt Bridge* (414/1973) was enacted on 13 June 1973[2]. The Ministry of Public Works was commissioned to produce a concept consisting of two parts, a low level western bridge between Fyn and Sprogø and a high level bridge between Sprogø and Sjaeland. The law provided for a combined road and railway bridge with six lanes for motor traffic and two tracks for the railway. The Board of Directors for a State Company for the Great Belt bridge was elected (Styrelse for Statsbroen Store Bælt, SSB).

127. During 1973-1977 frequent parliamentary debates took place in Denmark regarding the feasibility of the suggested bridge. While some wished to suspend the project altogether, others had different views on the priorities between the different technical alternatives. The political atmosphere was so uncertain that it was not until January 1977 that the State Company (SSB) began functioning with a permanent staff.

128. This was also the occasion for the despatch of the Danish *Note Verbale* regarding the planned bridge to foreign Embassies in Copenhagen in May 1977[3]. According to the Note, the planned bridge was to have a height of 62 metres but "[t]he construction of the section across the eastern channel will, in conformity with International Law, allow international shipping between the Kattegat and the Baltic Sea to proceed as in the past". It was pointed out that construction works were "scheduled to begin in 1978 or 1979 and to go on for about eight years".

129. The notification produced reactions from the Soviet Union and Poland[4] both of which expressed their concern over the suggested clearance of 62 metres. As for Finland, no reaction was considered necessary, because of the express assurances regarding navigational rights and the very uncertain character of the domestic political consensus behind the project.

130. Meanwhile, parliamentary debates on the matter continued in Copenhagen. In March 1978 the SSB organized a meeting with the fourteen consortia that had qualified for the tendering process. On 16 March, the Parliament rejected yet another proposal by the "Venstre" and "Socialistisk Folkeparti" to suspend the bridge project altogether.

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[1] Annex 19.

[2] Annex 21.

[3] Annex 22.

[4] Annexes 23 and 24.

131. On 1 June 1978 the Parliament finally decided to reconsider the bridge decision at the initiative of the Venstre. Nevertheless, the SSB commenced tendering procedures.

132. The final suspension of the bridge project, as a result of the formation of a new governmental coalition - Venstre and the Social Democrats - was made public on 30 August 1978. The contracts that had been negotiated on the construction works were left unsigned and the tendering procedures were cancelled.

133. In September 1978, the Government made an official decision to end the bridge project. A governmental statement to this effect was made in the Parliament on 17 October 1978. All materials were sent to the archives. The Administration of the SSB was terminated. The project had been publicly and explicitly terminated with no date being set for reconsideration beyond an indication from the Minister of Public Works that he did not expect that the matter could be resumed for at least 4 to 5 years.

Section II. The Present Plan[1]

(See also *Figure 1.*)

134. Design work on a new Great Belt project started again in 1983. Nevertheless, as we have seen, by 1984 - when a draft treaty on the Sound was prepared - there was no decision in Denmark as to whether to proceed with a Great Belt link or not. A preliminary political agreement on the establishement of a fixed link was reached only on 12 June 1986. Meanwhile, existing ferry connections for railway and motorway traffic had been improved. In 1985-86 a motorway bridge was constructed on the island of Fyn to amalgamate railway and car ferry services. This bridge was never used for its original purpose and must be demolished to make room for the fixed link.

135. The political agreement of 12 June 1986 became the basis of *Act No. 380 of 10 June 1987* on the Construction of a Fixed Link across the Great Belt[2] This law provided for either a high-level bridge or a tunnel across the East Channel. The contents of this law were communicated to foreign embassies in Copenhagen by the Circular Note of 30 June 1987[3]. The modalities of the present project differed significantly from the various earlier ones. Instead of a single bridge solution, the new Act provided for several alternatives to be made the object of further studies. Instead of a public body, a private company was engaged to carry out the project.

A. THE CONCEPTUAL DESIGN

136. The conceptual design was published in 1987 and 1988. The fixed link between Knudshoved in Fyn and Halsskov in Sjaeland was to be 18 kilometres long. It was to consist of three subprojects:

137. *The low-level West Bridge.* Combined railway and motorway bridge, alternatively two separate bridges for railway and motorway, were proposed for the West Channel. The

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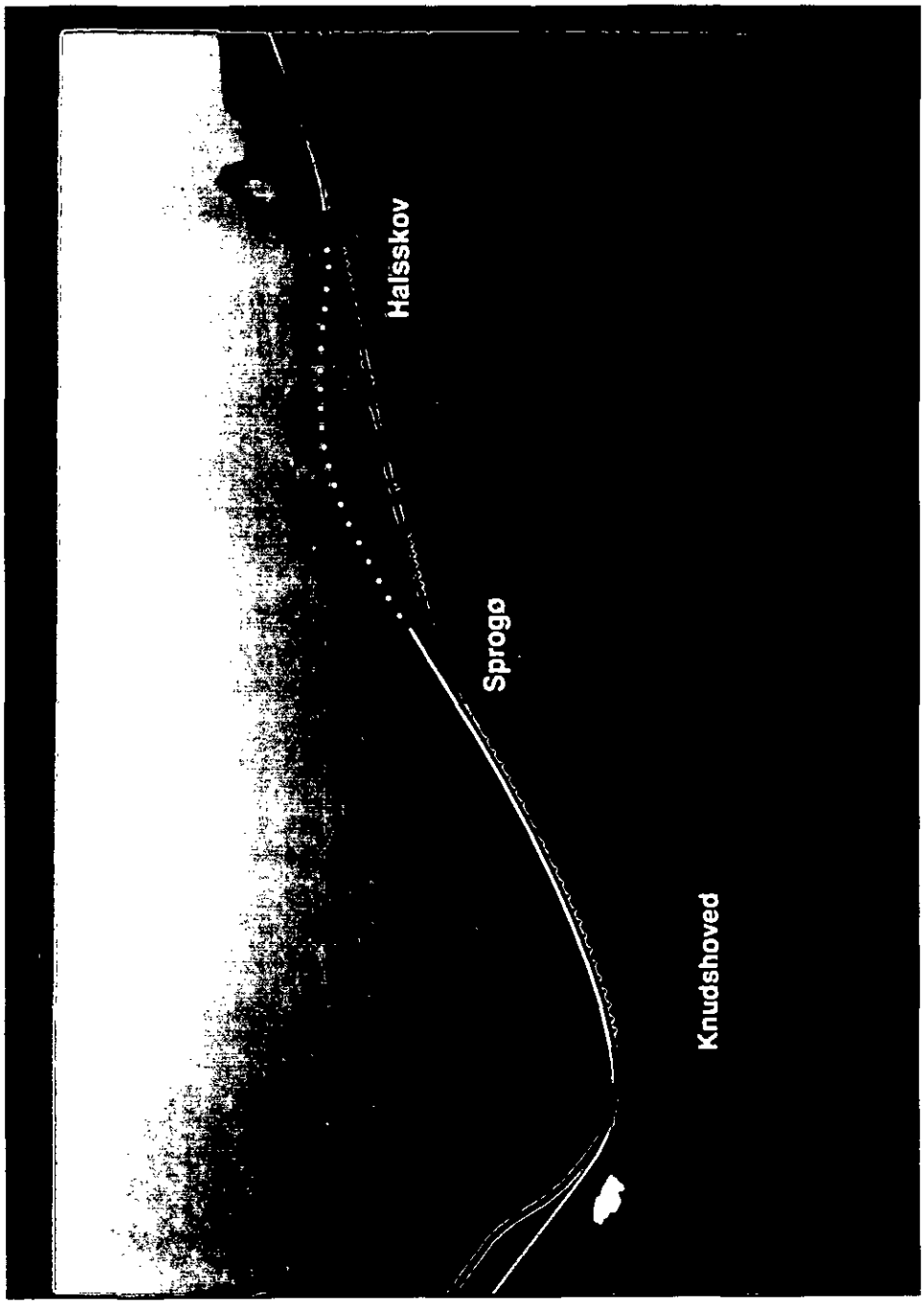
[1] For a detailed description, cf. Annex 25.

[2] Annex 26.

[3] Annex 27.

Figure 1

THE PRESENT PLAN FOR A FIXED LINK



bridge was to be 6100 metres long. The navigation clearance of the channel was set at 15 metres *(For illustration, see Figure 2.).*

138. *The Eastern Railway Tunnel.* This sub-project was to consist of a double track railway tunnel between Sprogø and Sjaeland. The tunnel was to be either bored or immersed. The vertical alignment of the bored option places the tunnel deeper down. The roof of the tunnel was at a depth of 68 metres under sea level. The bored tunnel was to be 7900 metres long. The immersed tunnel was to be placed in a dredged trench. At the lowest point the roof of the immersed tunnel was to lie 40 metres under sea level. The immersed tunnel was to be 5600 metres long. In the immersed option, the tunnel was lengthened by partly submerged ramps in the seabed. The ramps were to be made of dredged material *(For illustration, see Figure 3).*

139. *The Eastern Road Link - a bridge or a tunnel?* The law of 1987 provided for either a high-level bridge *or* a tunnel for the motorway to cross the Eastern Channel. The conceptual design report presented two bridge proposals and two immersed tunnel proposals.

140. The bridges studied were a cable-stayed bridge with a main span of 780 metres and a suspension bridge with a main span of 1416 metres. At both shores the bridges were connected to approach bridges by several 164 metre long spans. The total length of each alternative was about 5500 metres.

141. The tunnel alternatives were a concrete tunnel and a steel tunnel with identical longitudinal profiles. The tunnels were designed to be placed mainly in an excavated trench. At the deepest point however, a 150 metre long section of each tunnel was to be placed on an embankment. At the same point the roof of each tunnel was 40 metres under sea level. Each tunnel was 5300 metres long. However, the road was still under sea level at the end of the tunnel. Therefore, the tunnels would be lengthened by submerged ramps. The submerged ramps would be surrounded by artificial islands made from dredged material(For illustration of The East Bridge and The East Tunnel Proposals, see *Figures 4 and 5.*).

142. The official commentary to the law, prepared by the Ministry of Public Works, observed that between the two alternatives - bridge and tunnel - "there was no such difference from a functional, security or environmental point of view that would be decisive for the choice.1 Indeed, it is nowhere made clear for what reasons or at what point in time the decision in favour of a bridge was made. According to the Agent of Denmark at the hearings on the request for the interim measures, the decision that only a high-level bridge should go out for tender was made by the Ministry of Transport in November 1988 .[2]

143. The ramps, the piers of the west and the east bridges, and the tunnels affect the flow of water. One requirement placed on the project by the Danish Parliament was that the total flow of water should remain unchanged in spite of the construction of the fixed link. In order to neutralize the effects of the structures it was decided to make compensating excavations in the channels. Some of the dredged material was to be used for land reclamation at Sprogø and Halsskov. The maximum seabed area to be dredged was 5 million square metres.

144. At the time of finalizing the conceptual design the following time schedules were presented: The railway link was to be opened in 1993, and the road link in 1996. For the western bridge this meant starting construction work at the end of 1988, and completing the

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[1] Lovforslag nr. L. 177/21.1.1987 (Forslag til Lov om anlæg af fast forbindelse over Storebælt), Bemærkninger til lovforslaget, *Folketingstidende 1986-1987, Tillæg A*, p. 3443-80, p. 3444: "Funktionelt, sikkerhedsmessigt og miljømessigt er det ikke mellem alternativerne højbro eller tunnel sadanne forskelle, at disse forhold kan være bestemmende for valget".

[2] Statement by the agent of Denmark, Mr. Magid, 2 July 1991.

Figure 2

THE LOW-LEVEL WESTERN BRIDGE

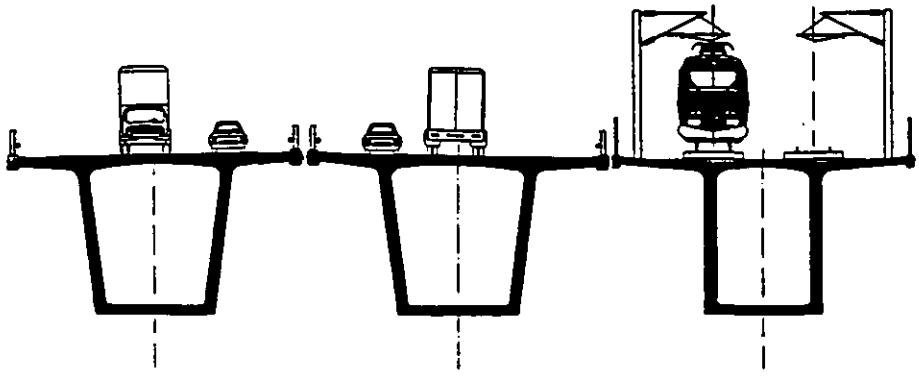


Figure 3

THE EASTERN RAILWAY TUNNEL
(PROPOSALS)

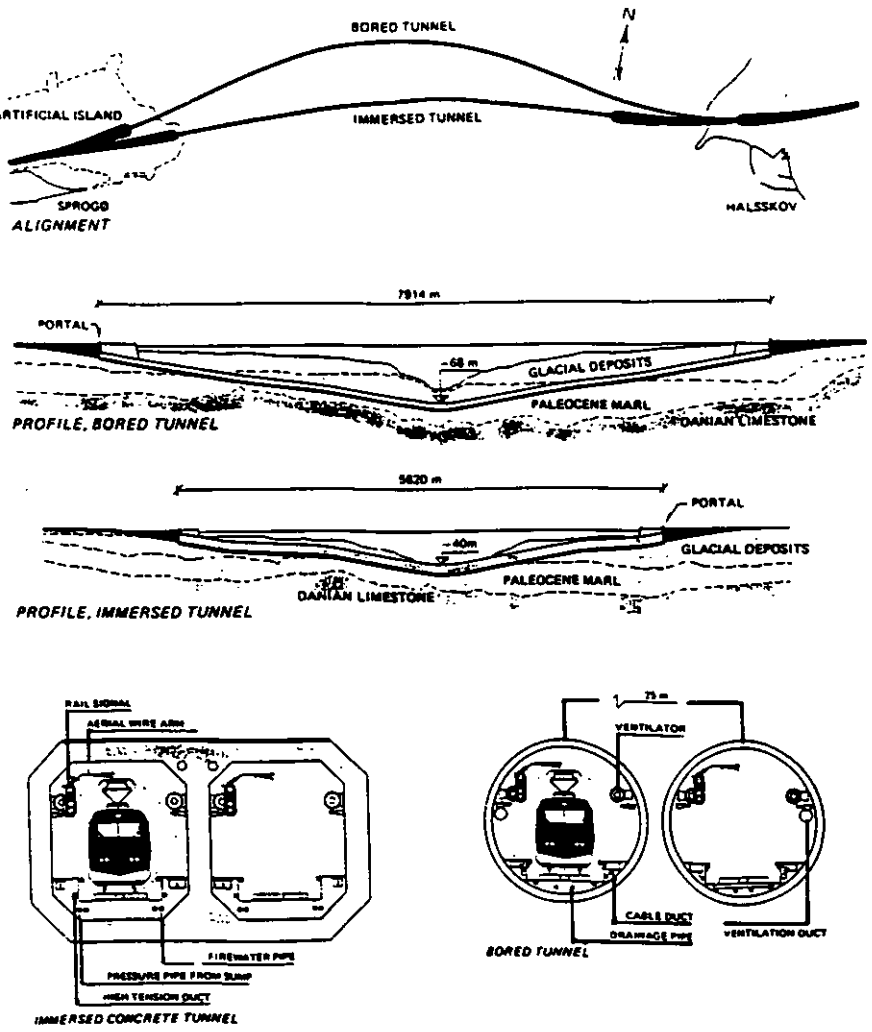
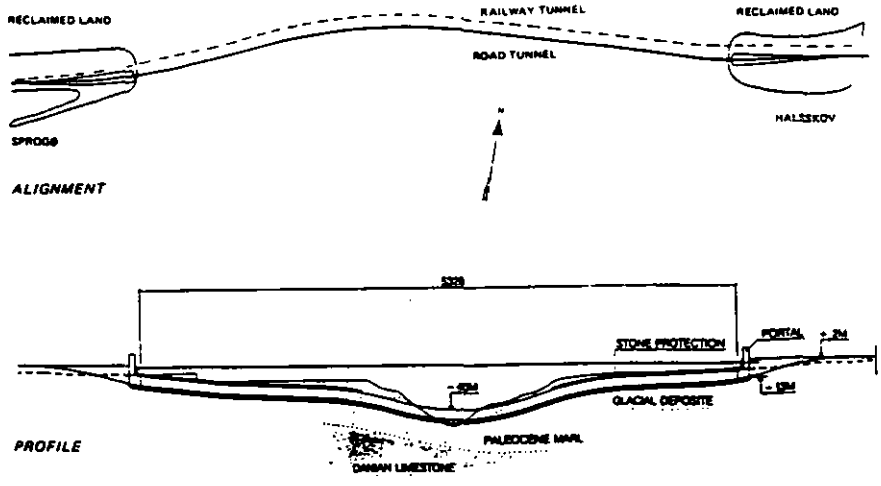
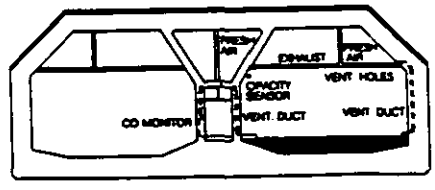


Figure 4

THE EASTERN ROAD TUNNEL PROPOSAL

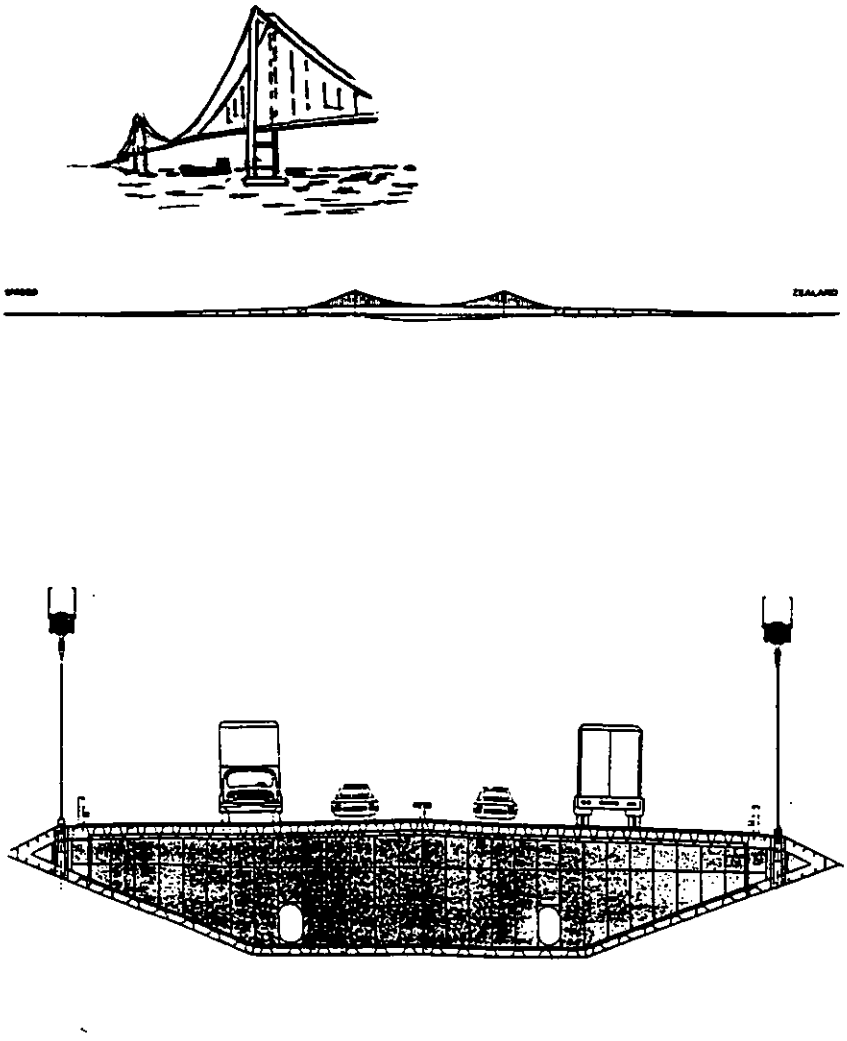




VENTILATION,
concrete tunnel alternative.

Figure 5

THE EAST BRIDGE



railway bridge at the end of 1992 and the road bridge at the end of 1995. The railway tunnel work was planned to start at the end of 1988 and to be finished at the beginning of 1993. Construction work on the eastern road tunnel or bridge connection was to start at the end of 1991 and to be finished at the end of 1996.

145. Significant delays have, however, occurred, in particular due to difficulties with the tunnel construction. As the political agreement of 1986 provided that the railway connection should have a two- to four-year advantage over the motorway link, this means that delays in the finalization of the rail link will have immediate repercussions for completion of the motorway link. For the moment, the Storebælt company's own estimate is that the East bridge might be completed by the end of 1997 [1]

B. CONSTRUCTION[2]

146. A company, Storebælt A/S, was founded to run the project. The Danish state is the only shareholder in this company. The budget for the project was set at DKK 17.85 billion, at 1988 prices.

147. *The First Works in 1989*: Submissions of tenders for dredging and land reclamation were made at the beginning of 1989. Tender prices varied from DKK 1.1 to 1.4 billion. Dredging and land reclamation at Sprogø started in April 1989. Preparatory work had to be done for the bored tunnel and for the artificial island. The area of the original 40 hectare island was trebled. In October 1989 the new island was connected to the old one. The second phase consisted of constructing the ramps. The material used on Sprogø was 5 million cubic metres of sand and 1 million cubic metres of stone. Most of the material was acquired through dredging close to the island of Sprogø. However, some material had to dredged at Ramsø in the northern part of the Great Belt, outside the original working area. Later, material was also deposited at the site of two anchor blocks for the suspended bridge. Here ellipsoid artificial islands were built around the blocks to decrease the resistance of the water flow.

148. Extra dredging was later done to straighten the navigation route in the Eastern Channel. The handling of seabed material, in total about 14 million cubic metres, was finished in the summer of 1991. The dredging and depositing operations caused sedimentation in the area close to the site. At a distance of 15 kilometres sedimentation was measured to less than 2 millimetres. No serious impact on sea bed fauna was observed except that which occurred in the area nearest to Sprogø. Dredging and land filling caused losses to the fishing industry but an agreement with the fishermen's union on compensation of DKK 600,000 solved this problem.

149. *The West Bridge*. A contract for building the West bridge was signed in June 1989. Construction work started in August 1990. Only minor alterations were made in the tender design after tendering. The link comprises a railway bridge and a separate motorway bridge. The bridges consist of 63 concrete box girders, each with a span length of 110 metres. The total length of the bridge is 6900 metres. In the navigation channel the navigation clearance is 18 metres. From summer 1990 onwards no ships larger than 1,000 DWT were allowed to use the western channel. Later, when the bridge is completed, it will be decided whether to keep this restriction at the same level or to change it to 2,000 DWT. The costs of the western railway and motorway bridge are estimated at DKK 3.2 billion. No serious delays in this project have been reported so far.

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[1] *News from Storebælt No 10/91* (31 October 1991), p.7.

[2] See also Annex 28.

150. *The Railway Tunnel*. A contract for building the railway link between Sprogø and Sealand was signed in November 1988. The same year excavations started for ramps both on Halsskov and Sprogø. The boring of the railway tunnel started in August 1990. However, the boring machines did not operate as expected, and a delay of about one year is anticipated. In April 1991 only 820 metres of the tunnels had been bored. The costs of this project are estimated at DKK 3.3 billion. Construction risks such as, for example, unforeseeable subsoil conditions which might hinder and delay the boring operations, are not included in this price. Nor is installation of railway equipment included in this contract. A separate contract of DKK 1.4 billion covering all railway installations for the 18 kilometre fixed link, was signed in January 1989. On October 14, 1991, the two tunnel boring machines on Sprogø were flooded when water broke through the tunnels. For the moment, it is not possible to estimate the delays caused by that accident.

151. *The East Bridge*. The immersed tunnel option was abandoned in November 1988. It is not clear what were the main reasons for this. Apparently, ventilation in the tunnel would cause high service costs and would be technically demanding.

152. Calculations of accident probability and simulations of ship collisions were carried out as a part of the design of the East bridge. According to these studies risks for collisions could effectively be reduced by lengthening the main span. Since a stay-cable bridge can only have a maximum main span of 1000-1200 metres, the suspended bridge solution with a main span 1624 m long was selected. With the two side spans of 535 m the suspended bridge would be the largest bridge in Europe. The total length of the Eastern Bridge including the approach spans would be 6900 metres.

153. The conceptual design specified a navigational clearance of 77 m for the bridge (The Report of the Great Belt Commission of 1960 provided for a free sailing height of 67 metres[1]). The navigational clearance of 76-77 metres was also adopted in the the text of the Governmental proposal for the relevant law.[2] This probably reflected the fact that the study regarding mast heights, included in the Report of the Great Belt Commission of 1968 (508/1968), listed the height of 71.5 m for a Danish drillship.[3] Also, it appears that the Danish Ministry of Industry had noted in 1986 that vessels had been built with mastheads as high as up to 75 metres.

154. The Great Belt company was well aware that by 1989 there existed special vessels, including drillships with permanently installed derricks up to 75 metres high, crane vessels up to 90 metres high and jack-up barges with a height of 152 metres.[4] However, a special study was commissioned by the company from Det Norske Veritas[5]. This study concluded that excluding drill ships, jack-ups, semisubmersibles, crane ships and one VLCC, a bridge at the height of 65 metres would present no problems for existing ships. The ships excluded are, of course, precisely those whose right of passage is of greatest concern to Finland.

155. The company went on to observe that with a navigational clearance of 65 metres the East Bridge would be more energy efficient than a bridge of 77 metres. The bridge would be less steep, so that vehicles would use less fuel to pass over it. Consequently, sometime

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[1] Kommissionen angående en Storebæltsbro, *Endlig Betænkning (237/1960)*, p. 47.

[2] "Lovforslag nr. L. 177/21.1.1987 (Forslag til lov om anlæg af fast forbindelse over Storebælt), Bemærkninger til lovforslaget", *Folketingstidende 1986–1987, Tillæg A*, p. 3449–3450.

[3] *Fast Forbindelse over Store Bælt, Betænkning Nr 508 (1968), Bind II*, p. 6

[4] *News from Storebælt No. 6/89 (30 June 1989)*, p. 2.

[5] For the revision of that study, cf. Annex 10 to the Danish written observations of 28 June 1991.

during the summer of 1989, the decision was made by the Danish Ministry of Transport to lower the bridge height from the originally planned 76-77 metres to the present 65 metres.

156. Tenders for the East Bridge were received on 18 December 1990. Negotiations with contractors took place from June 1991, and the contracts for the East Bridge were signed on 22 October 1991, while the bilateral discussions between Finland and Denmark on a mutually acceptable technical solution, initiated in pursuance of this Court's Order of 29 July 1991, were still in progress.

Section III. Conclusion

157. The Great Belt fixed link that is the object of these proceedings originates in a law of 10 June 1987. That law provided for a bridge or a tunnel across the main navigable channel of the strait, the East Channel. The decision to opt for a bridge instead of a tunnel was made at an administrative level in November 1988. The decision to build a bridge was communicated to other countries in October 1989. Tenders for the East Bridge were received in December 1990 and the contracts were signed in October 1991.

158. It has sometimes been claimed on the Danish side that the works are so far advanced that no modification in the plans can be made. This is plainly incorrect. The rights of passage which Finland seeks to uphold would have been - and still can be - fully accommodated by opening the East Bridge at either of the side approaches to the suspension bridge. This is a minor modification which could easily have been made after the initial contacts with Finland in the summer of 1989, as the decision on whether to opt for a cable-stayed or a suspension bridge was not taken until March 1990. In fact, as we have seen, several modifications have already been made to the original conceptual design of 1988/9. The tender projects were not forwarded to prequalified contractors until April 1990. Even as the contracts were signed - on 22 October 1991 - a further modification was made, extending the approach spans by 25 metres - to 193 metres[1]. At the time of writing, no physical construction for the structure of the East Bridge has been undertaken. With the last minute extension of the approach spans there is now ample possibility for Denmark to modify the bridge plan so as to guarantee free passage through the Great Belt to all existing and reasonably foreseeable ships, including drill ships, semisubmersible drill rigs and jack-up drill barges.

159. Finally, it should be noted that other States have also expressed their concern at the effects of the present bridge plan to international navigation. Thus, the representative of the Soviet Union, for example, took the matter up at the 66th Session of the Council of the International Maritime Organization in June 1991, requesting that the Council "appeal to Denmark to make adjustments to its plans". The Council decided to take note of the concerns expressed but refrained from further action in view of the fact that this Court has been seized of the matter[2].

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[1] *News from Storebælt No. 10/91 (31 October 1991)*, p. 5.

[2] Cf. Annexes 29 and 30.

CHAPTER VI

THE EFFECTS OF THE FIXED LINK ON FREE PASSAGE

160. The planned East Bridge would close off access to or from the Baltic for ships and transports with a height of 65 metres or above and a draught in excess of that of the Drogden in the Sound (i.e. 7.7 m minus underkeel clearance). This has immediate effects on the ability of certain special vessels and large transports to move between the Baltic and the North Sea. Taking into account past trends in ship sizes, it may also be inferred that the bridge would obstruct the capacity of Baltic shipbuilders to participate in worldwide tenders regarding very large ships in the future.

Section I. Effects on the Passage of Offshore Craft

161. The most dramatic, immediate and complete obstruction threatened by the bridge project concerns free passage by craft used for offshore exploration and exploitation and related purposes. These craft almost invariably have a height in excess of 65 metres. Their passage through the Great Belt would become impossible if the East Bridge is completed as planned.

162. It is useful to start the survey of the effects of the fixed link on passage by offshore craft also because the problems experienced by them illustrate all the difficulties experienced by other types of present and future vessels. If the bridge construction is modified so as to allow passage by offshore craft, passage by all other conceivable types of ships would be able to continue unhampered.

A. TYPES AND DIMENSIONS OF OFFSHORE CRAFT

163. Structures used for offshore exploration, exploitation and related activities may be divided into fixed and mobile structures. Structures permanently fixed in the seabed (submersible platforms) are in essence towers built on the sea-bed. These platforms are not designed to be mobile. As such, they are much less flexible than mobile rigs. The ratio of submersibles to all offshore craft has during the past years been decreasing. By 1990, the submersible fleet had only 36 units, of which only about 25 per cent remained active.

164. Mobile offshore craft (also sometimes called "Mobile Offshore Drilling Units", "MODUs" for short) are usually classified in three types: drillships, semi-submersible drill rigs and jack-up rigs. These three types account for 617 (93 per cent) of the total of 662 offshore craft in use today. The rest are classifiable as submersible platforms and drilling barges.

165. Each type of offshore craft has its own typical area of use. Irrespective of the type, however, they all carry roughly similar drilling equipment. This usually includes a drilling tower, a derrick, the supporting structures for the derrick and drilling equipment, and the complex electrical, electronic, hydraulic and mechanical systems for the actual drilling function and accommodation for the crew.

166. Because of the standardized nature of the drilling equipment and operations, including the length of the drilling pipe which can conveniently be handled in the upright position, the structural height of a complete drilling system is very much the same on each of the different types of offshore craft. This height includes the derrick itself (about 52

metres) plus the substructure (about 10 metres) above the main deck level. To get the absolute air draft required by an offshore craft, the height of the main deck level from sea level has to be added to the above mentioned structural height of the drilling system. When transferring jack-ups and semisubmersibles over very long distances heavy lift ships are often used. This leads to higher air drafts than mentioned above.

167. Most floating production platforms, such as production ships and semisubmersibles, are designed to have a drilling facility with a derrick reaching an air draught of over 65 metres. In addition, all floating production platforms have a flare boom for burning the extra gas separated from the main flow. The flare boom is higher than 65 metres.

1. The Drill Ship

168. Drill ships are regular ships equipped with a drilling tower (derrick) and equipment. They are used especially for operations in remote areas because of their ability to move long distances under their own power[1] (for illustration, *see Figure 6*).

169. There are at present 36 drillships in use around the world. Twelve of these have been converted from ships used for other purposes. Three of the existing drill ships have been constructed in Finland - the *Valentin Shashin* (1981) the *Viktor Muravienko* (1982) and the *Mikhail Mirchnik* (1982). The usual height of a drill ship is around 80 metres, consisting of the hull plus a derrick. The draught of a drill ship is usually between 6.5 and 8.5 metres. A typical example would be the *Chancellorsville*, which was built in 1976. It has a draught of 21.2 feet (about 7 metres) at full load. The deepest water depth rated drill ship is the *Discoverer Seven Seas*, also built in 1976, whose draught is 24.9 feet (about 8 metres).

170. The draughts of drill ships have not changed much over time. Nor is it expected that technical innovation will lead to a radical departure from present standards or dimensions.

171. None of the presently existing drill ships would be able to pass the Great Belt if the bridge were completed as planned.

2. The Semisubmersible

172. The semisubmersible is a floating craft whose hull is specifically designed for mobility. It usually has two pontoons (catamaran) and a deck supported by two to four columns. A majority of these have been designed by only four companies (Friede & Goldman 24 per cent, Aker 15 per cent, Earl & Wright Sedco 12 per cent and ODECO 10 per cent) (for illustration, *see Figure 7*).

173. The first semisubmersible offshore craft were delivered in 1963. There are presently 176 semisubmersibles in existence. The advantage of the semisubmersible over submersible platforms or jack-up rigs is its independence from the sea-bed and its great mobility. Most of the presently existing semisubmersibles are equipped by engins and propellers ("thrusters") to make them independently navigable.

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[1] Cf. generally Annex 31.

Figure 6

DRILL SHIP

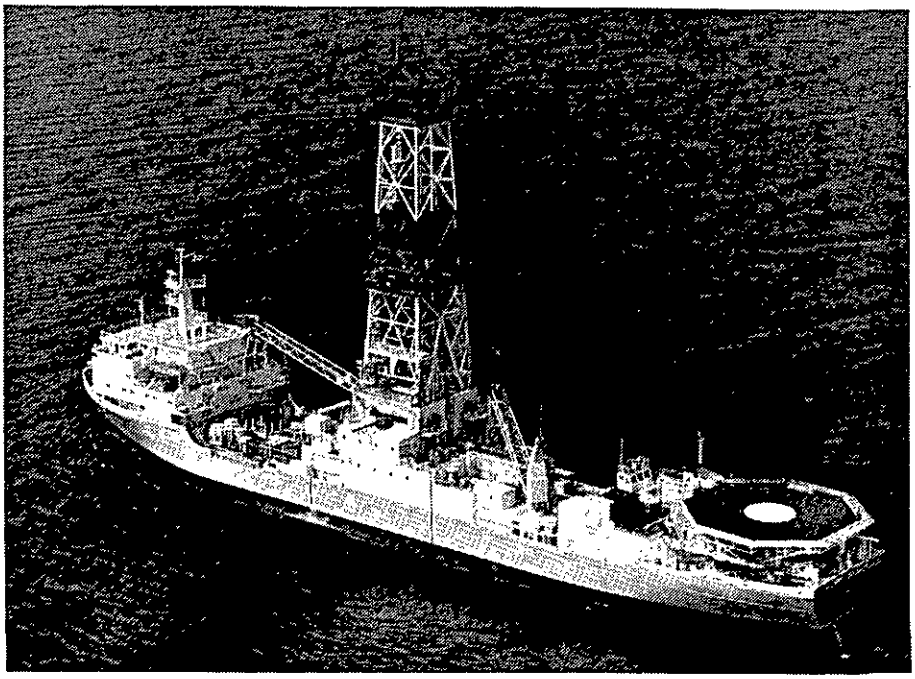
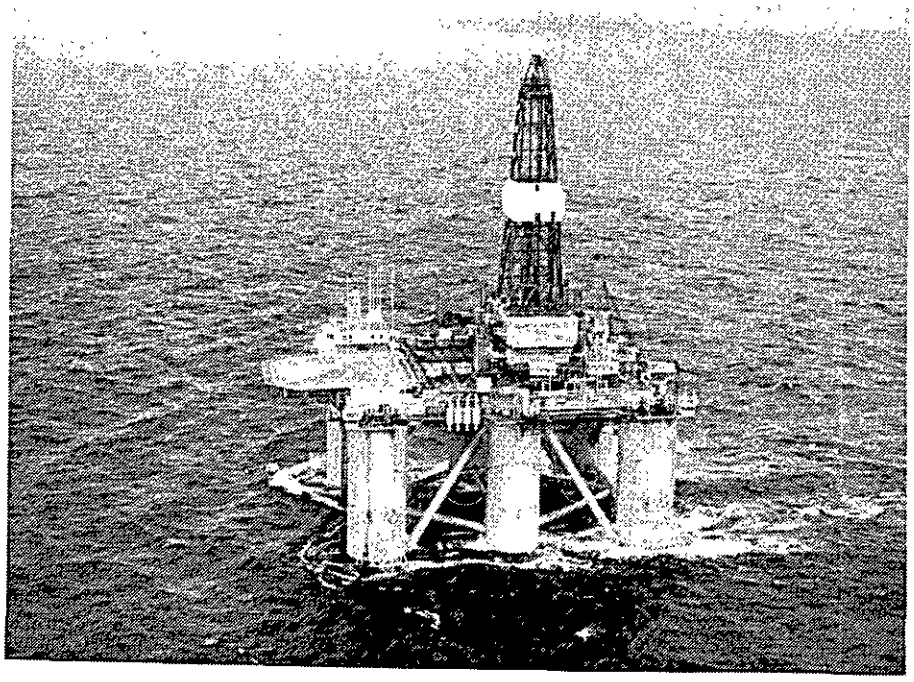


Figure 7

SEMISUBMERSIBLE



174. The derrick which stands on the deck usually has a height of about 40 metres. The air draught of a semisubmersible is between 76 and 90 metres[1].

175. The average transit draught of a semisubmersible is between 6 and 10 metres although some may have a draught of up to 16.5 metres (*Rowan Midland*, Petrolia). The transit draught of a semi-submersible is dependent on whether or not it is ballasted for towing. When in operation at a drilling site, the semisubmersible is ballasted to 25 metres for attaining a good stability. Over recent years, a slight increase in the transit draughts of semisubmersible craft can be discerned.

176. The early semisubmersibles were designed to work in around 200 metres of water. Today, many of them are able to drill in water depths of 600-700 meters and some as deep as 2000 metres. Semisubmersibles are often divided into three classes by reference to their weight and operational environment:

a) heavy semisubmersibles of up to 25.000 tonnes for use in harsh environments (Alaska, North Sea...);

b) compact semisubmersibles between 12.000 and 15.000 tonnes for use in relatively mild climatic and oceanic conditions (Gulf of Mexico);

c) light semisubmersibles of 6.000 tonnes upwards for use in specific, designated localities.

177. None of the presently existing semisubmersibles would be able to pass through the Great Belt if the East Bridge were completed as planned.

3. The Jack-Up

178. The jack-up rig is an offshore craft with a derrick and other drilling equipment on the deck supported by (usually three) legs which are lowered with a jacking system on to the sea bottom at the location of drilling operations. When the legs are lifted, the jack-up regains its floating position. The designs and capacities of jack-ups have developed markedly during the history of offshore activity. Today's rigs are much larger than the first jack-up rigs that were used in the 1960's (for illustration, see *Figure 8.*).

179. The world's jack-up fleet consists of 405 units. The advantage of a jack-up is that it is capable of being converted to serve other uses. It may, for example, be used for accommodation or the laying of pipe-lines in the seabed.

180. The air draught of a jack-up is a function of the length of its legs, which are lifted up as the craft is in transit. The average air draught ranges between 100 and 140 metres[2]. The required air draught may, however, also be significantly higher. The longest legs of a jack-up are about 200 metres (605 feet).

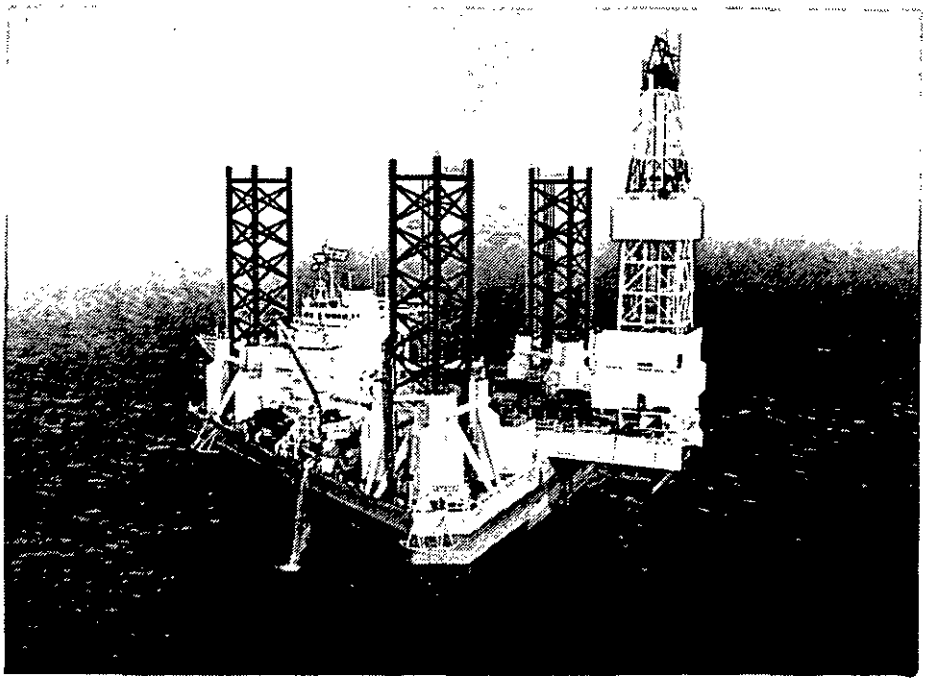
181. The transit draught of jack-ups is in the range of 13 to 30 feet (4 to 10 metres). The draughts have not varied very much during the years. The *Britannia* which was built in 1968 has a draught of 5 metres (15 feet), the *Ocean Tide*, delivered in 1971 has a draught of 5.8 metres (17 feet) while the *Rowan Gorilla*, built in 1984 has a draught of 5.7 metres (16.5

[1] Annex 32.

[2] *Ibid.*

Figure 8

JACK-UP



feet). Here is a table of some existing jack-ups which have an air draught higher than 65 m and a transit draught in excess of 7 metres. Spud cans are included in the transit draught:[1]

Name	Design	Air draught [m]	Draught [m]
West Beta	ETA EUROPE	150	8.5
Neddrill Trigon	CFEM	139.4	9.3
Trident X & XI	CFEM	122.2	9.6
Marlin	No. 6	116.4	8.5
KCA	Sandpiper	123.5	10.0
Diamond	M Gem	121.4	8.4

None of the existing jack-ups would be able to pass the Great Belt if the bridge were completed as planned.

B. THE MOVEMENT OF OFFSHORE CRAFT

1. Under their own propulsion

182. There are three basic ways in which offshore craft move on the sea. Drill ships move under their own propulsion like any other ships. So do many semisubmersibles, which have been equipped with thrusters under their pontoons that make them independently navigable. In case of long voyages, however, even semisubmersibles equipped by thrusters are usually towed in order to speed up the passage. Jack-ups are usually moved by towing. A third means of movement is carriage by heavylift transport ships. In the following paragraphs, more is said about these two latter means of movement.

2. Towage

183. The modalities of towage of a particular offshore craft are determined by reference to the size of the craft and the environmental conditions of the tow. These criteria determine the size and number of tugs to be used. The experienced company, Noble Denton Marine Services, requires that the towing vessel(s) should be capable of maintaining the position of the craft in 40 knot winds, 5m seas, and 1 knot current, all acting against the unit[2].

184. Traditional towage takes place with the craft floating on its own and perhaps assisting the tug(s) with its own propulsion (so-called "wet tow"). Sometimes, however, the semisubmersible or the jack-up is placed on a barge which is then connected to the towing vessel(s). Such a "dry tow" is a somewhat faster form of movement. The speed of a wet tow is approximately 4 to 6 knots, while the "dry tow" moves between 7.5 and 9 knots.

185. The barges used for dry tows of this kind do not usually have a navigating equipment of their own, though they may have small propellers to assist in maintaining direction under

[1] Spud cans are structures at the bottom of the legs which distribute the leg weight over the soil once the legs are attached to the seabed.

[2] Cf. Annex 32.

tow. They can usually be ballasted for the purpose of attaching the craft to the barge or detaching it at the end of the tow (for illustration, see *Figure 9*).

3. Carriage by Semisubmersible Heavylift Transport Ships

186. Towage - wet or dry - is a relatively slow means of movement and involves a significant risk. Quite frequently, accidents occur under tow, sometimes resulting in a complete loss of the craft (for example, the *Rowan Gorilla I* in 1988, *Interocean II* in 1989 and the *West Gamma* in 1990).[1] Since the end of the 1970's, it has become possible to avoid some of the risk inherent in towage by using specially designed semisubmersible heavylift transport ships to carry the offshore craft to its operating location (for illustration, see *Figure 10*).

187. In addition to navigational safety, the advantage of these craft over traditional tows is their speed of movement, which makes possible an early commencement of the craft's operational actities on location. The additional revenue derived from this will in many cases offset the higher costs involved in using a heavylift ship instead of a traditional tow.

188. Currently, semisubmersibles tend to be towed very long distances unless the distance involved is quite exceptional. Jack-up rigs, on the other hand, are towed only for distances of up to about 1.000 miles; for longer voyages heavylift transport ships are used for reasons of speed, economy and safety (for illustration, see *Figure 11*).

189. A typical heavylift transport ship has an operating draught far in excess of 7 metres. They can thus pass the Danish straits only by using the Great Belt. If the bridge were constructed as planned, no heavylift ships could be used for the transport of offshore craft through the Baltic Sea accesses.

C. OFFSHORE CRAFT IN TRANSIT THROUGH TERRITORIAL WATERS AND INTERNATIONAL STRAITS

190. The movement of offhore craft through the territorial seas of third States and international straits is an everyday occurrence. According to one expert estimate, the number of such movements is in the range of 40-150 annually.[2] A recent report to the CMI relating to the Draft Convention on Offshore Mobile Craft noted "a very substantial increase in movements of drilling units throughout the world" and added that "[a] distinctive feature of the development has been the movement of drilling units between different continental shelves and over large geographical areas".[3] Most rig movements have been into the North Sea and West Africa from other areas of the world, particularly from the Gulf of Mexico and Southeast Asia[4].

191. When using the most common routes to their operational locations, offshore craft routinely pass through such international straits as the English Channel, Gibraltar, Magellan, Bab el-Mandab, Hormuz, Malacca, Sunda and Torres straits (Offshore Data Report, Annex 31.).

---

[1] Cf. *Offshore Mobile Rig Accidents 1955–present*, Offshore Data Services 1991.

[2] Cf. Reply by Mr Ouwehand of 3 November 1991 in Annex 33.

[3] Comite Maritime International, *Draft Convention on Off - Shore Mobile Craft, Report and Questionnaire to the CMI Member Associations*, Frode Ringdal, Oslo, 24 September 1991, CMI Doc. Off-Shore-1, X-91, p. 2. See Annex 34.

[4] For the most commonly used routes, cf. Annex 31.

Figure 9

THE JACK-UP MURMANSKAJA
TOWED THROUGH THE GREAT BELT IN AUGUST 1991

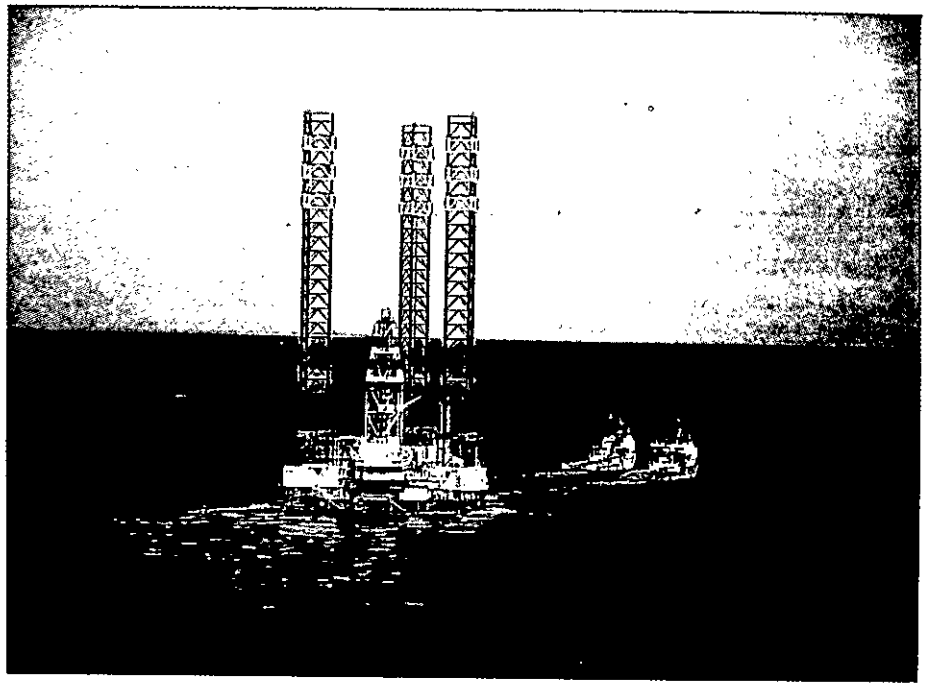


Figure 10

DIMENSIONS OF A HEAVYLIFT TRANSPORT SHIP

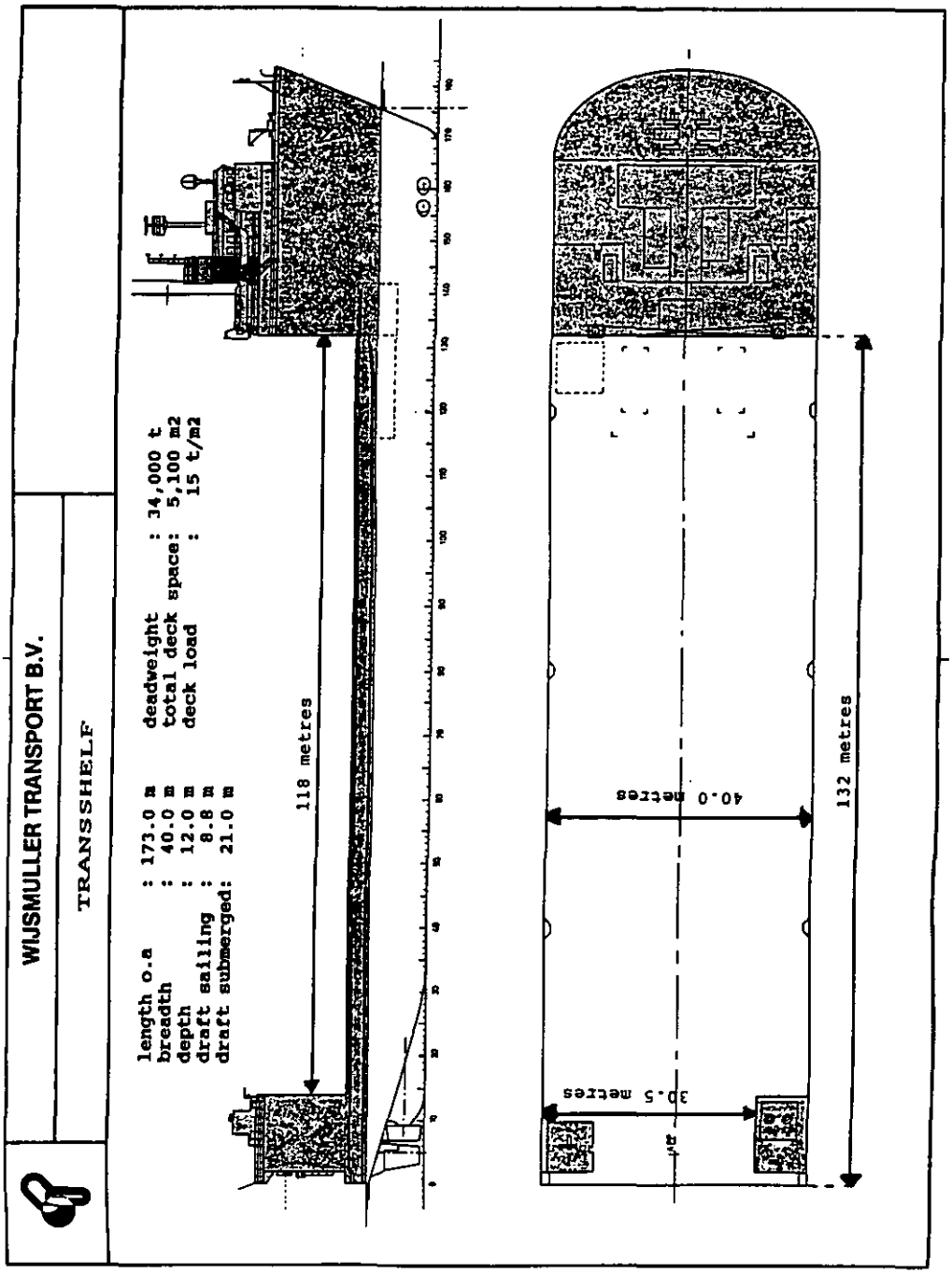
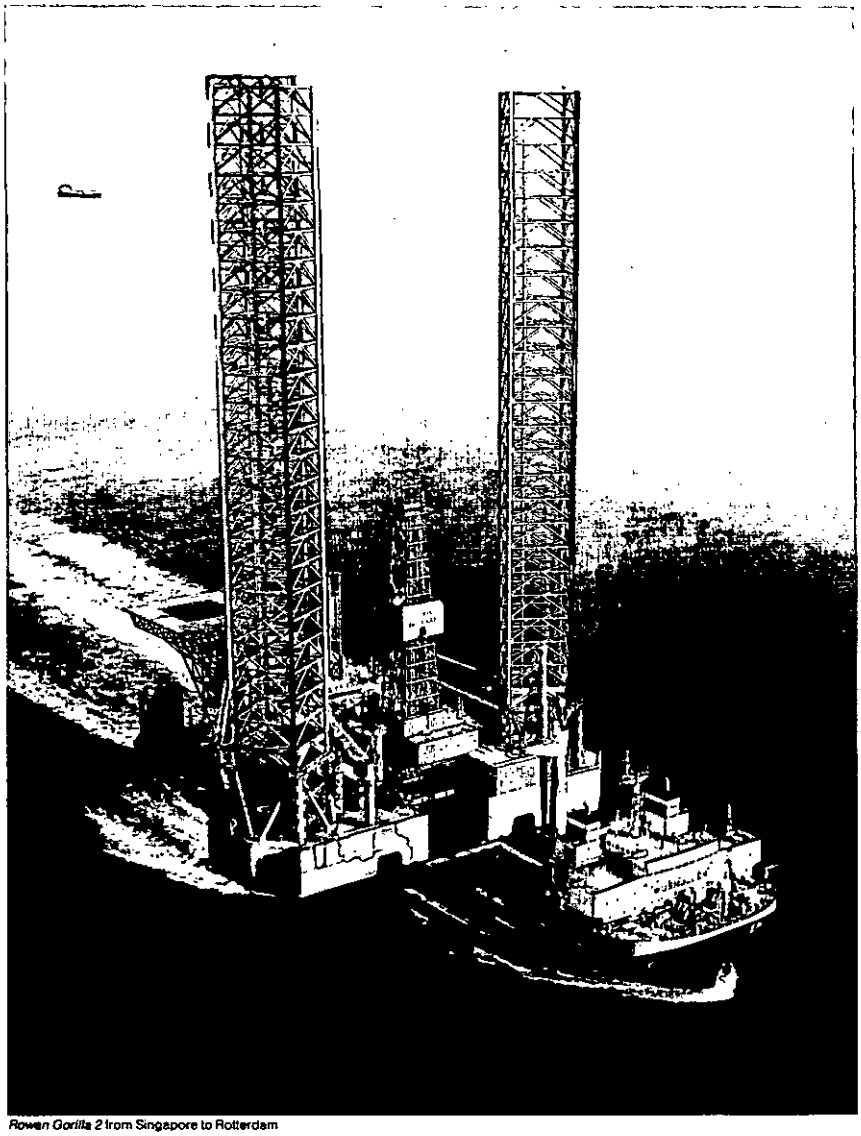


Figure 11

JACK-UP BEING CARRIED BY A SEMISUBERSIBLE HEAVYLIFT SHIP



Rowan Gorilla 2 from Singapore to Rotterdam

192. Data received from *Bugsier Rederei- und Bergungsgesellschaft mbH* - one of the largest international towage companies - concerning major tows of offshore craft performed by Bugsier tugs since 1965 confirms that international towage of offshore craft involving passage through international straits is a commonplace[1].

193. Experience shows that coastal States have not imposed particular conditions for allowing the passage of offshore craft through their territorial seas. To determine the level of control, two questionnaires were sent out from the Ministry for Foreign Affairs of Finland: one to three internationally renowned tug companies, the other to coastal States of important international straits[2].

194. The replies from the tug companies indicate that when planning routes, the most economic route is chosen. Sometimes territorial seas are avoided because of risk of collisions or groundings. There is no practice of routine notification to coastal states as a condition of passage. Prior approval seems necessary only for the Panama and Suez canals. Coastal States do, however, treat MODUs differently if their intention is other than mere passage (i.e. exploration or exploitation).

195. Replies have also been received from some coastal States. Those replies indicate that though there sometimes is a requirement of advance notice before a towage enters the territorial sea, the regulations regarding the passage of offshore craft - whether towed or under their own propulsion - do not differ from regulations regarding the passage of any other types of ships which are also commonly required to give advance notice of passage, for example in traffic separation schemes. In particular, there seem to exist no provisions or practice denying the right of innocent passage of offshore craft[3].

D. TRANSIT BY OFFSHORE CRAFT THROUGH THE DANISH STRAITS

196. Passage by offshore craft through the Great Belt would become impossible if the projected bridge were completed. All of these craft exceed a height of 65 metres. Inasmuch as the right of free passage applies to offshore craft, the completion of the bridge as presently designed would violate that right.

197. Though Denmark has not denied the fact that these craft have a height much in excess of the planned bridge, it has from time to time contended that their height is irrelevant as an accommodation can be made by modifying their passage in one of two ways:

1) it has been claimed that offshore structures might continue to pass through the Baltic Sea accesses by using the Sound (The Sound Option);

2) it has also been claimed that they could transit the Great Belt after having been dismantled for passage under the bridge, or simply by moving the final construction phase to a location beyond the bridge (The Dismantling Option).

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[1] Cf. Annex 35 - at least 80 passages.

[2] The Questionnaires, together with the replies received as of 1 December 1991 are listed in Annexes 33 and 36.

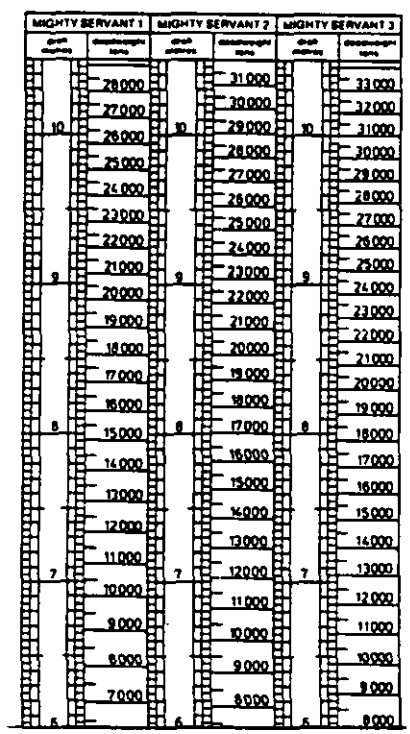
[3] Cf. also Annex 32.

1. The Sound Option

198. *Transit through the Sound is not a technically relevant option.* As noted in Chapter III, Section 1 above, the Sound has an official draught of 7.7 metres which is the actual physical depth of the Drogden channel at its shallowest point. This draught may, because of climatic or seasonal conditions, be reduced by as much as 2 metres. According to another estimate the waterlevel may decrease 0.40 to 0.70 metres.

199. We have seen that the typical transit draught of a semisubmersible is between 6 and 10 metres and that of a typical jack-up when towed between 4 and 10 metres. If carried on a heavylift transport ship, these transit draughts will increase significantly. According to data by Wijsmuller, the keel of a *"Mighty Servant"* type semisubmersible heavylift ship will descend to 8 metres with a 15.000 to 18.000 DWT load and to 10 metres at 26.000 to 31.000 DWT load.

TABLE 6: DEADWEIGHT SCALES OF A MIGHTY SERVANT VESSEL:



200. Quite apart from the fact that this "option" is completely unavailable to most movements of offshore craft and to all movements by heavylift ships, it is questionable whether compelling towage as the only available mode of movement between the Baltic and the North Sea is a good idea in the first place. The movement of offshore craft is a hazardous activity. Of a total of 1.289 lives lost in 122 accidents offshore from 1964 to date, almost 700 lives were lost in connection with accidents during transportation (including accidents with helicopters). During the 10-year period 1980-9, there was a total of 39 towing accidents.[1] According to Offshore Data statistics, towage is about 20 times more dangerous than carriage by heavylift transport ship. By far the most important single source of accidents undergone by jack-ups during 1955-1991 is towage in rough weather.

TABLE 7: CAUSES OF OFFSHORE MOBILE RIG ACCIDENTS:

CAUSES OF OFFSHORE MOBILE RIG ACCIDENTS

(1955 to 1990)

Type of Accident	Number of Accidents					
	Subm.	Jackup	Semi	Barge	Ship	Total
Weather Related In Transit	1	55	9	2	0	67
Weather Related on Location	5	23	28	7	10	73
Blowout	4	38	9	6	9	66
Preparing to Move On/Off Location	1	11	3	0	0	15
Drilling	0	9	1	0	1	11
Jacking Mode	-	34	-	-	-	34
Other	4	22	23	6	14	69
TOTAL	15	192	73	21	34	335

201. Because of its advantages from a safety point of view, underwriters and surveyors look favourably upon movement by heavylift transport ships in the insurance approval of such ventures[2]. Consequently, the costs of insurance for a movement by heavylift ship is considerably lower than the cost of movement by tow.

202. Moreover, the trend in the design of offshore craft has been towards units of a heavier structure and deeper draught. This can be seen, for example, in the list of craft tendered by Rauma-Repola Offshore since 1984. Those tenders concern structures many of which possess a draught of approximately 11 to 12 metres[3].

[1] Annex 34.

[2] Cf. Annex 32.

[3] Cf. Table 16 at para. 263 below.

203. For these reasons and for the other reasons developed in Chapter III above, it may be concluded that the irrelevance of the Sound option is particularly evident in regard to offshore craft. For these craft, using the Sound is physically impossible. For other ships, it presents a danger far in excess of the hazards involved in using the Great Belt.

204. The question of the underkeel clearance has also been treated in Chapter III, para. 75 above and in Annex 4 and elsewhere[1]. Suffice it here to recapitulate the relevant points:

1) An underkeel clearance of as much as 5 metres may be required for towage[2];
2) Owners of offshore craft like to see at least 2 metres below the keel[3];
3) A minimum international standard of 0.9 metres is applicable for conventional ships.

205. The 2-metre UKC for offshore craft is not a theoretical abstraction. It may be supported by the fact that a wind of 50 knots - a generally used criterion in the design of offshore craft - causes an increase in draught of 1.7 metres for an *Ocean Ranger* type semisubmersible, type being built in Finland[4].

206. However one looks at these recommendations, it is clear that safe passage by an offshore craft can be ensured only by allowing for an underkeel clearance which corresponds closely to the Danish recommendation for the Great Belt (i.e. 2 metres), specifically meant for passage by heavy ships. As can be seen from the list of offshore craft built and tendered in Finland by Rauma-Repola Offshore, none of these craft could have passed the Drogden if allowance for the necessary 2 metres clearance is made (Annex 4). Even if the P.I.A.N.C. recommendation for ships of conventional size and design (15 per cent of the actual depth - i.e. 0.9 metres in the Drogden) is followed, the result is the same.

2 . The Dismantling Option

207. The Danish suggestion that offshore craft could be dismantled at sea so as to enable their passage under the Great Belt bridge is a curious "option". Surely it was never required that a ship, in order to be able to use the right of free passage should undergo an operation to change its shape and/or size ? Surely such a requirement cannot be easily reconsiled with any meaningful notion of "unhampered passage", and is more in the nature of a far-reaching *"détention ou entrave"* of the kind explicitly prohibited by the 1857 Copenhagen Treaty.

208. Much has been said about this "option" in the preliminary hearings on this case (Cf. e.g. pleading by Ambassador Fergo, 2 July 1991). Suffice it to note that such an operation would involve an excess cost and delay that would be incompatible with a normal meaning of unhampered passage[5]. The fact that such dismantling is sometimes done in internal waters (the Gulf of Maracaibo, Missisippi River) is hardly an argument for imposing it as a condition for passage through an *international strait*. Furthermore, cases of known disassembly concern only lightweight structures, do not involve harsh environments, heavy jack-ups or semisubmersibles, all of which are characteristic of the current pattern of actual international usage of the Danish straits.

209. According to a statement by Friede and Goldman Ltd[6], a large international company of naval architects and marine engineers and a leading designer of semisubmersible drill rigs

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[1] Annex 32.

[2] Annex 4, Appendix 2.

[3] Annex 32.

[4] Cf . also Table 16.

[5] Cf. Annexes 37, 38, 39, 40.

[6] Annex 41.

(and particularly of the kinds used in harsh environments) such a job would, in good weather, with sufficient manpower and with adequate handling equipment (cranes etc.) either on board the rig or a service vessel or dockside, *require from 5 to 7 weeks*. The job of dismantling the derrick of a semisubmersible would thus be "time-consuming and expensive in terms of direct cost and lost rig earnings". Consequently "MODU operators would do whatever it took to avoid such an operation if at all possible".

Section II. Effects on Passage by Other Types of Craft

210.Though the obstruction created by the Great Belt bridge is clearest on passage by offshore craft, it may be useful to look at its implications as regards passage by other kinds of craft, particularly certain types of special vessels.

A. VESSELS OF CONVENTIONAL DESIGN

211. Conventional commercial vessels can be further divided into "weight carriers" and "volume carriers". Weight carriers are designed to carry as much dead weight as possible. These include oil tankers, ore carriers etc. They tend to have as large a draught as possible. However, when the ship size increases, the air draught also increases. Air draughts of the order of 55 to 70 metres exist for Ultra Large Crude Oil Carriers (ULCC).[1]

212. Volume carriers are designed to have as large internal volume as possible. These include container vessels, RoRo ships, car carriers, passenger vessels etc. They tend to have as large a side height as possible. Recently-built large container vessels have an air draught in the range of 40 - 50 metres, large RoRo vessels in the range of 40 - 48 metres, and car carriers of about 40 metres.

1. Passenger Ships

213. At present, the only existing passenger ship with an air draught in excess of 65 metres is the *Club Med* sailing ship with a mast height of 68 metres. Nevertheless, there is no particular magic in the figure of 65 m. The height of the *Queen Mary* was 65.5 metres and of the *Queen Elizabeth* 63 metres. Modern passenger vessels are increasing their height as the need to take on board ever larger numbers of passengers grows.

214. An example of a large modern passenger vessel is the *M/V Fantasy*, built in Finland by Kværner Masa-Yards in 1990 (for illustration, see *Figure 12*).

215. The required clearance of the *M/V Fantasy* is about 56.3 metres. The water draught is 7.7 metres. The air draught and main dimensions for a number of existing passenger vessels and ferries[2], as a function of the year the vessels were delivered, is depicted in Table 8 given below. It can be seen that in the case of large passenger vessels there is a clear trend during the past decades to increase air draughts.

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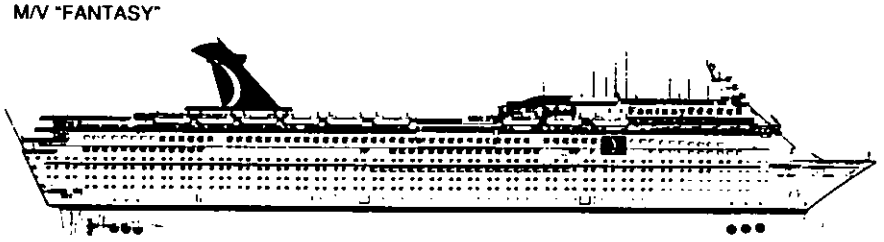
[1] Cf. Det Norske Veritas, *Revised Study on Air-Draught of Merchant Ships Carried Out for A.S. Storebæltsforbindelsen, (10 March 1989). For text of the study see Annex 10 to the Danish Written Observations of 28 June 1991.*

[2] Annex 42.

Figure 12

M/V "FANTASY"



Builders: Masa-Yards Inc., Helsinki New Shipyeard, Helsinki Finland
Yard number: 479
Type: Cruise Liner
Delivery: January 26, 1990
Owner: Carnival Cruise Lines Inc. Miami
Classification: Lloyd's Register of Shipping

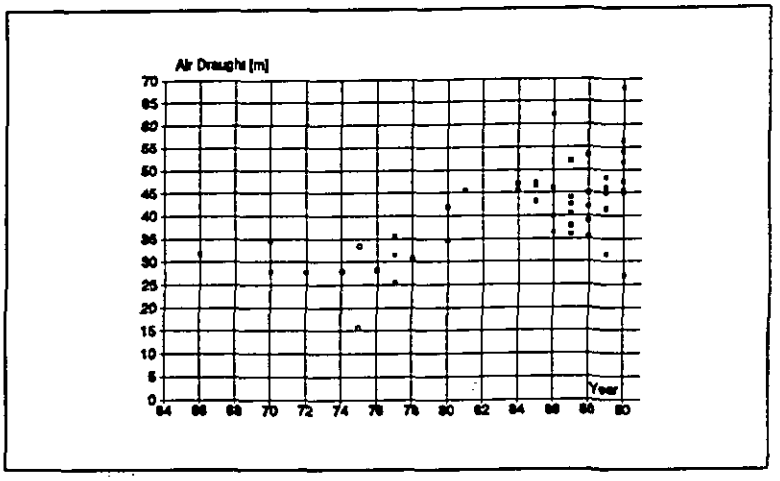
Tonnage	GT 70367
Deadweight	7000 t
Length o.a.	260.80 m
Breadth, max.	36.00 m
Breadth, waterline	31.50
Height to upper deck	40.40 m
Height to top of funnel	64.00 m
Draught	7.70 m
Speed:	22 kn

Propelling machinery:
2 Wärtsilä/Sulzer diesel generator sets, type 8ZAL 40S,
4 Wärtsilä/Sulzer diesel generator sets, type 12ZAV 40 S,
total about 42000 kW
6 Vulkan Rato couplings 4611, A2 for main drive
2 controllable pitch propellers, Ø 5.2 m, 14000 kW, each
Auxiliary engines:
4 generators 10300 kVA
2 generators 6800 kVA

Equipment:
2 electr. hydr. steering gears for control of 2 independent rudders
3 bow thrusters, 3 stern thrusters
1 active folding fin stabilizer plant 2 x 14.5 m^2
1 radar 8600 ARPA, 1 radar 7600 ARPA,
1 echosounder Echograph 481 (Krupp Atlas)
satellite communication, telex, telefax,
satellite navigator Magnavox 1100, sea-tel satellite-at-sea receiver for shore-based TV programs, Loran C navigator, Omega navigator
2 sets of comb. windlasses/mooring winches
2 25-t mooring winches forward
3 25-t mooring winches aft
12 passenger lifts for 18 persons or 1350 kg
2 passenger observation lifts with glass frontage for 15 persons or 1200 kg
2 crew lifts for 18 persons or 1350 kg
1 cargo lift for 1500 kg
1 provisions lift for 750 kg

Crew	980 persons
Accommodation for	2604 passengers
Cabins:	
owner's suites	2
suites	28
double outside cabins	566
double inside cabins	383
demisuites	26
double 1 + 1 cabins	19
total	1024

TABLE 8. AIR DRAUGHT FOR A NUMBER OF FERRIES AND PASSENGER VESSELS:



216. For reasons of energy, economics and navigational convenience, there has been renewed interest in the use of passenger sail vessels. There are several projects which have an air draught exceeding 65 metres. Mention has already been made of the existing sail ship, the *Club Med*, built by the Ateliers et Chantiers Reunis du Havre in 1990, which has an air draught of 68 metres (for illustration, see *Figure 13*).

217. The first large sail cruise vessel, the *Wind Star*, was built in France in 1986. This has an air draught of 62.2 metres. It has been succeeded by two similar vessels, the *Wind Song* in 1987 and *Wind Spirit* in 1988. The *Club Med* type sail vessels are a second generation of this type of ship and illustrate the tendency to increased vessel heights.

218. Sail or sail-assisted propulsion may be an attractive alternative in the future also for commercial vessels other than passenger ships, for example bulk carriers. This is a development which the presence of the projected bridge would hamper. For instance, a 30 000 DWT cargo vessel would need to have a 80 metre high rigging.

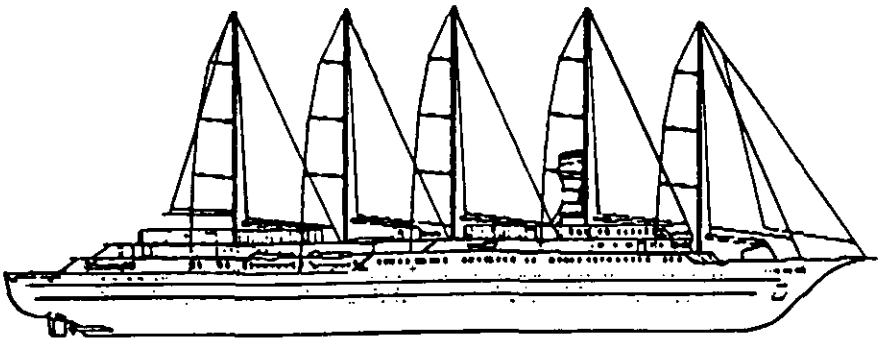
2. Cargo Ships

219. As far as cargo vessels are concerned, the Norske Veritas Study of 10 March 1989 commissioned by the StoreBælt Company[1], indicates that most - though not quite all - of such ships have an air draught of less than 65 metres.

[1] Cf. Annex 10 to the Danish Written Observations of 28 June 1991.

Figure 13

CLUB MED VESSEL, MAIN DIMENSIONS



SAIL CRUISE SHIPS

CLUB MED ONE
CLUB MED TWO

MAIN DIMENSIONS:

LENGTH over all	187.00 m
BEAM	20.00 m
DRAUGHT	5.00 m
AIR DRAUGHT	68.00 m
SAIL AREA	2500 sq.m

220. However, it is difficult to present detailed and exact numbers regarding the air draughts of cargo ships used worldwide, as the various registries have not, as a matter of routine, listed the air draughts until recently, and even then only in a haphazard fashion. A computer print of 751 pages from Lloyd's Registry, for example, *listing all cargo and passenger ships registered by Lloyd's* and having a water draught in excess of 7.7 metres lists the height for only about every 10th vessel in the register. Generalizations regarding ship heights worldwide can thus only be made with some hesitation.

221. Taking these reservations into account, it may be noted that out of a total of 3.100 conventional cargo and passenger ships for which Lloyd's registers the height (about 10 per cent of the total), 137 had a height between 60.0 metres and 64.6 metres, 26 between 65 and 70 metres and 12 in excess of 70 metres. As Lloyd's lists only the total height, however, the calculation of the *air draught* must be derived by subtracting either the notified maximum draught, or, more realistically, the estimated Baltic draught (15 m), from the total height. This leaves a very small number for which the projected bridge might cause difficulties. The Norske Veritas study identified one type of large tanker with an air draught of 68 metres. Bearing these serious reservations in mind, and particularly the lack of readily available data on ship heights, it may be tentatively concluded that this may indeed represent the class of highest air draught for conventional cargo ship designs of which information is available. It is hardly an insignificant category, however.

3 . Very Large Crude Carriers (VLCCs)

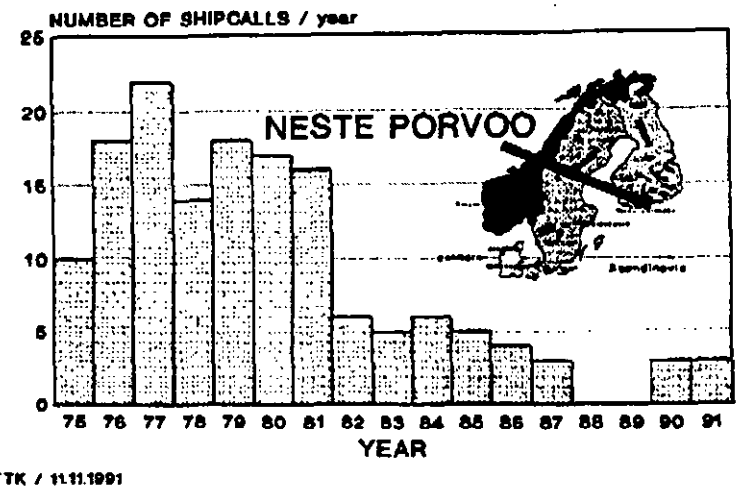
222. The Danish straits form an important international gateway for the energy movements of the countries around the Baltic Sea. In general crude oil and oil products move through the Great Belt while the generally smaller chemical and gas carriers make use of the Sound.

223. A great part of the crude oil and product movements to Finland have taken place inside the Baltic Sea. For example 80-90 per cent of the crude oil imported to Finland (7-8 bill.tons/a) has originated in the Soviet Union. Because of more stringent demands on sulphur content and production difficulties in the Soviet Union, a greater proportion will be imported from outside the Baltic from 1992 onwards. This will in practice mean year-round traffic through the Danish straits involving large crude oil carriers (over 100 000 DWT).

224. Neste Oy, the Finnish state owned oil and chemical company, is operating two oil refineries and petrochemical industries, which are the largest of their kind in the Nordic countries. The crude oil imports in the late 70s and early 80s were often transported from the Middle East by Very Large Crude Carriers (abt. 250 000 DWT) which were lightened in the North Sea onto vessels of about 100 000 DWT size to attain the Baltic draught of 15 m. Both ships, the VLCC and the 100,000 tonner, would then sail through the straits to Neste's Porvoo refinery.

225. Table 9 shows the number of ships over 150 000 DWT which have discharged their cargo at Porvoo Works annually from 1975 to 1991.

TABLE 9: NUMBER OF SHIPCALLS OVER 150 000 DWT AT NESTE OY PORVOO WORKS:



226. A notable change affecting the air draught of large oil carriers is currently under discussion in the International Maritime Organization (IMO), namely the obligation to use a double hull construction in order to reduce the risk of accidental pollution. The design requirements of future ULCC and VLCC will increase air draught for the following reasons:

- the double hull construction may increase the depth/beam ratio and result in a greater free board at ballast draught than a single hull construction.
- the IMO requirement of minimum forward visibility from the bridge will increase the necessary height of the superstructure.

227. The possibility cannot be excluded that the consequent increases in tanker height, together with an already used transportation method (i.e. "lightening" a VLCC into Baltic draught) becomes critical if the Great Belt bridge will have a clearance of 65 metres.

B. INDUSTRIAL AND SERVICE VESSELS

228. In addition to offshore craft, another type of industrial vessel which could not pass the Great Belt if the air draught were limited to 65 m is the *Petrojarl II* project requested by Golanor. This is a floating production vessel, which will be used for exploitation of marginal oil fields. The vessel will have an air draught of 90 metres (for illustration, see *Figures 14* and *15*).

229. Also most large crane vessels with a hoisting capacity of 4.000 metric tons or more have an air draught in excess of 65 metres. A list of these vessels is given in Table 10.

Figure 14

PETROJARL I

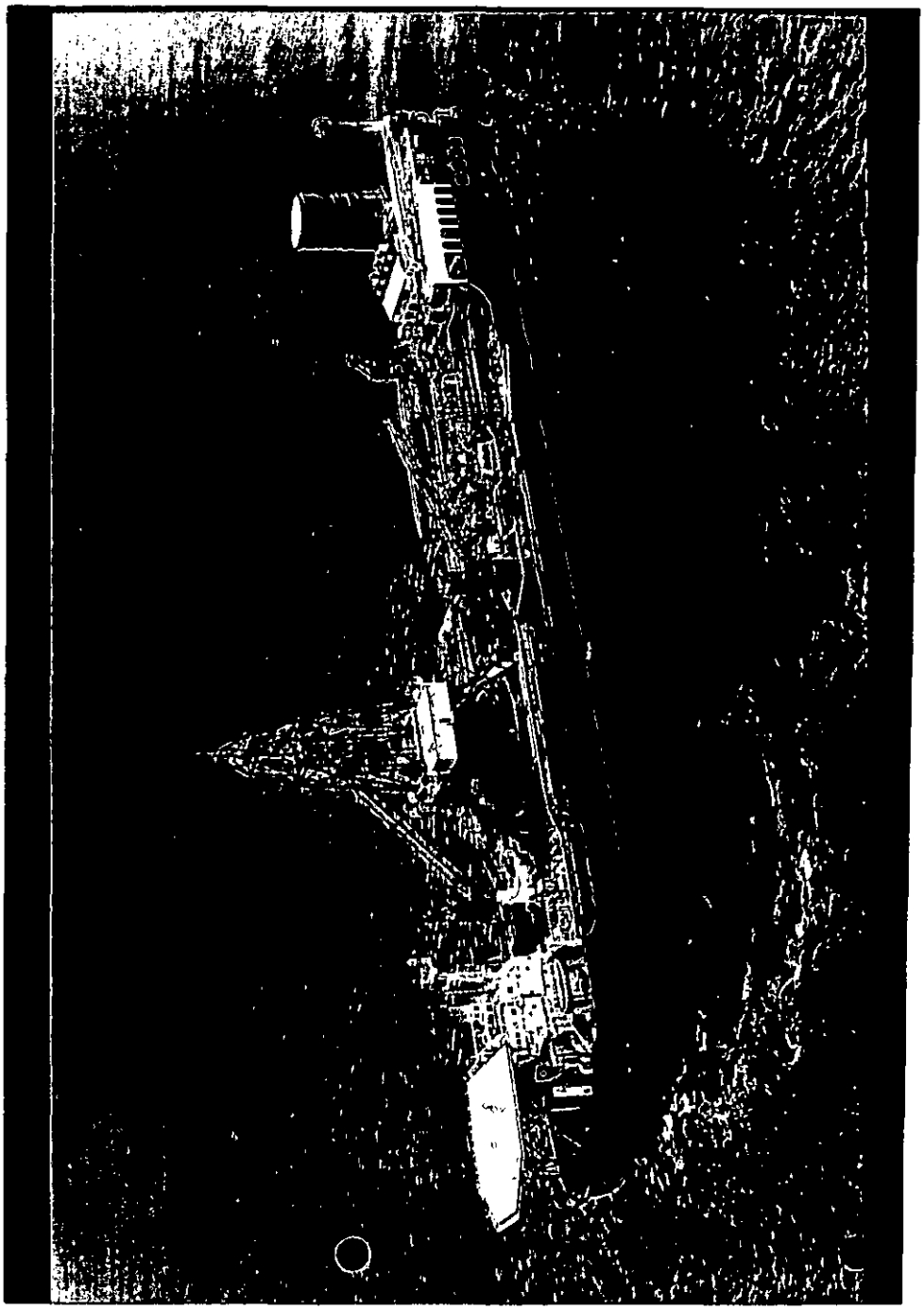


Figure 15

PETROJARL II
PROJECT

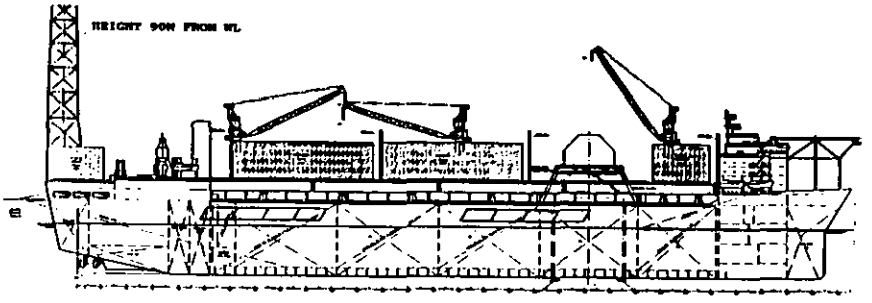
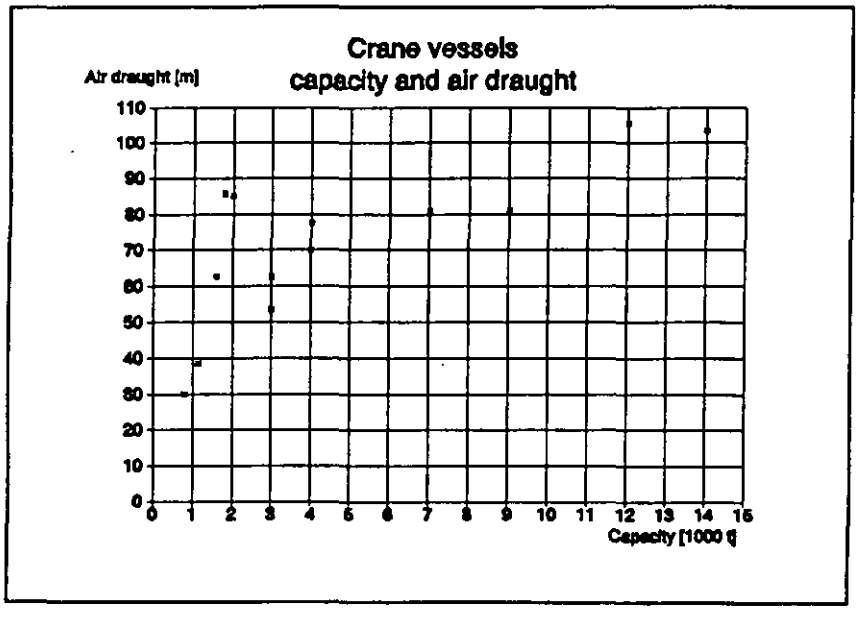


TABLE 10. PRINCIPAL DIMENSIONS OF EXISTING CRANE VESSELS:

Name	Lifting capacity	Transit draught	Operating draught	Air draught
Challenger I	800 sht	7.32 m		30.0 m
Champion	1 150 sht	5.72 m		38.6 m
Tor	3 000 sht		11.5 m	53.5 m
Odin	3 000 sht	8.56 m	12.0 m	62.5 m
Stanislav Yudin	1 600 mt		5.5 m	62.6 m
ITM Challenger	4 000 mt	8.5 m		70.0 m
McDermott DB 50	4 000 mt		9.5 m	77.5 m
Balder	7 000 sht	11.0 m		81.0 m
Hermod	9 000 sht	11.0 m		81.0 m
McDermott DB 101	2 000 sht		7.5 m	85.0 m
McDermott DB 100	1 800 mt	8.3 m		85.7 m
Micoperi 7000	14 000 mt	10.5 m	27.5 m	103.5 m
McDermott DB 102	12 000 mt	13.2 m		105.5 m

The air draught of these vessels is plotted against their lifting capacity in Table 11.

TABLE 11. AIR DRAUGHT OF EXISTING CRANE VESSELS AS A FUNCTION OF LIFTING CAPACITY:



230. The exclusion of large crane vessels from the Baltic could have serious consequences. For example, it might prevent the carrying out of salvage operations in case a nuclear powered submarine weighing more than 4.000 tonnes is wrecked in the Baltic Sea. The prevention of the passage into the Baltic by the various types of offshore craft would also affect the future of offshore exploration and construction projects in the Baltic (cf. further section IV. B. below).

231. It is sometimes argued that a bridge at a height of 65 metres would present no practical hindrance for the passage of crane ships, as the crane can be easily dismantled in order to undertake the passage. Whatever significance such a claim might have as a point of law, it is an oversimplification as a matter of fact. If the upper part of the crane has to be dismantled for the bridge underpass, the following tasks and costs arise[1]:

- the crane has to be designed for easy dismantling, which will increase the crane price by about 2 per cent;
- after workshop tests, the derigging and dismantling of the crane, and rebuilding, rigging and reconnection of systems and testing after the bridge, the cost of passage is estimated to be about 2.5 Million USD, depending on the size and type of the crane;
- the dismantling-rebuilding period is estimated to be 4-5 weeks, which increases the cost of the whole vessel by 1-1.5 per cent.

C. FUTURE VESSELS

232. New vessel types, including floating hotels, towns and factories may well be introduced during the relevant time frame (i.e. 100-150 years - the projected period of the bridge's existence). One example of an on-going project already in the planning stage is the ocean going resort cruiser for 5000 passengers presently under active consideration at the Kværner Masa-Yards shipyard in Helsinki. The main particulars of such vessel are its draught of 11 metres and air draught of 70 metres[2]. Also other large vessels are under consideration[3].

233. To foresee the future development of ship sizes, it may be useful to look at certain aspects of ship building technology.

234. When determining the main dimensions of a ship to be built, the use to which the vessel will be put and, consequently, her type and size are the starting values. By the size of a vessel is meant her load-carrying capacity. In the case of a freight carrier, the unit used is usually a tonne; in the case of volume freights - such as liquid gases - a cubic metre. The size of a passenger vessel is expressed as the number of passengers she can carry or as a kind of volume unit, as gross tonnage.

235. After the determination of the use of the vessel, attention will be directed to its main dimensions: depth, height, draught, beam and air draught.[4] The decision concerning use will already have determined something of the dimensions. For example, in a ship where carrying volume is a major factor, the designers must make sure that the dimensions are large enough for the required volume. On the other hand, the dimensions are also dependent on each other.

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[1] Cf. also the picture in Annex 43.

[2] Annex 44.

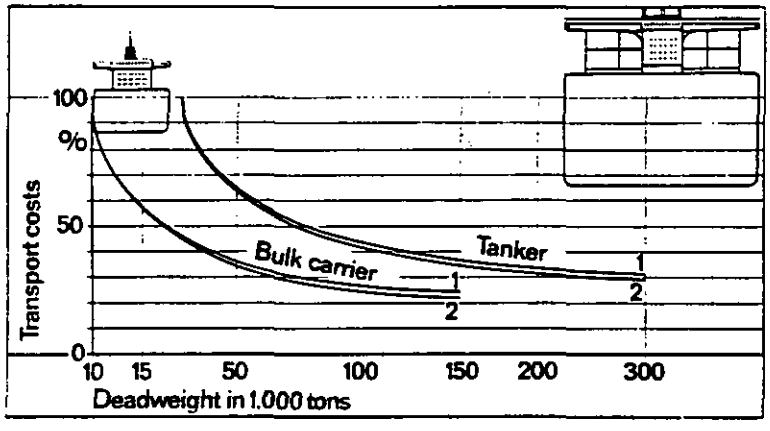
[3] Annex 45.

[4] Depth is the measure from the bottom to the uppermost hull deck. Deckhouses and superstructures rise from this deck upwards. Height is the measure from the bottom to the uppermost deckhouse or superstructure deck. The masts and funnels rise above this measure and determine the air draught of a vessel. Cf. illustration in Annex 46.

236. Thus, the air draught of a vessel is usually dependent on the depth and height. The bigger the depth of a vessel is, the bigger the height and consequently the bigger the air draught. When the capacity of a cargo vessel is considered, the depth is relevant, whereas when the capacity of a passenger vessel or a volume carrier is considered, the height is relevant.

237. In the determination of ship sizes, economics of scale are obviously relevant. A large vessel has a smaller unit cost per passenger or per cargo deadweight than a small one. It is therefore more economical than a small one.

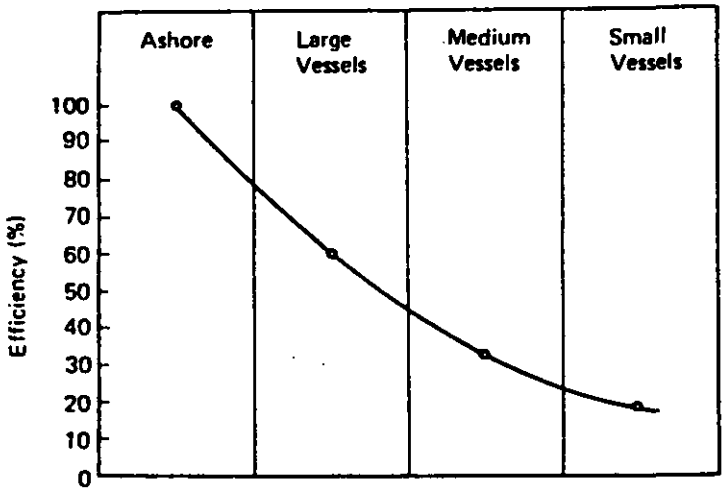
TABLE 12. *TRANSPORT COSTS PER TON OF CARGO AS A FUNCTION OF SHIP SIZE. 15 000* NM VOYAGE; 225 000 NM VOYAGE[1]:



238. A large vessel has also other advantages: it provides a more stable platform for human activities as can be seen in Table 13 below.

[1] Schönknecht R. et al., *Ships and Shipping of Tomorrow*, (1983), fig. 58.

TABLE 13. PERSONNEL EFFICIENCY IN A SEAWAY AS A FUNCTION OF SHIP SIZE[1]:

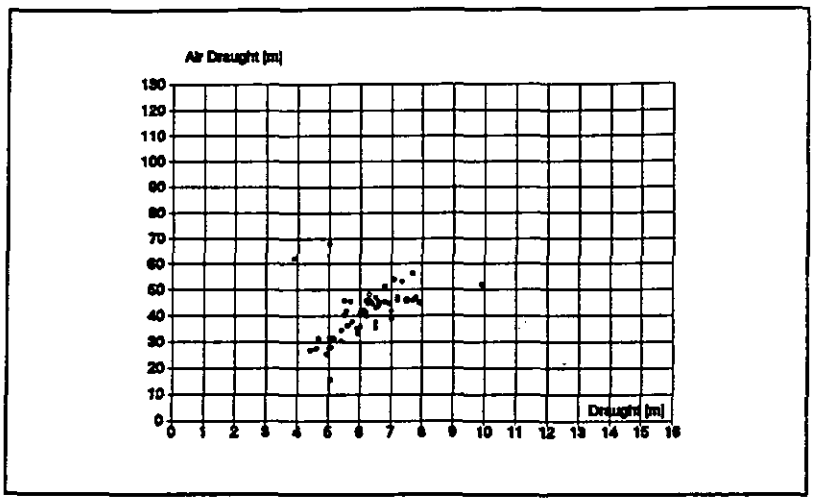


239. Any increase in ship size will usually show in an increase of the ship's draught. In other words, for economic reasons, the ship designer often endeavours to achieve maximum draught. If there are major limitations to the draught, due to sea-lane depths in the waters in which the ship is to sail, the limitation-determined draught is taken as the first main dimension.

240. Table 14 depicts the air draught of the vessels listed in Annex 42 as function of their draught. It can clearly be seen that air draught increases as draught does.

[1] Bhattacharyya R., *Dynamics of Marine Vehicles*, (1978), p. 498, fig. 16.47, p. 372.

TABLE 14. AIR DRAUGHT VERSUS DRAUGHT FOR PASSENGER VESSELS AND FERRIES GIVEN IN ANNEX 42:



241. Consequently, the table can also be used for extrapolating the main dimensions for a future big ocean going passenger vessel. Assume the draught of the vessel to be 15 m as that is a practical maximum draught for a Baltic vessel. The number 6.6 is chosen for the air draught/beam -ratio, which is a mean value for the existing large passenger vessels. From the table it can now be concluded that with a future increase of ship draught into the maximum allowable Baltic draught (15 m), ships might have an air draught of about 99 m and in any case much in excess of 65 m.[1]

Section III. The Effect on Finnish Shipbuilding

A. THE DEVELOPMENT OF FINNISH SHIPBUILDING IN THE POST-WAR ERA: TOWARD SPECIAL SHIPS

242. In relation to the size and industrial capacity of the country, Finland possesses a well developed and efficient shipbuilding industry. Its market share of world production (per cent of CGT) has in 1989 and 1990 been 3.3.

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[1] A more detailed discussion about the theoretical background for the choice of the main dimensions for a vessel is given in Annex 47.

243. The repercussions of the second World War were the driving force behind the development of the Finnish shipbuilding industry. The war reparations to the Soviet Union included more than 500 vessels, which required building up a substantial shipbuilding capacity. Since then, however, the industry's survival has been based on its competitiveness.

244. In the early 1960s the structure of ships ordered from Finland underwent a substantial change; the size of the vessels to be built grew and their number declined to a quarter of its former level. This required that Finnish shipbuilders come up with far-reaching decisions. Some of them transferred to new sectors while those who remained began to implement large-scale investments. Instead of building giant production facilities for super-size vessels - as happened in the leading shipbuilding countries - the Finnish yards concentrated on developing suitable types of their own. Highclass design and wide experience gained in building a highly diversified range of special vessels have since then formed the basis of the Finnish shipyards' success.

245. In the 1960s Finland rose to 15th place in the international shipbuilding league, with an approximate 2 per cent share of the world market. New vessel types such as car ferries and passenger liners, cruise vessels, cable layers, gas-turbine powered warships, large icebreakers etc. were added to the range of products. In collaboration with the University of Technology, a new national shipbuilding laboratory was established.

246. Since then, the Finnish shipbuilding industry has been producing the kind of tonnage for which demand would remain relatively constant regardless of cyclical fluctuations and which would ensure the existence of a regular group of customers. This has led to specialisation, with the Finnish yards prepared to supply even one-off orders. This is backed up not only by production equipment designed for flexibility, but also by exceptionally large production planning resources.

TABLE 15. SHIPBUILDING PRODUCTION IN 1976 - 1988 (MILL. FIM):

	1976	1977	1978	1979	1980	1981	1982
DOMESTIC	263.2	293.2	182.4	142.6	363.7	849.4	343.9
EXPORT	1.875.8	2.311.3	2.878.1	2.188.7	2,018.5	2,525.9	4.466.2
% OF THE TOTAL METAL AND ENGINEERING EXPORT	22.4	20.4	23.6	15.8	13.4	13.5	19.6
	1983	**1984**	**1985**	**1986**	**1987**	**1988**	
DOMESTIC	100.0	927.4	1. 334.1	1.732 .1	833.6	210.0	
EXPORT	5.816.1	6,624.9	4,756.3	3,955.0	2,224.9	3,592.3	
% OF THE TOTAL METAL AND ENGINEERING EXPORT	23.3	23.1	15.9	12.4	6.8	9.8	

247. In the course of the past 30 years, metal and engineering has grown into an export industry equalling the forest and paper sectors in volume, value and manpower. In 1960 the metal and engineering industries accounted for 15 % of Finnish exports, the forestry industries for 68 %. The corresponding figures for 1990 were: metal and engineering 44 % and forestry 39 %. Within the metal and engineering sector, the shipbuilding and offshore equipment industry has played a prominent role. In the 1980s the share of these subsectors of the total metal and engineering exports was over 20 % at its highest (24 % in 1983). The export figures do not include ships delivered to domestic buyers, such as icebreakers,

icestrengthened merchant vessels and state-of-the-art passenger ships. The relative decrease of the share of shipbuilding and offshore of the exports of the total of metal industries in 1985-7 reflects partly the increase in domestic demand, partly the increase of the production of metal industries generally.

248. In all countries, the domestic content of the shipbuilding and offshore industries is very high; in Finland it is over 80 %. An extensive subcontracting activity on this subsector has grown in the country. Some of the subcontractors have succeeded in establishing themselves on the international market as well.

249. A structural rationalization was successfully carried out within the Finnish shipbuilding industry at the beginning of the seventies. Smaller shipyards were merged with larger shipbuilding groups. Larger companies had better resources to modernize the viable shipyards than small independent companies would have had. During this period three completely new yards were started in Finland.

250. In 1973 the state-owned Valmet built a new shipyard outside Helsinki with a capacity to construct vessels of up to 250 000 DWT. Another shipyard was established in Turku by Wärtsilä (Now Kværner Masa-Yards) in 1975. In 1972 the Rauma Repola company constructed extensive engineering works on the Finnish west coast near the town of Pori. With the increasing demand for equipment for the offshore sector, this company has become a considerable producer of offshore craft.

251. The three new yards are among the most up-to-date facilities in western Europe. The following list shows the extremely diversified character of the products from Finnish yards:

ORDERS ON HAND WITH FINNISH SHIPYARDS IN 1983:

Type of vessel	Number	GT
River-sea vessel	2	3,800
Research vessel	3	2,400
Research vessel	1	1,800
Research vessel	5	1,650
Supply vessel	4	1,580
Tanker	1	5,000
Arctic tanker	5	5,500
Ro-ro vessel	1	8,400
Ro-ro vessel	2	5,000
Ocean going tug	3	1,500
Passenger vessel	2	2,050
Patrol vessel	1	130
Dry cargo vessel	4	17,910
Barge carrier	2	8,900
Accommodation vessel	4	4,465
Ferry boat	1	227
Icebreaker	6	1,800
Supply vessel	2	2,600
Passenger vessel	2	2,600
Luxury cruise vessel	1	40,000
Luxury cruise vessel	2	4,000
Car/passenger ferry	2	35,000
Dry cargo vessel	3	18,627
LPG-carrier	2	12,000
Dry cargo vessel	3	18,627

Multi-purpose vessel	3	31,000
Dredger	2	2,300
Heavy lift vessel	3	17,000
Product tanker	2	14,000
Dredger	2	2,500
Heavy lift vessel	1	24,000
Oil drilling rig	3	–
Oil drilling rig, jack up	2	–
Total	82	

B. LARGE PASSENGER AND CRUISE VESSELS

252. Kværner Masa-Yards Ltd. is a Finnish shipbuilding company owned by the Norwegian Kværner AS. With 4000 employees it has a capacity of 60,000 tonnes of steel per year and ranks as the largest shipbuilding company in Finland. Kværner Masa-Yards holds a substantial market share in cruise ships, which is one of the shipbuilding segments where West European yards are quite competitive. The Company's present products include some of the world's largest passenger vessels. Its future designs include ships with an air draught far in excess of 65 metres.

253. Since 1961, over 50 passenger ships have been delivered by this company and its predecessor, Wärtsilä Oy. An overview of these ships graphically shows the growing trend of the passenger ships built by the yard during the past thirty years[1]. The largest and newest cruise ferry is the *Silja Symphony*, with a draught of 6.4 m and air draught 53 m.

Mention has already been made of the cruiser M/V *Fantasy* which was delivered by this company in 1990 with an air draught of about 56.3 and water draught of 7.7 m.

254. The products of Kværner Masa-Yards Ltd. are the result of technological innovations, market needs, economical viability and business opportunities. In many cases, the company has become engaged in projects where development and adoption of new technology has been an integral part. Therefore, future orders cannot be reliably extrapolated from the present situation. Furthermore, when one tries to draw trends for the future, it must be kept in mind that individual ships can only be considered as examples in each market segment.

255. The company's shipbuilding facilities are located in Helsinki and Turku. Both shipyards have the capacity to construct vessels far in excess of the height of 65 metres. The *Turku New Shipyard* was completed in 1975 and further developed in the 1980s. Its large modules from the fabrication shops can be handled by the dock's 600 tonne capacity gantry crane, which has an overall lifting height of 85 m. [2] In the present *facilities in Helsinki*, the main assembly facility is a totally covered drydock, 208.5 m long * 34 m wide * 9.5 m deep. The Yard currently employs around 1300 persons. The Yard has gained experience in specialised vessels such as icebreakers, cruise ships, cable ships, naval craft.

256. The company is continuously involved in the development of future cruise liners and ferries, including faster ships, larger ships, floating self-propelled resorts, sailing ships and so-called "SWATH" ships[3]. The reason for the increased size of these ships is the economy of scale. Larger vessels can accommodate larger numbers of passengers.

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[1] Annex 48.

[2] These dimensions are pictured in Annex 49.

[3] Two designs for such vessels are depicted in Annex 50.

257. The development of multihull vessels presents an important shift towards increasing ship height. In a multihull ship stability is not endangered by a marked increase in height. The technical evolution is represented below (see illustration in *Figure 16*).

258. The multihull arrangement avoids an extremely long and narrow construction with unfavourable manoeuvrability and weak stability. It gives the vessel ample stability and manoeuvring characteristics, keeps the distances onboard within reasonable limits, while offering roomy indoor and outdoor public spaces and without overloading the longitudinal strength of the vessel.

C. INDUSTRIAL AND SERVICE VESSELS

259. In the future, the vast oil and gas resources on the Eurasian continental shelves in the Arctic ocean will become economically viable for exploitation. Large size icebreaking vessels, drilling equipment, support equipment and transport tonnage specially designed for that environment will then be constructed. Kværner Masa-Yards intends to participate in this development.

260. Several offshore supply ships, diving support ships, crane vessels, heavy transport ships have already been delivered. Noteworthy is the 1600 ton crane ship *Stanislav Yudin*, pictured below in *Figure 17*. The dimensions of this ship are as follows: draught 5.0 m, air draught 63.2 m.

261. The company has delivered seven 75,000 m3 LPG/ammonia tankers. As the demand for liquid natural gas carriers (LNG) is quickly growing, and as there is substantial know-how within the Kværner group, this company is also involved in future LNG ship projects. Typical delvieries of other special ships have been cable layers, dredgers, research ships, naval vessels. Also container ships, LASH barge carriers, RoRo ships, chemical tankers, product tankers, arctic transport ships, reefer ships, push barge systems are included in the list of products.

D. OFFSHORE CRAFT

As we have seen, the most immeditate effect of the planned East Channel bridge is to close off navigation through the Great Belt by drill ships, semisubmersible drill rigs and jack-up rigs.

1. General

262. Rauma-Repola Offshore (RRO) builds offshore craft in Finland for the international offshore oil and gas exploration industry. Construction of such craft was started at the Mäntyluoto Works of Rauma-Repola in the city of Pori in 1972. Since that time 23 jack-ups, semisubmersibles and drillships have been delivered from the yard [1]. Two of these were multiservice semisubmersibles without a drilling derrick. Two jack-ups were delivered to the Vyborg Shipyard in Russia with an unfurnished deck. The Russians installed e.g. their drilling equipment onboard. The number of semisubmersibles built by Rauma-Repola makes the company the biggest builder of this type of craft in Europe.

263. The following three tables list all the offshore craft built by Rauma-Repola Offshore as well as examples of tendered craft, annual deliveries of MODUs world wide and from RRO as well as MODUs presently under construction. (*Tables 16-18.*)

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[1] See Annex 51.

Figure 16

"FROM MONOHULL TO MULTIHULL"

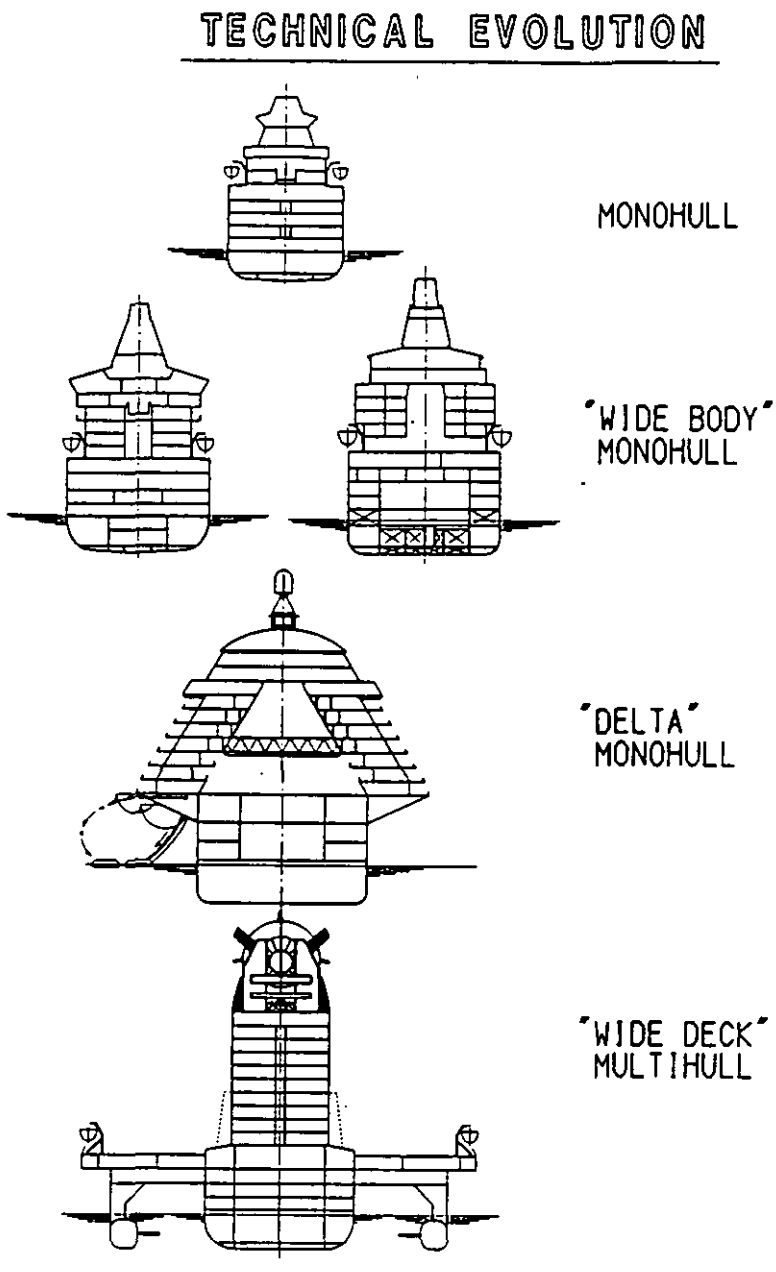


Figure 17

TABLE 16. OFFSHORE CRAFT BUILT BY RRO AND EXAMPLES OF TENDERED PROJECTS

A. SEMISUBMERSIBLES

BUILT 1974-79 **Design**	**AIR DRAUGHT (M)**	**WATER DRAUGHT (M)**
Pentagon 84	96,7	11,8
Pentagon 85	96,7	11,8
Pentagon 86	96,7	11,8
Aker H-3	90,0	7,0
Aker H-3	90,0	7,0
Aker H-3	90,0	7,0
Aker H-3	90,0	7,0
Aker H-3	90,0	7,0
Aker H-3	90,0	7,0
BUILT 1980-89 **Design**		
Ocean Ranger	112,2	7,5
MSV	66,6	11,5
Friede & Goldman L907	106,2	7,5
Friede & Goldman L907	106,2	7,5
Friede & Goldman L907	106,2	7,5
TENDERED 1984-89 **Design**	**AIR DRAUGHT (M)**	**WATER DRAUGHT (M)**
Trendsetter	102,0	13,0
RR-2952	101,3	11,6
Ultra Yatzy	83,6	11,8
Goodrich	109,0	12,2
RR-2152C (Floating Production Vessel)	abt. 65,0	7,6
TENDERED 1990- **Design**		
Reading & Bates	abt. 95,0	abt. 14,0

B. JACK-UPS

BUILT 1985- **Design**		
Gusto	144,9	10,3
Gusto	144,9	8,5
Minsudprom*	140,0	over 8,0
Minsudprom*	140,0	over 8,0

* Built in cooperation with the Vyborg Shipyard in Russia.
Draught information as received from the yard.

(JACK-UPS, CONTINUED)

TENDERED 1988- Design	AIR DRAUGHT (M)	WATER DRAUGHT (M)
ETA	136,9	8,0
TPG-500	160,0	10,0
Friede & Goldman Mod VI	152,3	10,0
Friede & Goldman Mod V	155,0	8,0
Friede & Goldman Mod II	127,6	7,0
MSC *CJ62 S120*	*159,8*	*8,6*
MSC CJ54	152,0	8,0
Friede & Goldman	204,8	9,2
Reading & Bates	186,0	8,0
King Kong	158,4	11-12

C. DRILLSHIPS

BUILT 1981- Design		
Gusto Pelican	80,3	7,3
Gusto Pelican	80,3	7,3
Gusto Pelican	80,3	7,3

TENDERED 1989- Design	AIR DRAUGHT (M)	WATER DRAUGHT (M)
Gusto Pelican (Repair work)	80,3	7,3
Gusto Pelican (Repair work)	80,3	7,3

D. OTHER OFFSHORE CRAFT

TENDERED 1985- Design		
RR-3090	107,0	8,0
RR-3190	106,0	8,0
MSV	60,4	15,2
GVA 4500 (Floating Production Vessel)	abt. 60,0	12,8

E. OTHER OFFSHORE PRODUCTS

TENDERED 1985- Design		
Drilling module of a fixed production platform	72,3	abt. 3,0
Drilling module of a fixed production platform	52,0	abt. 3,0

TABLE 17. ANNUAL DELIVERIES OF MODUS WORLD-WIDE AND FROM RAUMA-REPOLA OFFSHORE:

YEAR	WORLD-WIDE DELIVERIES	DELIVERIES FROM RRO	RRO'S SHARE %
1974	28	1	3,6
1975	39	2	5,1
1976	41	2	4,9
1977	36	4	11,1
1978	18	1	5,6
1979	32	0	0
1980	35	1	2,9
1981	85	1	1,2
1982	114	2	1,8
1983	67	1	1,5
1984	18	2	11,1
1985	16	2	12,5
1986	9	0	0
1987	7	0	0
1988	9	0	0
1989	2	0	0
1990	4	0	0
1991*)	3	1	33,5
TOTAL	573	20	3,5

*) By the end of October, 1991

TABLE 18. MODU'S UNDER CONSTRUCTION IN NOVEMBER 1991 (WORLD-WIDE):

MODU type	Client	Builder
Jack-up	Minsudprom	Vyborg Shipyard and Rauma-Repola Offshore
Jack-up	National Iranian Oil Company	Rauma-Repola Offshore
Jack-up	Brobekk	Marathon Le Tourneau
Jack-up	Maersk Drilling	Far East Levingston
Jack-up	Maersk Drilling	Far East Levingston
Jack-up	Santa Fe Drilling	Far East Levingston

264. Considerable investments have been made by Rauma-Repola Offshore to meet the changing demands of the industry. During the past 20 years the market has evolved through four generations of offshore mobile craft technology. With the investments made by RRO in the production facilities the capability to build all MODU designs has been maintained. The most essential physical parameters of a modern offshore craft yard are the size of the assembly, transfer and transportation facilities. During the 1980s RRO focused its investments in improving its competitiveness in those areas. Although some sections or other parts of offshore mobile craft may be subcontracted out of the yard to improve cost competitiveness the assembly and all final phases of the delivery take place at the company's own yard.

265. The following investments have been made by Rauma-Repola Offshore to facilitate the competitive construction, transfer and transportation of all types of heavy offshore products

1 Assembly yard with offloading structures and transfer rail systems;

2 Jack-up assembly supports;

3 Load-out/transportation barge;

4 Deep water (30 m) basin.

266. These investments, totalling some 61 million Finnish Markkas (USD 15,2 million), are additional to the investments made as the yard was established. Through these improved facilities a construction time 6 months shorter for semisubmersibles and 2 months shorter for jack-ups is achieved compared with the traditional assembly method.

267. The deep water basin was built as an integral part of the 10 km long deep water channel from the open sea to the Tahkoluoto harbour of the City of Pori (for illustration, see *Figure 18*).

268. The basic investments in deepening the channel and the harbour basin to 17,5 metres (respective draught 15.3 m, cf. Annex 4) in 1983-85 amounted to 113 million Finnish Markkas (USD 28,2 million). Dredging the deep water basin to 30 metres cost an additional 11 million (USD 2,7 million).

269. The deep water basin area is used as the base for work on offshore craft whose draught is too deep for floating to the quay of the yard. The basin is also used for mating operations where the hull of a semisubmersible is lowered to allow the floating of the deck on top.

270. The resources within the domain of Rauma-Repola's offshore industry include the main yard at Mäntyluoto in Pori, the Kalajoki Works and a big engineering group, now organized in a separate company PI-Rauma Oy. All these resources are needed and used in a construction project for an offshore mobile craft. The total number of employees involved in these projects is appr. 1000.

271. The market for new offshore craft has been very cyclical since the early 1970s. Consequently the work load at RRO has varied considerably. As a result of the higher workloads, Rauma-Repola Offshore has increased its own work force to 1500; there has been a corresponding increase in the work force of subcontractors at the yard.

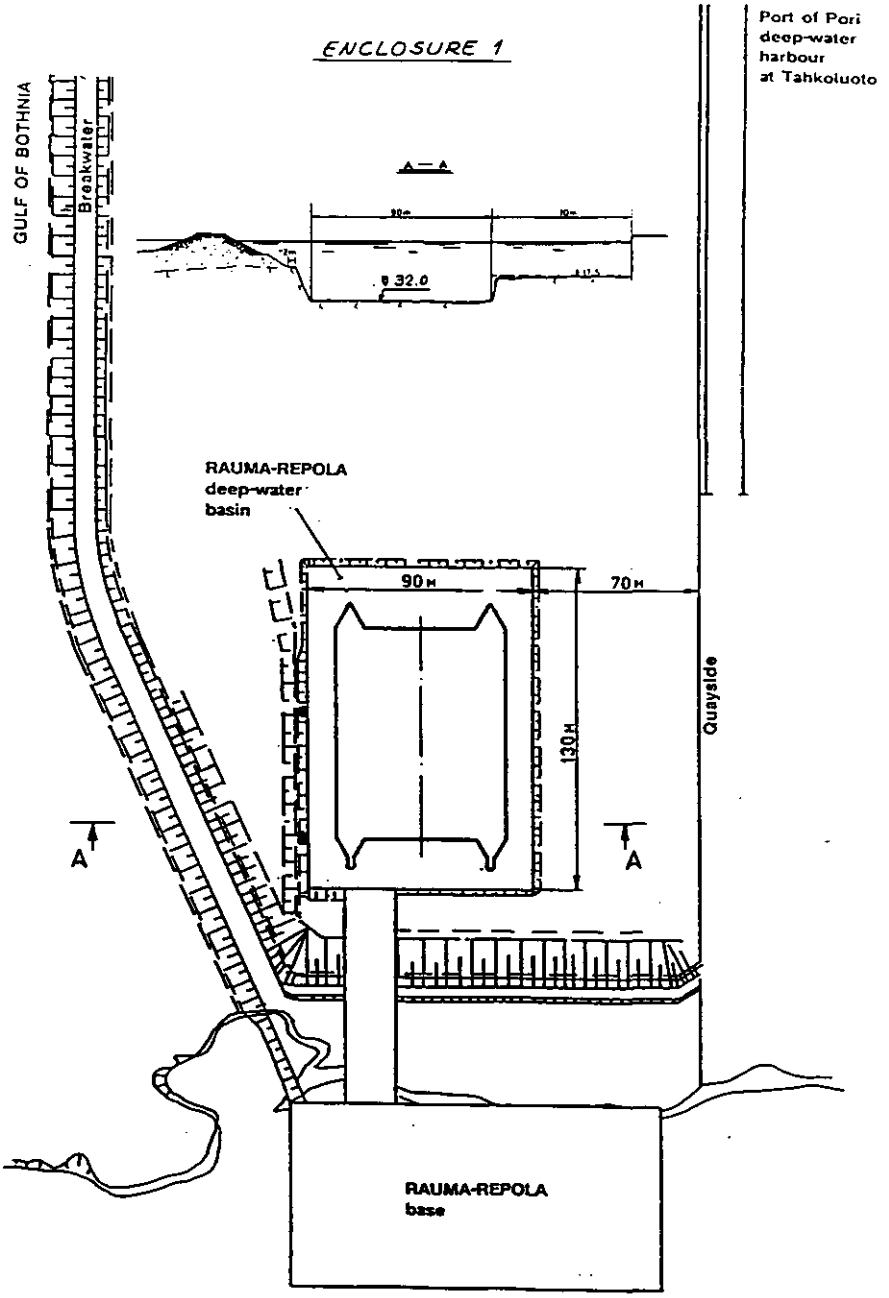
272. The economic feasibility of RRO's MODU construction is very sensitive to any changes in the assembly process. Both in respect of the delivery time and construction cost it is essential that the craft is completed in Finland. If this were not possible doubling of many costs could not be avoided and the delivery would definitely be delayed for several weeks. This would not only cause additional construction and interest cost but also disqualify RRO from what is a highly competitive market.

273. Rauma-Repola builds all three types of offshore craft. It is one of the few builders of heavy offshore craft in the world. This is shown in the references of the MODUs delivered and in the list of rigs under construction at this writing, November 1991. The facilities and the production organization of RRO have been developed to meet the competitive requirements of turn-key deliveries of MODUs in the heaviest class.

274. In addition to MODUs the international offshore oil and gas industry needs other craft as well, for example vessels for oil and gas production. RRO has developed its own semisubmersible production vessel design and has been several times in a position to bid on building a floating production vessel based on its own or somebody else's design. These have normally drilling equipment and derrick and thus an air draught higher than 65 m.

Figure 18

RAUMA-REPOLA DEEP WATER BASIN



275. Other offshore craft are vessels for service and support purposes, such as multi-service vessels (MSVs) and diving support vessels (DSVs). RRO has built two MSVs and has been in a position to bid on several others. Typical of these craft is a heavy propulsion system for keeping the craft positioned when it is operating. The propulsion system gives the craft a deep draught.

2. Outlook

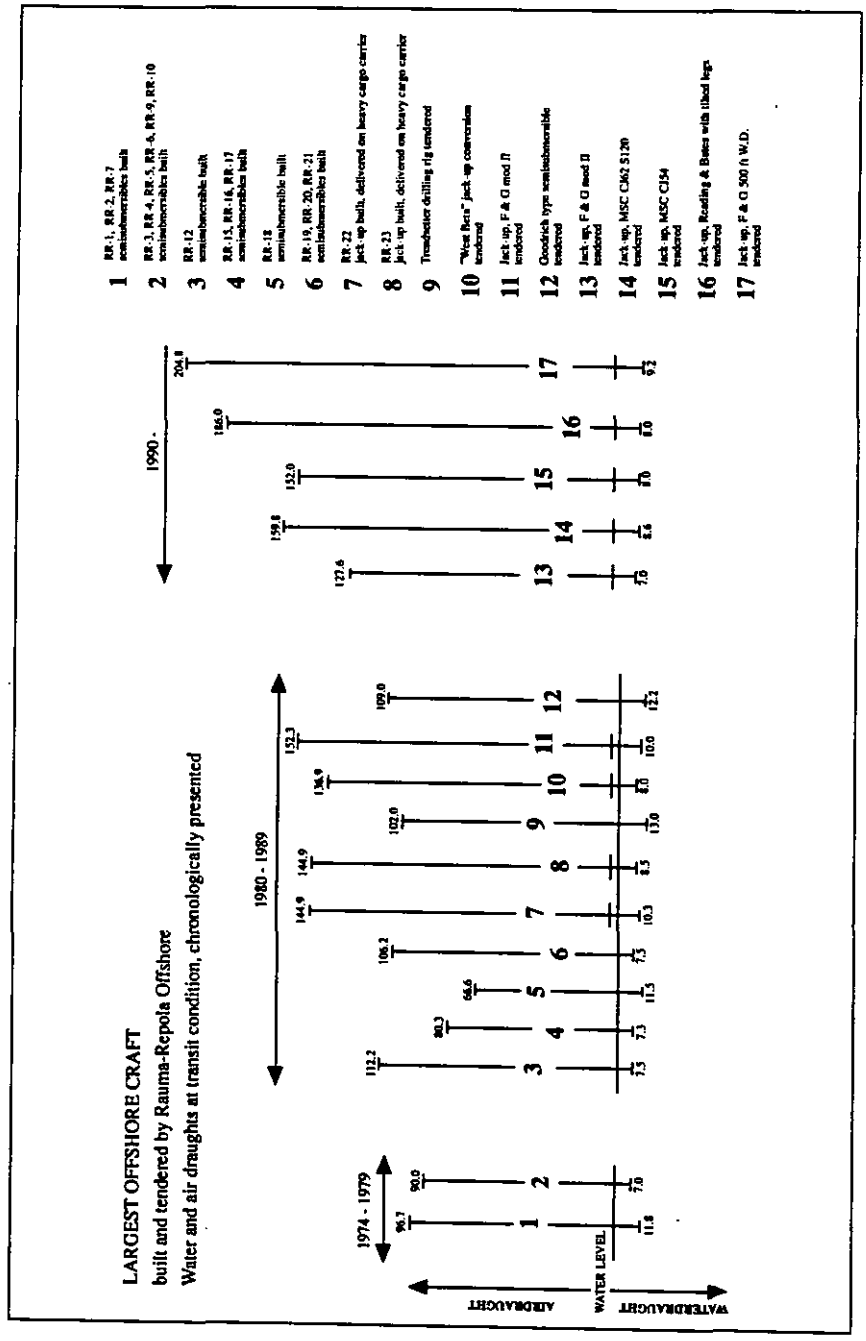
1. The Movement to Heavier Craft

276. There is a growth trend both in the air draught and the water draught of offshore craft. The increase in the air draught of jack-ups is due to the lengthening of legs. Some of the newest designs exceed 200 m. New technology allows the use of jack-ups in deeper waters than hitherto. Longer legs are therefore required which makes the whole craft heavier. Excluding the smallest, the jack-ups tendered since 1990 have a transportation draught of at least 8.0 m.

277. The need to drill for oil and gas in deeper waters than before also influences semisubmersible designs. In order to be able to work in deeper waters and to drill deeper the semisubmersible has to carry heavier loads on its deck. This makes the MODU itself bigger and heavier.

278. The trend of the MODU air and water draughts, based on designs built or bid by RRO is shown below.

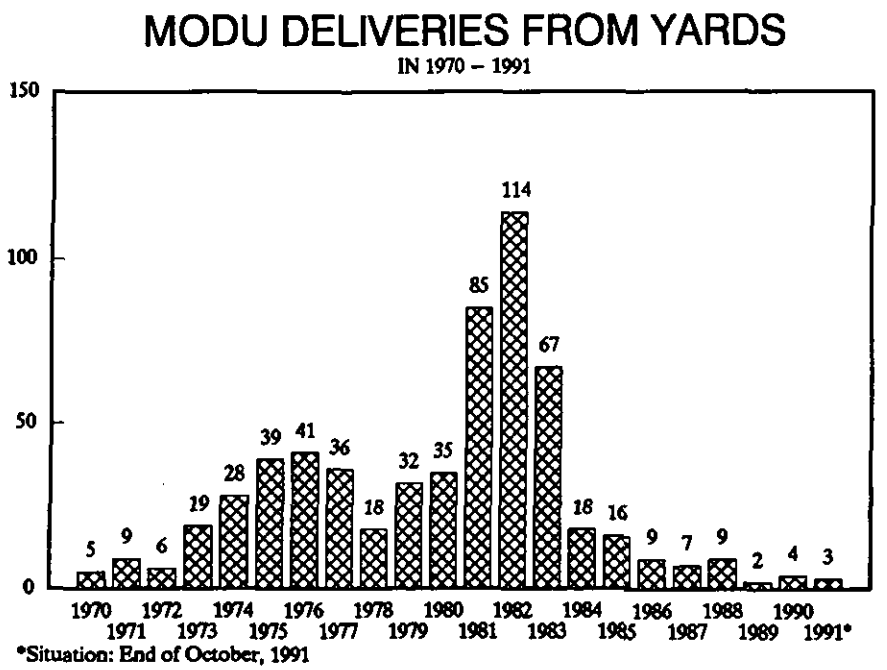
TABLE 19. TREND OF MODU AIR AND WATER DRAUGHTS:



2. The market for offshore craft

279. The cyclical nature of the international MODU market is pictured in table below.

TABLE 20: MODU DELIVERIES 1970-91:



*Situation: End of October, 1991

280. The number of MODUs delivered annually during this period varies from a high of 114 in 1982 to a low of 2 in 1989. A rig builder like RRO has to accommodate itself to these changes still maintaining the investments and capabilities on a reasonable level at all times.

281. The number of internationally marketed *competitive* offshore craft is 554 with 373 jack-ups, 151 semisubmersibles and 30 drillships[1]. (The total numbers for drillships, semisubmersibles and jack-ups are contained in paragraphs 164, 169, 173 and 179 above.) Thus, there are over 100 MODUs not counted in the competitive fleet any more. The average age of the competitive fleet was in the summer 1991: jack-ups 12 years, semisubmersibles 13 years and drillships 14 years. In 10 years this fleet will be on the average well over 20 years old, higher than the age of MODUs deleted from the fleet in the 1980s. In the higher scenario with a scrapping age of 20 years, some 380 of the existing MODUs will be deleted by 2002, and in the lower scenario with a scrapping age of 25 years this competitive fleet would be reduced by some 140 units. Currently there are only five new MODUs under construction for the international drilling market.

[1] *Ocean Industry*, September 1991, pp. 122-123.

TABLE 21. THE AGE PROFILE OF MODU FLEET:

Table 3—Age profile of MODU fleet, July 1991

	Age in years				
Quantity	**1-15**	**16-20**	**21 +**	**Total**	**Av. age**
Jack-ups	303	43	27	373	12
Semis	95	48	8	151	13
Drillships	21	9	0	30	14
Fleet	**419**	**100**	**35**	**554**	
Utilization, %					
Jack-ups	79	65	37	75	
Semis	85	71	25	77	
Drillships	52	33	N/A	47	
Fleet	**79**	**65**	**34**	**74**	

Table 4—Rig scrapping, 1983-89

Year	Number/Av. age when scrapped		
	Jack-ups	**Semis**	**Drillships**
1983	1/26	0	1/36
1984	1/28	0	1/16
1985	1/16	0	0
1986	7/22	3/19	1/20
1987	1/30	2/18	2/19
1988	2/23	2/19	4/25
1989	7/22	3/18	0
Total	**20/22.7**	**10/18.5**	**9/23.3**

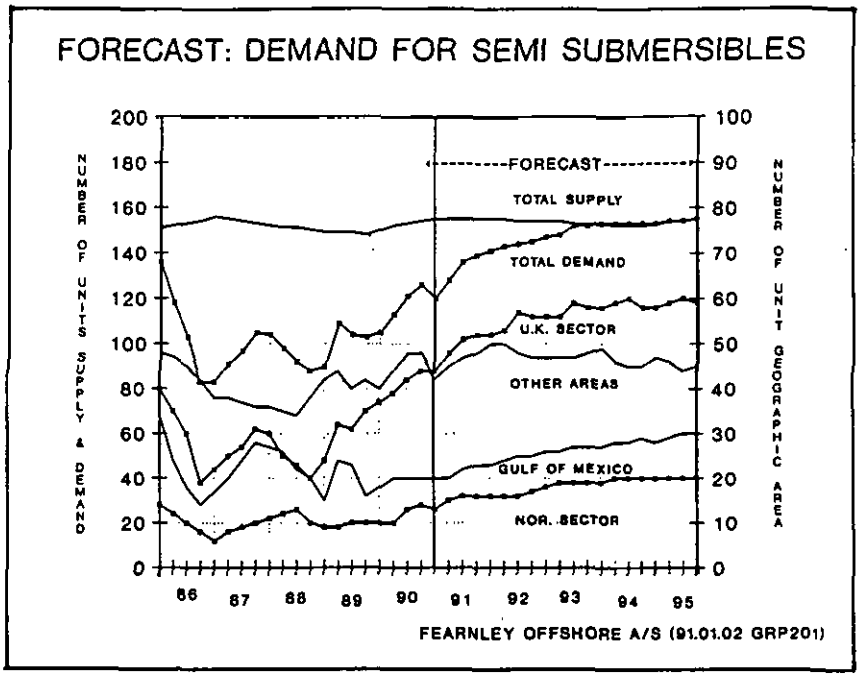
282. Taking into consideration the need to replace scrapped units and the forecast growth in the demand for drilling services, the number of new MODUs to be built by the year 2002 will be 150-400. Applying the average market share of RRO in the past deliveries and MODUs under construction the number of offshore craft to be built by RRO during this period will be 8-20. This does not include other offshore craft like floating production vessels which RRO is frequently bidding on.

283. The need for new MODUs or extensive modernization of existing units is additionally boosted by changes in the technical and regulatory environment, such as increasing loadcarrying capacity, new classification and insurance requirements as well as changes in oil company guidelines.

TABLE 22. FORECAST (FEARNLEY OFFSHORE): DEMAND FOR SEMISUBMERSIBLES:

"Worldwide

To summarize our forecast, we refer to the graph below. We anticipate to reach a permanent 90 % utilization by mid 1991. This is the level at which the market is considered to be in balance. Approaching this level, we expect the dayrate to show further improvements compared to the current level.



As can be seen, the strongest pick-up for the semi market has been in the U.K. sector of the North Sea. We expect that close to 50 % of the competitive semi fleet will be employed in the North Sea area, and 20 % in the Gulf of Mexico."

284. RRO has maintained its position as a major MODU builder during the depression years in the market, participating in the construction of three units during the second half of the 1980s and the beginning of the 1990s. Having succeeded in this, RRO is one of the few builders of heavy MODUs active today.

3 . The dismantling option

285. RRO receives invitations to bid on offshore craft from international drilling contractors. The contractors base their inquiries on designs preferred by oil companies - their own customers. The inquiry package is the same for all bidder candidates. If the invited yard decides to bid and submits a proposal interesting enough to the drilling contractor this

will audit the yard to make sure that the yard is capable of delivering the MODU as specified and on time. International competition will then weed out builders who cannot fulfil the common requirements.

286. A height of 65 metres for the Great Belt bridge would severely damage RRO's competitiveness on the international market. RRO could not deliver MODUs ready to work from its yard at a competitive price and on time.

a) Dismantling the derrick?

287. In RRO's market segment of heavy and harsh environment offshore craft there has never been an inquiry to bid on a unit with a derrick and the related drilling systems to be disassembled during transportation or operation. Should this for any reason be done as a part of the delivery of a newbuilt MODU the builder would automatically be disqualified from the competition due to extra costs[1] and extended delivery time[2]

288. Before transporting a new MODU from the yard to its first operating location extensive test runs and trials have to be carried out. The systems to be tested number around 100, most of them applying also to the drilling system. It would be totally unfeasible to think of disassembling, reassembling and testing again these systems after the MODU has been delivered from the yard.

289. To demonstrate the unfeasibility and high cost of disassembling and reassembling the kind of derrick concerned it can be mentioned that these operations would have to be extended to the pipe-handling winch, motion compensator as well as to the mud, cement, cooling, pressurized air, instrumentation, fire and alarm piping, etc. It would be essential that the disassembling and reassembling of the derrick with its numerous systems were carried out by the same people. Part of the crew of the craft would need to stay on board to run the utilities.

290. To postpone the assembly of the derrick to be carried out somewhere on the other side of the Great Belt is simply not feasible from a logistical and economic point of view. The logistics of RRO's MODU construction are based on parallel progress of different parts of the unit to cut construction time. Leaving part of the work uncompleted at the yard would destroy the competitiveness of the whole construction process.

b) Dismantling the legs of a jack-up?

291. RRO has never received a request to bid on a jack-up whose legs were intended to be cut and joined somewhere outside the yard. If such a requirement were for some reason imposed on RRO alone the company could be disqualified from the competition on the basis of extra costs[3] and extended delivery time[4]. Such a requirement would interfere with the efficient use of RRO's assembly investments and with the logical sequence of completing the work in a competitive manner[5].

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[1] Annex 37.

[2] Annex 38.

[3] Annex 39.

[4] Annex 40.

[5] Cf. Annexes 53 and 41.

c) Dismantling thrusters?

292. Should a semisubmersible designed and built with thrusters be transported through an alternative channel to that of the Great Belt, its draught could technically be reduced by removing the thrusters for passing the place with draught restrictions and reinstalling them after this passage. Considerable extra cost[1] and loss of time[2] are caused also by these measures.

293. In the case of delivering a new MODU from the yard, as has been the case with Rauma-Repola, every day of stoppage during the transportation would cause a considerable interest cost to the owner as well as lost revenue because he cannot contract his unit for drilling during the extra delivery time. The revenue made in the North Sea with a harsh environment rig is in the range of 100.000 US dollars per day.

Section IV. Other Effects

A. EFFECTS ON EXCEPTIONALLY LARGE TRANSPORT: CRANES - KONE OY, A CASE STUDY

294. We have already seen that the Great Belt bridge will effectively prevent the use of heavylift transport ships as a means to move offshore craft between the North Sea and the Baltic. Another type of obstruction caused by the Danish bridge plan affects the *transport of large cranes.*

295. The Finnish company KONE Corporation has during the last 20 years carried out 150 transports of 220 cranes[3]. The typical transportation height of such cranes varies between 55-100 m. It is estimated by the KONE Corporation that in the future such transports will take place through the Great Belt approximately twice a year.

296. Annex 57 contains a detailed survey of the transports undertaken by KONE since the inception of its transportation activity in 1969. Though most of the past transports have taken place inside the Baltic Sea, 27 transports have been taken from the Baltic through the Danish straits. The two cranes delivered to Gothenburg, Sweden, (North Sea), for example, had a height of 100 m (For the destinations of Kone crane transports, see *Figure 19.*).

297. Cranes are transported basically by using two methods. The first method is the towage of the crane on a barge. Though originally intended for short distances, towage can also be used for ocean voyages. Kone has had towage distances of over 7.000 nautical miles (for illustration: see *Figure 20*).

298. The second method is to use heavylift transport vessels to undertake the carriage. The advantage of this mode is its much greater speed. These vessels can attain a speed of 12 to 15 knots in comparison to the barge speed of 4 to 8 knots. With the manoeuvrability features of these vessels, most of the deficiencies of a barge towage system can be avoided. As pointed out in paragraphs 186-188 above, carriage by heavylift ships is an inherently much safer alternative than towage (For illustration, see *Figure 21.*).

B. EFFECTS ON OFFSHORE ACTIVITY IN THE BALTIC

299. In Section I above, we have surveyed the effects of the Great Belt bridge plan on passage by offshore craft mainly from the Baltic to the North Sea. Increase of offshore

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[1] Annex 55.

[2] Annex 56.

[3] Annex 57.

Figure 19

ROUTES USED FOR THE TRANSPORTATION OF KONE CRANES

Figure 20

CRANE BEING TOWED ON A BARGE

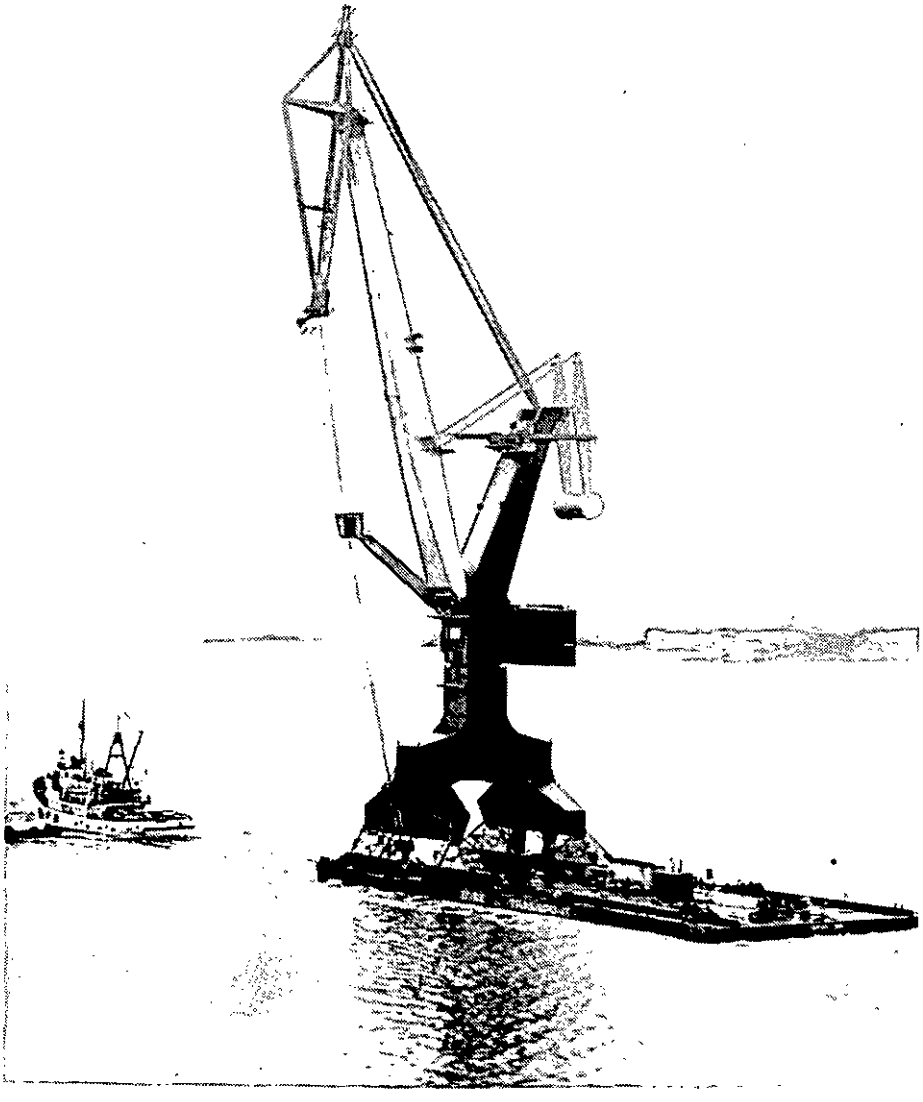
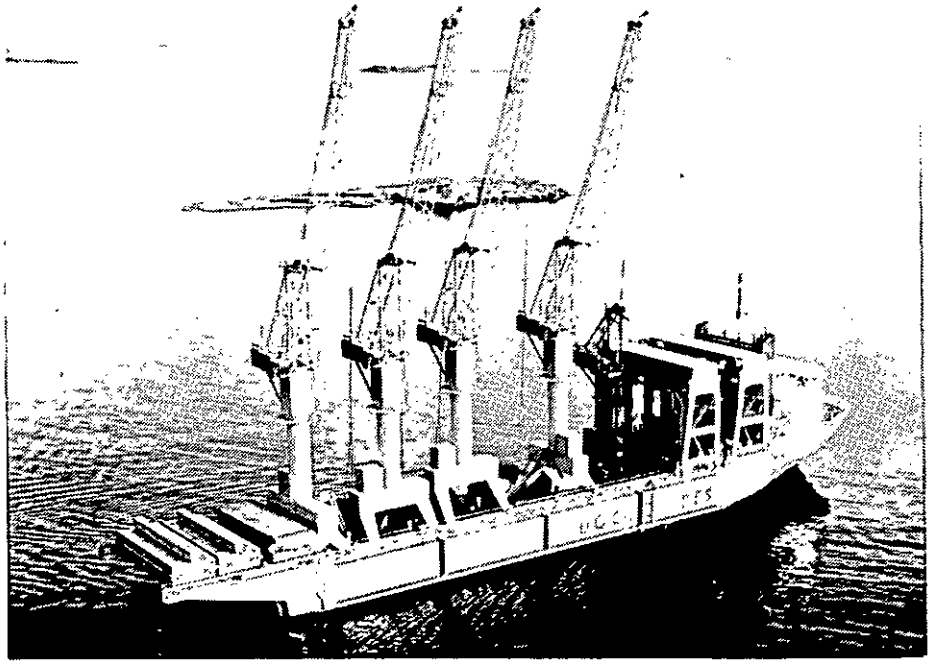


Figure 21

CRANES ON A HEAVYLIFT TRANSPORT SHIP



activity in the Baltic will, however, inevitably increase. As a result, there will also be a need to bring offshore craft from outside sea areas into the Baltic. This section will briefly survey the prospects of developing the Baltic Sea as an oil exploration region.

300. Oil and gas exploration activities in the Baltic Sea started in the late 1970s but the area is still little explored. So far, commercial discoveries have only been made in eastern parts of the Baltic Sea, off Poland and the USSR.

301. In this section, the Baltic Sea and its hydrocarbon potential is covered country by country.

302. Oil exploration on the *Danish* continental shelf started at the beginning of the 1960s. First signs of oil were found in 1966 in the Danish North Sea sector, but the Baltic Sea continental shelf gained interest as a potential exploration area only in the 1980's. The first exploration concessions in the Danish Baltic Sea continental shelf were granted in 1985[1].

303. Two large sedimentary basins with commercial oil and gas potential are located in the Danish Baltic Sea continental shelf. The North German Basin covers a large area both onshore and offshore in Denmark and northern Germany. On the Danish side several onshore wells and one offshore well have been drilled. The offshore well is known as KEGNAES-1 in block 5410/05. The drilling started in August 1985 and was completed in October 1985 after testing the well. No test results are released, but running an expensive test program gives an indication that probably some hydrocarbon shows have been found. A jack-up type drilling rig *Dyvi Epsilon* (now *Neddrill 7*) was used. It has a transit draught of 4 m (13 feet) and its legs are 105 m (344 feet) high. Usually the rig is operating in the North Sea.

304. Perhaps more promising is the Ronne Graben basin on the western side of Bornholm. The geology of this basin is similar to Central Graben in the North Sea where all the current producing Danish oil and gasfields are located. On the SW side of Bornholm several exploration blocks were released in 1985 or later. The area is widely surveyed with seismic vessels and international oil companies are active partners in the concessions. Two wildcat wells were drilled in 1989 and the jack-up type rig *Glomar Moray Firth 1*, normally operating in the North Sea, was used for both. The draught of this craft is 5.3 m (17.3 feet) and leg length 151 m (498 feet). Both wells (PERNILLE-1, April-June '89, block 5514/30 and STINA-1, June-July '89, block 5414/7) have been declared "tight", e.g. no information is available though the operator of Pernille-1, Norsk Hydro, is optimistic about the potential of the area.

305. In 1989 a total of four exploration wells were drilled on the Danish continental shelf, two of which are in the North Sea and two on the SW side of Bornholm in the Baltic Sea. During 1991 and 1992 there will be around five exploration wells being drilled annually, some of which might be located around Bornholm due to concession commitments.

306. *Sweden* has been producing oil on the island of Gotland for decades and the surrounding continental shelf has been systematically explored since the 1970s. The Gulf of Bothnia has been surveyed several times during the 1980s, but is so far kept outside the concession rounds.

307. The 1970s was the most active era in exploration on the Swedish continental shelf, but new optimism and activity has arisen after large oil discoveries off Latvia and Lithuania and the solution of the continental shelf dispute between Sweden and the USSR in 1988. This agreement has released large areas for exploration in the previous "grey zone" on the eastern side of Gotland. A final drilling application was submitted in April 1991 by an

[1] Cf also *Map No. 6* (Danish licence area) and *Map No. 7* (Sedimentary basins in Denmark).

international consortium, the "Grauten Group". If approval is given, drilling should start in the summer of 1992. Potential resources in the area may be as much as 180–240 million barrels. The well site will be located some 10 km north of Klints Bank. A jack-up rig will be utilized. Another important area is that wchich stretches from northern Poland near Gdansk to Öland. Several international oil companies have shown their interest in the potential of these areas by participating in concessions, and seismic surveys are currently being carried out. (Cf. *Map No. 8*: Petroleum Activity - South Sweden).

308. Detailed information on rigs used on the Swedish continental shelf is not available, but at least a semisubmersible type rig *Treasure Seeker* has been used. It operates normally in the North Sea and has a maximum operating depth of 380 m (1250 ft). The height of the hull is 36 m (120 ft) without topsides. Estimated minimum free height is 50 to 70 m. It has a transit draught of 6.8 m (21.98 feet).

309. In both parts of the previously divided *Germany* onshore oil and gas fields have been found. Some of these fields - for example, Kiel and Schwedeneck-See off Kiel - extend into the Baltic Sea continental shelf. Schwedeneck-See is developed with fixed platforms and production is currently about 5000–6000 barrels a day. No information is available concerning the exploration programs or rigs used in the western parts of the continental shelf. However, on the shelf previously governed by GDR the jack-up rig *Petrobaltik* has been used (see Poland). The former GDR's only oil and gas producing firm *Erdgas und Erdoil Gommern* is currently under privatization, and bids from international oil companies have already been received.

310. On the *Polish* continental shelf some commercial oil and gas discoveries have been made but not yet developed. The jack-up type rig *Petrobaltik* has been used. The rig was owned by a Joint Venture company Petrobaltik, and the participants were the USSR, GDR and Poland. The rig is now Polish property, and is offered for use in the whole Baltic Sea. The maximum operative water depth of the *Petrobaltik* is 91 m (300 ft). Its legs are 127.5 m (418 feet) long.

311. Poland is currently opening its onshore and offshore concessions to international oil companies. The first concession round is being planned and some 70 companies have shown interest and are considering whether or not to participate. Norwegian shipbuilder Kværner has signed a letter of intent with Gdnyia Shipyard. Plans include starting a maintainance service for North Sea based drilling rigs. (Cf. *Map No. 9* - Poland and the adjacent area.)

312. *Lithuania* is opening its onshore and offshore oil and gas fields to foreign companies and trying to boost up domestic oil production. Lithuania and Azerbaydzhan signed a technical cooperation agreement in October 1990 providing for assistance to Lithuania in future operations on the Lithuanian continental shelf. Denmark signed a similar agreement with Lithuania in 1991.

313. Eight wells were drilled on the Lithuanian continental shelf by the *Petrobaltik* (see Poland) in the 1970s and 1980s. Three wells were dry but one had oil shows. In 1983 a discovery was made (D-6 field) and four successful wells were drilled to appraise the discovery. The D-6 field is considered commercial and likely to be developed in the near future. A rig utilization is at the moment planned to bring shut-in wells on stream. Some Lithuanian geologists estimate potential undiscovered oil resources on the Lithuanian continental shelf as high as 350 million barrels. (cf. *Map No. 10*: Petroleum Activity - USSR Baltic Area).

314. One discovery was made in 1988-89 on the *Latvian* continental shelf. The reserves are estimated at approximately 50 million barrels.

315. *Kaliningrad Oblast* (Russian Federation): Onshore reserves and production are large, but the continental shelf has not yet been widely explored. Offshore reserves are likely

to be significant due to large discoveries in neighbouring areas on Polish and Lithuanian continental shelves.

316. *Estonia* has no known liquid hydrocarbon reserves, but is an important oil shale producer. The production is from seven underground and four opencast mines.

317. *Finland* has no known liquid hydrocarbon reserves.

318. In conclusion, it may be noted that there is increasing interest in the hydrocarbon potential of the Baltic Sea because of several reasons:

1. Relatively unexplored area.
2. Discoveries are encouraging.
3. Close to existing and future markets.
4. Recent economic and political developments in eastern Europe - need to increase domestic oil production in new independent states.
5. Non-hostile environment - smaller fields can be commercial.
6. Global supply and demand of oil is in balance increasing production capacity in mature oil producing regions can be expensive.

319. Every country around the Baltic Sea has foreseen the possibility for offshore oil exploration in their legislation, whether directly in petroleum legislation or in mining legislation (as Finland).

320. During the last decade at least three different drilling rigs (two jack-ups and one semi-submersible) have been transported through the Danish straits from the North Sea to the Baltic Sea for offshore oil and gas exploration. As activity increases, more rigs will need to pass into the Baltic.

321. The only rig permanently based in the Baltic Sea is the jack-up *Petrobaltik*. As offshore activity will increase more exploration craft are needed. During exploration activity, it is customary, for the contractor to use second-hand rigs previously employed elsewhere e.g. in the North Sea. For many of such craft, the Great Belt bridge will present an effective hindrance.

322. In general, oil drilling is carried out by independent contractors. The contractor selects the most suitable drilling unit according to the special conditions of the drilling site. Day rate for the drilling rig is not the only criterion for selection: drilling location, water depth, formation characteristics (depth, temperature, pressure, stratigraphy), drilling unit capacities (mud pits, water pits, fuel storage, deck load limit, cranes, testing equipment) etc., all play a role. Rig mobilization costs are normally small compared to total drilling costs, and therefore moving rigs half way round the world is not uncommon.

323. The Baltic Sea is not a big enough market for several different drilling units operating only locally. If the Baltic Sea were separated from other offshore exploration regions, oil companies would be forced to use a monopolistic contractor - with all the additional costs and other problems such a position would entail.

CHAPTER VII

THE UNIQUENESS OF THE GREAT BELT BRIDGE

Section I. The Great Belt Bridge is the Only Obstruction across a Territorial Sea Constituting Part of an International Strait

324. It has been claimed by Denmark that the 65 m clearance chosen for the East Bridge conforms to an international "standard for bridges across major waterways"[1]. In this section of the memorial the factual background of this Danish claim will be examined.

325. Before surveying existing practice concerning bridges, however, it must be noted that the Danish attempt to discern an "international standard" of bridge-building is ill-founded. There are crucial differences between the planned Great Belt bridge and *all existing bridges*, which render the Great Belt bridge project unique. The Great Belt bridge is the sole case in which a bridge is being constructed over an international strait consisting of a part of the territorial sea of the coastal state. All other existing bridges cross waterways that traverse the internal waters of the coastal State. The uniqueness of the Great Belt bridge lies in that it presents the first occasion in the history of international navigation in which a strait that is a part of the territorial sea is being crossed by a physical obstruction.

326. Though the Great Belt is unique in this sense, however, it is of course not unique as an international waterway. Accordingly, Section III will make a brief review of situations in this limited sense comparable to the Great Belt. The conclusion drawn from it is that when a seaway has an international status, States have preferred a technical alternative other than a bridge.

Section II. Fixed Links Across Non-international Waterways

327. The *Written Observations* of Denmark relating to the request for provisional measures make reference to a number of bridges in support of the proposition that "[a] bridge clearance of 65 metres takes account of the maximum height of contemporary ships and may now be considered an 'international standard' for bridge heights" (paragraph 65). After a brief reference to bridges existing in Turkey and Japan and the bridges in the Panama and Kiel Canals, ten bridges are mentioned.[2]

328. All of these ten bridges are situated in internal waters. All of them cross a waterway traversing the interior of the coastal State itself. Any obstruction they may create is self-inflicted and suffered by the bridge State itself. None of them crosses an international waterway - even less an international strait. The notion of free passage is inapplicable in all of them.

329. Specific mention is made in the Danish Written Observations of the Kanmon Bridge and the several links between Honshu and Shikoku (para. 63). But the Kanmon bridge (and the Kanmon tunnel) are situated inside the baselines of the Japanese territorial sea. The

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[1] Statement by Professor Gimsing, 2 July 1991.

[2] The Verrazano Narrows Bridge (New York), Golden Gate Bridge (San Francisco), Bay Bridge (San Francisco), Lions Gate Bridge (Vancouver), Tagus River Bridge (Lisbon), Maracaibo Bridge (Venezuela), Guanabara Bay Bridge (Rio de Janeiro), Sydney Harbour Bridge (Sydney), Alvsborg Bridge (Gothenburg) and Yokohama Bay Bridge (Yokohama).

location is entirely within Japanese internal waters. Moreover, it is possible to circumnavigate the route passing under the Kanmon bridge by passing around the Kyushu island. The Honshu-Shikoku links cross the Seto Naikai (Seto Inland Sea), which is closed by straight baselines and also falls wholly within Japanese internal waters.[1] None of the five straits recognized by Japan as undoubtedly "international straits" (the Soya Strait, the Tsugaru Strait, the eastern and western channels of the Tsushima Strait and the Osumi Strait) is crossed by a bridge.

330. The bridges mentioned by Denmark are not, of course, the only large bridges in the world. Others could be added to the list. There are several long bridges in Japan, the United States and the United Kingdom, for example. There is also the Öland bridge in Sweden and the Saudi Arabia - Bahrein Causeway in the Persian Gulf. The relevant point is, however, that no question of free passage under international law can arise in respect of them. None of them crosses an international strait and none of them poses an obstacle - a definite obstruction for any State between its coasts and world oceans.

331. In other words, even if one were to look for an "international standard" of bridge height (a dubious venture in the first place), these situations could not be cited in support of any such standard.

Section III. Fixed Links Across International Waterways

332. If attention is turned from non-international waterways to international waterways, the situation is completely different. Apart from the Bosphorus bridges - and even they lie entirely within internal waters - no situation comparable to that of the Great Belt exists. There simply are no bridges over international straits situated in territorial waters. What is more, in a number of comparable cases the coastal State or States have deliberately chosen an alternative to a bridge solution.

333. There have, of course, been projects related to indubitably international straits, such as the plans for fixed links over Gibraltar or the Strait of Messina. Neither project has reached fruition. In neither case has there been a definite decision to opt for a bridge *alternative, even less a bridge solution that would not accommodate all existing ships.*

334. In the following paragraphs, situations are reviewed in which there are links over indubitably international waterways.

A. CANALS

335. The three most notable canals in the world - the Kiel, Suez and Panama Canals - all are situated entirely within the territory of the respective canal States (Germany, Egypt and Panama). They pose limitations of draught and width and sometimes of height to ships passing through them. They are indubitably international waterways in the sense that they are much used by international shipping. Their navigation regime is also based on international treaties, as well as on the canal States' declarations. Their legal status is, of course, different from the status of international straits. But what is perhaps more important is the conceptual difference between these man-made waterways and natural waterways such as straits. For while the navigational conditions in canals are the result of deliberate human intervention, the conditions in international straits are not.

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[1] Cf. Japan's Enforcement Order of 17 June 1977 of Law No. 30 of 2 May 1977 on the Territorial Sea, *UN Legislative Series, National Legislation and Treaties Relating to the Law of the Sea*, ST/LEG/SER.B/19, p. 57.

336. The *Kiel Canal* has several bridges. Also new bridges are to be built in the near future. As an example, the KielHoltenau Bridge can be mentioned. It will be a 518 metre long steel girder bridge with a horizontal span of 170 metre at water level. The vertical clearance will be the same as at other Kiel Canal bridges, i.e. 42 metres. In the same area there exists an older bridge, and a third one is to be built later. The Canal is an international waterway situated entirely in German territory (cf. Chapter I, section IV).

337. The *Suez Canal*, built in 1859-69, is situated in Egypt, 120 km east of Cairo. The northern end of this 161 km canal is situated at Port Said at the Mediterranean. Its southern end is at the Gulf of Suez. The Gulf is connected to the Red Sea, which again is connected to the Indian Ocean via the Bab el-Mandeb Strait and the Gulf of Aden. The distance between the Mediterranean Sea and the Indian Sea is about 3500 km. At the narrowest point, the width of the canal at water level is 190 metres. The depth of the canal is 12 metres or more. There are no locks in this canal. It is the second busiest canal in the world; the recorded number of ships passing through it in 1980 was 22000.

The maximum beam of vessels transiting the canal is 210 feet (64 m) and the maximum draught is normally 33 feet (10 m). There is no maximum height to transit the canal. Special regulations govern the transit of drilling rigs, heavylift ships, integrated units and towed units.[1]

The Suez Canal Bridge at El Ferdan was completed in 1955. This bridge is a double arm swing bridge with a main span of 167 m. Its total length is 317 m. The bridge carries a single railway track, but it is free for passage of vehicles as well when no trains are scheduled to cross. The Suez Canal is an international waterway situated entirely in Egyptian territory. The navigational regime of the Canal is based on the 1888 Treaty of Constantinople[2], and the Egyptian Declaration of 24 April 1957[3].

338. The *Panama Canal* is situated on the Isthmus of Panama in Central America. It connects the Caribbean Sea with the Pacific Ocean. The length of the canal is 82 km. Its width on bottom level varies between 92 metres and 300 metres. The depth is 12.5 metres or more. There are several locks and lakes between the two ends of the Canal. The construction of the Panama Canal was completed in 1914. The Panama Canal reduces the sea route from the Atlantic Ocean to the Pacific Ocean by more than 14000 km. In 1980, 14000 vessels passed through the canal. The maximum dimensions of ships transiting the Canal are: length 294 m, beam 32,61 m, draught 10,81 m, height 57,91 m.[4]

339. There are at least two notable bridges across the Panama Canal. The one built first, the Miraflores Bridge, was completed in 1942. It is a swing bridge. The Thatcher Ferry Bridge was completed in 1962. Its total length is 1.6 km. The vertical clearance at the main span is 61 metres. The sovereignty of Panama over the Canal and the Canal zone is explicitly recognized in the Panama Canal Treaties of 7 September 1977[5], though the rights of operation are vested in the United States until the year 2000. These treaties also provide for the openness of the Canal for peaceful transit by ships of all nations on equal terms.

340. Each of the three canals has always had limitations of width and draught. Height restrictions apply in Kiel and Panama Canals. Detailed regulations have governed traffic in

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[1] Suez Canal Authority, *Rules of Navigation*, January 1986 pp. 71-83, 99-101.

[2] Cf. Martens, *Nouveau recueil général*, 2ème séries, tôme XV, pp. 557-566.

[3] For the text, cf. 51 *American Journal of International Law* (1957), pp. 673-675.

[4] Panama Canal Treaty, 1280 UNTS. p. 3.

[5] Panama Canal Commission, *Marine Director's Notice to Shipping*, No 1-91 (1 January 1991) pp. 2-7.

them. These limitations are a consequence of the canals' artificial character and cannot, therefore, be held to support an international standard of creating *new* limitations for passage in international straits.

B. DOVER STRAIT

341. The Dover Strait (English Channel) is located between France and the southern part of England. It is one of the busiest international sea routes. It can be circumnavigated, but that would mean a detour of approximately 2.500 km around the British isles.

342. *The strait is less than 24 miles wide for a part of its length. At the end of* 1971, France extended its territorial sea from 3 to 12 miles, subject to a median line in the strait.[1] Britain did likewise by the Territorial Sea Act 1987.[2] On 2 November 1988 the two Governments published a Declaration in which: "...the two Governments recognize rights of unimpeded transit passage for merchant vessels, state vessels and, in particular, warships."[3]

343. It was the dream of Napoleon two centuries ago to link the British Isles with France. In the 1880's an attempt was made by Englishmen who built a 2.5 km long tunnel towards France. This project was, however, discontinued for military reasons. In the 1970's the construction work was started again, but because of the bad economic situation due to the oil crises the work was stopped again. The final attempt to build the Channel tunnel began in July 1987. This led to a breakthrough in October 1990. The construction work is estimated to be completed in spring 1993.

344. The tunnel system under the English Channel, called **Eurotunnel,** consists of three parallel tunnels: two railway tunnels and a service tunnel between them. The distance between the individual tunnels is 15 metres. The width of the running tunnels is 7.6 metres and that of the service tunnel is about 4.5 metres. All three tunnels are connected by cross passages of approximately 3.3 metres diameter, which are required for safety and operational reasons, at 375 metre intervals. The total length of the Eurotunnel between the tunnel entrances is 50 km, of which about 37 km is under the sea. At the deepest point the tunnel is located about 70 metres below the seabed of the Strait of Dover. The section under the sea is entirely below the seabed, which means that the tunnel does not impede sea traffic at all. The Eurotunnel will be operated only by trains, which will carry cars and people.

345. The Channel fixed link crosses an important international sea-route which, at the time of its planning, contained a high seas channel but is now a part of the territorial seas of the two coastal States. Its international character was taken into account in the relevant preparatory materials. Thus, it was noted by the British Ministry of Transport, in its 1963 Report on the Fixed Link, that a bridge alternative:

> "... could not be carried out, having regard to the principles of international law, until Great Britain and France had sought the concurrence of the States principally concerned with navigation in the Channel. An agreement of this kind, which could in particular be concerned with the drawing up of a system for the regulation of navigation, would certainly involve lengthy negotiations which would only with difficulty be brought to conclusion."[4]

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[1] Law No. 71-1060 of 21 December 1971. *UN Legislative Series, National Legislation and Treaties Relating to the Law of the Sea*, ST/LEG/SER.B/18, p. 17.

[2] UN Office for Ocean Affairs and the Law of the Sea, *Current Developments in State Practice, No. II (1988)*, p. 48.

[3] Annex 58.

[4] Annex 59. The citation is from para. 1.9.

In short, a bridge alternative was considered for the English Channel, but it was rejected in favour of a tunnel, *inter alia* for the reason that the bridge would have required international negotiations among all concerned nations, the results of which would have been uncertain.

C. THE TSUGARU STRAIT, JAPAN

346. The Tsugaru Strait is located between Honshu, the main island of Japan, and Hokkaido, the northern island. Its width at the narrowest point is about 20 km. The Tsugaru Strait can be circumvented by circumnavigating Hokkaido Island, but this would mean approximately a 1500 km detour. The strait has a wide high seas channel in the middle. At the time of the adoption of its Territorial Waters Law on 2 May 1977, Japan specifically restricted its claims to territorial waters in the Tsugaru, Korea, Soya and Osami straits to 3 nautical miles.[1] The Tsugaru Strait is mentioned as a "principal international Asian strait".[2]

347. In 1964 construction work for a tunnel, called the Seikan Tunnel, was started to link these two islands. The tunnelling work was completed in March 1985 and the first test run took place in March 1988.

348. The Seikan Tunnel consists of a main tunnel and a service tunnel. The distance of the tunnels is 30 metres. At every 600 metres there is a cross passage between the tunnels. The diameter of the main tunnel is about 10 metres and that of the service tunnel is about 4 metres. At its deepest point the tunnel is situated 100 metres below the sea bed, which means 240 metres below sea level. The lengths of the undersea and underground parts are 23.3 km and 30.5 km, respectively. The overall length of the Seikan Tunnel is 53.85 km, which means that it is the longest traffic tunnel in the world. The tunnel is used for rail traffic only.

D. BOSPHORUS

349. The straits of the Bosphorus and Dardanelles are located between the Mediterranean and the Black Sea. When sailing from the Mediterranean to the Black Sea, one has to pass through these two straits. At its narrowest point, the Bosphorus Strait is no more than 1 km wide. Its length is 30 km. It divides the city of Istanbul into two parts. Both the Bosphorus and Dardanelles are enclosed by straight baselines, adopted by Turkey in the Territorial Waters Law of 15 May 1964.

350. Passage through the straits is governed by the Montreux Convention of 1936,[3] which provides for "complete freedom of transit and navigation in the Straits" (Article 2).

351. The first *Bosphorus Bridge* (for illustration, see *Figure 22*) was built 6 km north of the entrance to the Sea of Marmara and opened to traffic in October 1973. It is a suspension bridge with one suspended span and several approach spans at both ends. The total length of the bridge is 1.6 km. The vertical clearance at the midspan is 64 metres. The bridge carries a motorway with six traffic lanes. A second bridge, called the *Fatih Sultan Mehmet Bridge* was built about 5 km north of the first one and opened to traffic in July 1988. It is also a suspension bridge. It has only one single span, the length of which is 1090 metres. The vertical clearance is 64 metres. The bridge carries a motorway with eight traffic lanes.

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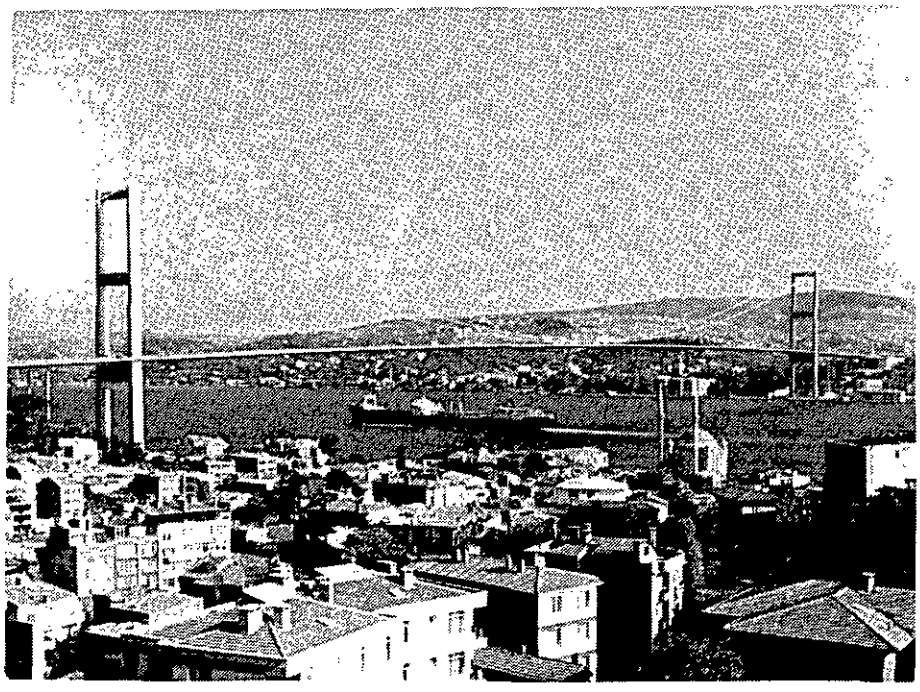
[1] Law No. 30 of 2 May 1977 on the Territorial Sea. *UN Legislative Series, National Legislation and Treaties Relating to the Law of the Sea*, ST/LEG/SER.B/19, p. 56-57.

[2] K.C. Koh, *Straits in International Navigation. Contemporary Issues*, (1982), p. 17.

[3] Convention Regarding the Regime of the Straits, Montreux, 20 July 1936, 173 LNTS 213.

Figure 22

THE BOSPHORUS BRIDGE



352. Like the Bosphorus, the Dardanelles Strait is also very narrow in relation to its length, which is about 70 km. So far there is neither a bridge nor a tunnel across this strait, though some information has been released suggesting that a bridge might be built in the future.

E. SCHELDE

353. Though a river, the Schelde (Westerschelde) is an interesting case because it forms a natural access from the Belgian town of Antwerp through the Netherlands to the North Sea. Though not, of course, identical, the situation of Belgium in respect of this river has an obvious similarity to Finland's situation in relation to the Danish straits.

354. Since 1988, negotiations have been held between Belgium and the Netherlands because of Belgian opposition to a Dutch plan to build a bridge with a vertical clearance of 54 metres over the river. According to Belgium, the plan would have created an effective obstacle for ships sailing between Antwerp and the North Sea.

355. The legal views expressed by the Government of Belgium are based in particular on Articles 108 to 117 of the Final Act of the Vienna Conference of 1815 concerning the freedom of navigation on international rivers, and on Article 9, paragraphs 1, 2 and 3 of the Peace Treaty concluded on 19 April 1839 by Belgium and the Netherlands. Belgium has further referred to the Mannheim Convention of 1868 concerning traffic of the Rhine[1].

Article 9, paragraph 3 of the 1839 Peace Treaty provides that no delay or hindrance of any kind shall be caused to ships sailing to Belgium on the Schelde river. The Government of Belgium interprets this provision to the effect that any bridge across the river would constitute such a hindrance. The Government of Belgium demanded at an earlier stage - when a bridge was still a probable alternative - that the bridge should be 90 metres in height or provided with an opening.

356. By August 1989, the Netherlands appears to have rejected the original bridge plan. The present intention is to build a bridge across a tributary of the river and a tunnel under the main river. The modalities of the proposed tunnel are still under discussion. The Government of Belgium wishes to conclude a treaty on the matter, while the Government of the Netherlands finds it sufficient that the conditions agreed are entered in the provisions of the concession which is given to the construction company.

Section IV. Conclusion

357. All of the bridges cited by Denmark in support of the alleged "international standard" are situated in internal waters. Almost all of them cross passages that lead only to the territory of the coastal State itself. If attention is directed to international straits, high seas corridors or other natural waterways of international importance, no fixed bridges are to be found, with the exception of the Bosphorus.

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[1] Cf. Act of the Congress of Vienna, Parry. *Consolidated Treaty Series*. Vol. 64 p. 453; Treaty between Belgium and the Netherlands relative to the Separation of their respective Territories, London 19 April 1839, *ibid* vol. 88 p. 427; Convention respecting the Navigation on the Rhine, Mannheim, 17 October 1868, *ibid.* vol. 138 p. 168.

358. Does the existence of the two Bosphorus bridges constitute an "international standard" of bridge clearance, opposable to Finland in the Great Belt? Surely not. In the first place, the Bosphorus lies entirely within internal waters, and passage rights in it are fully governed by an international Treaty (to which Finland is not a party). In the second place, there is no evidence of any existing navigation that would in fact have been hampered by the bridges at the time of their construction - unlike the case with the Great Belt, where established navigation would be prevented by the building of the bridge[1]. In the third place, it is hardly possible to generalize an internationally applicable standard out of one, idiosyncratic local situation - particularly in view of the complete absence of evidence of any *opinio iuris* to that effect.

359. If a broader view is taken of fixed links over natural waterways of international importance, two factual conclusions impose themselves. In the first place, there are no bridges over international straits situated in the territorial sea. Nowhere is the right of innocent or transit passage hampered by an existing bridge. Second, there are two cases in which an international strait is crossed by a tunnel (the Dover and Tsugaru straits). In respect of the Dover strait, the decision to opt for a tunnel was made partly at least because of the legal view that a bridge would have necessitated prior agreement with all the users of the strait.

[1] In the past 20 years, no offshore craft have transited the straits. Cf. Annex 36 (Reply by Turkey's Ministry of Transport).

PART III
THE LAW

CHAPTER I

THE RIGHT OF PASSAGE THROUGH THE GREAT BELT

Section I. Introduction

376. It is Finland's contention that the right of free passage through the Great Belt applies to all ships entering and leaving Finnish ports and shipyards including drill ships and MODU's and extends to reasonably foreseeable ship. It is this right, based, in Finland's contention, on existing and applicable rules of international law, whose existence Finland asks the Court to declare. These rules are both conventional and customary in nature. They all have in common, however, that they serve the purpose of protecting navigation in sea areas close to the coast, where the coastal State exercises its sovereignty. This is true in general as regards the territorial sea, and it is even more true in straits, which are those particular parts of the sea (and normally of the territorial sea) which link two parts of the high seas (or a part of the high seas to the territorial sea) and constitute therefore important and often irreplaceable passageways for international maritime traffic.

377. The right of passage claimed by Finland is based on rules set forth in various sources. None of these rules is such as to exclude, or to exclude wholly, the applicability of the others, and each of them - even taken separately - is sufficient to uphold the Finnish claim. The rules and the relationships between them will be examined first, in order to consider later why they are a basis for the Finnish claim.

Section II. Conventional rules

378. The conventional rules of law to be examined are the 1857 Copenhagen Treaty on the Redemption of the Sound Dues[1] and the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone. Customary law also has a role to play. The 1982 United Nations Convention on the Law of the Sea, even though not yet in force, is relevant from various points of view, as will be indicated.

379. The Treaty for the Redemption of the Sound Dues, done at Copenhagen on 14 March 1857, provides that the dues which were levied by Denmark on ships and cargo passing *through the Sound or the Belts would be abolished in exchange for the payment of a lump* sum by the Contracting Parties other than Denmark.

Article I, paragraph 1, after providing for the abolition of the dues, continues, in its French authentic text, as follows:

> " Aucun navire quelconque ne pourra désormais, sous quelque prétexte que ce soit, être assujeti au passage du Sund ou des Belts, à une détention ou entrave quelconque; mais Sa Majesté le Roi de Danemark se réserve expressément le droit de régler, par accords particuliers, n'impliquant ni visite ni détention, le traitement fiscal et douanier des navires appartenant aux Puissances qui n'ont pas pris part au present Traité."

This provision makes clear that the engagement of Denmark not to subject ships passing through the Sound and Belts to any détention or hindrance concerns all vessels, whether they belong to the contracting parties or not. The only reservation made by Denmark related to the fiscal and customs treatment of vessels belonging to non-Parties.

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[1] Annex 10.

The Parties to the 1857 Treaty were, apart from Denmark, the United Kingdom of Great Britain and Ireland, Austria, Belgium, France, Hanover, Mecklemburg-Schwerin, Oldenburg, the Netherlands, Prussia, Russia, Sweden and Norway, the Hanseatic Towns of Lübeck, Bremen and Hamburg.

380. Finland, then a Grand-Duchy of Russia, was not as such a Party, even though the Grand Duchy of Finland contributed 400,000 roubles in silver to the payment by Russia of its part of the compensation due to Denmark under the Copenhagen Treaty. [1]

381. The right of passage without détention or hindrance is provided for in the formulation of Article I, paragraph 1 of the Treaty, for the benefit of all States. This interpretation is confirmed in an intervention at the first United Nations Conference on the Law of the Sea by the Danish representative, Mr. Sørensen. He said that: "Part of the Danish coast bordered an international strait joining two parts of the high seas, and for more than one hundred years his country had maintained freedom of navigation through such strait in the interests of international trade."[2]

Thus, the rights provided by the Treaty being accorded to all States, Finland can be considered - *inter alia* according to Article 36 of the Vienna Convention on the Law of Treaties - as a third party beneficiary of the Copenhagen Treaty. This has been accepted by Denmark in its pleadings before the Court on the Indication of Provisional Measures in the present case[3].

382. The position of Finland in relation to the Copenhagen Treaty may also be based on considerations different from those connected with the law of treaties. It might be argued that the 1857 Treaty of Copenhagen creates an objective regime, in other words a set of rules which may be invoked by all interested states, independently of their being parties to the treaty. This was the opinion of the International Committee of Jurists established in 1920 by the Council of the League of Nations to advise it on the claim put forward by Sweden against Finland to the demilitarization of the Åland Islands. This claim was based on a Convention concluded on 30 March 1856 between France and Great Britain on the one hand, and Russia on the other. The International Committee of Jurists advised that even though Sweden was not a party, it could claim that Finland was bound to abide by the rules on demilitarization of the Islands. The Committee said that:

> "The provisions [of the 1856 Treaty] were laid down in European interests. They constituted a special international status, relating to military considerations, for the Åland Islands. It follows that until these provisions are duly replaced by others, every State interested has the right to insist upon compliance with them. It also follows that any State in possession of the Islands must conform to the obligations binding upon it, arising out of the system of demilitarization established by these provisions."[4]

It does not matter very much in the present context whether one speaks of an "objective regime", of a "settlement regulating European interests", or of a "real political status the effects of which are felt outside the immediate circle of contracting Parties". All these expressions are contained in the Report of the Committee of Jurists[5]. What counts is that in

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[1] Annex 20.

[2] Annex 73.

[3] Statement by the Counsel of Denmark, Dr. Jiménez de Aréchaga on 2 July 1991.

[4] League of Nations, *Official Journal*, Special Supplement no. 5, October 1920, p. 19. (conclusions of the International Committee of Jurists).

[5] *Ibid.*, pp. 17-18.

1920 Finland was held bound by an obligation based on a treaty to which it was not a party and - more remarkably - in relation to a claimant State that also was not a party to the treaty. In Finland's opinion the obligations assumed by Denmark under the Treaty of Copenhagen (concluded just one year after the Treaty on the Åland Islands) are similar in nature to those assumed by Russia (and held applicable to Finland as successor in the exercise of sovereignty over the Åland Islands) as regards the demilitarization of the Åland Islands. The importance of the Danish Straits for the political balance in the Northern part of Europe, and in particular in the Baltic area, is evident. The indication by Denmark, quoted in the preceding paragraph, of the "interests of international trade" as a reason for Denmark maintaining freedom of navigation through the straits for over one hundred years clearly points in the same direction. Consequently Finland is entitled to invoke the provisions of the Copenhagen Treaty independently of its position as a third party beneficiary.

383. The Convention on the Territorial Sea and the Contiguous Zone, adopted at Geneva on the 29 April 1958, was ratified by Finland on 16 February 1965 and by Denmark on 26 September 1968. Consequently, under Article 29 paragraph 2 of that Convention, it entered into force between the two Parties as from 25 October 1968.

That Convention contains rules on the innocent passage of foreign ships through the territorial sea. It only mentions straits used for international navigation between one part of the high seas and another part of the high seas or the territorial sea of a foreign State once, in Article 16 paragraph 4. According to this provision "there shall be no suspension" of innocent passage through such straits.

According to Article 25 of the 1958 Convention, "the provisions of this Convention shall not affect conventions or other international agreements already in force, as between States Parties to them".

Section III. The relationship between the Copenhagen Treaty of 1857 and the Geneva Convention of 1958

384. As far as treaty law is concerned passage through the Great Belt is thus regulated - as between Denmark and Finland - by the 1958 Geneva Convention, to which both States are parties, and by the 1857 Copenhagen Treaty, whether because Finland is a third Party beneficiary or on the basis of an existing objective regime.

What is the effect, in the light of this position of Finland, of Article 25 of the Geneva Convention, quoted above, according to which the provisions of the Geneva Convention "shall not affect conventions or other international agreements already in force, as between States Parties to them"?

Some doubts might be raised as to whether a third party beneficiary can be considered as a State Party for the purposes of Article 25. Whatever doubt may be raised in the abstract, the fact that as recently as in 1991 Denmark has considered Finland a third party beneficiary means that according to Denmark - which is the only State having obligations concerning passage through the Great Belt under the 1857 Treaty - Finland can invoke the rights deriving from the Treaty of Copenhagen notwithstanding the fact that the Geneva Convention is in force between Denmark and Finland. The construction mentioned above of the Copenhagen Treaty as creating an objective regime confirms this conclusion.

Section IV. The regime of passage through the Great Belt: The changing Danish view

385. The Danish position as regards the rules applicable to passage through the Great Belt has been far from consistent over the years. It is nonetheless clear that, up to the beginning of the present case, the rule on passage without détention or hindrance provided for in the Treaty of Copenhagen of 1857 has been seen by Denmark as a part of, or as the basis of, a regime of which customary law is a component.

386. In 1929, in responding to a questionnaire prepared in view of the League of Nations' Conference for the Codification of International Law, Denmark indicated its position on the regime of passage in the Sound and Belts as follows:

> "The Treaty of March 14th, 1857, for the redemption of toll dues on the Sound and the Belts is regarded by the Danish Government as having been primarily intended to abolish the special rules previously in force in these waters - in particular, the collection of the dues known as the "Sound dues" - and to bring these waters henceforward under the general rules of international law relating to straits connecting two portions of the open sea."[1]

387. In his intervention at the first United Nations Conference on the Law of the Sea, quoted above, Mr. Sørensen, speaking on behalf of Denmark, having recalled that Denmark had maintained freedom of navigation through the Danish straits in the interest of international trade for over one hundred years, stated that:

> "such an obligation as that which his country had assumed should be counterbalanced by corresponding rights in other parts of the world, and Denmark accordingly expected that there would be free passage for its ships through straits in the territorial seas of other States."[2].

388. In the interventions at the Third United Nations Conference on the Law of the sea, Denmark presented yet a different position.

Intervening in Plenary at the beginning of the Conference, the Danish Representative Mr. Fergo, emphasised that in some narrow straits, "a special regime had developed over the years based on treaties, custom and the coastal State's national legislation, and adapted to local conditions. Transit through the international straits leading into the Baltic, for example, was so regulated, on the basis of the Copenhagen Convention of 1857. Such special arrangements which had proved their value over the years and served the interests of coastal States and the international community should be maintained[3]."

The same Danish representative referred again in another intervention to the "special regime serving the interests of both the coastal state and the international community" [4].

Another Danish diplomat, who also served as representative of his country to the Third United Nations Conference on the Law of the Sea, Ambassador Ib R. Andreasen, affirmed in an intervention at an academic meeting that the provision of the Copenhagen Treaty according to which no vessel shall be subject in its passage through the Sound or Belts to

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[1] League of Nations, *Conference for the Codification of International Law, Bases of Discussion*, vol. II - C.74.M.39, 1929, p. 13. See Annex 12.

[2] *United Nations Conference on the Law of the Sea, Official Records*, vol. II, p. 65. See Annex 73 to the present Memorial.

[3] Annex 74.

[4] Annex 75.

any détention or hindrance, "is an expression of a regime of passage through straits" and that "in the Danish straits a special regime of passage adapted to local conditions has been developed over the years based on the Copenhagen Convention of 1857, international customary law, and national regulation".[1]

389. The opinion that what applies to the Danish straits is not a treaty but a "regime" emerges also from the fact that Denmark considers that Article 35 (c) of the United Nations Convention on the Law of the Sea applies to the Danish straits and from the contents of that Article. This point was made explicitly by the leader of the Danish delegation, Ambassador Peter Brückner, in intervening at the Plenary of the Third U.N. Law of the Sea Conference on 31 March 1982: "His delegation was satisfied that Article 35(c) applied to the specific regime in the Danish straits, a regime which had developed over the years on the basis of the Copenhagen Convention of 1857."[2]

Indeed, Article 35(c) of the Convention clearly aims at safeguarding something different from mere treaty obligations. This appears clearly if one compares this provision with Article 25 of the Geneva Convention on the Territorial Sea and the Contiguous Zone, quoted above. The 1982 provision provides that the new Convention's Part III on Straits shall not affect, "the legal regime in straits in which passage is regulated in whole or in part by long-standing international conventions in force specifically related to such straits". The 1982 provision speaks of a "legal regime", and not, as does that of 1958, of "conventions or other international agreements". It specifies that the conventions must be "specifically related" to the strait in question, and omits to say that the conventions must be in force between the Parties.

Moreover, the 1982 provision considers conventions which regulate passage through the straits *in whole or in part*. Consequently, if one accepts the view that the Copenhagen Treaty does not cover all aspects of passage through the Danish straits (as Denmark seems to have maintained through the various phases of its thinking on the regime of the Straits), rules on aspects of passage not regulated by the Treaty are seen as remaining unaffected.

390. The position of Denmark as to the "regime" of the Danish straits changed once again in 1991, as emerges from the Danish Written Observations and from the Danish pleadings during the discussion of Finland's Request for provisional measures in the present case. On this more recent occasion the applicable law was indicated by Denmark to consist exclusively of the Geneva Convention and the 1857 Treaty of Copenhagen in respect of which Finland was, according to Denmark, a third party beneficiary.[3] The concept of "regime", upon which Denmark had insisted so much during the Third United Nations Conference on the Law of the Sea, was absent in these pronouncements. The relevance of customary law, also often mentioned on previous occasions by Denmark, was excluded.

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[1] "Commentary", *The Law of the Sea in the 1980s, Proceedings of the Law of the Sea Institute, 14th Annual Conference, October 20-23, Kiel, Germany*, (ed.) Choon-ho Park, (1983) pp. 600-601.

[2] Annex 76. See also the intervention made on behalf of Denmark by Mr. Mellbin on 27 August 1980, *ibidem*, vol. XIV, p. 61. Annex 77.

[3] Danish Written Observations of 28 June 1991, paras. 96-123. See also statement by the counsel of Denmark, Dr. Jiménez de Aréchaga.

Section V. The role of customary law

391. The view of Finland as regards the law applicable to passage through the Danish straits and in particular through the Great Belt is, broadly speaking, similar to that held by Denmark during the Third United Nations Conference on the Law of the Sea: passage through the Danish straits is indeed a specific regime, the components of which are the above mentioned treaty provisions as well as rules of customary law.

What precisely is the role of customary law in the shaping of this regime?

392. Such a role can be seen, firstly, if one considers that the rules contained in the Treaty of 1857 have now become rules of customary law. This is the case for the rule that excludes all forms of customs or dues for passage in the Sound or Belts "for ever". Article 18, paragraph 1, of the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone, repeated in Article 26, paragraph 1, of the United Nations Convention on the Law of the Sea of 1982, states that, "No charge may be levied upon foreign ships by reason only of their passage through the territorial sea".

Furthermore, the rule providing for the right of passage without any hindrance or détention has become a customary law rule. In the many decades of its application Denmark has never invoked the fact that certain ships passing through the straits fly the flag of a State party to the Copenhagen treaty in order to treat them differently from ships of States that are not parties to the Treaty. Certainly, no such distinction was even hinted at in the notes sent by the Danish Ministry of Foreign Affairs on the plans for a fixed link to all the Embassies in Copenhagen.

393. *Secondly, the developments concerning the notion of innocent passage arising from* the United Nations Convention on the Law of the Sea of 1982 are not without consequence for the customary law notion of such passage, and also for the interpretation of that notion as envisaged in the 1958 Convention on the Territorial Sea and the Contiguous Zone. This is true, in particular, as regards the listing of activities, set forth in Article 19 paragraph 2 of the 1982 Convention, which "shall be considered to be prejudicial to the peace, good order or security of the coastal state". As is well known, the Geneva Convention says only that "passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State" (Article 14, paragraph 4). Similarly, the listing in Article 21 of the 1982 Convention of the subjects relating to which the coastal State "may adopt rules and regulations ...relating to innocent passage through the territorial sea", can be seen as an authoritative indication of these subjects from the perspective of customary law as well as from that of the interpretation of Article 17 of the Geneva Convention, which mentions, in general terms, the coastal State's laws and regulations.

Indeed, two important States parties to the Geneva Convention, the United States and the Soviet Union, have recently jointly stated that, "the relevant rules of international law governing innocent passage of ships in the territorial sea are stated in the 1982 United Nations Convention on the Law of the Sea..., particularly in Part II, section 3", and specified that the list of activities which would render passage non-innocent, set forth in Article 19 of the 1982 Convention, is "exhaustive" and that the rules of international law in conformity with which the coastal State must adopt any laws and regulations are "reflected" in Articles 21, 22, 23 and 25 of the same Convention[1].

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[1] Annex 78.

Moreover, domestic legislation on innocent passage has already started to reflect the listings in the 1982 Convention (see, for instance, the Bulgarian Law of 8 July 1987,[1] and note that Bulgaria is a party to the Geneva Convention on the Territorial Sea and the Contiguous Zone) or to make reference to the Convention of 1982, as does , for instance, the Ghanaian Maritime Zones (Delimitation) Act of 1986.[2]

394. Thirdly, there are strong trends in international practice towards the establishment of a customary international law rule on passage through straits making such passage independent of the notion of "innocent passage".

This trend is evidenced by the acceptance of the notion of "transit passage" through straits used for international navigation at the Third United Nations Conference on the Law of the Sea and by the fact that this notion has been indicated by some States , unilaterally or in treaties, as being part of customary law.

One may recall, in particular, that the President of the United States in his Proclamation on the territorial sea of 27 December 1988 stated that, "In accordance with international law, as reflected in the applicable provisions of the 1982 Convention on the Law of the Sea...the ships and aircraft of all countries enjoy the right of transit passage through international straits"[3]. Similarly, in a Joint Declaration of 2 November 1988, the Governments of France and of the United Kingdom affirmed that,

> "The existence of a specific regime of navigation in straits is generally accepted in the current state of international law"

and that

> "the two Governments recognize rights of unimpeded transit passage for merchant ships , state vessels and, in particular, warships following their normal mode of navigation, as well as the right of overflight for aircraft, in the Straits of Dover"[4].

In its decree-law No. 14/78 Sao-Tôme-et-Principe affirms that

> "shall respect freedom of navigation in and overflight of straits or sealanes used for international navigation"[5].

In Article 5, paragraph 2, of the South Pacific Nuclear-Free Zone Treaty, signed at Rarotonga on 6 August, 1985, "transit passage of straits" is mentioned in such a way that no doubt is left that the treaty parties consider it as a concept belonging to existing international law[6].

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[1] *United Nations Office for Ocean Affairs and the Law of the Sea, The Law of the Sea, Current Developments in State Practice No. II*, New York, 1989, p. 3 et seq., Art. 20.

[2] *United Nations Office of the Special Representative of the Secretary-General for the Law of the Sea, The Law of the Sea, Current Developments in State Practice*, New York, 1987, p. 33 et seq., Art. 2, sec. 1.

[3] *United Nations, Office for Ocean Affairs and the Law of the Sea, The Law of the Sea, Current Developments in State Practice, No. II*, New York, 1989, p. 83.

[4] Annex 58.

[5] In 2 *United Nations Law of the Sea Bulletin*, (December 1983) p. 73.

[6] "Each Party in the exercise of its sovereign right remains free to decide for itself whether to allow visits by foreign ships and aircraft to its ports and airfields , transit of its airspace by foreign aircraft, and navigation by foreign ships in its territorial sea or archipelagic waters in a manner not covered by the *rights* of innocent passage, archipelagic sea-lanes passage or *transit passage of straits*" (underlining added). (United Nations, Office of the Special Representative of the Secretary-General for the Law of the Sea, *The Law of the Sea, Current Developments of State Practice*, New York, 1987, p. 192.)

The "right of passage in transit" is also mentioned in the Boundary Delimitation Treaty concluded on 31 March 1978 between Venezuela and the Netherlands (Article 4)[1].

In Article 7 of the Agreement between Australia and Papua New Guinea of 18 December 1978 a regime of passage through the Torres Straits is declared applicable which should not be more restrictive than that of transit passage provided for in the relevant articles of the then most recent Informal Negotiating Text of the Third United Nations Conference on the Law of the Sea. The Article adds that "if the provisions of those articles are revised, are not included in the Law of the Sea Convention or fail to become generally accepted principles of international law" the parties would consult in order to agree on another regime.[2] No such consultation has occurred and the parties have ratified the Agreement in 1985, making it legitimate to conclude that they consider transit passage to be a generally accepted principle of international law.

395. These examples from the practice of States of various regions of the world indicate that there is evidence of an emerging principle on "transit passage" through straits, notwithstanding the fact that a number of States (albeit a small and a diminishing number) still hold a different view.

Perhaps such an emerging principle does not include all the details set forth in the United Nations Convention on the Law of the Sea. The manifestations of practice considered above would seem, however, sufficient support in any case for the view that present day customary law on passage through straits does not correspond any longer with the prescriptions of the Geneva Convention on the Territorial Sea and the Contiguous Zone, or with any restrictive interpretation thereof.

396. It is significant from the point of view of customary law that although thousands of ships have passed and pass every year through the Danish straits, neither Denmark nor the flag States of these ships have ever indicated that this passage is *ex gratia*. It is a passage based on law, on an obligation of Denmark. No distinction has ever been made between passage based on the Geneva Convention, on the Copenhagen Treaty or on general international law. This seems to indicate that all the above-mentioned sources merge, in their application to passage through the Danish Straits, into a general rule of freedom of passage.

Section VI. Customary Law and Article 35 (c) of the Law of the Sea Convention of 1982

397. Special provision is made in the 1982 United Nations Convention on the Law of the Sea for straits which are the subject of long-standing international treaties. Indeed, Finland was an active proponent of that provision. Article 35(c) provides that nothing in Part III of the 1982 Convention, on straits used for international navigation, shall affect "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".

398. One interpretation of this provision is that, whatever the true impact of the concept of transit passage through straits in customary law, passage through the Danish straits is sheltered from such impact by Article 35(c). Such an interpretation is, however, of doubtful validity in the present state of the law. The United Nations Convention on the Law of the Sea of 1982 is not in force. Consequently, no problems concerning conflicts between the

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[1] In United Nations, Office for Ocean Affairs and the Law of the Sea, *The Law of the Sea, Maritime Boundary Agreements (1970-1984)*, New York, 1987, p. 139.

[2] The text of the agreement is in 8 *International Legal Materials*, 1979, p. 291.

treaty provisions contained in it and other rules of international law can arise before the Convention, including Article 35, becomes binding for the parties as a treaty.

399. The question of the influence on customary law of the rules set forth in the Convention is different. The International Court of Justice has stated that even if two norms belonging to two sources of international law appear identical in content, and even if the States in question are bound by these rules both on the level of treaty-law and on that of customary international law, these norms retain a separate existence.[1] Can it be said that the existence of Article 35 (c) in the 1982 Convention, considered in its present status as a document not yet binding as a treaty, is such as to preclude any repercussion on the customary law trend towards the consolidation of a regime of passage through international straits similar, in its broad outline, to that of "transit passage"? In Finland's opinion such repercussions cannot be excluded, at least as regards passage of ships other than warships.

Even were the contents of Article 35(c) considered to be inseparable from whatever customary rule has emerged in correspondence with the concept of "transit passage", this would not exclude the impact of such a rule on the regime of the Danish Straits. Similarly, - it is submitted - were the 1982 Convention to enter into force, Article 35(c) would not preclude such impact of the "transit passage" rules of the Convention. The reason is that the regime applicable to the Danish Straits includes a customary law component which remains open to influence from the general rules of international customary law. Such a possibility was taken in consideration by the drafters of the 1982 Convention, when they made reference in paragraph 35(c) to long-standing conventions regulating passage through straits in whole or in part.

400. The importance of the customary component of the legal regime of the Danish straits depends on how comprehensive the treaty law rules, and notably the rule on passage of the 1857 Treaty, are considered to be. It is well known that views differ on this point. According to some, the treaty of Copenhagen "n'a pas établi un régime particulier pour les détroits danois - son seul but étant de faire disparaître une entrave à la navigation - et par consequent ces passages sont soumis au régime général des détroits internationaux"[2] As is noted above, this position was also held by Denmark in its reply to a questionnaire sent in preparation for the League of Nations Conference of 1930 for the Codification of International Law.

Similar is the position held by the Danish professor E. Brüel in his treatise on International Straits[3], as well as, more recently, by the Danish author S. Lassen[4] and by the German professor W. Graf Vitzthum.[5]

Others hold the view that the 1857 Treaty is the principal legal basis of the right of passage of ships (or at least of ships other than warships) through the Danish straits. This position

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[1] Military and Paramilitary Activities in and against Nicaragua *(Nicaragua v. United States of America), Merits, Judgment, ICJ Reports 1986*, p. 95, para. 178.

[2] R. Lapidoth, *Les détroits en droit international*, (1972), p. 112.

[3] Erik Brüel, *International Straits*, (1947), vol. II, pp. 40-41.

[4] "Passage through Straits. An Analysis of the Conflict between the General Interest in Free Navigation and the Particular Interest of the Starit States in Controlling the Pollution Threat Posed by the Wreck of Oil Tankers as illustrated by the Danish Straits Controversy", 47 *Nordisk Tidskrift for International Ret* 1978, p. 93 et seq., espec. 99-100.

[5] "The Baltic Straits", *The Law of the Sea in the 1980s*, Proceedings Law of the Sea Institute 14th Annual Conference, *Kiel, 1980*, (ed.) Choon-ho-Park, p. 537 et seq., espec. p. 565.

has been taken recently by the German scholar H. Löschner[1]. The position held by Denmark at the Third United Nations Conference on the Law of the Sea and mentioned before may come close to this view.

Section VII. The regime of passage and the Finnish claim

401. It has been shown that the regime of passage through the Great Belt is the result of a combination of rules emerging from various sources, and that the precise relationship between these sources may be the object of debate, even though it seems certain that the Treaty of Copenhagen and customary rules have a particular importance in the shaping of the regime.

As regards the right claimed by Finland it is not necessary, however, to determine exactly what is the relationship between these various rules. Each of them, even taken separately, provides sufficient support for such right.

402. It is sometimes argued that in certain respects the rules on innocent passage set forth in the Geneva Convention on the Territorial Sea and the Contiguous Zone are more restrictive than those on transit passage contained in the United Nations Convention on the Law of the Sea of 1982, and this point could be made also as regards the customary law reflection of these rules. It must be considered, nonetheless, that often the criterion for considering one rule of international law concerning passage to be more or less restrictive than another is whether, or under what conditions, passage of warships is permitted. This seems to be the criterion adopted by Denmark in the *Written Observations* it presented during the discussion of the request for provisional measures in the present case[2]. This question is not relevant for the purposes of the present dispute, and should not influence the assessment by the Court of the character of the rule concerning passage.

Section VIII. Passage for all ships

403. All the varying rules of international law to which attention has been drawn obligate Denmark to ensure passage of ships of all States through the Great Belt. No exception is made for any particular kind of ship, apart from warships. Indeed the rules under consideration envisage ships different from warships (as well as, in recent times, government-owned ships not used for commercial purposes), as a general residuary category.

404. This emerges clearly if one examines the structure of the provisions on innocent passage in the Geneva Convention on the Territorial Sea and the Contiguous Zone of 1958 as well as the structure of the corresponding provisions of the 1982 United Nations Convention on the Law of the Sea. In these provisions, "warships" and "other government ships" are clearly identified, while the other ships, although called "merchant" ships in the title of sub-section B of section III of the Geneva Convention and of sub-section B of section III of Part II of the 1982 Convention, are seen as a single category, without any reference to their nature or function. Indeed, the rules applicable to them, but not to warships and other government ships operated for non-commercial purposes, refer to "foreign ships" (Articles 18, 19, 20 of the Geneva Convention, 27 and 28 of the 1982 Convention).

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[1] "Shipping Routes to and within the Baltic Sea", 30 *Außenpolitik* 1979, p. 174 et seq., espec. pp. 278-279.

[2] Danish Written Observations of 28 June 1991, paras. 110-111.

405. The Treaty of Copenhagen of 1857 also envisages all ships and not only "merchant" ships according to the most restrictive meaning of the term, although it probably excludes warships, which it does not mention. In its pleadings before the International Court of Justice in the hearings on the request for provisional measures in the present case, Denmark held the opposite view[1]. According to Denmark, the provisions of the treaty "have in mind merchant vessels", because the Treaty refers to "foreign ships and their cargoes" and to "commercial relations". This argument does not, however, into account the following two aspects of the treaty: that the preamble mentions, just after the statement of the purpose of increasing "commercial relations", that of increasing "maritime relations"; and that the dues on ships and on cargoes were then separate.

As explained by the Danish Commissioner during the negotiation of the 1857 Treaty, the dues "were of two kinds, namely the Sound dues which are levied on merchandize...and the dues levied upon shipping, which are also of two classes, the one under the name of Light dues being set apart for the maintenance of the lighthouses and buoys in the Sound and Belts, and the other called "Expedition dues", being fees levied for the purposes of defraying the expenses of the Customhouse."[2] The dues levied on shipping depended on the fact of passage. At least as far as the Light dues are concerned, there can be no doubt that what counted was the fact of navigation through the Sound and Belt, and of utilizing the lighthouses and buoys, and not that the ship was engaging in trade.

406. International law has never limited rights of passage through territorial seas and straits to an exclusive category of beneficiaries, whether defined as ships, vessels, or otherwise. Rather, rights of passage have themselves been conceived in a functional sense, according a right of navigation to all craft which navigate upon the sea. This functional approach to the definition of rights of passage is so fundamental as to pervade the entire body of juristic writing and practice, rather than being confined to specific provisions in texts on the subject. Thus, for example, it was stated in one of the prominent texts of the early part of this century that:

> "In all cases in which territorial waters are so placed that passage over them is either necessary or convenient for the navigation of open seas, as in that of marginal waters, or of an appropriated strait connecting unappropriated waters, they are subject to a right of innocent use by all mankind for the purposes of commercial navigation... [F]or more than two hundred and fifty years no European territorial marine waters which could be used as a thoroughfare, or into which vessels could accidentally stray or be driven, have been closed to commercial navigation; and since the beginning of the nineteenth century no such waters have been closed in any part of the civilised world. The right therefore must be considered to be established in the most complete manner." [Footnotes omitted.][3]

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[1] Statement by the counsel of Denmark, Dr. Jiménez de Aréchaga, 2 July 1991.

[2] Report of the Minister of Great Britain to the Court of Denmark on the Negotiations on the redemption of the Sound dues, 22 March 1857. Martens, *Nouveau recueil général des traites*, 2ème series, Tôme XVI, p. 331 et seq., at p. 332, reporting on the explanations on the dues given by the Danish representative.

[3] W.E. Hall, *A Treatise on International Law*, 8th ed (ed., A. Pearce Higgins), (1924), pp. 197-198. To similar effect see, e.g. F. Perels (trans. L. Arendt), *Manuel de droit maritime*, (1884), p. 97; T.E. Lawrence, *The Principles of International Law*, 7th ed (ed., Percy H. Winfield) (1924) pp. 181-183 ["...the common law of nations now imposes upon all maritime States the duty of allowing a free passage through such of their territorial waters as are channels of communication between two portions of the high seas"]; A.S. de Bustamante y Sirven (trans. P. Goulé), *La mer territoriale* (1930), para. 181; J. Hostie, "Examen de quelques règles du droit internationale dans le domaine des communications et du transit", 40 *Recueil des Cours* (1932 II), p. 462; G. Gidel, *Le droit international de la mer*, vol. 3 (1932), pp. 201 et seq.

Section IX. The contents of the various rules

407. The sweeping affirmation of the Treaty of 1857 that passage shall not be hindered or hampered should be interpreted as creating a very general and very liberal regime of passage. This is confirmed by the observation made by Max Sørensen in his declaration as legal advisor to the Danish Foreign Ministry of 4 February 1957[1], where he emphasises that with the word "entrave", contained in the above quoted Article 1, paragraph 1, sentence 2, the Treaty

> "...presumaby excludes not only an absolute hindrance but every measure that can render passage difficult".

408. Whatever the position may be on the scope of the Copenhagen Treaty, the rules on "innocent passage" require more detailed examination because, at least during the discussion of the request for provisional measures in the present case, Denmark relied on them, arguing that they are more restrictive than those on transit passage and that they are formulated in such a way as not to give support to the Finnish claim.

Whether these rules can be labeled as more restrictive than others is not relevant. What is important is whether the Finnish claim can be based on them. If one analyzes the rules on innocent passage it emerges that they support four basic propositions, which are such as to give full support to the Finnish claim. These propositions are the following:

1) The innocence of passage is clearly defined.
2) Ships exercising the right of innocent passage shall comply with the laws and regulations of the coastal State which must, however, be confined to certain subjects.
3) Passage not in conformity with the coastal State's laws and regulations is not, as such, "non-innocent"
4) The coastal State must not hamper or deny or impair innocent passage.

409. As regards the first proposition, while "passage", according to Article 14, paragraph 2, of the Geneva Convention on the Territorial Sea and the Contiguous Zone, "means navigation through the territorial sea for the purpose either of traversing that sea without entering internal waters, or of proceeding to internal waters, or of making for the high seas from internal waters", it is "innocent" , according to paragraph 4 of the same Article, " so long as it is not prejudicial to the peace, good order or security of the coastal State".

As has been seen, the 1982 Convention gives a list which, as said before, reflects the present trend in customary law and can serve as an interpretation of the Geneva Convention - of activities which render passage prejudicial to the peace, good order and security of the coastal State, and consequently not innocent (Article 19 paragraph 2[2]). If one reads this list it appears clearly that none of the activities included in it has any connection whatsoever with the passage of MODUS or other tall ships. This passage is not, as such, non-innocent.

410. Coming to the second proposition, ships exercising the right of innocent passage shall, according to Article 17 of the Geneva Convention, "comply with the laws and regulations enacted by the coastal State in conformity with these articles and other rules of international law and, in particular, with such laws and regulations relating to transport and navigation". Similarly, the 1982 Convention, in Article 21, paragraph 4, provides that foreign ships exercising the right of innocent passage shall comply with all laws and regulations adopted by the coastal States on the subjects listed in paragraph 1 of the same Article.

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[1] Annex 19.

[2] Annex 79.

The list[1] does not contain any item which would as such permit interference with the passage of MODUS and other tall ships apart from the aspect, mentioned in subparagraph (a) of "safety and navigation and the regulation of maritime traffic". Moreover, these laws and regulations "shall not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules and standards" (paragraph 2 of Article 21). According to Article 22 the coastal State especially as regards "tankers, nuclear powered ships and ships carrying nuclear or other inherently dangerous or noxious substances" - may require that ships use sealanes or traffic separation schemes it may designate or prescribe. As was indicated before, the more detailed indications of the 1982 Convention are influencing customary law and can be used in order to interpret the Geneva Convention.

411. As to the third proposition, that passage not in conformity with these laws and regulations is not automatically to be considered as "non innocent", it is corroborated by Article 17 of the Geneva Convention, reproduced above. In prescribing compliance with the coastal State's laws and regulations, this Article envisages ships "exercising the right of innocent passage". The United Nations Convention on the Law of the Sea of 1982 confirms the same proposition, as it specifies that the coastal State's laws and regulations must relate "to innocent passage through the territorial sea" (Art.21). Moreover, Article 14, paragraph 4, of the Geneva Convention confirms this point *a contrario*, as it provides that passage by fishing vessels "shall not be considered innocent if they do not observe such laws and regulations as the coastal State may make and publish in order to prevent such vessels from fishing in the territorial sea".

412. Coming now to the fourth and last proposition - that the coastal State must not hamper or deny or impair innocent passage - according to the Geneva Convention, while the coastal State may "take the necessary steps in its territorial sea to prevent passage that is not innocent" (Article 16), as long as passage is innocent the coastal State "must not hamper" it (Article 15, paragraph 1). The 1982 Convention repeats that the "coastal state shall not hamper the innocent passage of foreign ships through the territorial sea" and specifies that "in particular, in the application of this Convention or of any laws or regulations adopted in conformity with this Convention, the coastal State shall not...impose requirements on foreign ships which have the practical effect of denying or impairing the right of innocent passage" (Article 25, paragraph l-a).

As passage of MODUS and other tall ships is, as such, innocent, it must not be hampered, denied or impaired by the coastal State.

413. The rules on transit passage in the United Nations Convention on the Law of the Sea, while formulated in such a way as to give less discretion to the coastal State, permit the formulation of similar propositions. Transit passage is clearly defined (Article 38, paragraph 2). Foreign ships exercising the right of transit passage shall comply with the laws and regulations "relating to transit passage" adopted by the States bordering straits; but these laws and regulations are to be confined to certain subjects (Articles 42 and 43). Passage not in conformity with the abovementioned laws and regulations is not per se outside the scope of transit passage (Article 42, on "laws and regulations of States bordering straits *relating to transit Passage*"). States bordering straits shall not hamper transit passage, and their laws and regulations shall not have the practical effect of denying, hampering or impairing the right of transit passage (Articles 44 and 42, paragraph 2) .

414. The developments above indicate that according to all the rules that may apply to passage through the Great Belt there exists - leaving aside the question of warships - a right

[1] Annex 79.

of passage for all ships, which Denmark, as the State bordering the strait, cannot hamper or in any way deny - as in fact it has never hampered or denied it. Denmark can adopt regulations concerning such passage. These regulations cannot, however, have the practical effect of making passage impossible.

415. The complex nature of the regime of passage through the Great Belt, which, as has been indicated, is based on rules of various origins and nature, makes irrelevant one line of reasoning put forward by Denmark in the discussion of the Request for provisional measures in the present case. According to this line of reasoning[1], as the States parties to the Copenhagen Treaty have accepted the clearance of 65 meters by their lack of reaction to the Danish Circular Note announcing the intention of building a bridge of such clearance, Finland could not claim a right of passage extending to ships taller than 65 meters, because, as a third party beneficiary it would not be entitled "to invoke additional rights or a more favorable treatment than the one agreed to by the actual parties to the 1857 Treaty".[2]

This line of reasoning applies - if at all - only as far as the 1857 Copenhagen Treaty is concerned. As has been seen, the regime of passage through the Great Belt is based only partially on that treaty, and consists of rules of customary and treaty origin each of which is sufficient to support the Finnish claim. Obviously, the rights Finland enjoys on the basis of these rules do not depend in any way on the attitude of other States.

Even within the narrow framework adopted by Denmark namely that of the rights of Finland are those of a third party beneficiary of the Copenhagen Treaty - the line of reasoning here considered is not beyond objection. The right of passage includes all existing ships, and consequently also tall Finnish ships. This is the right (derived, for the purposes of the present discussion, from the 1857 Copenhagen Treaty) of which Finland is a third party beneficiary. This right can be revoked or modified by the parties, according to Article 37, paragraph 2, of the Vienna Convention on the Law of Treaties (unless agreement to the contrary can be established). But, it is submitted, a series of consents (moreover tacit) by treaty parties not to object to a modification planned by another treaty party to the factual situation in which the right is exercised is not equivalent to the parties revoking or modifying a right that has arisen for a third party: an agreement to that effect seems to be necessary, and evidence of this, in the present case, is missing.

Section X. MODUS as "ships with special characteristics"?

416. In the pleadings before the International Court of Justice on the request for provisional measures in the present case [3] Denmark has put forward the idea that there is a new notion of "ships with special characteristics" which has been introduced in Part II of the Convention of 1982, and which could include also MODUS. Passage of this category of ships could, it is said, be subject to treatment different from that accorded to other ships.

One may note, in passing, that this position of one of Denmark's main counsel concedes two points Denmark has been otherwise very reluctant to accept - namely that MODUS are ships, and that the 1982 Convention can be invoked in discussing passage through the Great Belt.

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[1] Danish Written Observations of 28 June 1991, para. 105; pleading by the counsel of Denmark, Dr. Jiménez de Aréchaga, 2 July 1991.

[2] Pleading by the counsel of Denmark, Dr. Jiménez de Aréchaga, 2 July 1991.

[3] Pleading by the counsel of Denmark, Dr. Jiménez de Aréchaga, 2 July 1991.

417. Coming back to the question of "ships with special characteristics", it is true that this expression is used in Part II of the Convention of 1982. It appears in Article 22, paragraph 3-c, where it is stated that "In the designation of sea lanes and the prescription of traffic separation schemes under this article, the coastal State shall take into account:

c) the special characteristics of particular ships and channels".

It emerges clearly from this provision that the Convention does not intend to create a category of "ships with special characteristics". If one reads the Article in its entirety, it appears immediately that it concerns only sea lanes and traffic separation schemes that the coastal State may designate or prescribe for the use of foreign ships "where necessary having regard to the safety of navigation" (paragraph 1 of the same Article), and whose use it may require for tankers, nuclear powered ships and ships carrying nuclear or other intrinsically dangerous or noxious substances (paragraph 2).

Consequently, all that can be inferred from the 1982 Convention is that the coastal State may designate sea lanes and prescribe traffic separation schemes for the passage of MODUS, if this is necessary for the safety of navigation. What cannot be inferred is that laws or regulations may make their right of passage dependent upon their height or the adaptation of their construction to the presence of a bridge.

Section XI. The right of passage and the height of a bridge over the strait

418. The right of the State bordering the strait to adopt laws and regulations concerning the question of safety of navigation consequential to the existence of a bridge is similar to the right of adopting laws and regulations consequential to the fact that the strait has a certain depth or a certain width. It is a right consequential to a factual situation. But a legal right cannot arise from facts which the State invoking the right has itself brought about in violation of international law.

The right to prescribe that ships may pass through the strait only if they do not exceed a certain height because of the existence of a bridge of a certain height is similar to the right to prescribe that ships may pass only if they do not exceed a certain width or a certain draught because of the width or depth of the strait. Such right cannot, however, justify the construction of a bridge, any more than the other rights mentioned above can justify works that make the strait narrower or shallower. It is one thing to adopt laws and regulations consequential to a factual situation; it is quite another to change such a factual situation.

419. It is a factual necessity, once a bridge has been built, that navigation and shipbuilding take into account its existence, even when the building of the bridge is not in conformity with international law. In the latter case a problem of international responsibility obviously arises. This is implicit in the Court's Order of 29 July 1991 on the request for provisional measures in the present case, where it is stated that

> "if it is established that the construction of works involves an infringement of a legal right, the possibility cannot and should not be excluded *a priori* of a judicial finding that such works must not be continued or must be modified or dismantled".[1]

A different view was held, apparently, by the Danish scholar, and former Legal Adviser to the Danish Foreign Ministry, Max Sørensen who seems to transform what is a factual necessity into a legal principle of priority. According to Sørensen:

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[1] *ICJ Reports 1991*, p. 19 (para. 31).

> "Once the bridge is in place future shipbuilding must take it into account. One can invoke from this point of view a precise principle of priority"[1].

Even starting from Sørensen's point of view, this has, however, nothing to do with the question of whether the bridge can legally be built in the face of the obligation to allow passage through the strait.

420. While there can be no doubt that territorial sovereignty over the land whose coasts border the strait and over the waters of the strait includes the right to build a fixed link between the coasts separated by the strait, there can be no doubt either that such a right cannot be exercised in such a way as to deprive the strait - in whole or in part - of its character as a navigable waterway. This is particularly true in the light of the positive obligation to permit passage which exists for Denmark as regards the Great Belt. The Danish specialist on the law of straits, Erik Brüel, in considering the Copenhagen Treaty of 1857, expressed these concepts as follows: "...even if the treaty does not place upon Denmark any duty to maintain the Straits as navigable waterways the fact that it does pre-suppose them to be such raises the presumption, that Denmark cannot *actively deprive them* of their character as such e.g. by building enbankments or bridges without openings wide enough for navigation, over all three waterways".[2]

Even in an intervention that Denmark quoted in support of its position in the *Written Observations* concerning the Request for provisional measures in the present case[3], the Danish representative, Ambassador Fergo, did not go beyond making the uncontested point that the construction of bridges and tunnels across the Danish straits was vital for Denmark within the limits of "the obligation not to hamper the free passage of ships in transit".[4]

421. The navigation which must be preserved is that of all ships. Brüel, having said that

> "Bridges and enbankments must be so constructed that practically all ships can pass under, respectively through them without such difficulties in manoeuvering that the strait ceases to be a navigable waterway"[5] affirms that, if the view were accepted that Denmark can "by way of a bridge or enbankment or in some other way close one or even two of them (i.e. the Danish straits), as long as one is left open", "the strait that is left open must at all events be passable by *all ships* i.e. only the Great Belt could be considered as fulfilling this condition since the construction of the Little Belt bridge".[6]

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[1] Unofficial translation from the German original: "Brückenbau und Durchfahrten in Meerengen", in *Recht im Dienst des Friedens, Festschrift für Eberhard Menzel*, Berlin, 1975, p. 551 et seq., at p. 557.

[2] Erik Brüel, *International Straits*, (1947), vol. II, p. 43, italics in the original. In the lectures made in French in 1936 "Les détroits danois au point de vue du droit international", *Recueil des Cours* (1936 I), p. 595 et seq., at p. 623, Brüel uses the expression "intervention positive" which seems to convey even more clearly than the English expression "actively deprive" the idea of a modification of the natural situation of the strait.

[3] Para. 122.

[4] Annex Nº 75.

[5] Erik Brüel, *International Straits*, (1947), vol. II., p. 43, italics supplied.

[6] *Ibid.*, p. 44, italics in the original.

Sørensen makes the point that the bridge must be so constructed that "it does not create any obstacle for the navigation through the strait even of the biggest ships existing at the time".[1] He also observes that

> "it is not possible, and therefore also not necessary, to take into account unknown future developments". [2]

422. These authoritative positions converge in holding that the height of a bridge to be constructed depends on the height of the tallest ships known to exist - without excluding, as is clear from the last quotation of Sørensen, *known* future developments. The importance of future trends in shipbuilding was underlined by Poland in its Note of 6 December 1977[3] in which it responded to the Danish Note of 12 May 1977[4]. In responding to the Polish note, Denmark, by indicating that it had made a study of the "tendences actuellement prévisibles dans les techniques de constructions maritimes", concedes that such trends are relevant as regards the construction of a bridge[5].

423. The existence of MODUS exceeding in height the maximum clearance of the planned bridge was well known in the 1970s when Denmark passed its first, and unsuccessful, law on the construction of the bridge. The passage of such ships through the Great Belt was a normal occurrence in the 1980s, when the second law was adopted and the decision to build a bridge and not a tunnel for road traffic across the East channel was taken.

Consequently the planned bridge, if constructed in such a way as to make the passage of MODUS impossible, would not be compatible with the limits to the exercise of the right of building a fixed link indicated above. As will be demonstrated below, MODUS are ships; and they are existing ships, not unknown future developments.

424. It may be argued - and it has been argued by Denmark in its Written observations and pleadings before this Court on the Finnish request for provisional measures in the present case - that other bridges have been constructed over straits and that these bridges have a clearance equal or similar to that of the planned Great Belt bridge. This would give rise to a kind of "international standard", to which the planned Great Belt bridge would be conforming.

First of all, any such supposed international standard would certainly not be constant in time. So, for instance, in discussing in 1936 the Little Belt bridge and the ideas then under consideration for a bridge over the Great Belt, Erik Brüel expressed strong doubts on the compatibility with international law of the construction of the bridge over the Little Belt because, by giving it a clearance of 33 metres, Denmark "a non seulement rendu plus difficile le passage par ce détroit, mais aussi - sans d'autres motifs que des simples raisons d'économie - *completement privé* une partie des navires de la possibilité même de l'utiliser"[6] Brüel than states that a clearance of 42 metres would have been preferable because it would have permitted passage of almost all ships and adds that the fact that the plans then current for a bridge on the Great Belt envisaged a clearance of 42 metres made

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[1] Unofficial translation from the German original, Brückenbau und Durchfahrt in Meerengen, quoted above, para 419, footnote 1, p. 556.

[2] *Ibid.*, p. 557, unofficial transl.

[3] Annex 24.

[4] Annex 22.

[5] Note Verbal of 3 July 1978, Annex No. 6 to the Danish Written Observations on the request for provisional measures in the present case.

[6] Erik Brüel, "Les détroits danois au point de vue du droit international", 55 *Recueil des Cours* (1936 I) p. 595 et seq., at p. 672.

the proposed bridge compatible with the Copenhagen Treaty as well as with general rules of the law of nations concerning international straits.

Forty-two metres is certainly different from sixty-five. If there is an international standard it is certainly one that changes with the passing of time.

425. Moreover, doubts may be raised as to the existence of any such international standard. All the examples given concern bridges in internal waters (Cf. Part II, Chapter VII above). And all - with the exception of the Bosphorus bridges - have alternative passages. This is particularly true of the bridges built in Japan, which are, moreover, all included within the Japanese baselines and consequently in Japanese internal waters. Together with the Bosphorus bridges, the Great Belt bridge would be the only bridge over an international strait not permitting an alternative route (the routes through the Little Belt and through the Sound not being real alternatives because of the presence of a bridge over the first and of the shallowness of the second). Can an "international standard" be built upon such limited practice?

426. Leaving aside the fact, which is not, however, without relevance, that while the Great Belt includes Danish territorial sea, the Bosphorus lies entirely within internal waters of Turkey, the main difference between the Great Belt and the Bosphorus is that the Great Belt is a route for the passage of tall MODUs and of tall cruiseships, while the Bosphorus is not.

For each strait the notion of existing and reasonably foreseeable ships may be different. The decisive element is which ships do in fact pass through a specific strait or are likely to pass in the light of known trends of maritime traffic and shipbuilding. An interesting indication pointing in this direction can be found in a recent Report by the International Maritime Organization's Sub-Committee on Safety of Navigation as regards the proposed bridge over the Strait of Messina . This strait, it may be noted, permits an alternative route on the high seas. Moreover, the decision to build a suspended bridge is still under discussion, as the alternative of an underwater bridge at a depth of 30 metres is actively considered[1].

The Report states that the minimum clearances proposed in the two alternative proposals for a suspended bridge, namely 55 metres for a two-span bridge and 64 metres for a single span bridge, "should be more than adequate for *ships likely to use the Strait of Messina, so far as can be foreseen*". [2]

This is a clear indication that, in assessing the clearance for a bridge over an international strait, the specific traffic using that particular strait should be considered; and this not only as far as the present is concerned but also as regards the foreseeable future.

Section XII. Concluding Remarks

427. In the light of the observations made, the following main conclusions may be drawn as regards the law applicable to passage through the Great Belt.

The right of passage through the Great Belt, whose existence Finland asks the Court to declare, is based on a set of rules which constitutes a regime with treaty-law and customary-law components.

This regime has been formed on the basis of the Copenhagen Treaty of 1857, and has developed in the light of the notion of innocent passage as codified in the Geneva

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[1] Report in I.M.O. document NAV 35/14 No. 3.7.4., as well as *Ecos, ENI's Monthly Magazine*, excerpts from No. 212/213, p. 65 et seq.

[2] I.M.O. document NAV 35/14 of 2 February 1989, italics supplied.

Convention of 1958 and as shaped by customary law, most recently under the influence of the 1982 United Nations Convention on the Law of the Sea, as well as of the emergence of special rules on passage applicable to straits.

This regime - and also the practice of Denmark - provides for free passage through the Great Belt of ships not included in the category of warships, without distinction based on *the nationality or on the characteristics of the ships.*

Each of the rules that merge into the specific passage regime of the Great Belt is, however, sufficient to uphold the right claimed by Finland. This is true, in particular, as far as "innocent passage" is concerned.

The State bordering the strait is entitled to adopt laws and regulations concerning safety of navigation; but this does not include the right to interfere actively in the factual situation of the strait so that it loses in whole or in part its character as an international waterway.

The height of a bridge which can be built over a strait does not depend on international standards but on the characteristics of the ships which in fact use that particular strait or may reasonably be foreseen to use it.

MODUS directed to and coming from Finnish ports and shipyards and exceeding the height of the planned bridge have been passing through the Great Belt for about two decades and can be foreseen to pass through it in the future; moreover, cruise and other ships exceeding that height may be foreseen to pass in the future. Consequently, there exists a right of passage through the Great Belt which Denmark is bound not to violate with the construction of the bridge as planned.

CHAPTER II

THE SHIPS ENTITLED TO PASSAGE

Section I. Introduction

428. The history of shipbuilding is one of continual innovation. There are innovations in the use of materials, such as iron-clad, iron hulled and plastic hulled vessels. There are innovations in design, such as the development of aircraft carriers, submarines, Very Large Crude Carriers (or "supertankers"), and hydrofoils. While there is an overall tendency for the size of merchant vessels to increase, it is difficult to predict the precise nature of future developments for a period as long ahead as the bridge across the Belt is intended to last.

429. Even the dimensions of existing port facilities impose no long-term constraint on the size of ships. As one recent study observed:

> "In order to cater for the increasing size and variety of vessels, and to provide additional land close to deep-water berths, many traditional ports have extended downstream from their historic locations at the heads of estuaries. The most successful ports have been almost completely rebuilt..."[1]

430. Port construction and ship design influence each other. Bigger ships create a demand for larger port facilities; and new, large port facilities encourage the building of ships as big as the economics of the shipping trade dictate. Neither developments in ship design nor developments in port construction can be predicted with much accuracy over the long term.

Section II. Types of Ship

431. In the context of the present case and of the international regulation of navigation it is helpful to classify the different types of ship according to the relevant characteristics of their construction. There is as much variety among ships as there is among States. Warships and small pleasure craft are not of concern in the context of these proceedings. But ships of five other identifiable types are. These types are vessels of conventional design, drill ships, semisubmersibles, Very Large Crude Carriers (VLCCs), and jack-up drill barges.

432. The characteristics of these vessels are described in more detail in Part II of this Memorial (paragraphs 163-181, 210-275). Here it is necessary only to draw attention to their more salient characteristics.

433. Merchant ships of conventional design are, by definition, the archetypes of merchant shipping. Constructed with a hull of conventional shape, powered wholly or largely by mechanical means, navigable, and bearing their cargoes in the hold or on the deck or in the superstructure, they represent the traditional conception of a ship. At the lower end of the scale they merge with the category of pleasure craft, and include tugs and small barges. At

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[1] R.B. Clark, *The Waters Around the British Isles: Their Conflicting Uses* (1987), pp. 162-163. Note also the development of offshore loading facilities in the USA, regulated under the Deepwater Port Act of 1974: A.W. Rovine, *Digest of United States Practice in International Law 1974* (1975), pp. 356-360.

the upper end they include vessels such as the 67,000 GRT, 293 metre-long *Queen Elizabeth 2*.

434. Drill ships are ships built with hulls of conventional shape modified to accept a drill rig installed on the deck. Their height is typically around 80 metres, and their draught around 7 metres. They are self-propelled. They have no other special characteristics marking them out from ships of conventional design, and they can be assimilated to those ships. Ships carrying cranes may also be included in this category.

435. Semi-submersibles are navigable platforms bearing drill rigs or other equipment. Some have been converted or specifically built for use as production platforms or accommodation units for offshore workers. When bearing drill rigs, their overall height can reach around 80 metres. They are commonly powered by independent engines attached to their legs and known as thrusters. The thrusters can propel the semi-submersible at speeds approximately equivalent to the speed at which they could be towed, this being around 10 knots. The thrusters may also be used to maintain the semisubmersible in the precise location intended when it is operating on site. The hulls of semi-submersibles are of variable design. In some the operating platform is supported on two or more pontoons shaped like conventional ship hulls. Others are supported by stability columns which control flotation of the semi-submersible by ballasting: these have a shape closer in appearance to fixed offshore platforms. Semisubmersibles are designed so as to be easily navigable, and to operate afloat, rather than resting on the sea-bed as is the case with submersible drill rigs.

436. The term VLCC does not strictly designate a distinct class of ship, but rather applies to the larger bulk oil carriers. The largest crude carriers are known as ULCCs -Ultra Large Crude Carriers. Because of their size, such vessels have considerable difficulty in stopping and manoeuvreing. They are accordingly treated differently from other vessels for certain purposes, notably under the 1972 Collision Regulations, in which a VLCC or ULCC falls under the heading of "vessel restricted in her ability to manoeuvre." Ultra Large Crude Carriers may have draughts of around 10 metres and air draughts of the order of 55 metres to 70 metres.

437. Jack-up drill barges are seaworthy barges having three or more "legs" which can be jacked down to the sea-bed. The legs give the barge an air draught of around 100 metres to 140 metres. Once the legs are resting firmly on the sea-bed the barge is jacked up on the legs until it is clear of the water. Although some may be fitted out so as to be capable of navigation under their own power, most are towed to and from the sites on which they operate. (For present purposes, references to jack-ups are to those not self-propelled: selfpropelled jack-ups may be assimilated to semisubmersibles). Tows are of two types. The first is the traditional wet tow, using one or, in narrow or difficult passages, two tugs. The other is the dry tow, in which the jack-up is carried on a barge which is itself towed, or on a heavy lift barge, the deck of which can be lowered below sea level by ballasting in order to permit the jack-up to be manoeuvred into a position directly above the deck, which is then raised. The jack-up is then secured to and transported on the deck. In general, modern jack-ups are designed to move across oceans with their full leg length intact.

438. It should be noted that both semisubmersible rigs and jack-up barges are quite distinct from the traditional fixed offshore production platforms, which are in essence towers build on the sea-bed. In the case of these fixed platforms the main part of the central supporting tower which bears the production platform is built on shore and carried by heavy-lift barge to the production site, where it is lowered into the water and secured firmly to the sea bed. The platform is designed as a "permanent" attachment to the sea-bed, and is not designed to be mobile. Semisubmersibles and jack-up barges, on the other hand, are

designed precisely in order that they should be capable of navigating easily and frequently from site to site. For example, in the North Sea alone there are around 300 location moves each year. This reflects the differing economics of offshore oil production, for which a permanent platform may be appropriate, and offshore oil exploration, for which fixed installations are not appropriate.

439. Drill ships, semisubmersible drill rigs, and jack-up drill barges are referred to collectively as MODUs (Mobile Offshore Drilling Units). However, it must be emphasized that semisubmersible platforms are not used only to carry drill rigs. They may carry accommodation units for offshore workers, offshore production facilities, or other equipment. (See also Annex 31, Offshore Data Report). Platforms may be and are converted from one such use to another. Accordingly, it would be more accurate to use the term MOUs (Mobile Offshore Units) to refer to drill ships, semisubmersibles (whether carrying drill rigs or other loads) and jack-up drill barges collectively. However, in deference to current fashion, the term MODU is used here, with the understanding that it includes mobile offshore units carrying equipment other than drill rigs.

440. Not all of the distinctions between different kinds of ship are material in the context of the present case. Drill ships and crane ships have, while navigating, no characteristics which necessitate their separation in the context of consideration of rights of navigation and passage from the class of ships of conventional design.

441. Semisubmersibles are designed to be able to navigate independently and under their own power. As will be shown, they are in fact treated for the purposes of navigation in the same manner as any other ship. However, because they do not possess the same degree of manoeuvrability as small ships of conventional design they are properly grouped with VLCCs as ships having a restricted ability to manoeuvre.

442. Jack ups are not usually independently powered, but navigate by being towed. It is therefore appropriate to give them special consideration, as is done below.

443. In drafting the wide variety of regulations applicable to shipping it is appropriate to draw distinctions in order to accommodate the particular characteristics of the vessels in question. Thus, in the same way that pollution instruments commonly distinguish between tankers and other ships, and the Montreux Convention of 1936 distinguishes between capital ships and other warships, it may be desirable to distinguish between different types of ship for the purposes of regulating navigation. This, indeed, is precisely the rationale of the special category of "vessels restricted in their ability to manoeuvre" in the Collisions Regulations made under the 1972 Convention on the International Regulations for Preventing Collisions at Sea. The appropriateness of special consideration for different types of ship does not, however, imply that some vessels cease to be ships.

Section III. The Concept of a Ship in International Law

444. The concept of a ship in international law is a wide one, and no single definition is accepted as authoritative.[1] The following paragraphs discuss the scope of that concept in international treaty practice, municipal law, doctrine, and the actual practice of States.

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[1] See D.P. O'Connell, *The International Law of the Sea*, vol. II (ed I.A. Shearer) (1984), pp. 747-750.

A. TREATY PRACTICE

445. There is no single definition of the word "ship" accepted in international treaty practice. Many treaties concluded in the first half of this century simply used the term "vessel"[1] or "ship"[2], without providing any definition of the term; and some instruments used both terms, drawing no distinction between them.[3] The words "ship" and "vessel" usually correspond to a single word in French, *navire*[4], and in Spanish, *buque*[5].

Some of the treaties concluded during this period did attempt definitions of the terms "ship" or "vessel".[6] These definitions tended to be simple, and to emphasise the breadth of

[1] See, for example, the treaties listed in Annex 80.

[2] See, for example, the treaties listed in Annex 80.

[3] See, e.g., the Convention (Preamble) and Statute on the International Regime of Maritime Ports, Geneva, 9 December 1923, 58 LNTS 285; Convention for the Unification of Certain Rules relating to the Limitation of Liability of Owners of Seagoing Vessels, Brussels, 25 August 1924, 120 LNTS 123; PanAmerican Sanitary Convention, Habana, 14 November 1924, 86 LNTS 43; Convention for the Unification of Certain Rules relating to the Immunity of State-owned Vessels, Brussels, 10 April 1926, 176 LNTS 199; Sanitary Convention, Paris, 21 June 1926, 78 LNTS 229; Convention on Maritime Neutrality, Habana, 20 January 1928, 135 LNTS 187; Convention on Safety of Life at Sea, London, 31 May 1929, and Annex (Regulations completing the Provisions of the Convention on Safety of Life at Sea) and Annex II (Regulations for Preventing Collisions at Sea), 136 LNTS 81; Convention concerning the Regime of the Straits, Montreaux, 20 July 1936, 173 LNTS 213; Procès-Verbal concerning Rules of Submarine Warfare, London, 6 November 1936, 173 LNTS 35.

[4] See, for example, the Convention for the Unification of Certain Rules relating to the Limitation of Liability of Owners of Seagoing Vessels, Brussels, 25 August 1924, 120 LNTS 123; Convention on Maritime Neutrality, Habana, 20 January 1928, 135 LNTS 187; Convention concerning the Regime of the Straits, Montreaux, 20 July 1936, 173 LNTS 213.

Where inland navigation vessels were concerned, the word "bateau" often corresponded to the word "vessel": see, for example, the Convention for the Unification of Certain Rules concerning Collisions in Inland Navigation, Geneva, 9 December 1930, [Hudson, *International Legislation*, vol. V, 815], and the Convention on the Registration of Inland Navigation Vessels, Rights *in rem* over such Vessels, and other Cognate Questions, Geneva, 9 December 1930 [Hudson, *International Legislation*, vol. V, 822]. Where warships are signified, the word "vessel" is sometimes translated as "bâtiment": see, for example, the Treaty for the Limitation of Naval Armament, London, 25 March 1936, 184 LNTS 115; Convention concerning the Regime of the Straits, Montreaux, 20 July 1936, 173 LNTS 213.

There is no consistent practice determining the relationship between the terms. For instance, the *Protocole de clôture* of the Modus Vivendi concerning the Revised Convention for the Navigation of the Rhine, Strasbourg, 4 May 1936, stipulated that "le terme 'bâtiment' s'applique aux navires et bateaux, y compris les engins flottants et les hydroglisseurs, ainsi qu'aux radeaux" [Hudson, *International Legislation*, vol. VII, 290] . On the other hand, the ILO Revised Convention Fixing the Minimum Age for the Admission of Children to Employment at Sea, Geneva, 24 October 1936, 40 UNTS 205, stipulated in article 1 that " Pour l'application de la presente convention, le terme 'navire' doit être entendu de tous les bateaux, navires ou bâtiments, quels qu'ils soient, de proprieté publique ou privée, effectuant une navigation maritime..."

[5] See, for example, the Pan-American Sanitary Convention, Habana, 14 November 1924, 86 LNTS 43; Treaty on International Commercial Navigation Law, Montevideo, 19 March 1940, Hudson, *International Legislation*, vol . VIII, 460 . Spanish practice is less consistent than French. For instance, the Convention on the Repression of Smuggling, Buenos Aires, 19 June 1935, uses the terms "embarcaciones" (art. 6), "barcos" (art. 6), "vapor" (art. 10), and "buque" (art. 13), in each case translated as "vessels" or "vessel" in the English text: Hudson, *International Legislation*, vol. VII, 100.

[6] Examples of treaty provisions defining the term "ship" are set out in Annex 80.

the concept. The Convention for the Unification of Certain Rules relating to Bills of Lading for the Carriage of Goods by Sea, 1924, for example, stipulated that:

" Ship' means any vessel used for the carriage of goods by sea."[1]

446. A more detailed, but equally broad, definition was adopted in the first treaties concluded under the auspices of the International Labour Organization:

> " For the purpose of this Convention, the term "vessel" includes all ships and boats, of any nature whatsoever, engaged in maritime navigation, whether publicly or privately owned."[2]

447. In certain Conventions concerned with the welfare of seamen this was subsequently revised to read as follows:

> "For the purpose of this Convention the following expressions have the meanings hereby assigned to them, viz:
>
> (a) the term "vessel" includes any ship or boat of any nature whatsoever, whether publicly or privately owned, ordinarily engaged in maritime navigation;"[3]

The narrowing of the meaning of "vessels" by inclusion of the reference to vessels "ordinarily engaged in navigation" is explicable by the purpose of the Conventions. These Conventions were concerned with seamen, rather than with vessels as such; and the effect of the modification was to confine the ambit of the treaty to persons who were ordinarily employed as seamen rather than as offshore workers in general.

448. In multilateral treaties of the inter-war period specifically concerned with navigation, on the other hand, there is no evidence of any trend towards narrowing of the meaning of "ship" or "vessel". For instance, the 1930 Convention for the Unification of Certain Rules concerning Collisions in Inland Navigation stipulated that:

> "For the purposes of this Convention, the term 'vessels' includes hydroplanes, rafts, ferryboats, dredgers, floating cranes and elevators, movable sections of boat-bridges and all floating appliances or plant of a similar nature."[4]

Though limited in its examples by the vessels in operation at the time that the Convention was drafted, this definition illustrates clearly the tendency to define vessels in a functional

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[1] Brussels, 25 August 1924, art. 1(d), 120 LNTS 155.

[2] ILO Convention Fixing the Minimum Age for Admission of Children to Employment at Sea, Genoa, 9 July 1920, Article 1, 38 UNTS 109. See also ILO Convention concerning Unemployment Indemnity in case of Loss or Foundering of the Ship, Genoa, 9 July 1920, 38 UNTS 119; ILO Convention Fixing the Minimum Age for the Admission of Young Persons to Employment as Trimmers or Stokers, Geneva, 11 November 1921, 38 UNTS 203; ILO Convention concerning the Compulsory Medical Examination of Children and Young Persons Employed at Sea, Geneva, 11 November 1921, 38 UNTS 217; ILO Revised Convention Fixing the Minimum Age for the Admission of Children to Employment at Sea, Geneva, 24 October 1936, 40 UNTS 205.

[3] ILO Convention Concerning Seamen's Articles of Association, Geneva, 24 June 1926, article 2, 38 UNTS 295. See also ILO Convention concerning the Repatriation of Seamen, Geneva, 23 June 1926, 38 UNTS 315.

[4] Geneva, 9 December 1930, art. 11, Hudson, *International Legislation*, vol. V, 815. Cf., the Convention on the Registration of Inland Navigation Vessels, Rights *in rem* over such Vessels, and other Cognate Questions, Geneva, 9 December 1930, article 6 of which provided that:

"Each Contracting State may, under conditions referred to in Articles 3 and 4, require or permit the following to be entered in its registers: (1) Floating cranes and elevators, and all similar appliances; (2) Pleasure craft; (3) Vessels, including dredgers, of less than 20 metric tons." [Hudson, *International Legislation*, vol. V, 822.]

manner, including all kind of craft in fact engaged in or capable of navigation.

449. A similar approach was adopted in the 1938 Police Regulations concerning Navigation on the Rhine. Those Regulations were adopted in the context of article 1 of the Treaty of Mannheim, which stipulated that

> "La navigation du Rhin et de ses embouchures, depuis Bâle jusqu'à la plein mer, soit en descendant, soit en remontant, sera libre aux navires de toutes les nations pour le transport des marchandises et des personnes, à la condition de se conformer aux stipulations contenues dans la présente Convention et aux mesures prescrites pour le maintien de la securité générale."[1]

Article 1 of the 1938 Regulations read as follows:

" Dans le présent règlement:

> a) Le terme 'bâtiment' s'applique aux navires et bateaux, y compris les engins flottants, les hydroglisseurs, les menues embarcations et les bacs; b) Le terme 'engin flottant' désigne les constructions flottantes sur lesquelles sont installés des appareils mécaniques tels qu'appareils de dragage, grues, élévateurs, sonnettes (et les bacs) il ne s'applique pas aux radeaux."[2]

450. It may be noted that the draft Articles on the Territorial Sea prepared by the Second Committee of the Hague Codification Conference of 1930 ascribed a right of innocent passage not only to vessels traversing the territorial sea without entering inland waters but also to vessels proceeding to inland waters or making for the high seas from inland waters.[3] The broad definition of ships adopted in instruments concerned with inland navigation are, therefore, directly relevant to the question of the category of craft enjoying the right of innocent passage.

451. Both marine and aerial navigation were conceived in functional terms. The functional approach evident in the meaning ascribed to the term "vessels" was mirrored in the definition of the term "aircraft" in the Pan-American Sanitary Convention, article 2 of which read as follows: "*Definitions* "*Aircraft.* - Any vehicle which is capable of transporting

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[1] Convention respecting Navigation of the Rhine, Mannheim, 17 October 1868, article 1, Parry, *Consolidated Treaty Series*, vol. 138, p. 168. See also the Treaty of Mayence, 31 March 1831, article 1, Parry, *Consolidated Treaty Series*, vol. 81, p. 307.

[2] Police Regulations concerning Navigation on the Rhine, Paris, 25 August 1938, Hudson, *International Legislation*, vol. VIII, 103. The Regulations continue as follows:

> "c) Le terme 'radeau' désigne tout assemblage de pièces de bois destiné à être transporté par flottage, qu'il soit ou non remorqué;
>
> d) Le terme 'établissement flottant" designe toute installation flottante autre que les bâtiments et les radeaux, telle que bains, docks, appontements, hangars pour bateaux;
>
> e) Le terme 'bâtiment muni de moyens mécaniques de propulsion' s'etend aux bâtiments utilisant pour leur propulsion un moteur auxiliaire, même lorsque ce moteur est placé sur une installation flottante annexe (chaloupe de propulsion ou de traction), que la chaloupe de propulsion ou de traction exige ou non un personnel de service permanent; ce terme ne s'etend pas aux bâtiments remorqués..."

[3] Article 3; 24 *AJIL Supp.* 239 (1930). The definitions of the right of innocent passage in the 1958 Convention on the Territorial Sea and Contiguous Zone (article 14(2)), and the 1982 UN Convention on the Law of the Sea (article 18(1)), are couched in similar terms.

persons or things through the air, including aeroplanes, seaplanes, gliders, helicopters, air ships, balloons and captive balloons."[1]

452. After 1945 treaty-making in matters affecting shipping became an increasingly specialised matter, particularly after the entry into force in 1958 of the treaty establishing the Inter-Governmental Maritime Consultative Organization, subsequently re-named the International Maritime Organization. Although some treaties continued the practice of using the term "ship" or "vessel" without defining it[2], in others the increasing specialization in treaty-making is reflected in the refinement of the definition of meaning of the terms "ship" and "vessel", although without any reduction in the breadth of that meaning.

453. The increasing refinement of the concept of a ship or vessel is evident in the context of treaties on marine pollution. The 1954 International Convention for the Prevention of Pollution of the Sea by Oil[3] did not define the word "ship", which it used to denominate the craft to which obligations under the Convention applied. A definition was, however, adopted in the 1962 Amendments to the 1954 Convention. Article 1 (1) of those Amendments included the stipulation that:

> "Article 1
>
> For the purposes of the present Convention, the following expressions shall (unless the context otherwise requires) have the meanings hereby respectively assigned to them, that is to say
>
> . . .
>
> "Ship" means any sea-going vessel of any type whatsoever, including floating craft, whether self-propelled or towed by another vessel, making a sea voyage; and " tanker " means a ship in which the greater part of the cargo space is constructed or adapted for the carriage of liquid cargoes in bulk and which is not, for the time being, carrying a cargo other than oil in that part of its cargo space.[4]"

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[1] Habana, 14 November 1924, 86 LNTS 43. Cf., the Sanitary Convention for Aerial Navigation, The Hague, 12 April 1933, 161 LNTS 65, article 1(1) of which states: "The word *aircraft* includes any machine which can derive support in the atmosphere from the reactions of the air and is intended for aerial navigation."

[2] See, for example, the Convention on the Inter-Governmental Maritime Consultative Organization, Geneva, 6 March 1948, 289 UNTS 48; Convention on the Territorial Sea and Contiguous Zone, Geneva, 29 April 1958, 516 UNTS 205; Convention on the High Seas, Geneva, 29 April 1958, 450 UNTS 82; Convention on the Continental Shelf, Geneva, 29 April 1958, 499 UNTS 311; Convention on the Facilitation of International Maritime Traffic, London, 9 April 1965, 591 UNTS 265; the International Convention for the Safety of Life at Sea, London, 1 November 1974, 1184 UNTS 2; Convention on Limitation of Liability for Maritime Claims, London, 19 November 1976, 16 *International Legal Materials* 606 (1977); United Nations Convention on the Carriage of Goods by Sea, Hamburg, 31 March 1978, 17 *International Legal Materials* 608 (1978); the International Convention on Standards of Training of Certification and Watchkeeping for Seafarers, London, 7 July 1978, UKTS 50 (1984); Belgium-Denmark-Finland-Federal Republic of Germany-Greece-Ireland-Italy-Netherlands-Norway-Portugal-Spain-Sweden-United Kingdom, Memorandum of Understanding on Port State Control in Implementing Agreements on Maritime Safety and Protection of the Marine Environment, Paris, 26 January 1982, 21 *International Legal Materials* (1982) .

[3] London, 12 May 1954, 327 UNTS 3.

[4] 1962 Amendments to the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, 600 UNTS 332 . The same def inition was adopted in the 1969 Amendments to the 1954 Convention: UKTS 21 (1978) . See also the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, London, 29 December 1972, article III, 1046 UNTS 120.

454. This definition illustrates three points. First, the definition of a ship, even in a treaty with so specific a purpose as the prevention of oil pollution, is remarkably broad. It rests the definition on the fact of the vessel making a sea voyage, rather than on any characteristics of construction or purpose which might narrow the category of ships to which the Convention relates. Second, it explicitly includes within the definition non-self-propelled craft making a sea voyage under tow by another vessel. This is of particular relevance to jack-up barges, which are commonly transported in this manner. And third, the ancillary definition of the word "tanker" demonstrates the manner in which specific characteristics of construction or purpose (or, as here, both) are taken into account in order to narrow the definition of a vessel in circumstances where that is considered necessary. That narrowing does not apply at the level of the conception of a ship or vessel: it applies by the creation of a sub-category of the category of ship.[1]

455. The definition in the 1954 Oil Pollution Convention might be thought to leave open the question whether the term "ship" should be read subject to an implied condition limiting the term to vessels with an appearance similar to ships of traditional design, so as to exclude, for example, platforms. That question was clearly answered in subsequent treaties.

456. One of the first clear articulations of the breadth of the concept of a ship was included in the 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, article 19 of which stated that: "For the purpose of this Convention:

> . . .
>
> 2) "Ships and aircraft" means sea-going vessels and air-borne craft of any type whatsoever. This expression includes air-cushion craft, floating craft whether self-propelled or not, and fixed or floating platforms."[2]

457. Attempts to reverse the tendency towards explicit use of such broad definitions of the term "ship" were unsuccessful. The successor to the 1954 Oil Pollution Convention, the 1973 "MARPOL" Convention, contained the following stipulation: "Article 2 Definitions For the purposes of the present Convention, unless expressly provided otherwise:

> . . .
>
> (4) "Ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms."[3]

On at least five occasions in the Conference which adopted the 1973 MARPOL Convention proposals to delete from the definition of ships the reference to fixed and floating platforms

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[1] But see the definitions in the International Convention on Civil Liability for Oil Pollution Damage, Brussels, 29 November 1969, 973 UNTS 3, article 1 of which provided that "'Ship' means any sea-going vessel and any seaborne craft of any type whatsoever, actually carrying oil in bulk as cargo"; and cf., the Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution, 14 January 1971, 10 *International Legal Materials* 137 (1971)

Similarly, article 2 of the IMO Draft Protocol to the International Convention on Civil Liability for Oil Pollution Damage 1969, London, 1984, 23 *International Legal Materials* 177 (1984) provided that article 1 of the 1969 Liability Convention be amended to provide that "'Ship' means any sea-going vessel and sea-borne craft of any type whatsoever constructed or adapted for the carriage of oil in bulk as cargo, provided that a ship capable of carrying oil and other cargoes shall be regarded as a ship only when it is actually carrying oil in bulk and during [the] [any] voyage following such carriage [unless it is proved that it has no residues of such carriage of oil in bulk aboard] [if it has residues of such carriage of oil in bulk still on board]."

[2] Oslo, 15 February 1972, 11 *International Legal Materials* 262 (1972).

[3] International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, 12 *International Legal Materials* 1319 (1973).

were defeated. It is difficult to see how it could be made plainer that all kinds of vessel, including drill ships and drill platforms, are included within this definition, which is widely echoed in other pollution treaties.[1] Platforms are ships for the purposes of these treaties.

458. This broad definition of ship is not a peculiarity of treaties concerned with the prevention of pollution. A similarly broad definition is adopted in other contexts. For example, the Convention on the International Maritime Satellite Organization provides that:

> "For the purposes of this Convention:
>
> . . .
>
> (f) 'Ship' means a vessel of any type operating in the marine environment. It includes *inter alia* hydrofoil boats, air cushion vehicles, submersibles, floating craft and platforms not permanently moored."[2]

Similarly, the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation states that:

> "For the purposes of this Convention, 'ship' means a vessel of any type whatsoever not permanently attached to the sea-bed, including dynamically supported craft, submersibles, or any other floating craft."[3]
>
> And the International Convention on Salvage states that: "Vessel means any ship or craft, or any structure capable of navigation."[4]

459. One treaty of interest because it addresses in general terms the issue of what counts as a ship is the 1986 UN Convention on the Conditions for Registration of Ships.[5] The Convention was concluded under the auspices of UNCTAD and accordingly reflects that

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[1] See, for instance, the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, Oslo, 15 February 1972, 11 *International Legal Materials* 262 (1972), article 19; the Convention on the Protection of the Marine Environment of the Baltic Sea, Helsinki, 22 March 1974, 13 *International Legal Materials* 546 (1974), article 2; the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft, Barcelona, 16 February 1976, 15 *International Legal Materials* 290 (1976), article 3; the Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment, Jeddah, 14 February 1982, I. Rummel-Bulska and S. Osafo, *Selected Multilateral Treaties in the Field of the Environment*, vol. 2 (1991), 144.

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, London, Mexico City, Moscow and Washington, 29 December 1972, 1046 UNTS 120, article III (1)(a), may appear to run counter to this trend in distinguishing between "vessels" and "platforms" in the reference to "vessels, aircraft, platforms or other man made structures". However, article III (2) of that Convention stipulates that "'vessels and aircraft' means waterborne or airborne craft of any type whatsoever. This expression includes air cushioned craft and floating craft, whether self-propelled or not." While there might be platforms which are not vessels, such as fixed man-made platforms build on low-tide elevations, the definition in article III (2), which is similar to that in the 1973 MARPOL, is broad enough to embrace drill ships and drill platforms of the kind in issue in this case.

[2] London, 3 September 1976, 1143 UNTS 105, article 1.

[3] Rome, 10 March 1988, 27 *International Legal Materials* 672 (1988), article 1.

[4] London, 28 April 1989, 14 *United Nations Law of the Sea Bulletin* (December 1989), p. 77, article 1. Cf., the IMO Draft Convention on Liability and Compensation in Connection with the Carriage of Noxious and Hazardous Substances by Sea, London, 1984, 23 International Legal Materials 150 (1984), article 1 of which provides that "'ship' means any sea-going vessel and any seaborne craft of any type whatsoever carrying one or more hazardous substances as cargo."

[5] Geneva, 7 February 1986, 26 *International Legal Materials* 1229.

organization's particular concern with the international shipping trade rather than with the regulation of ships as such, a matter which falls within the competence of the International Maritime Organization. Nonetheless, the Convention adopts a functional approach to the concept of a ship, not limiting the concept of a ship by reference to any particular design characteristics. *Article 2 of the Convention stipulates that:*

> "'Ship' means any self-propelled sea-going vessel used in the international seaborne trade for the transport of goods, passengers, or both with the exception of vessels of less than 500 gross registered tons."

460. Perhaps the treaty definition most relevant to the present case is that given in the Regulations attached to the 1972 Convention on the International Regulations for Preventing Collisions at Sea.[1] Those Regulations are specifically intended to establish rules for the avoidance of collisions by all navigating vessels: in other words, their intended ambit is co-extensive with the category of navigating vessels. Rule 3 states that:

> "For the purposes of these Rules, except where the context otherwise requires (a) The word "vessel" includes every description of water craft, including non-displacement craft and seaplanes, used or capable of being used as a means of transportation on water. (b) The term "power-driven vessel" means any vessel propelled by machinery.
>
> . . .
>
> (f) The term "vessel not under command" means a vessel which through some exceptional circumstance is unable to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.
>
> (g) The term "vessel restricted in her ability to manoeuvre" means a vessel which from the nature of her work is restricted in her ability to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.
>
> The following vessels shall be regarded as vessels restricted in their ability to manoeuvre:
>
> (i) a vessel engaged in laying, servicing or picking up a navigation mark, submarine cable or pipeline;
>
> (ii) a vessel engaged in dredging, surveying or underwater operations;
>
> (iii) a vessel engaged in replenishment or transferring persons, provisions or cargo while underway;
>
> . . .
>
> (vi) a vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from their course.
>
> . . ."

While no explicit reference is made to MODUs, they plainly come within the definition, and are treated in practice as doing so.

461. This broad definition of the terms "ship" and "vessel" is continuing in current practice. One of the most recent treaties on maritime matters, the International Convention on Oil Pollution Preparedness, Response and Cooperation[2], uses the following definition:

> "Article 2
>
> For the purposes of this Convention:

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[1] London, 20 October 1972, 1050 UNTS 16, 1143 UNTS 346.

[2] London, 30 November 1990, 30 *International Legal Materials* 733 (1991).

> (3) "Ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, and floating craft of any type."

462. As is the case in relation to pre-1945 treaties, there is no evidence of any systematic distinction being drawn between the terms "ship" and "vessel". A Report of the Drafting Committee of the Third UN Conference on the Law of the Sea, having noted the use of both terms in the draft text of the UN Convention on the Law of the Sea, stated:

> "This problem affects only the English and Russian versions since only one word is used in other languages, e.g., *buque* in Spanish and *navire* in
>
> French. The words "ship" and "vessel" are not interpreted as meaning different things in the text.
>
> . . .
>
> In the Arabic, Chinese, French and Spanish texts, one word is used consistently throughout the text. The Drafting Committee suggested that the chairmen of the English and Russian language groups might consult with each other in an attempt to resolve the issue within their groups."[1]

The issue was not, however, resolved. Although towards the end of the conference a suggestion was made that the term "vessel" was broader than the term "ship",[2] no harmonization of the terms was achieved and both "ship" and "vessel" appear in the English text, in the same provisions which had led the Drafting Committee to report that the terms did not mean different things. "Ship" and "vessel" remain interchangeable terms in international law.

463. Multilateral treaty practice throughout this century leads to the conclusion that the legal conception of a ship or vessel has consistently been a broad and functional one, tied to the fact of the craft in question navigating on the sea or with the capacity to do so.

464. Bilateral treaty practice does not diverge from this pattern. Most bilateral treaties use the terms "ship" or "vessel" without defining them.[3] A rare and notable exception is article 1 of the Agreement between the Government of the Kingdom of Denmark and the Government of the German Democratic Republic concerning Salvage Operations in the Internal Waters and Territorial Seas of the Kingdom of Denmark and the German Democratic Republic, which states:

> "For the purposes of this Agreement: 1. 'Ship' means a vessel of any type which is used at sea, including hydrofoil boats, air cushion vehicles, submarines, floating vessels and fixed or floating platforms."[4]

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[1] UN Doc. A/CONF.62/L.40, 22 August 1979; UNCLOS III, O.R., vol. XII, p. 95 at p. 97.

[2] See UNCLOS III, O.R., vol. XVI, p. 13, para. 56 (Mr Yankov).

[3] See, for example, Agreement between the Government of the Kingdom of Denmark and the Government of the Union of Soviet Socialist Republics concerning Shipping, 17 October 1973, 976 UNTS 293; Agreement on Maritime Transport between the Government of the Kingdom of the Netherlands and the Government of the People's Republic of China, 14 August 1976, 1021 UNTS 249; Agreement on Maritime Transport between the Government of the Republic of Finland and the Government of the People's Republic of China, 27 January 1977, 1215 UNTS 65; United States of America - Panama, Panama Canal Treaty, 7 September 1977, 1280 UNTS 3; Agreement on Trade and Shipping between the Czechoslovak Socialist Republic and the Republic of Cuba, 5 November 1977, 1135 UNTS 169; Agreement on Maritime Transport between the Government of Spain and the Government of the Republic of Equatorial Guinea, 5 December 1979, 1177 UNTS 213.

[4] Berlin, 13 October 1976, *UN Legislative Series*, ST/LEG/SER.B/19, p. 408.

465. One qualification needs to be made to this conclusion. As has been seen, several of the definitions are framed in terms wide enough to encompass drill platforms engaged in seabed exploitation and engaged in operations there, as well as platforms navigating the seas. The 1973 MARPOL definition (" "Ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms") is a good example.

466. This reflects the fact that it is inappropriate in the context of the regulation of the activities of vessels to try to force a distinction between "vessels navigating" and "vessels engaged in the exploitation of seabed resources": a vessel might fall into both categories. The 1972 Collisions Regulations, for instance, include dredgers (to which vessels recovering deep sea bed minerals are assimilable) within the category of vessels. Their inclusion is appropriate because such craft are navigating while they are collecting seabed resources. However, certain vessels cease navigating in order to recover or otherwise engage in the exploitation of seabed resources. MODUs are vessels of such a kind. While they are fixed to the seabed they are not navigating and do not behave like ships.

467. The appropriate distinction in the context of the regulation of navigation, therefore, is that drawn between MODUs which are, and MODUs which are not, navigating at the time in question. This distinction is drawn explicitly in several instruments. The 1976 ILO Convention on Minimum Standards in Merchant ships[1] stipulates that:

> "Article 1
>
> 1. Except as otherwise provided in this Article, this Convention applies to every seagoing ship, whether publicly or privately owned, which is engaged in the transport of cargo or passengers for the purpose of trade or is employed for any other commercial purpose.
>
> . . .
>
> 4. This Convention does not apply to —
>
> (a) ships primarily propelled by sail, whether or not they are fitted with auxiliary engines;
>
> (b) ships engaged in fishing or in whaling or in similar pursuits;
>
> (c) small vessels and vessels such as oil rigs and drilling platforms when not engaged in navigation, the decision as to which vessels are covered by this subparagraph to be taken by the competent authority in each country in consultation with the most representative organizations of shipowners and seafarers."

Here, oil rigs and drilling platforms may be excluded from the scope of the Convention by the flag State, but only when they are not engaged in navigation.

468. The same distinction is drawn in other treaties. The 1976 INMARSAT Convention excludes from the definition of a ship platforms which are "permanently moored"[2]. The 1989 International Convention on Salvage[3] also excludes them, in more precise terms. Article 3 of that Convention states that:

> "This Convention shall not apply to fixed or floating platforms or to mobile offshore drilling units when such platforms or units are on location engaged in the exploration, exploitation or production of seabed mineral resources."

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[1] Geneva, 29 October 1976, 15 *International Legal Materials* 1288 (1976).

[2] Convention on the International Maritime Satellite Organization, London, 3 September 1976, 1143 UNTS 105, article 1.

[3] London, 28 April 1989, 14 *United Nations Law of the Sea Bulletin* (December 1989), p. 77.

Such platforms and units are within the definition of vessels in article 1(b) of the 1989 Convention when they are not so located and engaged. Article 1(b) provides that "vessels means any ship or craft, or any structure capable of navigation."

469. This is underlined by the fact that during the negotiation of the 1989 Salvage Convention, as the Conference records note:

> "The Committee decided to amend sub-paragraph (b) by inserting the word "any" before the word "structure", in order to make it clear that the phrase "capable of navigation" should be understood as a qualification only with regard to the term "structure", and not with regard to the term "ship"." [1] The question whether a structure is a vessel is made to turn on the functional criterion of the fact its capability of engaging in navigation, and not on any other characteristics of its shape or design.[2]

470. One of the fullest international discussions of the distinction between platforms which are and platforms which are not ships occurred during the negotiation of the 1988 Convention for the Suppression of Unlawful Acts against the Safety of Navigation.[3] There the line was drawn between "a vessel of any type whatsoever not permanently attached to the sea-bed" which, as a ship, is covered by the 1988 Convention itself[4], and "an artificial island, installation or structure permanently attached to the sea-bed for the purpose of exploration or exploitation of resources or for other economic purposes", which is a "fixed platform" covered by the 1988 Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf.[5]

471. The distinction in the 1988 Convention and Protocol, which treats platforms operating on location but not *permanently* attached to the sea-bed as ships, perhaps goes further than the current general practice. The generally accepted distinction regards such platforms as ships when they are navigating, usually from one drilling site to another or to or from a shipyard, but not when they are operating on location, whether or not they are "permanently" attached to the sea-bed. This generally accepted distinction is epitomised by the terms of a note to IMO Resolution A.671(16). That note reads as follows: . .

> "For the purpose of this resolution mobile offshore drilling units (MODUs) used for exploratory drilling operations offshore are considered to be vessels when they are engaged in transit and not engaged in a drilling operation, but are considered to be installations or structures when engaged in a drilling operation."

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[1] Note on article 1, IMO Doc. LEG/CONF.7/CW/RD/2, 19 April 1989.

[2] Cf., the International Convention on Oil Pollution Preparedness, London, 30 November 1990, 30 *International Legal Materials* 733 (1991), article 2, which distinguishes between offshore installations and vessels in general only to the extent that the installations are engaged in exploration and exploitation activities.

[3] Rome, 10 March 1988, 27 *International Legal Materials* 672 (1988).

[4] Article 1.

[5] 27 *International Legal Materials* 685 (1988), article 1.

B. CONCLUSIONS FROM TREATY PRACTICE

472. International treaty practice provides no warrant for the application of any criterion other than a capability of navigation at sea, or perhaps an actual engagement in navigation at sea, in determining whether or not a given craft counts as a ship or vessel.

473. It may be said that in the absence of an authoritative and general definition of the terms "ship" and "vessel" a purposive interpretation must be adopted, admitting that the definition may vary from one context to another.[1] Such an approach would be supported in the context of treaties by the provisions of the Vienna Convention on the Law of Treaties concerning treaty interpretation.[2] However where, as in the present case, the question is one of rights of navigation, the conclusion must be the same: the question whether a given craft does or does not qualify as a ship so as to enjoy rights of navigation must depend on its capability of navigation at sea, or perhaps its actual engagement in navigation at sea.

474. Drill ships and semisubmersibles plainly satisfy this criterion. They are capable of navigating at sea, and indeed are designed specifically to navigate at sea; and they do in fact navigate at sea.

475. Jack-ups are more problematic. They are designed to be towed at sea, either by heavy lift barges or by tugs. When towed by a heavy lift barge they constitute the cargo of that barge. As such they partake of the right of passage of the barge.[3] This was made explicit in early formulations of the right of innocent passage, which stipulated that ships, their passengers and cargo enjoyed that right.[4] Although this is not expressly stated in the 1958 Territorial Sea Convention or the 1982 UN Convention on the Law of the Sea, it is absurd to suggest that a ship enjoys the right of passage but its cargo does not. There is no evidence in national legislation or treaty-making practice of rights of passage being dependent upon ships bearing cargo of any specific size.

476. The position is different in relation to jack-ups which are under wet tow or which are being towed on a barge. There is no evidence establishing the existence of a general requirement that a ship, for the purposes of international law, be capable of navigation under its own power. The 1986 UN Convention on the Conditions for Registration of Ships is unusual in defining ships as "self-propelled" vessels, and other instruments, such as the 1972 Collision Regulations, clearly contain no such requirement. There is, therefore, no justification for excluding jack-ups from the category of ships on the basis that they cannot navigate under their own power. Indeed, the 1972 Collisions Regulations explicitly treat tug and tow as two vessels:[5] the fact that the tow may be unable to move under its own power is irrelevant.

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[1] See D.P. O'Connell, *The International Law of the Sea*, vol. II (ed I.A. Shearer) (1984), p. 749.

[2] 23 May 1969, 1155 UNTS 331, Articles 31-33.

[3] Cf., Rule 24 of the 1972 Collisions Regulations, 1050 UNTS 16, 1143 UNTS 346, which treats a tug and her tow as a (single) power driven vessel when they are "rigidly connected in a composite unit".

[4] See, for instance, M. Schücking's Memorandum to the Sub-Committee of the League of Nations Committee of Experts for the Progressive Codification of International Law, League of Nations Doc. C.196.M.70. 1927. V, April 20, 1927, p. 71; A.S. de Bustamante y Sirven (trans P. Goulé), *La mer territoriale* (1930), para. 175.

[5] See, for example, Rule 24 of the Collisions Regulations, which sets out the requirements for both the towing vessel and her tow.

477. It may be thought that there is, or ought to be, a distinction between vessels capable of navigation under their own power and those not so capable, with the effect that jack-up barges are not to be regarded as vessels. However, the definitions of the terms "ship" and "vessel" in international treaties do not compel the conclusion and, as is shown below, municipal practice does not support any such requirement. International practice has not so far excluded jack-up barges from the category of ships.

478. Even if international law were to require a capability of navigation under its own power in order that a craft qualify as a ship, it would not, of course, necessarily follow that non-powered craft have no rights of passage. Rights of passage might apply equally to ships and non-powered vessels. Alternatively, non-powered vessels might have an independent right of passage, established by the consistent and repeated practice of States in allowing them to navigate unhampered through the territorial sea in the same manner as conventional ships. Or, thirdly, a towed jack-up might be held to partake of the right of passage of the tug, on the basis that it is cargo, or that it and the tug are a single navigating unit for this purpose or, again, on the basis that State practice clearly establishes that towed jack-ups are treated as having a right of passage. Whatever legal characterization might be adopted, the fact that towed jack-ups are treated in a manner consistent with their possessing a right of passage is undeniable.

C. THE DEFINITION OF SHIPS IN NATIONAL LAW AND DOCTRINE

479. The concept of a ship or vessel in treaty-making certainly extends to drill ships and semisubmersible platforms and arguably to jack-ups. The definition of ship adopted in municipal law is similarly broad.

480. Most national legislation concerning the territorial sea explicitly affirms the right of navigation or of innocent passage. In some cases, this right is phrased in general terms, in others it is applied to "all ships" or "all ships other than warships".[1]

481. Unless they are anchored or permanently fixed to the sea-bed in areas of national jurisdiction,[2] or unless they are engaged in the actual exploration or exploitation of the resources of the sea-bed of the coastal state,[3] there is no tendency to exclude drill ships, semisubmersibles or jack-up drill barges from the definition of ships in the applicable national legislation. On the contrary, those pieces of national legislation which define the words "ship" or "vessel" tend to employ the broadest terms which could not conceivably be interpreted to exclude such vessels. This applies both to legislation concerning the territorial sea generally, and specialized legislation dealing with issues such as pollution, fisheries, customs regulation, etc.

482. Some national jurisdictions establish special restrictive regimes for the passage of warships, nuclear ships and ships carrying ultra-hazardous substances. MODUs are generally not subject to such special treatment while in transit.[4] In a few cases, the coastal

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[1] As in international usage, the terms 'ship' and 'vessel' are often used interchangeably. E.g., the report of the Chairman of the Drafting Committee of the Third United Nations Conference on the Law of the Sea. A/CONF.62/40 UNCLOS III, Official Records, vol XII, p. 95, at 97.

[2] Coastal states frequently adopt specialized legislation for drilling platforms fixed to the seabed. However, such legislation is not relevant in the context of this memorial, which addresses the *navigational* rights of MODUs. In municipal case law floating structures fixed in one place are also generally excluded from the definition of ships, see, *e.g.*, *The Gas Float Whitton* No. 2, [1897] A.C. 337 (H.L.). *The Normandy*, [1904] P. 187; *The Upcerne*, [1912] P. 160; *The Blow Loat*, [1912] P. 217; *Mac Donald v. Santa Fe Intl.*, 1981 AMC 536; *Dresser Ind. v. Fidelity and Cas.*, 1978 AMC 2588; In *Stephenson v. McLean Contracting*, 1988 AMC 2640, a crane barge capable of moving along its own anchor lines was held not to be a vessel. However, that case is distinguishable, as the barge in question was constrained in its ability to move by fixed cables and therefore unable to navigate freely. When navigating, MODUs are free from such constraints.

[3] The right of coastal states relating to the regulation of exploration or exploitation of natural resources on the sea-bed are of course of a different and wider nature than the rights relating to the possible interference with the freedom of navigation. Thus, all of the jurisdictions surveyed below permit the passage of MODUs, although some would apply specialized, and possibly more restrictive legislation, should MODUs engage in exploration or exploitation, *see, e.g.*, Part *XV*, subsection 655 (2) of the Canadian Shipping Act, and Douin, *Etat actuel des législations nationales en matière d'utilisation des fonds marins*, (1985) esp. pp.38 *et seq.*

[4] Norwegian legislation (Royal Decree of 1965, reproduced in the Annex) requires notification of the movement of drilling platforms intended for use in areas under Norwegian jurisdiction. However, this stipulation does not require notification for platforms not intended for *use* in Norwegian waters, *i.e.* it does not apply generally to MODUs in transit. Furthermore, the Norwegian Decree requires notification, not authorization. This practice is in line with international standards aimed at enhancing safety of navigation, rather than precluding navigation. See the *IMO Recommendation on Safety Zones and Safety of Navigation around Offshore Installations and Structures*, under which coastal States authorizing the operation of offshore installations and structures should "require operators of MODUs to provide advance notice of any change of their location to the appropriate authority of the coastal State so as to allow timely issue of relevant Notices to Mariners": IMO Res.A.671(16), Annex, Article 1(1).

State may require prior notification for reasons of safety when oil rigs are being towed through certain areas of its territorial sea, because of their restricted ability to manoeuvre. However, in that case they are treated just like other ships which are similarly restricted, and their right of passage is not in question.[1]

1. Elements of Definitions in National Law

483. A number of legislative acts simply define a vessel as a structure capable of flotation.[2] Undoubtedly all MODUs would satisfy this criterion. Such a broad definition is also reflected in the views of leading writers on the subject. Duckworth notes that the word 'ship' "does not limit its meaning, but rather enlarges it."[3] Caron finds that the "customary international law definition would be quite encompassing."[4] The specialized literature explicitly includes drilling ships, semisubmersibles, and, to an extent, jack-up rigs in the definition of ships. Wylie Spicer, a lecturer in Maritime Law at Dalhousie University, concludes: "The debate about whether a self-propelled semisubmersible is a ship must now be over – it is a ship."[5]

2. The requirement of 'navigation'

484. Many definitions in national legislation refer to the functional criterion of vessels capable of, or engaged in navigation. The functional approach is also supported in municipal law jurisprudence and doctrine. It is well established in common law jurisprudence that "every vessel that substantially goes to sea is a ship."[6] A similarly broad approach is evidenced in civil law jurisdictions.[7] And, in more recent cases, MODUs have been found

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[1] E.g., the US Navigation Rules, Rule 3(q) (vi). "The term 'vessels restricted in their ability to manoeuvre' shall include but not be limited to: a vessel engaged in a towing operation such as severely restricts the towing vessel and her tow in their ability to deviate from the course she is following."

[2] Sometimes reference is made to the fact that it must be a hollow structure—a criterion fulfilled by MODUs.

[3] *The Principles of Maritime Law* (1930) p. 1; further references to the literature are given below.

[4] Ships, Nationality and Status, in Bernhardt (ed.), 11 *Encyclopedia of Public International Law* (1989) p. 290.

[5] Canadian Maritime Law and the Offshore, 15 *Journal of Maritime Law and Commerce* (1984)p. 489. The American Law Institute even includes fixed installations: "Oil drilling platforms and similar fixed installations are in some respects subject to the law of the sea and maritime law as if they were ships." 2 *Restatement of the Law, the Foreign Relations Law of the United States p.* 12. On the other hand, as indicated, above international conventions and national legislation tend to exclude fixed installations and installations or devices engaged in the exploration and exploitation of the resources of the sea-bed and the ocean floor from the definition of the term 'ship'. MODUs in transit are of course neither fixed to the ocean floor nor engaged in the exploration or exploitation of such resources.

[6] *Ex p. Ferguson,* (1871) L.P. 6 Q.B.280; further cases are cited below.

[7] *E.g.*, the German *Bundesgerichtshof,* 1952 NJW 1135; and the French *Cass.*, 1844, *1*, 197. It may be noted that in a commentary to the Danish Maritime Act, it is stated that in principle, any vessel (in Danish "fartøj") irrespective of its size, type or use may be considered a ship ("skib") under the Act. It is added, though, that further characterization may ensue from the more specific rules of the Act. *Søloven med kommentarer ved Jørgen Bredholt og Allan Philip,* (1986), p. 63.

to fall within the functional criterion of capability of, or use in navigation. For example, in *In re Seafarers' International Union of Canada v. Crosbie Offshore Services, Ltd.*, Judge Thurlow of the Canadian Federal Court of Appeal pointed out with respect to oil rigs: "The rigs are also ships. They have means of self-propulsion but for one reason or another may be towed to a drill site."[1] This view has also been maintained with consistency in other jurisdictions, in particular the United States.[2]

485. Writers too have followed the functional approach. In the words of Gidel, it is "l'aptitude à la navigation" which furnishes the decisive element of the definition.[3] Gidel adds: "il semble pouvoir ressortir que le navire de mer de surface n'est pas seulement tout engin flottant, mais tout engin, quelles que soient ses dimensions et sa dénomination, apte à se mouvoir dans les espaces maritimes (à l'exclusion des autres milieux) avec l'armement et l'équipage qui lui sont propres en vue des services que comporte l'industrie à laquelle il est employé." Lazaratos, in an article devoted to the *Definition of Ships in National and International Law*, concludes that "the ability to navigate is the paramount test."[4]

486. Some pieces of national legislation refer to 'vessels capable to navigate', while others cover vessels 'used in navigation'. Technically, there might be a distinction between these two concepts. A vessel 'capable' of navigation would include any detached or detachable structure which floats, even if it is never moved, while a vessel 'used' in navigation must actually be employed in movement in water. However, this distinction is not maintained with any consistency in municipal law. For example, the Australian Navigation Act covers vessels used in navigation, while the Australian Shipping Registration Act applies to vessels capable of navigating. The Netherlands Act Regarding Shipping Traffic refers to both requirements simultaneously, covering any vessel 'which actually is used or suitable to be used as means for movement by water'. Some legislative acts apply explicitly to vessels which are 'sea-going' or 'ocean going'.[5] It is not clear whether this

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[1] (1982) 135 D.L.R. (3rd 485 (F.C.A.).

[2] *E.g., Offshore Co. v. Robinson*, 1959 AMC (5th Circuit); *Producers Drilling Co. v. Gray*, 1966 AMC 1260 (5th Circuit); *A-1 Industries Inc. v. Barge Rig # 2*, 1979 AMC 1486 (E.D. Louisiana); *In re Complaint of Sedco*, Inc., 1982 AMC 1461, 21 *International Legal Materials* (1982), p. 318 (S.D. Texas).

[3] 1 *Le droit international public de la mer* (1932), p. 65. See also, e.g., Nguyen Quoc, Dallier, Pellet, *Droit international public* (1987), p. 958; Bredholt and Philip, *Søloven med Kommentarer* (1986) p. 63; Soederquist, *Droit international maritime* (1930), p. 156; Calvo, 2 *Dictionnaire de droit international* (1885), p. 11.

[4] 22 *Rev. Hellenique de droit international* (1969), p. 78. For this reason, Lazaratos would deny that platforms engaged in exploitation and fixed to the seabed are ships. See also C.A. Fleischer, *Petroleumsrett*, (1983), p. 342. It may be noted that in mid-seventies a Norwegian governmental Committee on the law applicable to drilling craft, rigs and platforms prepared a Report discussing the legal nature of such craft. The Report concludes (NOU 1976:59, p. 16) that in some situations a drilling platform takes much similarity to a "ship", while in others the same is not the case. The Report continues to note that there was no general proviso to determine to what extent the rules and regulations on ships in the Norwegian Maritime Act and other relevant acts were also applicable to drilling platforms. According to the Report, one had to study *in casu* the individual rules to ascertain their applicability, and that in some cases drilling platforms would correspond to ships while in others they would not. *Privatrettslige regler for borefartøyer. Norges offentlige utredninger, NOU 1976:59.*

[5] E.g., Barbados, Maritime Boundaries and Jurisdiction Act, 1976; Grenada, Maritime Boundaries Act, 1976; Japan, Marine Pollution Prevention Law, 1970. The term 'sea-going' has been interpreted to indicate navigation beyond internal waters, *Big Foot Two Lim. Procs.*, 1989 AMC 1004, 1008.

criterion would be of an objective or subjective nature, i.e., whether it relates to the abstract capability of navigating on the high seas or to the practice of actually navigating the oceans. In any event, MODUs would fulfill both the objective and the subjective test. By design, they are capable of long-distance navigation, and by definition they are engaged in navigation when attempting to exercise the right of passage through waters under national jurisdiction.

487. The subjective criterion of vessels 'used' in navigation might be interpreted to mean that the primary use of a vessel must be that of navigation.[1] Generally, municipal law courts tend to require evidence only of occasional use in navigation, or even only actual use in navigation at a single point in time when the structure in question was involved in the events giving rise to the judicial proceedings.[2]

488. In *Qualls v. Arctic Alaska Fisheries*, the US District Court, District of Alaska, affirmed that "Courts have found that the vessel does not have to be actually plying the waters for it to be 'in navigation'," adding that: "generally the 'in navigation' requirement is used in the broad sense not strictly confined to those vessels that actually navigate or move, but can include those vessels that are engaged as instruments of commerce or transportation in navigable waters."[3]

489. In 1982, the US District Court, Southern District of Texas, was faced with the necessity of defining the character of a ship in litigation arising from the Ixtoc I oil well disaster. It summarized the criteria relating to the capability of, or use for navigation in the following way when it investigated whether an oil rig could be considered a vessel: "Thus as the law has evolved, several factors have emerged as indicia of whether a craft is a vessel under the [US Limitation of Liability] Act. First, the craft must be built with the intent that it be used in navigation as a means of transportation. Second, the contrivance must not be permanently attached to the shore or seabed. Finally, the craft must be subject to the perils of the sea. Comparing these factors to the craft in question, the Court finds the *Sedco 135* semisubmersible rig to be a vessel under the Limitation Act."[4] The Court added that "semisubmersible drilling rigs long have been held vessels for other statutory purposes."[5]

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[1] Examples of such a requirement in national legislation are rare, and they mostly relate specifically to maritime commerce, which is not of direct relevance to MODUs. *E.g.*, Morocco, Code de Commerce Maritime: "Le navire est le bâtiment qui pratique habituellement cette navigation". In *Merchants' Marine Insurance Co. Ltd v. North of England Protecting & Indemnity Association*, [1926] 25 Ll.L.R. 446, Roche, J, dealt with a case where the primary purpose for which a platform had been designed was "to float and to lift, and not to navigate". He denied that the platform was a ship because "whatever other qualities are attached to a ship or vessel, the adaptability for navigation, and its use for that purpose, is in my judgement one of the most essential elements." However, this case related to a pontoon, moored to a river bank by chains, which was almost impossible to move, and had only been observed to do so once.

[2] *E.g.*, *Patton-Tully Transportation Company v. Turner*, 269 F. 334 (6th Cir. 1920); *The Craighall, [1910]* P. 207 C.A.); *In re Great Lakes Transit Corporation*, 53 F2d 1022, 1931 AMC 1740 (E.D. Ohio 1931); affirmed in 63 F.2nd 849; 1933 AMC 1019 (6th Cir. 1933); *Marine Craft Constructors Ltd. v. Erland Blomqvist (Engineers) Ltd.*, [1953] 1 Lloyd's Rep. 514; *Cook v. Dredging & Construction Co. Ltd., [1958]* Lloyd's Rep. 334; *The Queen v. St John Shipbuilding & Dry Dock Co.* (1981), 126 D.L.R. (3d) 353, 362 (F.C.A.).

[3] 1911 AMC 582. Also *Wheeling Pittsburgh Steel Corp.*, 1975 AMC 2527; 1976 AMC 1499; *Ramos* v. *Universal Dredging Corp*, 547 F.Supp. 661, 664 (D.Haw. 1982).

[4] In *Drilling Unit Sedco 135*, 1982 AMC 1461, 21 *International Legal Materials* (1982), p. 318 at 337.

[5] Id., at 334, relying on *Offshore Co. v Robison*, 266 F.2d 769, 779 (5 Cir. 1959).

490. Applying the three elements of the test enunciated in the *Sedco* case, it is clear that MODUs of all types are fully covered by the definition of ships. They have been specifically designed to allow for movement in water; they are obviously not attached to the seabed while moving; and they move through maritime spaces, often for considerable distances. Even jack-up rigs change location with some frequency, both within particular drilling areas and sometimes for transcontinental relocation or refurbishment.

3. Used for Purposes of Transport

491. It is occasionally required that a vessel must be engaged in transport of goods and persons, in fishing or other particular activities.[1] This requirement can usually be explained with reference to the fact that the legislation in question tends to be specialized, dealing with maritime transport regulation, fisheries, etc. While such legislative measures should therefore not be taken to indicate that there is a general criterion requiring vessels to be used for transport of goods or persons in order to qualify as ships, MODUs would in any event fulfill this criterion. They are designed precisely in order to transport drill rigs, accommodation units, or other offshore equipment from place to place. Hence, a MODU moving by itself, or being moved in wet or dry-tow, is of course engaged in transport. This was specifically affirmed in the *Sedco* case, where the US District Court, Southern District of Texas, held that a semisubmersible drilling platform "was built and utilized as an ocean-going vessel in navigation as a means of transporting a fixed cargo".[2]

4. Means of Propulsion

492. The Australian Navigation Act, as amended, includes MODUs in its general definition of ships, but specifically excludes those MODUs which are not self-propelled. The Venezuelan Shipping Act requires an 'integrated means of propulsion'. However, a substantial number of other legislative acts explicitly exclude the means of propulsion as

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[1] *French doctine distinguishes between le navire and le bâtiment.* "*Le navire, bâtiment de mer, est* aussi plus que cela. Outre son aptitude à affronter le peril marin, il se caractérise par sa fonction, qui est de transporter des personnes ou des biens. Cette condition est necessaire et suffisante pour valoir à un bâtiment de mer la qualification de navire." Remond-Gouilloud, *Droit Maritime* 42 (1985). However, the same author confirms with respect to *plates-formes de forage:* "Ces bâtiments sont, comme les navires, isolés et exposés au peril marin: leur mode de construction et leurs amenagements montrent qu'ils y sont destinés. Aussi certaines règles maritimes, à l'origine conçues pour les navires, on vocation à les regir: ces sont celles qui sont commandées par le peril marin: règlements de securité, assistance ou règles pour prévenir les abordages. D'autres règles maritimes en revanche n'ont pas lieu de les intéresser: ce sont celles qui sont justifiée par le role du navire, qui est de transporter." Id., at 39. In addition, some parts of French legislation explicitly include "les plates-formes flottantes et tous engins flottants, qui soient auto propulsés ou non" in *the definition of the term navire, (see* Annex 78). *In Presly v. Healy Tibbits Construction Co,* 1988 AMC 1894, the US District Court, District of Maryland affirmed that in order to be "in navigation" a vessel must be performing the function of transporting people or things in commerce. That case related particularly to the application of the US Jones Act and the position of a worker as a "seaman" in the context of merchant shipping. Still, in consistent practice this requirement of transportation of people or things has been interpreted broadly, e.g., *Offshore Co. v Robison,* "a vessel may mean more than a means of transport on water." 266 F2d 769, 776 (5th Cir. 1959). Also *The Mac,* (1882) 7 P.D. 126, 131 (C.A.), Cotton L.J.: "The question cannot depend on the circumstance whether she carries a cargo from port to port."

[2] 1982 AMC 1461, 1474; 21 *International Legal Materials* 318, 337.

a criterion for the definition of ships (with the occasional exception of vessels propelled by oars).[1] Some definitions explicitly include vessels in tow.[2] It has long been established in the jurisprudence of municipal courts that "when the definition of the word 'ship' is considered", there is nothing to indicate that a craft "must at the time possess independent practical power of moving herself."[3] Towed barges without independent means of propulsion have been treated as ships in numerous cases.[4] And MODUs have been similarly subsumed within the definition of ships, even while in tow, in such decisions. In *Rogers vs. Gracey Hellums Corp.*, it was held that "Rig. No 4 is a submersible inland drilling barge. Lacking motive power, it is towed to and from locations by tug. ... The Court finds that the barge was a vessel".[5]

5. Conclusion

493. By far the largest number of legislative instruments surveyed here contain broad criteria for the definition of ships which would in principle include everything that floats. Even the more specific elements of the definition of ships which can be found in some pieces of legislation and in municipal court cases and the opinions of learned writers are satisfied by MODUs. MODUs are capable of flotation and navigation; they are not permanently attached to the sea-bed; and while in transit they are 'used in navigation' for the purpose of transport.

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[1] Bulgaria, Decree of 1951; Canada, Arctic Waters Pollution Act, Admiralty Act; Colombia, Maritime Commercial Code; Cook Islands, Territorial and Exclusive Economic Zone Act; France, Loi n. 76-600; Federal Republic of Germany, Act of 1977; Ireland, Maritime Jurisdiction Amendment Act; New Zealand, Marine Pollution Act, Oil in Navigable Waters Act; Spain, Act no. 21/1977; Tuvalu, Fishing Ordinance; UK, Fishing Boats Designation Order, Fisheries Limits Act; USA, Public Law 95-372; Western Samoa, Exclusive Economic Zone Act; (a number of other legislative acts, by ruling out vessels propelled by oars, imply that all other means of propulsion are covered).

[2] Finland, Order No. 710/1972 (now replaced by a definition based on MARPOL, see act No. 746/1983); See also the Finnish Act of Shipping Registration, No. 211/1927 (as amended) and the Law on Civil Liability for Damage Caused by Pollution by Oil, 401/1980; Oman, Marine Pollution Control Law, 1974; US Navigation Rules, Rule 3 (g)(vi), which includes vessels in tow in the category of vessels restricted in their ability to manoeuvre.

[3] *St John Pilot Commissioners v. The Cumberland Railway and Coal Co*, [1910] A.C. 208, 218 (P.C.).

[4] *The Mac*, (1882) 7 P.D. 126, 131 (C.A.), affirmed in *The Lighter No. 3, (1902)*, 18 T.L.R. 322; *The Mudlark*, (1911) P. 116; *The St. Machar*, [1939] 64 Ll.L.R. 27; on appeal, [1939] 65 Ll.L.R. 119. This includes barges or pontoons carrying specialized equipments such as cranes. *The Titan, (1923)* 14 Ll.L.R. 484; *Marine Craft Constructors Ltd. v. Erland Blomquist (Engineers) Ltd., (1953)* 1 Lloyd's Rep. 514; *The Queen v. St. John Shipbuilding & Dry Dock* Co., a Canadian case, at 126 D.L.R. (3rd) 353 (F.C.A.); *Orgeron v. Avondale Shipyards*, 1991 AMC 338. Meyers, while doubting that a single definition can be found to fit all circumstances, suggests that one might consider as a ship, by way of a starting point for a definition, "all seaworthy objects, including such as are incapable of traversing the sea otherwise than with the aid of a tug (floating drilling platforms, ships deprived of their means of propulsion, abandoned ships adrift which are still seaworthy, etc) ... ." *The Nationality of Ships* (1967) p. 22.

[5] 1971 AMC 956.

D. STATE PRACTICE IN DEALING WITH SHIPS

494. Treaty-making practice and State practice in the form of municipal legislation accord in regarding drill ships, semisubmersibles and jack-ups capable of navigation as ships. However, this may not be decisive. As Judge Read observed in the *Anglo-Norwegian Fisheries* case in the context of the evaluation of State practice concerning claims to maritime jurisdiction:

> " Customary international law is the generalization of the practice of States. This cannot be established by citing cases where coastal States have made extensive claims, but have not maintained their claims by the actual assertion of sovereignty over trespassing foreign ships.....
>
> The only convincing evidence of State practice is to be found in seizures, where the coastal State asserts its sovereignty over the waters in question by arresting a foreign ship and by maintaining its position in the course of diplomatic negotiation and international arbitration."[1]

495. The evidence afforded by treaty-making practice and municipal legislation must be viewed in the light of the manner in which States in fact act. Were there to be substantial evidence that States distinguish for the purposes of rights of navigation and passage between conventional ships and drill ships, semisubmersibles or jack-up barges, the inference drawn above from the treaties and legislation might be open to question. On the other hand, if States consistently draw no such distinction, the conclusion that drill ships, semisubmersibles and jack-up barges are ships for the purposes of navigation and passage rights must be regarded as firmly established in customary international law.

496. *Actual practice confirms the conclusion that drill ships, semisubmersibles and jack-ups* are treated as ships for the purposes of navigation and passage. As the annexed details[1] demonstrate, passages through straits by MODUs are common. The main straits through which MODUs have passed are the Bass, Danish, Dover, Gibraltar, Hormuz, Magellan, Malacca, Sunda, and Torres straits[2].

497. Not one single case is known in which the permission of the coastal State has been sought for the mere passage of a drill ship, semisubmersible or jack-up barge through a strait. Not one single case is known in which the permission of the coastal State has been sought for the passage of a drill ship, semisubmersible or jack-up barge through territorial waters. In every known case rights of passage are exercised by drill ships, semisubmersibles and jack-up barges in exactly the same manner as by merchant ships of conventional design.

498. Nor is any case known in which prior notification has been given to a coastal State in advance of mere passage by a drill ship, semisubmersible or jack-up barge, unless for the purpose of obtaining services such as pilotage or in order to comply with the requirements of a reporting-in system such as that operating in the Dover Straits, in which cases notification is given in the same manner as it is given by merchant ships of conventional design. No case is known in which notification has been given in circumstances which might cast doubt on the right of passage.

499. Nor is any case known in which any coastal State has treated a drill ship, semisubmersible or jack-up barge in any way differently from merchant ships of conven-

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[1] *ICJ Reports 1951*, p. 191.

[2] Annex 36.

tional design in relation to the exercise of rights of passage or navigation. The practice of the authorities in the United Kingdom responsible for supervising navigation through the Dover Straits, which are the international straits most frequently transitted by MODUs, and of the authorities in States such as Malaysia, Mexico, the Netherlands, and Singapore is to require them to comply with the 1972 Collision Regulations in exactly the same manner as other ships.[1]

500. MODUs are commonly entered upon the same registers as conventional ships. This is the case in, for example, Denmark, Mexico, Norway and the USA. In insurance matters the practice is to insure drilling vessels and drilling rigs under Hull and Machinery clauses as a marine risk. In all relevant respects international practice is to treat MODUs in the same manner as ships of conventional design, at least while they are not attached to the seabed or engaged in exploration and exploitation activities.[2]

501. The attitude of States to MODUs is exemplified by a passage from the decision of the US court in the *Sedco* case:

> "The SEDCO 135 was built in 1965 at the Ingalls Shipyard in Mississippi and between that time and 1979, when she was scuttled, she made two trans-atlantic voyages and eleven long ocean voyages, logging a total of 15,947 miles in navigation. These journeys took her to the waters off Portugal, then to the coast of Africa and eventually to the Bay of Campeche. During these voyages the SEDCO 135 was subject to all perils of the sea and without question would have been considered a vessel under the Limitation Act had an accident occurred during her travels. Additionally, she was designed to transport cargo, albeit a permanent one, throughout her voyages.
>
> The SEDCO 135 was registered as a United States vessel engaged in foreign commerce pursuant to federal law. She was inspected by the U.S. Coast Guard and surveyed on an annual basis by the American Bureau of Shipping. Moreover, she was subjected to a preferred ship mortgage. Clearly, she was built and utilized as an ocean-going vessel in navigation as a means of transporting a fixed cargo."[3]

502. The practice of treating drill ships, semisubmersibles, jack-up barges and merchant ships of conventional design alike, without drawing any distinction between them so far as rights of passage are concerned, is the critical element as far as the ambit of the right of passage through the Danish straits is concerned.

503. Whether the right of passage of MODUs is regarded as flowing from their status as ships, or from a distinct right established in State practice, is a matter involving the imposition of a legal characterization upon an established practice. Whatever characterization may be adopted, it is evident that MODUs have a right of passage.

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[1] Similarly, the regulations on passage through the Panama Canal distinguish two basic kinds of vessel: those which are self-propelled and those which are not. See Panama Canal Commission, *Marine Director's Notice to Shipping* No. 1-91.

[2] This position is also accepted in international fora not specifically concerned with navigation. See, for instance, the International Labour Organization, 71st Session, Report of the Committee of Experts on the Application of Conventions and Recommendations, Report III (Part 4A), 1985, p. 12. Also drilling rigs under tow are insured under Hull and Machinery clauses as a marine risk like any other ships. See Annex 82.

[3] US District Court, Southern District of Texas, *In the Matter of the Complaint of Sedco, Inc.*, 21 *International Legal Materials* 318, at pp. 337-338.

E. CONCLUSIONS

504. International law contains no authoritative definition of a ship.

505. International treaty practice includes within the category of a ship all craft which float and navigate, or are capable of flotation and navigation, upon the sea, at least while they are not attached to the seabed. These criteria are fulfilled by MODUs and other large ships which must pass through the Great Belt in order to enter or leave the Baltic Sea.

506. Municipal legislation commonly includes within the category of a ship all craft which float and navigate, or are capable of flotation and navigation, upon the sea, at least while they are not attached to the seabed or engaged in exploiting its resources. These criteria are fulfilled by MODUs and other large ships which must pass through the Great Belt in order to enter or leave the Baltic Sea.

507. State practice treats MODUs and other large ships which must pass through the Danish straits in order to enter or leave the Baltic Sea in the same manner as conventional ships as regards their rights of passage.

508. MODUs and other large ships which must pass through the Danish straits in order to enter and leave the Baltic Sea have been passing without permission or hindrance through these and other straits for many years. Regardless of their classification, that practice establishes that they have a right of passage through straits used for international navigation.

CHAPTER III

ALLEGED ACQUIESCENCE BY FINLAND IN THE BUILDING OF THE GREAT BELT BRIDGE IN ITS PRESENTLY PLANNED FORM

Section I. Introduction

509. It must be anticipated that Denmark will contend that Finland has somehow acquiesced in the building of a bridge over the eastern channel of the Great Belt in its presently planned form, and is therefore precluded from asserting that ships with a clearance of more than 65 metres, including drill ships, semisubmersibles, jack-ups, and reasonably foreseeable ships manufactured in Finnish shipyards have a right to free passage through the Great Belt. This contention is already foreshadowed in the Danish Written Observations of 28 June, 1991, submitted just prior to the oral hearings on the Finnish request for provisional measures. It is also foreshadowed in some of the statements made on behalf of Denmark at those oral hearings.

510. Thus, in the Danish Written Observations of 28 June, 1991, on Finland's request for an indication of provisional measures, it is recalled that Finland was directly informed of the Great Belt Project by Circular Notes in 1977 and 1987. It is then stated:

> "Other Baltic States reacted to these Notes, but no reaction was received from Finland" (para. 36).

Denmark concedes that on 18 July, 1989, Finland drew attention (by means of a letter from the Commercial Department of the Finnish Embassy in Copenhagen to the Danish Board of Navigation) to the fact that, according to available information, Finland's large transports e.q. drilling platforms with a free height of 150 metres, would be obstructed by the new bridge (para. 37). Likewise, Denmark also concedes that, in May, 1990, Finland requested informal talks to discuss aspects of international law pertaining to the passage of drilling platforms through the Great Belt, and that on 19 June, 1990, the Embassy of Finland sent a Note to the Danish Ministry of Foreign Affairs stressing that the proposed bridge over the eastern channel of the Great Belt would impede the transit of drilling platforms through the Great Belt (paras. 38 and 39).

511. Perhaps more directly in point is the argument advanced at paras. 130 to 132 of the Danish Written Observations of 28 June, 1991. In para. 130, Denmark rhetorically refers to the "striking passivity" of Finland as regards Danish plans for a fixed link over the Great Belt, pointing out that Finland has had diplomatic representation in Copenhagen since 1918. In para. 131, it is baldly stated:

> "The silence by Finland through all these years [*semble* since 1918] must be interpreted simply as acquiescence in Denmark's right to construct a high-level bridge across the Great Belt."

Denmark then proceeds to argue (in para. 132) that the real element of urgency arose in 1977 when the Danish Ministry of Foreign Affairs issued its first Circular Note on the Bridge Project. Denmark admits that the second Circular Note explicitly stated that a possibility existed to construct an immersed tunnel instead of the high-level bridge, but argues that "this was the last call" for States having problems for their ships passing the Danish straits to express and explain these problems to the Government of Denmark. The third Circular Note of 24 October, 1989, is characterised by Denmark as simply conveying "supplementary information", including the information that it had been decided to construct a high-level bridge of 65 metres over the East Channel; and it is specifically stated:

> "At that time the element of urgency would appear to have been overtaken by events in the sense that it would be almost impossible to stop even this part of the entire project."

512. A similar line is taken in various statements made by counsel for Denmark in the oral hearings on the Finnish request for provisional measures held in The Hague between 1 and 5 July, 1991. Thus, Ambassador Lehmann, in his statement of 2 July, 1991, argues *inter alia* that:

> "... the conduct on the part of Finland [*semble*, in not reacting to the Circular Notes of 1977 and 1987] should not be rewarded by indicating provisional measures against Denmark, *but should rather be considered as a factor which estops Finland from pursuing the matter further*." *(Emphasis supplied.)*

Mr Magid, in his presentation of 2 July, 1991, confined himself broadly to a presentation of facts which might be thought to sustain the argument that Finland had acquiesced in the construction of a high level bridge over the eastern channel of the Great Belt with a clearance of 65 metres. Finally, Professor Bowett, in his statement of 5 July, 1991, argues, in dealing with the question of urgency, that "it seems quite extraordinary that Finland should keep silent, knowing that Denmark would begin a scheme, spending millions and millions of dollars, and keep its protest until a point in time so late that Denmark was already committed" and that "where Governments believe their international legal rights are under threat, they have an obligation to speak out".

513. Although these Danish arguments are directed specifically towards the element of urgency inherent in a request for the indication of provisional measures, and although they were not adverted to in the Court's Order of 29 July, 1991, finding that the circumstances, as they now present themselves, were not such as to require the exercise of the Courts' power under Article 41 of the Statute to indicate provisional measures, Finland must assume that Denmark will resuscitate its arguments based on acquiescence at the merits stage. Finland is accordingly devoting this part of its Memorial to an analysis of these arguments in the firm conviction that they are unmeritorious in fact and in law.

514. There is not much dispute about the essential facts relevant to the Danish arguments about acquiescence; but there are significant and serious differences between Finland and Denmark as to how these essential facts are to be *interpreted*. Thus, Finland does not dispute that it received three Circular Notes from Denmark dated 12 May, 1977, 30 June, 1987, and 24 October, 1989. Nor does Finland dispute that it returned no formal reply to the first two of these Circular Notes, nor that the first Finnish reaction to the definitive Danish decision to construct a high level bridge over the eastern channel of the Great Belt with a clearance height of 65 metres was conveyed to Denmark in the letter of 18 July, 1989 from the Finnish Embassy in Copenhagen to the Danish Board of Navigation (Annex 61), followed by the Note of 19 June, 1990, from the Finnish Embassy in Copenhagen to the Danish Ministry of Foreign Affairs (Annex 64).

515. Finland proposes, first, to analyse the law relating to acquiescence and estoppel in the light of which the validity of the Danish arguments on acquiescence can properly be assessed, and, secondly (and more significantly), to analyse how the law should be applied to the particular circumstances of the present case.

Section II. The Law Relating to Acquiescence and Estoppel

516. Acquiescence is a concept which forms part of a series of principles of international law based upon and deriving from the conduct of a State party to an international dispute.

It is thus related to cognate principles such as estoppel or recognition, all three deriving from State conduct. For purposes of analysis, however, it is necessary to distinguish acquiesence from estoppel.

517. In a very recent judgment, a Chamber of the Court has drawn attention to some of the essential elements required by estoppel which it defines as:

> "... a statement or representation made by one party to another and reliance upon it by that other party to his detriment or to the advantage of the party making it[1]."

In that case, Nicaragua had presented a particular argument whereby it could be dispensed from producing evidence of the existence of the legal interests on which it relied by reason of certain assertions of fact and law made by El Salvador and Honduras in the proceedings which, it was contended, constituted recognition of the existence of major legal interests pertaining to Nicaragua. The Chamber found no evidence of estoppel in the pleadings of El Salvador and Honduras:

> "The indications to be found in the pleadings of the views of the Parties as to the existence or nature of Nicaraguan interests within or without the Gulf, no doubt amount to some evidence which the Chamber can take into account. None of these however amounts to an admission, recognition or statement that, in the view of the Party concerned, there are interests of Nicaragua such that they may be affected by the decision of the Chamber in the case."[2]

518. Bowett defines estoppel in terms which correspond closely to the definition given by the Chamber of the Court in its judgment on Nicaragua's application to intervene in the *Land, Island and Maritime Frontier Dispute*. Bowett states:

> "The rule of estoppel operates so as to preclude a party from denying the truth of a statement made previously by that party to another whereby that other has acted to his detriment or the party making the statement has secured some benefit: as such the rule has been accepted by international tribunals."[3]

519. In his specialised monograph on estoppel in public international law published more recently, Martin, having conducted a detailed survey of international case-law and doctrine, presents his own definition of estoppel, which is also expressed in suitably narrow terms:

> "On peut en donner la définition suivante, inspirée de la conception restrictive telle qu'elle paraît s'imposer aujourd'hui dans la jurisprudence internationale, des dicta de juges, des exposés de certains plaideurs et des observations de quelques auteurs: lorsqu'une Partie, par ses déclarations, ses actes ou ses comportements, a conduit une autre Partie à croire en l'existence d'un certain état de choses sur la foi duquel elle l'a incitée à agir, ou s'abstenir à agir, de telle sorte qu'il en est resulté une modification dans leurs positions relatives (au préjudice de la seconde ou à l'avantage de la première, ou les deux à la fois), la première est empêchée par l'estoppel d'établir à l'encontre de la seconde un état de choses different de celui qu'elle a anterieurement représenté comme existant."[4]

520. In order to found an estoppel, the representation of fact must be clear and unequivocal in the sense that it must reasonably support the meaning attributed to it by the

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[1] Judgment of 13 September, 1990, on Nicaragua's application to intervene in the case concerning *Land, Island and Maritime Frontier Dispute (El Salvador/Honduras), ICJ Reports 1990*, p. 30.

[2] *Ibid.*

[3] Derek Bowett, "Estoppel before International Tribunals and its relation to Acquiescence", 33 *British Year Book of International Law* (1957), p. 201.

[4] Antoine Martin, *L'estoppel en droit international public* (1979), pp. 259-260.

party raising the plea of estoppel; and that party must satisfy the court that it understood the statement to have that meaning. The rationale for this requirement would appear to be that suggested in a recent article on estoppel:

> "Clear and unequivocal representation, prejudice or detriment are not simply addenda; they trigger the very justification for specific protection of settled expectations. A rule of principle which would prohibit any modification of conduct, statement or representation vastly overestimates the potentials of law and is not even suitable or desirable in order to promote protection of good faith, reliance and confidence in international relations."[1]

521. An essential element in the rule of estoppel is that there must have been reliance in good faith upon the representation of one party by the other party to his detriment, or to the advantage of the party making the representation. Thus, in the *Serbian Loans* case, the question arose whether, by their conduct in accepting payment of interest upon the loans in French francs as opposed to "gold francs", the French bondholders had represented that they were prepared to accept payment in French francs. If they had, it was at any rate arguable that they were henceforth estopped from claiming payment according to the strict terms of the loans. The Permanent Court concluded that there had been no clear and unequivocal representation of the bondholders upon which the debtor State was entitled to rely. But the Court went further and stressed that there had in fact been no reliance by the debtor state on the alleged representation:

> "There has been no change in position on the part of the debtor state. The Serbian debt remains as it was originally incurred; the only action by the debtor state has been to pay less than the amount owing under the terms of the loan contracts."[2]

522. So also, the argument was advanced by Costa Rica in the *Tinoco* arbitration that Great Britain, by reason of its nonrecognition of the Tinoco government in Costa Rica, was estopped from asserting that the Tinoco government could confer rights which would be binding upon successor governments in Costa Rica. The sole arbitrator, Taft CJ, summarily dismissed this argument:

> "I do not understand the arguments upon which an equitable estoppel in such a case can rest. The failure to recognise the *de facto* government did not lead the succeeding government to change its position in any way upon the faith of it ... An equitable estoppel to prove the truth must rest on previous conduct of the person to be estopped, which has led the person claiming the estoppel into a position in which the truth will injure him. There is no such case here."[3]

523. A third essential element in the creation of a binding estoppel is that the statement or representation must be voluntary, unconditional and authorised. A representation procured by fraud, duress or error will nullify any plea of estoppel.[4] That the representation must be unconditional is supported by the advisory opinion of the Permanent Court in the *European Commission of the Danube* case, where the Court refused to uphold a plea of estoppel based on the conduct of delegates of France, Great Britain and Italy in agreeing, during the course of negotiations, that enforcement of regulations of the Commission could be left to the Roumanian authorities. The agreement of the delegates was made dependent upon conditions which were not accepted by the Roumanian Government. The Permanent

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[1] Bernhardt (ed.),7 *Encyclopedia of International Law* (1984), p. 79.

[2] *PCIJ Reports*, Series A, Nos. 20/21 (1929), p. 39.

[3] 18 *American Journal of International Law* (1924), p. 156.

[4] Salvador Commercial Company case, United States Foreign Relations (1902), p. 867.

Court refused to regard this conditional representation as creating a binding estoppel.[1] That the representation must be made by a person having authority to do so is confirmed by the treatment of the Ihlen declaration in the *Eastern Greenland* case.[2] That unilateral declarations or statements made by Government Ministers having ostensible authority to make them will be regarded as binding upon the Government concerned is further confirmed by the judgments of the present Court in the *Nuclear Tests* case (Australia v France),[3] and in the *Case concerning Military and Para-Military Activities in and against Nicaragua* (Merits)[4]; and by the judgment of the Chamber of the Court in the case concerning the *Frontier Dispute* (Burkina Faso/Mali)[5].

524. Further indications of the requirements of a true estoppel, and of the relationship between estoppel and acquiesence, are to be found in some of the more recent case-law of the present Court. The first case to be considered is the case concerning the *Arbitral Award made by the King of Spain on 23 December, 1906* (Nicaragua/Honduras)[6], which has been characterised as illustrating "the narrow distinctions between acquiescence, preclusion, estoppel, and recourse to the subsequent conduct of the parties as a means of interpretation of a treaty."[7] In that case, Nicaragua advanced a number of reasons why the 1906 arbitral award was invalid, including the argument that the designation of the King of Spain as arbitrator in the frontier dispute with Honduras under the terms of the Gomez-Bonilla Treaty of 7 October, 1894, was null and void *ab initio*, the Treaty having lapsed before the King of Spain had signified acceptance of the office of arbitrator. As a matter of treaty interpretation, the Court found that the intention of the parties to the 1894 Treaty had been that, contrary to the contentions of Nicaragua, the ten-year period for which the Treaty was to remain in force should begin to run from the date of the exchange of ratifications. The Court however also gave a broader reason for its conclusion

> "Finally, the Court considers that, having regard to the fact that the designation of the King of Spain was freely agreed to by Nicaragua, that no objection was taken by Nicaragua to the jurisdiction of the King of Spain as arbitrator either on the ground of irregularity in his designation as arbitrator or on the ground that the Gomez-Bonilla Treaty had lapsed even before the King of Spain had signified his acceptance of the office of arbitrator, and that Nicaragua fully participated in the proceedings before the King, it is *no longer open to Nicaragua to rely on either of these contentions as furnishing a ground for the nullity of the Award." (Emphasis supplied.)*[8]

Thus, the Court does not appear to have regarded the conduct of Nicaragua as having created a binding estoppel *stricto sensu*, but rather as having created circumstances disentitling Nicaragua from contending that the appointment was invalid and out of time, on grounds of acquiescence or preclusion. No mention was made of estoppel in the judgment of the Court, though the *ad hoc* judge appointed by Nicaragua (Urrutia Holguin) discussed the possibility of estoppel in his dissenting opinion, only to reject it on the grounds

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[1] *PCIJ Reports*, Series B, No. 14 (1927), p. 35.

[2] *PCIJ Reports*, Series A/B, No. 53, pp. 69, 71.

[3] *ICJ Reports 1974*, p. 253, at pp. 267-71.

[4] *ICJ Reports 1986*, p. 14, at p. 132.

[5] *ICJ Reports 1986*, p. 554, at pp. 573-574.

[6] *ICJ Reports 1960*, p. 189.

[7] Hugh Thirlway, "The Law and Procedure of the International Court of Justice, 1960-1989", 60 *British Year Book of International Law* (1989), p. 30.

[8] *ICJ Reports 1960*, p. 208.

that there had been no reliance by Honduras on the conduct of Nicaragua in this respect.[1]

525. Nicaragua had also relied on other arguments in an endeavour to demonstrate that the 1906 award, even if not null and void *ab initio* by reason of the irregularity in the designation of the King of Spain as arbitrator, was invalid or incapable of execution. The Court's finding on this aspect of the case was that Nicaragua:

> "... by express declaration and by conduct, recognised the Award as valid and it is no longer open to Nicaragua to go back upon that recognition and to challenge the validity of the Award. Nicaragua's failure to raise any question with regard to the validity of the Award for several years after the full terms of the Award had become known to it further confirms the conclusion at which the Court has arrived."[2]

Here, the finding again appears to be one of a broader notion of preclusion (distinct from estoppel as such), based upon recognition by Nicaragua of the validity of the Award by express declaration and by conduct, and subsidiarily, upon acquiescence evidenced by the lapse of a period of "several years" before Nicaragua raised any question so as to deny the validity of the Award.

526. The judgment of the Court in the *Temple* case displays similar characteristics. Here the question was whether Siam (as it then was) was bound by a map, printed and published by a French firm and handed over officially to Siam, which showed the frontier between Siam and Cambodia as leaving the Temple of Preah Vihear to Cambodia. A treaty of 1904 between Siam and France (as protecting power of Cambodia) had declared the frontier between Siam and Cambodia as following the watershed between two specified river-basins, and it was later established that the line of the watershed ran the other side of the temple so that, if the mapped frontier-line had followed the watershed as contemplated by the 1904 treaty, the temple would have been left to Thailand (as Siam later became). The Court found that the circumstances of delivery of the maps to Thailand in 1908:

> "... were such as called for some reaction, within a reasonable period, on the part of the Siamese authorities, if they wished to disagree with the map or had any serious question to raise in regard to it. They did not do so, either then or for many years, and thereby must be held to have acquiesced."[3]

But the Court did not rely solely on this lack of reaction by the Siamese authorities. It was able to point to *positive* acts of acquiescence and recognition by the Siamese authorities. As Cahier[4] has pointed out, the Court also took into consideration the fact that the Siamese Minister of the Interior had thanked France for the delivery of the maps and had asked for additional copies; the fact that, some years later, the Siamese geographical service had itself published a map showing the temple to be in Cambodian territory; and the fact that the President of the Royal Institute of Thailand had made an official visit to the temple in 1930 where he had been welcomed by the French authorities with all the honours due to his rank. Such a welcome was, in the view of the Court, evidently incompatible with Thailand's sovereignty over the temple. It is accordingly not surprising that this combination of initial inaction followed by lack of protest over many years, coupled with positive acts capable of being construed as active acquiescence, should have led the Court to conclude that Thailand was precluded from challenging the frontier as depicted on the 1908 map:

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[1] *ICJ Reports 1960*, p. 236.

[2] *Ibid.*, pp. 213-214.

[3] *ICJ Reports 1962*, p. 23.

[4] Philippe Cahier, "Le comportement des états comme source de droits et d'obligations", *En Hommage à Paul Guggenheim* (1968), pp. 248-249.

> "Even if there were any doubt as to Siam's acceptance of the map in 1908, and hence of the frontier indicated thereon, the Court would consider, in the light of the subsequent course of events, that Thailand is now precluded by her conduct from asserting that she did not accept it. She has, for fifty years, enjoyed such benefits as the Treaty of 1904 conferred on her, if only the benefit of a stable frontier. France, and through her Cambodia, relied on Thailand's acceptance of the map ... It is not now open to Thailand, while continuing to claim and enjoy the benefits of the settlement, to deny that she was even a consenting party to it."[1]

527. Dominicé, in commenting on the *Temple* case, suggests that it is difficult to draw definite conclusions from this passage. He points out that the Court had already determined that Thailand had accepted the 1908 map before affirming, subsidiarily, that Thailand was now precluded from denying that acceptance. He also wonders in what terms the Court would have expressed itself if it had declared that there was no need for it to determine if the map had been accepted, this fact being presumed by reason of the representations given by Thailand.[2]

528. A more recent commentator has also expressed doubts about whether the circumstances in the *Temple* case were such as to be creative of a true estoppel binding upon Thailand. Referring to the same passage in the Court's judgment, the author comments:

> "It is submitted that there is here some departure from the requirements of an estoppel, at least on a strict interpretation of those requirements. The benefit to Thailand is not material; what is required is a change in the relative positions of the parties, as on a seesaw, whereby the one profits from the other's detriment. France, and Cambodia, equally with Thailand enjoyed the benefit of the 1904 treaty. Furthermore, the benefit which would be relevant is not the benefit *of the treaty*, which Thailand would have had in any event, but the separate benefit *of the representation* that Thailand accepted the map."[3] *(Emphasis in original.)*

529. In the *North Sea Continental Shelf* cases, Denmark and the Netherlands argued that the equidistance rule for the delimitation of the continental shelf employed in Article 6 of the 1958 Geneva Convention on the Continental Shelf had become binding on the Federal Republic of Germany as a result of her subsequent conduct. After noting the details of the subsequent conduct relied upon and stating that the Federal Republic had not become bound by the Convention as such, the Court concluded:

> "Having regard to these considerations of principle, it appears to the Court that only the existence of a situation of estoppel could suffice to lend substance to this contention, - that is to say if the Federal Republic were now precluded from denying the applicability of the conventional regime, by reason of past conduct, declarations etc., which not only clearly and consistently evinced acceptance of that regime, but also had caused Denmark or the Netherlands, in reliance on such conduct, detrimentally to change position or suffer some prejudice. Of this there is no evidence whatever in the present case."[4]

Here the Court is clearly making reference to the essential elements of estoppel in the strict sense, and finding that there is no evidence to sustain such a plea.

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[1] *ICJ Reports 1962*, p. 32.

[2] Christian Dominicé, "A propos le principe de l'estoppel en droit des gens", *En Hommage à Paul Guggenheim* (1968), p. 357.

[3] Thirlway, *loc. cit.* at para 524, footnote 7 above.

[4] *ICJ Reports 1969*, p. 26.

530. In the *Gulf of Maine* case, the Chamber of the Court was confronted with a series of arguments based on pleas of estoppel or acquiescence. In the first place, Canada argued that, as the United States was aware that Canada had issued seabed exploration permits over disputed areas of the Georges Bank and had neither protested nor evinced any reaction, the United States conduct conveyed the clear (if false) impression that the United States accepted the Canadian claims, thereby estopping the United States from later challenging these claims. The Chamber rejected this Canadian argument:

> "... while it may be conceded that the United States showed a certain imprudence in maintaining silence after Canada had issued the first permits for exploration on Georges Bank, any attempt to attribute to such silence, a brief silence at that, legal consequences taking the form of an estoppel, seems to be going too far."[1]

Canada also maintained that the United States had acquiesced in the idea of adopting a median line as the maritime boundary by reason of the conduct of United States officials, particularly evidenced by the "Hoffman letter". Mr Hoffman, an official of the Bureau of Land Management of the (United States) Department of the Interior, in enquiring about the position of certain Canadian concessions, had explained in his letter that he had no authority to commit the United States as to the position of a median line. In rejecting the Canadian plea of estoppel based upon the "Hoffman letter", the Chamber pointed out that Mr Hoffman, like his Canadian counterpart, was acting within the limits of his technical responsibilities, and that Canada could not rely upon the contents of that letter "as though it were an official declaration of the United States Government on that country's international maritime boundaries."[2]

531. In the *Gulf of Maine* case, the Chamber also made an important general pronouncement concerning the relationship between estoppel and acquiescence:

> "The Chamber observes that in any case the concepts of acquiescence and estoppel, irrespective of the status accorded to them by international law, both follow from the fundamental principle of good faith and equity. They are, however, based on different legal reasoning, since acquiescence is equivalent to tacit recognition manifested by unilateral conduct which the other party may interpret as consent, while estoppel is linked to the idea of preclusion. According to one view, preclusion is in fact the procedural aspect and estoppel the substantive aspect of the same principle."[3]

532. It is also worthy of note that, in the *Gulf of Maine* case, the Chamber conducted a review of the case-law invoked by Canada in support of its pleas of estoppel or acquiescence. Canada had relied *inter alia* on the judgment of the Court in the *Norwegian Fisheries* case where the Court had found that the Norwegian authorities had applied their system of delimitation by means of straight base-lines consistently and uninterruptedly from 1869 until the time when the dispute arose, and that general toleration of that Norwegian practice was an unchallenged fact. The Court found that such general toleration, combined with other facts (including Great Britain's "prolonged abstention") would in any case warrant Norway's enforcement of her system against the United Kingdom.[4] In the *Gulf of Maine* case, the Chamber considered that the elements of fact and of law in the *Norwegian Fisheries* case and those in the dispute before it were too dissimilar for a comparison to produce legal consequences. The Chamber added:

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[1] *ICJ Reports 1984*, p. 308.

[2] *Ibid.*, pp. 307-308. Cf. the treatment of the Ihlen declaration in the *Eastern Greenland* case and of statements by French Government Ministers in the *Nuclear Tests* cases.

[3] *Ibid.*, p. 305.

[4] *ICJ Reports 1951*, p. 139.

> "Neither the long duration of the Norwegian practice (70 years), nor Norway's activities in manifestation of that practice, warrant the drawing of conclusions from the 1951 Judgment that would be relevant in the present Case."[1]

Canada had also invoked the award in the *Grisbadarna* arbitration (between Sweden and Norway)[2], the judgments of the Court in the *North Sea Continental Shelf* cases, the *Temple* case, and the case of the *Arbitral Award made by the King of Spain on 23 December, 1906*. But the Chamber, in the *Gulf of Maine* case, found that these alleged precedents were distinguishable on the facts. Referring to the case of the *Arbitral Award made by the King of Spain on 23 December, 1906*, the Chamber stated:

> "Acquiescence did play a part in that case, but in reaching that conclusion the Court relied on explicit declarations of Nicaragua, and on conduct that had continued over a very long period, something which does not apply in the present case."[3]

533. In the *Frontier Dispute (Burkina Faso/Mali)* case, the argument was advanced by Burkina Faso that Mali had acquiesced in certain principles of delimitation approved by the Legal Sub-Commission of the OAU Mediation Commission during an earlier, but abortive, attempt to resolve the dispute. Burkina Faso relied on the principle that a State cannot disclaim in a particular instance rules and principles to which it has acquiesced in comparable circumstances, when their operation becomes disadvantageous to itself.

534. The Chamber of the Court, in rejecting this argument, recalled that it was on the basis of international law that it would have to fix the frontier line, weighing for that purpose the legal force of the respective evidence submitted by the Parties for its appraisal:

> "It is therefore of little significance whether Mali adopted a particular approach, either in the course of negotiations on frontier questions, or with respect to the conclusions of the Legal Sub-Commission of the OAU Mediation Commission, and whether that approach may or may not be construed to reflect a specific position, or indeed to signify acquiescence, towards the principles and rules, including those which determine the respective weight of the various kinds of evidence applicable to the dispute. If these principles and rules are applicable as elements of law in the present case, they remain so whatever Mali's attitude. If the reverse is true, the Chamber could only take account of them if the two Parties had requested it to do so...."[4]

535. The legal effect of silence was again at issue in the *Elettronica Sicula* (ELSI) case where the United States argued that Italy was estopped from advancing the plea that the United States application was inadmissible by reason of the failure of the United States companies to exhaust their local remedies in the Italian courts. The United States argument was based on the consideration that Italy had failed to raise the argument of nonexhaustion of local remedies in diplomatic exchanges with the United States prior to the submission of the dispute to the Court, thereby tacitly accepting the United States view that local remedies *had* been exhausted. In rejecting the United States plea of estoppel, the Chamber of the Court stated that:

> "... although it cannot be excluded that an estoppel could in certain circumstances arise from a silence when something ought to have been said, there are obvious

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[1] *ICJ Reports 1984*, p. 309.

[2] *Reports of International Arbitral Awards*, Vol. XI, pp. 161-162.

[3] *ICJ Reports 1984*, p. 310.

[4] *ICJ Reports 1986*, p. 575 (para. 42).

difficulties in constructing an estoppel from a mere failure to mention a matter at a particular point in somewhat desultory diplomatic exchanges."[1]

536. The time element will also be very important in the consideration of arguments based upon acquiescence. In the *Temple* case, the Court referred to Siam's lack of reaction to the maps delivered in 1908 either "within a reasonable period" or indeed "for many years".[2] In the case of the *Arbitral Award made by the King of Spain on 23 December, 1906*, the Court relied in part upon Nicaragua's failure to raise any question with regard to the validity of the Award "for several years".[3] By way of contrast, in determining, in the *Gulf of Maine* case, that the United States silence with respect to the issuance of Canadian exploration permits over disputed areas of the Georges Bank was insufficient to create an estoppel, the Chamber referred to the silence as "a brief silence at that"[4] and later contrasted it with the "conduct that had continued over a very long period" in the *Arbitral Award made by the King of Spain* case.[5] Thus, the time element in any particular set of circumstances may well be determinative of whether acquiescence can or should be presumed.

537. It is submitted that the foregoing survey demonstrates that international tribunals in general, and the Permanent Court and the present Court in particular, view with considerable caution arguments based on alleged estoppel or on acquiescence having the effect of preclusion. It is of course only natural that States engaged in international litigation will raise arguments based upon the plea of asserted estoppel or acquiescence amounting to preclusion, if only for the reason that the facts supporting such a plea may have some evidential value, as demonstrating inconsistency of conduct, even if the plea as such is rejected. It is however striking that, in the case-law of the present Court, at least over the past thirty years, arguments based upon an asserted estoppel or upon acquiescence amounting to preclusion have in most cases been rejected by the Court. As the survey has demonstrated, this was so in the *North Sea Continental Shelf* cases (although it is fair to add that Denmark and the Netherlands did not advance a plea of estoppel as such), in the *Gulf of Maine* case, in the case concerning the *Frontier Dispute (Burkina Faso/Mali)*, in the *Elettronica Sicula* case, and in the recent judgment of the Court on Nicaragua's application to intervene in the *Land, Island and Maritime Frontier* case between El Salvador and Honduras. Even the earlier case-law of the Court and its predecessor (and indeed of arbitral tribunals) displays the same caution. Thus, the Danish argument in the *Eastern Greenland* case that Norway ws precluded from contesting Danish sovereignty over Greenland by reason of the Ihlen declaration was rejected by the Permanent Court, arguments based on estoppel were dismissed by the Permanent Court in the *Serbian Loans* case, and in its advisory opinion in the *European Commission of the Danube* case, and were likewise dismissed by the sole arbitrator in the Tinoco arbitration. The present Court may have relied to some extent on United Kingdom absence of protest against the Norwegian straight base-line system in the Norwegian Fisheries case, but, as the Chamber noted in the *Gulf of Maine* case, the Norwegian practice had been applied for 70 years and there had been activities by Norway in manifestation of that practice.[6]

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[1] *ICJ Reports 1989*, p. 44.

[2] See text to para 526, footnote 3 above.

[3] See text to para 525, footnote 2 above.

[4] See text to para 530, footnote 1 above.

[5] See text to para 532, footnote 3 above.

[6] See text to para 532, footnote 1 above.

538. Finland does not of course deny that the principles of estoppel and acquiescence have a place in international law, particularly in relation to territorial disputes. As Brownlie rightly points out:

> "Recognition, acquiescence, admissions constituting a part of the evidence of sovereingty, and estoppel form an inter-related subject-matter, and it is far from easy to establish the points of distinction."[1]

Brownlie likewise concedes that "in appropriate conditions acquiescence will have the effect of estoppel", citing the *Temple* case for this conclusion. But he warns that the principle of estoppel "has no particular coherence in international law, its incidence and effects not being uniform"[2] and that it "must be used with caution, more particularly in dealing with therritorial issues".[3] Brownlie urges similar caution in assessing the significance of acquiescence amounting to preclusion:

> "Acquiescence of the kind which closes the principal issue (which therefore has an effect similar to estoppel) must rest on very cogent evidence"[4]

539. It is believed that the foregoing survey of the jurisprudence of the present court and of its predecessor, together with the instances of international arbitral awards reviewed, supports Brownlie's conclusions. It is really only in the *Temple* case and the case of the *Arbitral Award made by the King of Spain on 23 December, 1906* that we see judicial application of the principles of estoppel and acquiesence. The *Temple* case can be characterised as involving both an initial acquiesence (in relation to the 1908 map) and a subsequent estoppel (based on Thailand's later conduct)[5]. The *Arbitral Award of the King of Spain* case is more difficult to characterise. The judgment carefully refrains from using any of the terms estoppel, preclusion or acquiesence. The finding in respect of the alleged irregularity of the King of Spain's appointment looks to be based on acquiesence[6], and the finding in respect of Nicaragua's broader arguments of invalidity looks to be based upon recognition by Nicaragua of the validity of the Award by express declaration and by conduct, buttressed by evidence of acquiesence[7].

Section II. Application of the Law to the Facts

540. At this point, it is necessary to revert to the facts of the present case. It is Finland's *silence* (and on that alone) in relation to the Great Belt bridge project on which Denmark must rely in order to sustain any plea of estoppel or acquiesence.

541. In the first place, it is necessary to look carefully at the terms of the Danish Circular Note of 12 May, 1977.[8] That Circular Note conveyed to all foreign dipolomatic missions accredited to Denmark information about construction plans for the erection of a bridge for

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[1] Ian Brownlie, *Principles of Public International Law*, 4th edn. (1990), p. 161.

[2] *Ibid.*, p. 641.

[3] *Ibid.*, p. 161.

[4] *Ibid.*, p. 161-162.

[5] See text to para 562, footnote 3 above and para 526, footnote 1 above. In the same sense, see Thirlway, *loc. cit.*, at para 524, footnote 7 above, p. 46.

[6] See text to para 524, footnote 8 above.

[7] See text to para 525, footnote 3 above.

[8] Annex 22.

road and rail traffic across the Great Belt, the Danish Parliament having endorsed erection of such a bridge by virtue of Act No. 414 of 13 June, 1973. The Circular Note stated that the planned Great Belt bridge would feature a high level bridge across the eastern channe and a low level bridge across the western channel. It continued:

> "The construction of the section across the eastern channel will, in conformity with International Law, allow international shipping between the Kattegat and the Baltic to proceed as in the past"

The Circular Note also stated:

> "According to all available data the high level bridge across the eastern channel will not in any way restrict passage through the Great Belt by existing ships which have navigated these waters in the past ..."

This was however followed by further information about horizontal clearance of the two sea lanes and by the (ominous) statement that "... the free vertical clearance for passage under the bridge will be 62m. above mean sea level."

542. Despite the two assurances about unrestricted passage given in this Circular Note, it might have been more prudent if Finland had responded to it in writing, if only to draw attention to the possible inconsistency between the proposed vertical clearance for passage under the bridge and the assurances given in the Note itself. But Finland had reasonable grounds for assuming that (a) the bridge project then under consideration was unlikely to be pursued as a matter of urgency, given the degree of internal opposition to it within Denmark and the fact that many previous proposals for a bridge across the Great Belt had come to nothing and (b) Denmark would in any event, if the then bridge project were to be pursued as a matter of urgency, give full effect to the solemn assurances given in the Circular Note. As regards (a), reference is made to Chapter V, Part II of the present Memorial where a detailed account is given of the various Danish plans to modify the navigational conditions in the Great Belt. It will be seen that plans had already been formulated as early as the 1930s for the construction of a bridge across the Great Belt. It will be recalled that the Little Belt bridge (with a clearance of only 33 metres) had been opened on 15 May, 1935. Brüel, in his seminal work on international straits, has commented as follows:

> "Bridges and embankments must the (sic) so constructed that practically all ships can pass under, respectively through them without such difficulties in manoeuvring, that the strait ceases to be a navigable waterway."[1]

To this statement of general principle, Brüel adds the following footnote:

> "This was not observed in the building of the Little Belt Bridge since it was given a height of only 33 metres over the surface of the sea which prevented not merely large warships (although as we are here dealing with merchant ships this is immaterial) but also large merchant vessels e.g. motor vessels engaged in overseas trade from passing through the Belt at all."[2]

Brüel continues:

> "In this connection it may further be asked whether the treaty[3] presupposes that *all three* straits shall be available as passages or whether, irrespective of the treaty, Denmark cannot by means of a bridge or an embankment or in some other way close one or even two of them, so long as one is left open. If this view is taken -in spite

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[1] Erik Brüel, *International Straits* (1947), Vol. II, p. 43.

[2] *Ibid.*, footnote 3.

[3] That is to say, the Treaty of Copenhagen.

> of the fact that it may present a certain interest to have several ways to choose from then the strait which is left open must at all events be passable *by all* ships i.e. only the Great Belt could be considered as fulfilling this condition since the construction of the Little Belt bridge."[1] *(Emphasis in original.)*

Brüel comments elsewhere that detailed plans for a bridge over the Great Belt had been prepared as early as 1934; and that a scheme for bridges over both the Great Belt and the Sound had been drawn up by a group of Danish and Swedish engineers in the mid-1930s and published in 1936.[2] It remains only to add that Brüel, in another passage commenting on the construction of the Little Belt Bridge in 1935, expresses the following view:

> "On the other hand, Denmark can now - if she bars the Sound - no more close the Great Belt which formerly had been passable by all vessels."[3]

Thus, there is clear evidence that plans for the construction of bridges over the Great Belt and, indeed, the Sound were under consideration in the mid-1930s, no doubt as a consequence of the construction of the Little Belt bridge; and that a very eminent Danish international lawyer (Brüel) had drawn attention to the limitations imposed by the Treaty of Copenhagen on the building of a bridge or embankment across the Great Belt which, after the construction of the Little Belt bridge, was and remained the only viable passage-way from the Baltic to the North Sea (and *vice versa*) for large deep-draught vessels. Accordingly, the bridge project of 1977 was only the latest in a series of such projects which had been planned since the mid-1930s. The Court will recall in this context that a Governmental Commission was established in Denmark in 1948 to study the possibility of constructing a bridge over the Great Belt, the Commission reporting in 1960. Again, this led to no immediate action beyond the setting up of yet another investigation.[4] In all the circumstances and in the light of the long history of abortive plans to construct a bridge over the Great Belt, it is hardly surprising that Finland should not have reacted immediately to the Danish Circular Note of 12 May, 1977.

543. As regards (b), Finland also took into account the two solemn assurances given by Denmark in this Circular Note about passage through the Great Belt. Finland was surely entitled to rely on these assurances, fortified as they were by the public views already expressed by two very eminent Danish international lawyers. Attention has already been directed to the views expressed by Brüel; the evidence of Sørensen's views, as expressed in his 1957 evidence to the Danish Great Belt Commission and in his published statement of 29 January, 1962, can be found in Annex 19 to this Memorial. The Circular Note of 12 May, 1977, did not go into any detail on the technical specifications of the proposed bridge, beyond indicating the planned horizontal and vertical clearances. But even a bridge with a vertical clearance of only 62 metres would not necessarily have caused problems for Finland if the more detailed plans for the bridge had taken sufficient account of the requirement, referred to in the second of the two Danish assurances, not to "... restrict passage through the Great Belt by existing ships which have navigated these waters in the past ...", such ships including the drill ships, submersibles and jack-ups manufactured in Finnish shipyards.

544. Finland's silence and lack of response to the Danish Circular Note of 12 May, 1977, must also be assessed in the light of the time-frame within which a reaction might have been

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[1] Erik Brüel, *International Straits* (1947), Vol II, pp. 43-44.

[2] *Ibid.*, p. 15, footnote 3.

[3] *Ibid.*, pp. 111-112.

[4] Danish Written Observations of 28 June 1991, paras. 11 and 12.

called for. Denmark concedes, in its Written Observations of 28 June, 1991, that the then Danish Prime Minister announced to the Danish Parliament on 3 October, 1978, that, due to financial considerations, the Government had decided to postpone the implementation of the Great Belt project.[1] It seems that the decision to suspend the project had already been taken no later then 30 August, 1978, when the Danish Prime Minister informed the public that an agreement had been reached between the Social Democrats and Venstre to suspend the project *sine die*. Denmark denies that the project was suspended "sine die" and points to the fact that the Danish Minister for Public Works had stated on 17 October, 1978, that the project was not abandoned but merely postponed for an anticipated period of four to five years.[2] However one interprets the terms in which the project was finally suspended in 1978, there is no doubt that it was put "into the refrigerator" for an indefinite period, even if it was expected or anticipated on the Danish side that work on it might be resumed within a measurable period. Accordingly, as from 30 August, 1978, at the latest, the then Great Belt project, to which reference was made in the Danish Circular Note of 12 May, 1977, was effectively suspended for an undefined period. It follows that any immediate threat to Finnish rights and interests was (at least temporarily) removed as from the summer of 1978, so that no reaction from Finland to the Danish Circular Note of 12 May, 1977, was or could have been called for as from the date of the announcement of the suspension. Finland's silence on the Danish Circular Note of 12 May, 1977, understandable in the light of the considerations to which reference has already been made, was therefore a "brief silence" (to use the phrase adopted by the Chamber of the Court in its judgment in the *Gulf of Maine* case).

545. It is of course natural that Denmark should have sought to concentrate attention on the Danish Circular Note of 12 May, 1977, notwithstanding that the bridge project under consideration in that year was effectively suspended just over a year after the issuance of the Note. It is natural if only because Denmark seeks thereby to establish *continuity* between the 1977 Great Belt project and the subsequent 1987 Great Belt project. But in fact there was no such continuity. This is confirmed by the fact that the Danish Government felt obliged to send out to foreign missions accredited to Denmark a second Circular Note on 30 June, 1987. The first two paragraphs of the 1987 Circular Note are instructive as demonstrating the lack of continuity between the 1977 project and the 1987 project:

> "The Ministry of Foreign Affairs has the honour to inform that on 26 May 1987 the Danish Folketing (Parliament) passed a new Act No. 380 of 10 June 1987 on the construction of a fixed traffic connection for both vehicular and rail traffic across the Great Belt i.e. between Halsskov on Zealand and Knudshoved on Funen.
>
> The new Act repeals the former Act No. 414 of 13 June 1983 (sic) on the construction of a bridge across the Great Belt, of which all Heads of Mission were informed by Circular Note of 12 May, 1977."

546. Thus, the first object of the 1987 Circular Note was to inform foreign missions of the passage of this new Act, which was to provide the statutory basis for the *new* project, and of the repeal of Act No. 414 of 13 June, 1973, which provided the statutory basis for the 1977 Great Belt project.

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[1] Danish Written Observations of 28 June 1991, para 14.

[2] Mr Magid's statement of 2 July 1991, during the oral hearings on Finland's request for an indication of provisional measures. But cf. para 15 of the Danish Written Observations of 28 June 1991, where the Minister is recorded as having simply stated that "the Government *expected* that the necessary preconditions for resuming the Project would not be present until 4-5 years had passed": emphasis supplied. An *expectation* falls somewhat short of an *anticipation*. See also Chapter V, Part II above (paras 130-133).

547. The 1987 Circular Note goes on to demonstrate the significant differences between the 1977 Great Belt project and the *new* project of which notice was being given in 1987. The new project was to be tackled in two stages. The first stage was to be a railway connection, by means of a tunnel under the eastern channel of the Great Belt and of a low level bridge across the western channel. The second stage was to be a motorway connection which was to cross the western channel on the same low level bridge as the railway connection. The contrast with the 1977 Great Belt project is significant, since the 1977 project envisaged the railway connection across the eastern channel as proceeding by means of the same high level bridge as would carry the motorway connection. But even more significant is the following statement included in the 1987 Circular Note:

> "It has not yet been decided whether the motorway shall cross the eastern channel on a high level bridge or a tunnel."

This is immediately followed by a further solemn assurance:

> "In case the bridge solution is selected, the erection of the bridge section crossing the eastern channel will, in conformity with international law, allow for the maintenance of free passage for international shipping between the Kattegat and the Baltic Sea as in the past."

548. It is necessary to interpolate here that between the years 1977 and 1987 no less than 13 Finnish drill ships and oil rigs of various types had passed through the Great Belt.

549. Denmark raised no objection to the passage of these drill ships and oil rigs, this passage being effected in accordance with the two assurances given by Denmark in its Circular Note of 12 May, 1977. Moreover, it cannot be objected that Denmark was unaware of the continuing passage through the Great Belt of drill ships and oil rigs manufactured in Finland and the Soviet Union during this period.

550. That the passage of these drill ships and oil rigs (produced not only in Finland but also in the Soviet Union) had been noted by the Danish authorities is confirmed by the statement made by Mr Magid on 5 July during the course of the oral hearings on Finland's request for an indication of provisional measures. Mr Magid, in response to a question posed by Judge Shahabuddeen, referred to the fact that the official comments to the 1987 Bill, prepared by the Danish Ministry of Public Works, had asserted that:

> "A high level bridge shall probably have a navigational clearance of 76-77 metres."

In commenting on this assertion, Mr Magid stated:

> "The Ministry based its estimate upon information from the Ministry of Industry and the Danish Maritime Authority, which had in 1986 noted that drill ships produced in the Soviet Union and Finland had a height above water level ranging between 60 and 75 metres and that a bridge clearance of 76 metres was therefore called for."[1]

Subsequently, the Danish Government reduced the bridge clearance to 65 metres, notwithstanding the information available to the Danish Ministry of Industry and the Danish Maritime Authority about the continuing passage through the Great Belt of drillships produced in the Soviet Union and Finland having a height well above 65 metres.

551. The main point to note about the Circular Note of 30 June, 1987, however, is that it clearly indicated that no final decision had yet been made as to whether the road connection over the eastern channel should be by way of a high-level bridge or by way of a tunnel. Even if it were to be by way of a high level bridge, no indication was given in the

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[1] 2 July 1991.

Circular Note of what the vertical clearance would be. Again, Finland and other foreign States were in any event reassured that if the bridge solution were to be selected, the erection of the bridge section crossing the eastern channel will "in conformity with international law, allow for the maintenance of free passage for international shipping between the Kattegat and The Baltic Sea as in the past", the "past" for this purpose including the year 1986 when the Danish authorities had, as Denmark itself admits, noted the passage through the Great Belt of drill ships produced in the Soviet Union and Finland and having a height considerably in excess of 65 metres.

552. It is amply clear from the foregoing analysis of the 1987 Circular Note that Finland cannot be held to have acquiesced, as a result of her failure to respond to that Circular Note, in the construction of a high level bridge over the eastern channel of the Great Belt having a vertical clearance of 65 metres, the effect of which would be to deny free passage through the Great Belt of drill ships and oil rigs manufactured in Finland. A tunnel for road traffic would not have had that effect, and the option of a tunnel solution had been left open. Moreover, even a bridge solution would not necessarily have had that effect if, in drawing up plans for the bridge, Denmark had given full effect to the assurance given to foreign missions in the 1987 Circular Note.

553. Indeed, it was not until receipt of the third Danish Circular Note of 24 October 1989, that Finland and other States were put formally on notice of the firm Danish decision to construct a high-level bridge over the eastern channel of the Great Belt with a vertical clearance of 65 metres above sea level. By that time, Finland had already expressed its concern to Denmark, as a result of the letter from the Finnish Embassy in Copenhagen to the Danish Board of Navigation of 18 July, 1989 (Annex 60 to the present Memorial). As soon as it became clear from the reply of the Danish Ministry of Foreign Affairs of 29 August, 1989 (Annex 61 to the present Memorial) that the planned Great Belt bridge would indeed obstruct passage through the Great Belt of drill ships and oil rigs manufactured in Finland, Finland endeavoured to engage Denmark in negotiations with a view to finding a solution.

554. *Quite apart from the fact that the Danish Circular Note of 30 June, 1987, did not call* for any immediate reaction from Finland because the option of a tunnel solution for the road traffic connection across the eastern channel of the Great Belt had been deliberately left open and because a renewed assurance of free passage for international shipping *as in the past* had been given, the time element is also important. In this context, the silence of Denmark is, if anything, even more significant than the silence of Finland. During the oral hearings on Finland's request for an indication of provisional measures, it was admitted on behalf of Denmark that the Danish Minister of Transport had already decided, in November 1988, that only a high-level road bridge should be put out for tender.[1] Why were foreign missions not immediately notified formally of this decision? The Circular Note of 30 June, 1987, *had clearly put foreign missions on notice that both options - a high level bridge and* a tunnel - were still open as regards the road traffic connection across the eastern channel of the Great Belt. Yet it was not until 24 October, 1989 - almost a year after Denmark had decided in principle in favour of a high-level bridge - that foreign missions were informed not only that a firm decision had been taken within Denmark in favour of the high-level bridge solution but that the plan was for a high-level bridge with a vertical clearance of only 65 metres. One of the essential elements of any plea of acquiescence is that the State alleged to have acquiesced acted or failed to act in full knowledge of the circumstances. Thus, Article 45 of the Vienna Convention on the Law of Treaties, 1969 (which deals with acquiescence in the context of the law of treaties), provides:

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[1] Statement by the agent of Denmark, Mr. Magid, on 2 July 1991.

> "A State may no longer invoke a ground for invalidating, terminating, withdrawing from or suspending the operation of a treaty under Articles 46 to 50 or Articles 60 and 62 if, *after becoming aware of the facts*:
>
> (a) it shall have expressly agreed that the treaty is valid or remains in force or continues in operation, as the case may be; or
>
> (b) it may by reason of its conduct be considered as having acquiesced in the validity of the treaty or in its maintenance in force or in operation, as the case may be." *(Emphasis supplied.)*

It will be noted that the phrase "after becoming aware of the facts" governs both limbs of the rule so enunciated. In the present case, and applying by analogy the principle of acquiescence as formulated in the context of the law of treaties, it is apparent that limb (a) is wholly inapplicable (because Finland has never expressly agreed that Denmark is entitled to build a high-level bridge over the Great Belt which would prevent the free passage of drill ships and oil rigs manufactured in Finland), and that limb (b) is equally inapplicable (because Finland did not become aware of the firm Danish proposal to construct a high-level bridge over the Great Belt with a vertical clearance of 65 metres until the summer of 1989 at the earliest, and immediately ventilated its concern). It should also be noted that the International Law Commission, in its commentary to what later became Article 45 of the Vienna Convention on the Law of Treaties, laid particular stress on the need for the State alleged to have acquiesced in the loss of a right to invoke a ground of invalidity, termination etc., to have been aware of the facts. The Commission considers:

> ".... that the application of the rule in any given case would necessarily turn upon the facts and that the governing consideration would be that of good faith. This being so, the principle would not operate if the State in question had not been aware of the facts giving rise to the right or had not been in a position freely to exercise its right to invoke the nullity of the treaty." [1]

If one applies the principle of good faith to the circumstances of the present case, the suspicion cannot wholly be dismissed that Denmark, for internal political or indeed for other reasons, had determined already in 1987 that the motorway connection across the eastern channel of the Great Belt should be by means of a high-level bridge rather than a tunnel; and that the Circular Note of 30 January, 1987, was carefully formulated to reduce to a minimum the possibility that foreign States might object to such a solution. It is in any event quite clear that foreign missions accredited to Denmark were not formally made aware of the full extent of the Danish plans for a fixed link for road traffic across the eastern channel of the Great Belt until 24 October, 1989. Accordingly, any Danish argument of acquiescence based upon the lack of an immediate reaction from Finland to the Danish Circular Note of 30 June, 1987, is manifestly unfounded.

555. Finland would in any event question whether Denmark is entitled to rely on tacit consent in the form of acquiescence as a basis for unilateral action by way of derogation from the generally recognised right of free passage for international shipping through straits. Finland is aware that tacit consent does play a role in international law, notably in connection with the rule governing the acceptance of reservations to multilateral conventions. But the rationale here is that all States parties to the multilateral convention in question or entitled to become parties will have been made aware of the reservation formulated by the reserving State, and will have been given an opportunity to object to the reservation and even *in extremis* to attach to such objection the consequence of a denial of treaty relations with the

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[1] *Report of the International Law Commission* (1966): *GAOR*, 21st Session, Supplement No. 9 (A/6309/Rev.1), p. 69 (para (5) of commentary to Art. 42).

reserving State. Furthermore, it is clear that any reservation which is incompatible with the object and purpose of the convention is impermissible. There are accordingly certain safeguards for States confronted with a reservation to a multilateral convention which they consider to be either impermissible or inimical to their interests. The situation is however quite different in the context of proposed unilateral action by a State to construct a traffic link across an international strait which would obstruct free passage through that strait for a particular category or categories of international shipping which have previously enjoyed such free passage. Indeed, Finland would submit that, in such circumstances, what is needed is the express agreement of the user States, that is to say, the States which have traditionally, and as of right, utilised the strait for the free passage of vessels constructed in their shipyards. Finland notes that this was the position taken by the United Kingdom and France in the context of their early consideration of proposals to construct a fixed link across the Dover Strait in the English Channel. In a Joint Report of British and French officials submitted to their respective Ministers of Transport in 1963, reference is made to the juridical problems inherent in the proposal to construct a bridge across the Dover Strait for road and rail use, following a straight route 21 miles long. Referring to this bridge project, the Joint Report states:

> "The bridge offers a continuous road and rail Channel link in the open, which makes it an attractive proposal to road users; but it would undoubtedly be a new and serious hazard and source of delay to mercantile and naval shipping in the Strait of Dover, which is one of the busiest shipping channels in the world, with traffic of the order of 500 ships a day; moreover *it could not be constructed without international agreement both to the bridge in principle* and to the additional measures necessary for the safe regulation of sea traffic;" [1] *(emphasis supplied).*

The same point is repeated later in the Joint Report:

> "Besides the serious disadvantage to shipping which it would involve, the bridge project could not be carried out, having regard to the principles of international law, until Great Britain and France *had sought the concurrence of the States principally concerned with navigation in the Channel.* An agreement of this kind, which could in particular be concerned with the drawing up of a system for the regulation of navigation, would certainly involve lengthy negotiations which would only with difficulty be brought to a conclusion." [2] *(Emphasis supplied.)*

In a later chapter of the Joint Report devoted to "Practicability", the juridical aspects of the bridge project are analysed in the following terms :

> "A bridge would interfere with the use of recognised sea lanes and, before beginning its construction, it would be necessary for Britain and France *to seek the prior approval of the States principally concerned with navigation in the Channel.* It would not suffice merely to notify and to light and mark obstructions. If any associated system for the regulation of navigation were to be complied with, this also would require international agreement in advance. International agreement on a matter of such complexity could only be achieved after prolonged and difficult negotiation." [3] *(Emphasis supplied.)*

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[1] *Proposals for a Fixed Channel Link* (Joint Report by British and French Officials presented to British and French Ministers of Transport in July 1963): Cmnd. 2137 (Annex 58 to this Memorial). The citation is from para. 1.8.

[2] *Ibid.*, para. 1.9.

[3] *Ibid.*, para. 3.17.

Thus, it will be seen that, when consideration was first given in the 1960s to the construction of a fixed Channel link, both the British and French Governments considered it necessary to obtain the "concurrence" or the "prior approval", of the States principally concerned with navigation in the Channel if a bridge solution were to be pursued. That concurrence or prior approval would have to take the form of an international agreement which would be difficult to negotiate. It is of some interest that the plan for a bridge connection under consideration within the framework of the 1963 Joint Report envisaged, for the 10 spans crossing recognised navigation channels a clearance height above high water of 230 feet (70 metres).[1]

556. The Court will be aware that plans for a fixed Channel link were postponed following consideration of the 1963 Joint Report, and that the matter was not taken up again by the two Governments until 1981 when a further joint study by experts was commissioned. This resulted in the submission, in June, 1982, of a further Report of a UK/French Study Group analysing the various alternatives for a fixed link across the Channel for rail or road traffic. This second Report is not as specific as the 1963 Joint Report about the need to obtain the concurrence of user States in the form of an international agreement before work could begin on a bridge project. Nevertheless, it does reiterate the need for international consultation in the context of proposals for bridges, immersed tubes or combined projects:

> "All the road projects require fixed structures to be placed in the sea, e.g. bridge piers, ventilation shafts etc. These structures must be protected against accidental collisions with ships even if they are located outside the shipping lanes. In this respect, although proposals for new, compact and economic devices have been sketched out, the only type of protection which can be considered at present consists of artificial islands. The dimensions of these islands would have to be substantial - a 40-60 m. platform around the structure and low gradient slopes (one in three to one in five), all protected from erosion.
>
> From the point of view of the hazard to shipping, the spacing of these obstacles and the flexibility of their siting varies according to the option chosen, but no project completely avoids them being located in a main shipping lane. Therefore, for all these options, measures must be taken to maintain the freedom and safety of shipping during surveying, construction work and (with regard to the final structure) the operating phase.
>
> It would of course be the responsibility of France and the United Kingdom to draw up these provisions, but other countries should be consulted through the appropriate international authorities to demonstrate that the rights of transit passage will be respected and shipping safety maintained." [2]

The problems associated with bridges, immersed tubes and other composite options are summarised in the second Report as follows:-

> "For bridges, immersed tubes and the composite options, provisions for maintaining the safety and freedom of shipping must be drawn up and approved by the international organizations once study of the project is sufficiently advanced. There is no guarantee that the outcome of such negotiations would be favourable."[3]

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[1] *Proposals for a Fixed Channel Link* (Joint Report by British and French Officials presented to British and French Ministers of Transport in July 1963): Cmnd. 2137 (Annex 58 to this Memorial) at para 1.3.

[2] *Fixed Channel Link Report of UK/French Study Group* (June 1982) : Comnd. 8561 (Annex 83 to this Memorial). The citation is from paragraphs 4.12 and 4.13.

[3] *Ibid.*, para. 4.25.

557. Finland is of course aware that no direct comparison can be made between the proposal for a high-level road bridge across the English Channel and the proposal for a high-level road bridge across the eastern channel of the Great Belt. Finland is equally aware that the eventual decision of the French and British Governments for a fixed Channel link was to construct a bored railway tunnel, which raised none of the difficulties identified in the 1963 and 1982 Reports of securing the concurrence or agreement of the States principally concerned with navigation in the Channel and through the Dover Strait. What is, however, of relevance in the present context is the recognition by both the French and British Governments of the need to secure the *active* consent of the user States to any project (such as a bridge project) which would have a significant impact upon the safety and freedom of shipping in and through the Dover Strait.

558. Finland has so far concentrated on demonstrating that, as a State party to the present case before the Court, she is neither estopped from challenging the compatibility with international law of the current Danish project for establishing a fixed traffic link across the eastern channel of the Great Belt, nor has she acquiesced in that project, so far as it involves the construction of a high-level bridge with a clearance of 65 metres. But it will be apparent to the Court that the substantive issue which the Court has to decide in the present case, namely, the *scope* of the right of passage through an international strait, is a matter of concern to all maritime States - indeed to the international community as a whole. Finland does not of course take the extreme position that no State is entitled to construct a bridge across an international strait; but it does take the position that the State wishing to construct a high-level bridge over an international strait with a clearance height which would deny passage to ships, including drill ships and oil rigs manufactured in other States, must consult with, and obtain the positive agreement of, such States, particularly where no alternative mode of passage through the strait is available or is to be made available for ships so denied passage.

559. Finland would summarise its position on any argument that might be advanced by Denmark alleging that Finland is estopped from challenging the compatibility with international law of the current Danish project for the construction of a highlevel bridge over the eastern channel of the Great Belt with a clearance height of 65 metres, or has otherwise acquiesced in that project, in the form of the following submissions:

1) None of the conditions identified by international case-law as being requisite for an estoppel exist in the present case. In particular, there has been no representation or statement by or on behalf of Finland evincing clearly acceptance of any Danish proposal to construct a high-level bridge over the Great Belt which would interfere with or obstruct the right of free passage through the Great Belt currently enjoyed by merchant vessels and other ships manufactured in Finland, including drill-ships and oil rigs so manufactured. Finland relies in this context on the essential elements of estoppel identified by the Chamber of the Court in its recent judgment of 13 September, 1990 on Nicaragua's application to intervene in the case concerning the *Land, Island and Maritime Frontier Dispute* between El Salvador and Honduras, by the Court itself in the *North Sea Continental Shelf* cases, and by the Chambers of the Court in the *Gulf of Maine* and *Elettronica Sicula* cases. Finland equally relies on the award of the sole arbitrator in the *Tinoco* arbitration, and on the decisions of the Permanent Court in the *Eastern Greenland* and *Serbian Loans* cases.
2) On the facts of the present case, there has been no such acquiescence by Finland as could warrant the Court in treating the failure of Finland to respond to the Danish Circular Notes of 1977 and 1987 as precluding Finland from pursuing her Application to the Court and seeking the relief therein sought. In particular, as regards the Circular Note of 1977, it is clear that the bridge project then under construction was postponed in the

summer of 1978 for an undefined period, so that the time element required by international caselaw to sustain a plea of acquiescence is not met. As regards the Circular Note of 1987, it is equally clear that it was not so worded as to call for a reaction from Finland in defence of Finnish rights and interests. In this context, Finland relies *inter alia* (so far as the time element is concerned) on the judgments of the Court in the *Norwegian Fisheries* case, in the case of the *Arbital Award made by the King of Spain on 23 December, 1906* and in the *Temple* case, and on the judgments of Chambers of the Court in the *Gulf of Maine* case and the *Elettronica Sicula* case.

3) As the plea of acquiescence rests upon considerations of good faith and equity, it is necessary to take into account the conduct of *both* parties to the dispute. In this context, Finland submits that the failure of Denmark, prior to the issuance of the third Danish Circular Note of 24 October, 1989, to notify foreign missions of Denmark's decision (already taken in November, 1988) to opt for a high-level bridge rather than a tunnel to carry road traffic over the eastern channel of the Great Belt must be taken as disentitling Denmark from advancing a plea of acquiescence as against Finland in respect of the 1987 Circular Note.

4) Denmark cannot properly rely upon tacit consent evidenced by acquiescence (the conditions for which are not in any event met in the present case) in relation to a project which would interfere with and, in some instances, physically obstruct the right of free passage through the Great Belt of categories of ships which have hitherto enjoyed or exercised that right.

PART IV

SUBMISSIONS

560. Having regard to the considerations of fact and of law developed in this Memorial, Finland repeats the submissions it made in its Application of 17 May 1991 and asks the Court to adjudge and declare:

(a) That there is a right of free passage through the Great Belt which applies to all ships entering and leaving Finnish ports and shipyards;
(b) That this right extends to drill ships, oil rigs, other special ships and reasonably foreseeable ships;
(c) That the construction of a fixed link over the Great Belt as currently planned by Denmark would be incompatible with the right of passage mentioned in subparagraphs (a) and (b) above;
(d) That Denmark and Finland should start negotiations in good faith, on how the right of free passage, as set out in subparagraphs (a) to (c) above, shall be guaranteed.

20 December 1991

Tom Grönberg

Agent of the Government
of Finland

LIST OF MAPS AND ANNEXES

MAPS

ANNEXES

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17. International Maritime Organization, Annex V to Resolution A.375(X)
18. Illustration of the Plan for a Fixed Link over the Sound
19. Three Statements by the Legal Adviser to the Danish Ministry of Foreign Affairs, Mr. Max Sørensen, regarding Problems of International Law related to the Fixed Link over the Great Belt
20. His Imperial Majesty's Gracious Ordinance of 22 January 1859 to Introduce a Provisional Levy to Be Collected in Respect of Goods Entering Finland in Lieu of the Repealed Strait Tariff
21. Act No. 414 of 13 June 1973 on the Construction of a Bridge across the Great Belt
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23. *Note Verbale* of 29 March 1978 from the Embassy of the Union of Soviet Socialist Republics to the Danish Ministry of Foreign Affairs
24. *Note Verbale* of 6 December 1977 from the Embassy of Poland to the Danish Ministry of Foreign Affairs
25. Text of a Brochure of the Great Belt Project ("Storebælt ")
26. The Public Works Act for a Fixed Link across Storebælt, Act No. 380 of June 10, 1987
27. Danish Circular Note of 30 June 1987
28. International Maritime Organization, Routeing of Ships, Construction of a Fixed Traffic Link across the Great Belt, Note by Denmark
29. 66th Session of the Council of the International Maritime Organization, Provisional Summary Record of the First and Second Meeting, 10 June 1991
30. Decision Adopted by the Council of the International Maritime Organization at Its 66th Session on 10 June 1991
31. Offshore Data Services, Offshore Mobile Rig Size / Draft Survey, Routes Used by Offshore Mobile Rigs, Overhead Obstructions
32. Noble Denton Report, The Great Belt Case
33. Questionnaire dated 4 October 1991 from the Ministry for Foreign Affairs of Finland to the Tug Companies and Replies thereto
34. Draft Convention on Offshore Mobile Craft with Two related Reports
35. Major Drill-rigs/Offshore Structure Tows Performed by Bugsier Tugs
36. Questionnaire dated 4 October 1991 from the Ministry for Foreign Affairs of Finland, forwarded to Coastal States of Important International Straits by Finnish Embassies, with Replies Received by 1 December 1991
37. Calculation of Extra Costs for Delivery of Semisubmersible due to Great Belt Bridge, Calculated according to Price Level at the Beginning of 1991
38. Extra Time Needed for Disassembly and Reassembly of Derrick and Drilling System of a Semisubmersible Outside Mäntyluoto
39. Calculation of Extra Costs for Delivery of Jack-up Rig due to Great Belt Bridge, Calculated according to Price Level at the Beginning of 1991
40. Extra Time Needed for Leg Assembly of a Jack-up Outside Mäntyluoto

41. Letter of 3 October 1991 from Friede & Goldman Ltd to Rauma-Repola Offshore Oy
42. Data on Some Existing Passenger Vessels and Ferries
43. Micoperi 7000 Italy and McDermott DB 50 USA Crane Ships Plotted against a Bridge at the Height of 65 Metres
44. Dimensions of an Ocean-going Resort Cruiser for 5,000 Passengers (Design)
45. Floating Hotel by Hitachi Zosen
46. Depth, Height, Draught and Air Draught of a Ship
47. Theoretical Background for the Choice of the Main Dimensions for a Vessel
48. Passenger Vessels Built or on Order at Masa-Yards (November 1990)
49. Dimensions of Turku Shipyard's 600 Tonne Capacity Gantry Crane
50. Two Designs for Future Cruise Liners (Kværner Masa-Yards)
51. Rauma-Repola Offshore Deliveries
52. Deep-Water Harbour at Tahkoluoto, Pori
53. Building of Jack-up Rigs by Rauma-Repola in Mäntyluoto
54. Letter of 8 November 1991 from Marathon LeTourneau Marine Company to Rauma-Repola
55. Calculation of Extra Costs for Delivery of Semisubmersible due to Removal of Thrusters, Calculated according to Price Level in September 1991
56. Extra Time Needed for Disassembly and Reassembly of Thrusters of a Semisubmersible Outside Mäntyluoto
57. Erect Sea Transportations of Cranes Performed by Kone Oy
58. Joint Declaration by the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the French Republic, 2 November 1988
59. Proposals for a Fixed Channel Link
60. Letter of 18 July 1989 from the Finnish Embassy in Copenhagen to the Danish Board of Navigation (Søfartsstyrelsen)
61. Letter from the Danish Ministry of Foreign Affairs to the Finnish Embassy in Copenhagen of 29 August 1989
62. Letter of 6 October 1989 from the Danish Embassy in Helsinki to the Finnish Ministry for Foreign Affairs
63. Danish Circular Note of 24 October 1989
64. Finnish *Note Verbale* of 19 June 1990
65. Danish *Note Verbale* of 11 July 1990
66. Finnish *Note Verbale* of 7 September 1990
67. Danish *Note Verbale* of 2 October 1990
68. Finnish *Note Verbale* of 5 November 1990
69. Letter from the Finnish Minister for Foreign Trade, Mr. Pertti Salolainen, of 9 November 1990 to the Danish Minister of Industry, Ms. Anne Birgitte Lundholt
70. Letter from the Prime Minister of Finland, Mr. Harri Holkeri, of 6 February 1991 to the Prime Minister of Denmark, Mr. Poul Schlüter
71. Letter from the Prime Minister of Denmark, Mr. Poul Schlüter, of 20 February 1991 to the Prime Minister of Finland, Mr. Harri Holkeri

72. Report of the Finnish-Danish Technical Working Group
73. Two Statements by Mr. Sørensen (Denmark), United Nations Conference on the Law of the Sea (1958)
74. Statement by Ambassador Fergo (Denmark), Third United Nations Conference on the Law of the Sea, Second Session, Plenary Meeting, 33rd Meeting - 9 July 1974
75. Statement by Ambassador Fergo (Denmark), Third United Nations Conference on the Law of the Sea, Second Session, Second Committee, 11th Meeting - 22 July 1974
76. Statement by Mr. Brückner (Denmark), Third United Nations Conference on the Law of the Sea, Eleventh Session, Plenary Meeting, 163rd Meeting - 31 March 1982
77. Statement by Mr. Mellbin (Denmark), Third United Nations Conference on the Law of the Sea, Resumed Ninth Session, Plenary Meeting, 138th Meeting - 26 August 1980
78. Union of Soviet Socialist Republics - United States of America, Joint Statement with Attached Uniform Interpretation of Rules of International Law governing Innocent Passage, Done at Jackson Hole, Wyoming, 23 September 1989
79. Articles 19 and 21 of the United Nations Convention on the Law of Sea
80. Definitions of "Ship" and "Vessel" in International Treaties
81. Extracts from National Legislation regarding the Definition of "Ship" and "Vessel"
82. Insurance of Drilling Vessels and Mobile Drilling Rigs
83. *Fixed Channel Link, Report of UK/French Study Group*