

## **INSROP WORKING PAPER NO. 140 – 1999**

### **The NSR Simulation Study Work Package 3: Economic Evaluation of NSR Commercial Shipping**

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**INSROP International Northern Sea Route Programme**



Central Marine  
Research & Design  
Institute, Russia



The Fridtjof  
Nansen Institute,  
Norway



Ship and Ocean  
Foundation,  
Japan

# International Northern Sea Route Programme (INSROP)

Central Marine  
Research & Design  
Institute, Russia



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Nansen Institute,  
Norway



Ship & Ocean  
Foundation,  
Japan



## INSROP WORKING PAPER NO. 140-1999

Box B: The Simulation Study of NSR Commercial Shipping

Work Package 3: Economic Evaluation for the Simulation Study

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## FOREWORD - INSROP WORKING PAPER

INSROP is a five-year multidisciplinary and multilateral research programme, the main phase of which commenced in June 1993. The three principal cooperating partners are Central Marine Research & Design Institute (CNIIMF), St. Petersburg, Russia; Ship and Ocean Foundation (SOF), Tokyo, Japan; and Fridtjof Nansen Institute (FNI), Lysaker, Norway. The INSROP Secretariat is shared between CNIIMF and FNI and is located at FNI.

INSROP is split into four main projects: 1) Natural Conditions and Ice Navigation; 2) Environmental Factors; 3) Trade and Commercial Shipping Aspects of the NSR; and 4) Political, Legal and Strategic Factors. The aim of INSROP is to build up a knowledge base adequate to provide a foundation for long-term planning and decision-making by state agencies as well as private companies etc., for purposes of promoting rational decisionmaking concerning the use of the Northern Sea Route for transit and regional development.

INSROP is a direct result of the normalization of the international situation and the Murmansk initiatives of the former Soviet Union in 1987, when the readiness of the USSR to open the NSR for international shipping was officially declared. The Murmansk Initiatives enabled the continuation, expansion and intensification of traditional collaboration between the states in the Arctic, including safety and efficiency of shipping. Russia, being the successor state to the USSR, supports the Murmansk Initiatives. The initiatives stimulated contact and cooperation between CNIIMF and FNI in 1988 and resulted in a pilot study of the NSR in 1991. In 1992 SOF entered INSROP as a third partner on an equal basis with CNIIMF and FNI.

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TROND R RAMSLAND - SYNERGY RESEARCH

# WORK PACKAGE 3

ECONOMIC EVALUATION OF NSR  
COMMERCIAL SHIPPING

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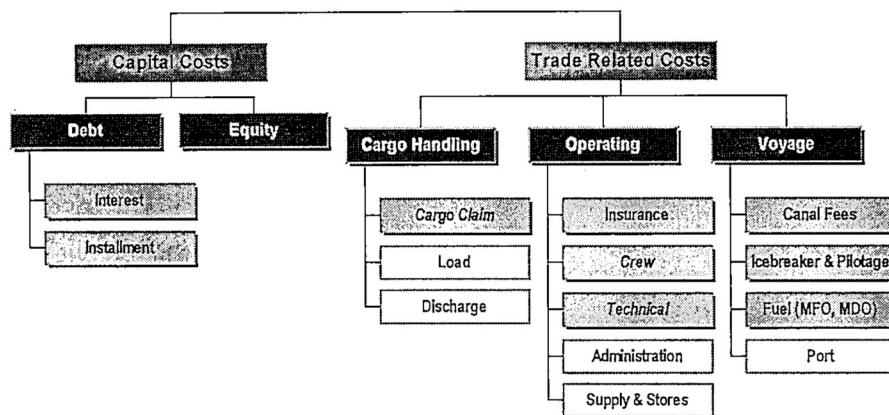
## 1 INTRODUCTION

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This paper has been undertaken as part of INSROP Phase two simulation project (Box B) to identify the cost differential of a shipping operation on the Northern Sea Route versus the Suez Canal for cargo shipments between the Far East and Europe. The approach to the study is based on INSROP Working paper no 59 as regards the cost differential methodology.

The concept is to compare the actual cost component differential between the identical point of destination and origin, but where route geography, distance and climate vary. It thus diverts from the traditional approach where the costs are stationary to a large degree, but where a contractual split of cost and risks differ whether entering into a voyage or a time charter.

### NSR - Suez Voyage Comparison



The revenue input variable is that of the cargo base in Europe and the Far East at the identical US \$ per tonnes rate attacked by two operators. This is the same initial approach as for a Voyage cost comparison. The output of the revenue - cost comparison is the Net Cash Flow Differential (ncfd) that accrue on a per trip, month and annual basis. This is denoted "time charter equivalent" and illustrates the NSR – Suez Canal differential. On one hand the function of less cost due to shorter distance, and thus direct cost per trip, on the other hand revenue, US \$ / tonnes, is divided by a less number of days, and such a function of time.

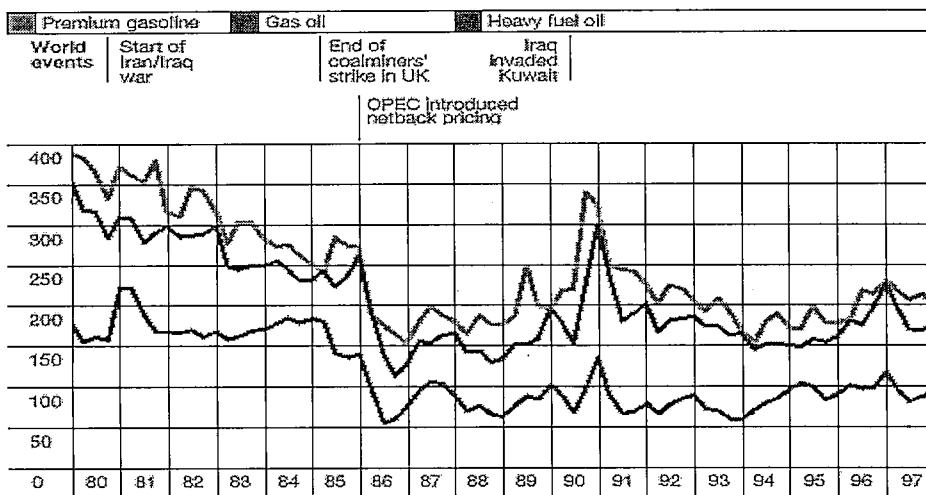
This is converted to a US \$ per day, month and annual basis, and discounted for a horizon of

20 years. The result is the Net Present Value or the annual ncfd, and the margin between an investment in a conventional vessel, or that of an ice-classed vessel. This vessel is optimised for an 8-month operation on the NSR and competes for the remaining 4 months of the year at equal operational costs as the conventional vessel.

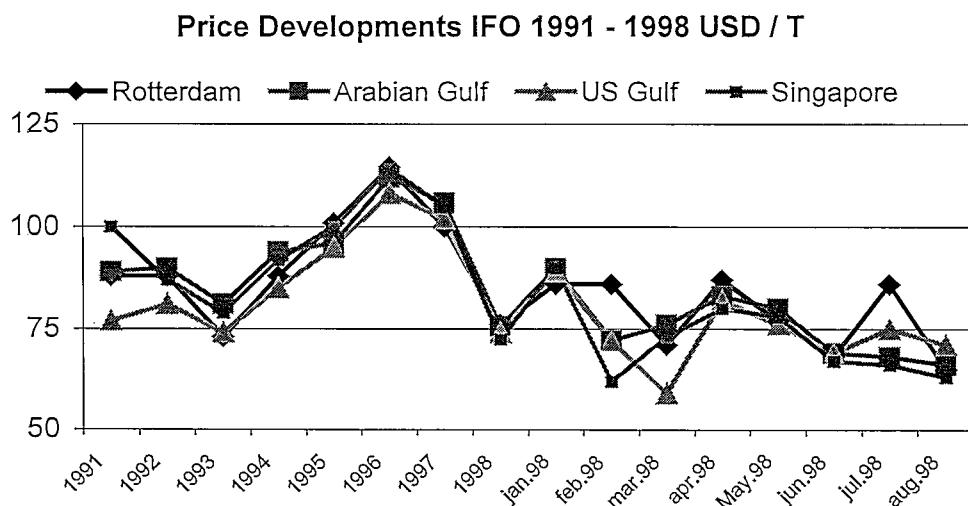
Political risk as refers to Russia is identical with the regulatory environment and the cost component of tariffs and their applicability. The approach of work packages is that of two different route choices, a southern coastal and a northern direct. Coastal tariffs comparison for Finland and Norway shed light on the effect on margins. The route choice that conforms to the identified cargo segments, is the Northern route that marginally touches Russian territorial and internal waters and thus the relevance is that of non applicability of tariffs.

## 2 SHIP COSTS USED IN THE MODEL

### 2.1 FUEL PRICE



The majority of studies attempting to predict the developments of the oil price, arrive at the current spot price being the best predictor of the future price. From the graph above, *British Petroleum Energy Statistics Yearbook* (97), it is however clear that the Petroleum product prices have been in a steady decline since early eighties, only shortly interrupted during the Iraqi invasion of Kuwait.

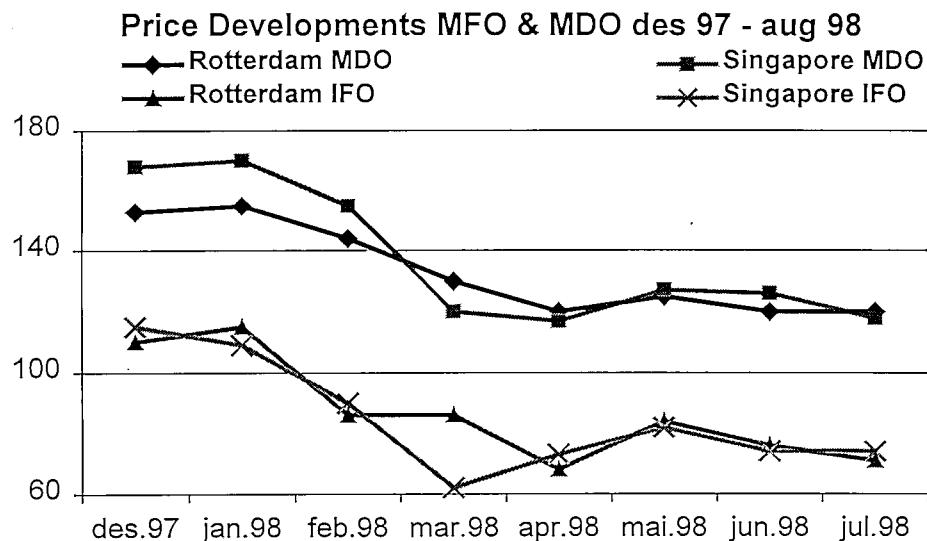


Moving specifically to Intermediate Fuel Oil, the price is not too sensitive to the general development in the price of crude oil and the supply and demand balance that follows.

Regional refining balances and accessibility to IFO can lead to significant short term imbalances. In general terms we see that the price of IFO in the four major refining and shipping accumulation areas follow the same long run price pattern. This is due to arbitrage of vessel operators seeking the identical commodity at cheapest possible price, which smooths out regional differences.

The price of IFO however, is not so closely correlated to the wellhead price of crude oil in the refining region. For the period 1991 – 96 Rotterdam delivered IFO correlates only 0,50 to Brent Blend. Houston delivered IFO correlates only 0,31 to the Western Texas Intermediate, and Singapore and Arabian Gulf delivered IFO correlates 0,72 to Arab Light crude oil. Refining capacity being slow to adjust and normally operating on finite volumes in the regional markets, suggest that shipping demand and intensity is of greater importance. This is supported by the Asian crisis taking full effect from December 97 and we see a corresponding slump in the export from, and in particular import to, the region. As demand for shipping services is reduced, the price of Marine Fuel and Diesel oil falls.

For the model estimates a price of USD 62 per Tonnes has been used.



## 2.2 OPERATING EXPENSES

Operating expenses has been applied as observed in the market. Vessel operating cost

covering Crews, Technical expenses, Management and Miscellaneous are set as monthly figures of USD as shown in table below for the 1<sup>st</sup> quarter of 1998.

Period	Crewing	Technical	Management & Miscellaneous	Total
1997, 1 <sup>st</sup> quarter	64.000	38.000	38.500	140.000
1997, 2 <sup>nd</sup>	64.000	38.000	38.500	140.000
1997, 3 <sup>rd</sup>	63.000	37.000	38.000	140.500
1997, 4 <sup>th</sup>	62.000	36.000	37.000	140.500
1998, 1 <sup>st</sup>	62.500	35.000	36.000	133.000

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### 3 ASSUMPTIONS ON THE LEGAL REGIME.

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#### 3.1 INNOCENT PASSAGE - TERRITORIAL WATERS.

Initially, comments to Work Package 7<sup>1</sup> needs to be made, as the views put forth on the *United Nation Law of the Sea, UNCLOS III* I find questionable<sup>2</sup>. From a commercial angle they clearly resembles Non – tariff - barriers to trade (NTB) if put into effect.

As for the treatment of territorial waters and innocent passage article 18 applies for transit along the coastline, the term "expeditious" is defined subject to the navigation and safety of the vessel. It should be irrelevant whether the innocent passage last for 1 or 5 days, as long as it is "continuous", and along accepted route sections. Both "continuous" and "expeditious" must be evaluated from the point of *modus operandi* of an ice class vessel in its intended environment. That particularly emphasises due diligence and observation of the prevailing ice condition to which low speed is normal. Also short interruptions of continuity, is normal and sound judgement on ecological and environmental grounds. Thus it is hardly acceptable logic under international law or suited to promote international shipping to treat a commercial vessel transiting territorial waters as a threat to the safety of the Russian Federation, when to the contrary the Master of the vessel observe prudent navigational skills in ice waters.

Airing that a commercial vessel in innocent passage could be viewed as a threat to the security of the Russian Federation, should also be referred to, and solved by, article 19 litra a-l, not article 18. By referring to article 18 it is indicated that these issues neither are properly evaluated nor fully understood by what is referred to as competent Russian authorities. It seems evident that if, Russia establish a policy to question this interpretation, it is Russia on the whole that avails its commercial shipping to potential repercussion along numerous coastlines in the world, subject to bilateral balances. To emphasise the issue, it is enough to mention that about 4 000 Russian vessels calls port in Norway per year.

Some comparison towards compliance on legislation by commercial shipping, and service to, can be made on figures based on port calls and diplomatic clearances to Norway in 1997<sup>3</sup>.

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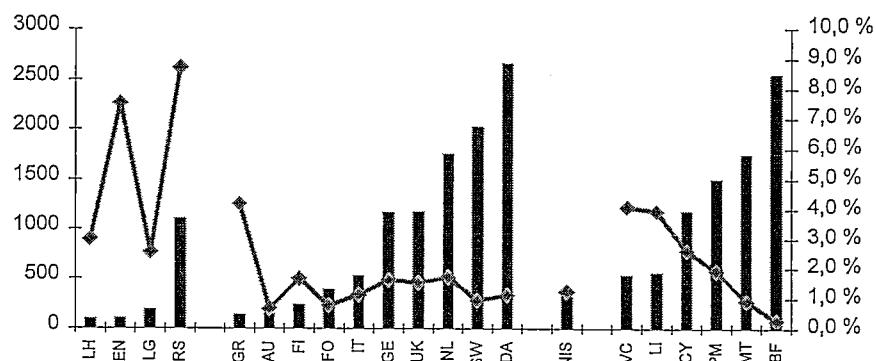
<sup>1</sup> See INSROP Working paper no 128, Work Package 7, Ivanov et.al.

<sup>2</sup> For these issues I also refer to the review comment on WP 7

On legal basis of UNCLOS III, art 8, and Law of Defence Secrets of 18 august 1914, Norway implemented *Royal Decree no 1130 of 23 December 1994 "About the entry to, and passage in, Norwegian Territorial Waters for Foreign Non-Military Shipping"*.

The decree was effected as of 01 May 1995. Sorted by Trade Bloc, EU Flagged vessels made up 51 % of all port calls (10 118), whereas Flags of Convenience made up 40 % (8 095). By compliance to legislation EU flagged vessels have 99 % fulfilment on the right hand axis and the curve is flat, i. e the learning curve has approached the near optimal. EU short sea shipping makes the point of importance of regularity, as the vessel Master and crew becomes familiar to a particular area. For vessels of Flag of Convenience the classic learning curve applies, i.e a falling trend of warning issued as port calls increases.

The cargo base of interest being concentrated in South Norway, Russian shipping had 1 112 port calls during 1997. For Russian shipping the rather high figure of non-compliance (8,8 %) indicates both language barriers but could also indicate a lax operational standard. Thus, from a Norwegian point of view, there is no indication that either EU flagged or Flag of Convenience registered vessels by intent or practice should be prone to suggestions as indicated by the Work Package 7 report, rather to the contrary.



If we turn to diplomatic clearances granted by Norwegian authorities, Norway serves Russian shipping well as their research vessels dominate by flag state. 39 % of diplomatic all clearances were issued Russia under the decree's § 13, all of which were seismic and

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<sup>3</sup> By courtesy of the serving Coastal Operation Officer, Defence Command South Norway, Naval Operations, Press release january 1998.

oceanographic research vessels<sup>4</sup>. Deviations from generally accepted interpretation of UNCLOS III should thus not be accepted on behalf of Russia.

### 3.2 STRAITS.

Reference given to the Karskie Varota, the Vilkitskogo and the Sannikova Strait with regard to innocent through – passage<sup>5</sup>, should be treated under UNCLOS Part III, art 34 to 45. The principle of previous use as a criteria for current use where deemed irrelevant during UNCLOS I, ref. *the Corfu Channel case*<sup>6</sup>. Although this legal base itself is embodied in the International Northern Sea Route Program (INSROP) concept and textual framework, numerous interpretations have been presented during the program period. None of the Working papers as of yet evaluated the legal regimes as related to the commercial implication.

The theoretical framework however, has been thoroughly debated and reviewed in numerous sub-programme IV reports, but without any consensus having been reached. The issue mainly moves along two positions;

1. Freedom of Navigation which conforms to United States policy and State practice established by United States vessels navigating the above – mentioned straits.
2. The Russian view presented by Kolodkin et. al<sup>7</sup> that strait baselines can be established for the straits. Thus the waters in between the baselines are treated as internal waters, and Non – Russian shipping passing through becomes subject to sovereign Russian legislation under UNCLOS III article 8.

As the middle ground has been suggested that legally the position of non - internationality strait is the more solid, which supports the Russian Regime put forth, but that the straits can become international through use<sup>8</sup>.

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<sup>4</sup> As note 2.

<sup>5</sup> See INSROP Discussion Paper WP 7, Fig 1-3 p 8 – 10

<sup>6</sup> Ref. International Court of Justice Reports 1949 p 28

<sup>7</sup> See INSROP Working Paper no 94 – 97, Legal Regime of Navigation in the Russian Arctic, A Kholodkin et.al

<sup>8</sup> See INSROP Working Paper no 57 – 96, D Brubaker, The legal position of straits in the Artic.

The main negative argument being questioned is that of historic use by Norwegian and other flag vessels, suggesting that the quantity do not qualify to an analogous treatment to the Corfu Channel solution. The lack of balance of quantity and scope on historic grounds would thus tilt the case towards the straits being internal waters.

US Policy established through navigation, conforms to both an innocent and transit passage regime under UNCLOS III articles 18 – 32 and articles 37 – 45.

### **3.3 COMMERCIAL IMPLICATIONS.**

The implication of the two different positions have bearing on both the commercial viability of the NSR with regard to costs, and the practical way to arrange and exercise freedom of navigation for transit cargoes.

Of the two positions the US position underline and conform to the commercial realities. The positions are also reflected in the defined routes in the Work packages, where the Northern route, to which vessel and average parcel size as derived by market values correspond<sup>9</sup>, reflects circumvention of Russian legislation by simple avoidance of internal waters. This would leave a “creative ambiguity”, as the issue of unhindered passage through the straits is left unsettled.

Solving by “creative ambiguity” would probably weaken the initial Russian position over time, as its negative power in internal waters becomes impotent. On the assumption that some revenue is preferred to none, the issue becomes to what degree the coastal state Russia through incentives can raise marginal revenue from passing traffic.

From the point of navigation, use of the Southern coastal route will enhance the transit vessel flexibility to a certain degree, but also limit the parcel size of cargoes if used in full length. This option also directly confronts the legal issues involved, one way or the other. A direct challenge would be to enforce the right “prima noctis”, through free navigation along the entire length of this route.

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<sup>9</sup> See Ramsland 98, “Cargo Analysis, The potential for Transit Traffic on the Northern Sea Route”

The middle road would be to charter Flag of Convenience vessels from an irrelevant Flag state and negotiate single voyages or seasonal agreements. This would leave Russia no bargaining power as regards state practice, but could serve to build confidence as the applicability of the commercial framework and practical approaches could be tested by a non – Russian entity.

For practical purposes two options remains ; Charter a western vessel and adhere to the published fee structure as presented in Program. There is no need to elaborate on this issue, as the costing are straight forward, and document that no vessel will neither be built nor chartered<sup>10</sup>. Use of current Russian tonnage as the remaining option is outside both the parcel size and future of the NSR, and will not be evaluated.

### **3.3.1 THE NORTHERN ROUTE AND THE SOUTHERN ROUTE CHALLENGED.**

Observing the above mentioned, transit through the straits should be facilitated and not denied, hampered nor obstructed in any way. The initial argument and burden of proof of activity not legitimate, as put forth in WP 7, must rest with the coastal state. There should not, and can not, be room for legislation regulating international shipping based on assumptions, as obviously is the regime the above mentioned discussion paper suggest.

The concept is to apply generally accepted standards and market parameters known to, and used by, the shipping community. Stipulating relevant ice class for the related ice conditions is probably the way forward. This should also be tied to the daily - weekly ice forecasts issued by the Northern Sea Route Authorities (NSRA), to which classification societies, underwriters, ship and cargo owners alike can subscribe to, and provide a reasonable currency earner for the administration. Russia and the NSRA would thus also observe the services expected from the coastal state under UNCLOS III article 44.

As for reference to UNCLOS III article 42, non - discrimination applies equally to international and domestic flag, and this system would apply in a balanced way to fair trade practice in services, and allow for transparency as a confidence building measure.

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<sup>10</sup> NSR tariffs for the standard parcel and vessels size are more than 50 % higher than for Suez, (See later costing).

### **3.4 BARRIERS TO TRADE**

It has been suggested that vessels should be constrained by port calls to facilitate vessel inspection under a set of specific NSRA rules. Subject to financial security and compulsory insurance being served by that particular vessel, this cannot be viewed as anything but time consuming and a cost driving NTB. Under General Agreement on Trade and Services (GATS) one must be allowed to assume equal participation rights for vessels of similar ice class, subject to generally accepted standards being adhered to and observed by the vessel.

Time being a crucial variable in the costing of both alternatives, this argument should be allowed put forth without being challenged as biased. Previous working papers documenting that this practice is not followed by domestic flag vessels. This is clearly an indirect cost increase. It would also be a direct cost increase as port fees, light dues etc accrues during port calls.

Proof of ownership preferences by Russian capital concentration is evident, as Cyprus registered vessels owned by Russian capital are known to traffic the NSR with no such constraints being imposed. As factual evidence to be submitted under the Most Favoured Nation <sup>11</sup> clause, to which Russia itself frequently files claims, this would probably serve the cause and be given the proper legal interpretation. Non Russian vessels and its corresponding Flag state could with reasonable good cause press this issue, which supports both the Northern route and a challenged Southern route.

The pivotal point is whether enough interest to enact upon the evidence is present, to claim the right of through passage on equal grounds. According to Ørebech (96) , the “diachronic perspective” applies such that if subject to evidence of discrimination on grounds of tariffs etc, breaching the treatment of the “no-less-than-favourable principle”, the case can be brought before a WTO panel. It should not be necessary to await a dispute settlement resulting from an actual conflict that could arise from a challenged transit. Subject to Russia, Japan, EU and Norway being Members to GATS equal competition rights will apply.

Counter wise on grounds of legal symmetry, the NSRA should within a reasonable advance be allowed to stipulate limits to presented with the necessary documentation to enable it to

ascertain that the transit vessel maintains its class, and that proper policies are being served. This concept is best served through a notification system of intended transit to the NSRA, to be forwarded within a reasonable time limit.

### 3.5 COMPARISON TO NORWEGIAN LEGISLATION.

The comparison made to Norway's internal waters, referred to as "indreleia"<sup>12</sup>, is not totally irrelevant, but must be commented in light of the above mentioned. First, it can not, and has never to my knowledge been viewed as a "strait" connecting two parts of the High Seas by any competent National or International body. However, to the opposite, the term, concept and legal definition of "straits" has very specifically been embodied and accepted in all INSROP papers. Although by significant variations on approach and conclusions, it has become a pivotal point of focus.

Navigation through these straits must thus be evaluated on the terms of relevance of the outer Islands, (Novaya Zemlya, Severnaya Zemlya, New Siberian Islands) being *perpendicular*, not parallel, to the coastline. Navigation through the Arctic straits, connecting separate parts of the high seas, is thus of necessity, not convenience as suggested by Kholodkin et. al, subject to the prevailing ice conditions. The term "expeditious" related to innocent passage through the straits applies for article 38, "Right of Transit Passage" as for article 18. "Continous" passage a more definite term to which the coastal state can and should respond if an unreasonable breach of continuity occurs.

Returning to the Norwegian inner leads stretching from Stavanger to Honningsvåg SW of North Cape, the leads are completely sheltered by an continuously archipelago running *parallel*, not perpendicular to the coastline. This facilitates safe and sheltered navigation along mainland Norway.

The framework and legal regime for Norway's sovereign legislation is as previous mentioned UNCLOS III article 8, *internal waters*, to which neither particular exemption nor interpretations have been sought or made. The comparison made by Kholodkin et.al (p 25)

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<sup>11</sup> See INSROP Working Paper no 67 – 96, The Participation Rights under the World Trade Organisation General Agreement on Trade and Services (GATS), Peter Ørebech p 7 ..

<sup>12</sup> See INSROP Working Paper no 94 – 97 "Legal Regime for Navigation in the Russian Arctic" Kholodkin et. al p 22 – 25

relates to the issue of coastal tariffs etc, which are fully accepted under article 8 for the coastal state, but not for States bordering straits under provisions of article 42 to which transit passage through the Arctic Straits belongs.

Concluding on this point the case obviously rest with the opponent user of the NSR ; if the evidence is strong enough and the commercial argument and incentive to undertake a challenged transit with an ice classified vessel present, that case can be tested on forehand. If not, the case of "creative ambiguity" is a good case, as time do not impede the strength until the facts clears the table. The financial calculations to follow should bring some light to the issue and stakeholders in this case.

### **3.6 ICE COVERAGE RELATED TO TRANSIT PASSAGE.**

On the above mentioned assumptions and criteria, only UNCLOS III article 234 remains valid for regulating int shipping on the NSR. Relevant issues are climatic, hydrographic and ice conditions as exogenous variables related to potential environmental and ecological damage. With regard to Port State Control exercised by Russia related to pollution and the Exclusive Economic Zone, this relates primarily to tankers, not to dry cargo vessels. Crude oil and oil products neither selected as potential cargo with regard to the design of the service ships, nor the most actual cargo base for transit between the Far East and North West Europe, should weaken the Russian view on this issue.

One must assume that the vessel will observe generally accepted international rules and standards by its inherent ice class and proper insurance is served. Thus, if Russian coastal state legislation deviate from standards set by classification societies, and from practice to which Russian shipping observe, then legislative measures should not be accepted enforced on a transiting vessel. In symmetry the contradictory principle applies for the vessel to communicate its essential ship characteristics, deficiencies or other relevant factors as regards the safety of the navigation of the vessel to the NSRA.

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## 4 TARIFFS AND FEES

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Overall it seems that Russia's proposal to extraordinary inspect vessels in Russian ports at the beginning of east-west-east transits is not found on grounds of technology and standards, but is more tilted towards economic variables. The fees, duties, tariffs indicated are thus questionable unless they specifically are for actual services rendered to, and sought by, international shipping themselves. Especially for passage which refers to the Northern Route of 2108 nm, border guard and custom registration fees is irrelevant as this is innocent passage / voyage through the territorial waters and the high sea, for which I have found no support under international law. The Northern Route as defined touches marginally upon transit through the Straits, also previously used for international navigation.

The above mentioned is especially important as the general parcel size derived from the market fits the Northern route package best, to which only 0 - 5 % of route length (2108 nm) is internal waters and 1 % of route sections is territorial waters<sup>13</sup>. The whole question of tariffs, subject to inherent ice class for the transiting vessel, could then become irrelevant. To facilitate a reasonable comparison, annual coastal tariffs as adopted by Norway, Finland, and Ice Insurance as present in Canadian Arctic are used for comparison.

### 4.1 THE RUSSIAN NSR TARIFF STRUCTURE.

<b>Ice Class</b>	<b>Tonnage From</b>	<b>To</b>	<b>Entire NSR - USD</b>	<b>Part NSR</b>	<b>Winter</b>
Ice-breaker	5001	6000	7,26	4,36	6,53
	10001	11000	6,58	3,95	5,92
	19001	20000	5,49	3,29	4,94
ULA	5001	6000	9,98	6,49	9,73
	10001	11000	9,04	5,88	8,82
	19001	20000	7,54	4,9	7,36
UL	5001	6000	18,15	11,8	17,7
	10001	11000	16,44	10,68	16,03
	19001	20000	13,73	8,92	13,37
L1	5001	6000	22,69	15,88	23,82
	10001	11000	20,55	14,38	21,58
	19001	20000	17,15	12	18

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<sup>13</sup> See Ivanov et al

The Russian tariffs for traffic on the NSR are given above as put forth by in Work Package 7 (Ivanov et.al) Tariffs are in USD per Gross Register Tonnes, but intervals from 6 001 to 10 000 and 11 001 to 19 000 are missing for all ice classes. For the comparison tariffs for ULA class have been used, and for the intervals not present, average values have been used as shown below.

ULA	6001	10000	9,51	6,19	9,28
ULA	11001	19000	8,29	5,39	8,09

Values are put forth for single voyages, and the NSR Administration do not publish or indicate an annual system as the Norwegian and Finnish system offer.

#### 4.2 THE NORWEGIAN TARIFF STRUCTURE.

The Norwegian *coastal tariffs* are given by *Royal Decree no 375 of 21 april 1995*. The tariffs applies to Norwegian *Internal Waters* only, ref § 2 litra a-c. Subject to § 3 litra f, vessels which are non -stationary in internal waters, i.e vessels allowed transit in inner leads without calling port <sup>14</sup>, are exempted from tariffs. The tariffs are applied as single voyage fees, or compounded annual fees which favours frequent users. The tariff structure is shown below.

Norwegian Coastal Tariff - Annual Fee (NOK)				
	Tonnage Segments		Per Grt	
From grt	0	To grt	5000	kr 4,20
From grt	5001	To grt	10000	kr 9,00
From grt	10000	To grt	350000	kr 12,00

<sup>14</sup> Under the Royal Decree no 1130 of 23 december 1994, About Foreign Non-Military vessels entry to, and transit in, Norwegian Territorial Waters § 16 litra d, Foreign non-military vessels may be given transit rights after notification. This is common procedure which positively affects Russian Tonnage in transit from Kola - White Sea to and from NW Europe.

For pilotage an annual *pilot readiness fee* applies according to *Royal Decree no 1128 of 23 December 1994 §§ 9, 11* as shown below, to which there are no exemption for vessels in transit. In the model the structure of fees are compounded for the eight-month period and split on the actual number of transits performed. These figures are applied to the relevant tonnage segments as a lump sum, and used for relevant comparison.

Norwegian Pilot Readiness Tariff - Annual Fee (NOK)				
Tonnage Segments				Per Grt
From grt	0	To grt	5000	kr 18,15
From grt	5001	To grt	10000	kr 35,65
From grt	10000	To grt	350000	kr 44,55

#### 4.3 THE FINNISH TARIFF STRUCTURE.

The Finnish coastal tariffs applies to commercial shipping as regulated by *Law on Coastal Tariffs 30 December 1980*, § 2 first paragraph. One should note that although the Finnish Bay normally is covered by various degrees of first year ice during winter navigation, it is explicitly stated that no vessels in innocent passage through territorial waters are subject to tariffs or fees, see § 2, second paragraph. This is the logical approach which conforms to reality in international law and shipping, and could serve as a model for the NSR.

The concrete tariff regulating vessels calling port in Finland can be found in *Law on Coastal Tariffs of 16 December 1983*. The Law separates between vessels in cabotage, regulated by § 1, and vessels in international traffic, regulated by § 2. It conforms to the Norwegian system, which favours frequent users and the tariffs stipulate annual fees payable as lump sum for the respective tonnage segments. It also includes the seasonal icebreaker support and do not differentiate tariffs. Finland's import and export as Norway's more or less wholly depend on seaborne mode of transport. By including the frequent user approach, the Finnish authorities observe commercial preferential treatment to secure investments in ice – classified vessels, which have a higher capital costs, but without discrimination with respect to Flag State.

Finnish Coastal Tariffs (Markka)		
Tonnage Displacements		
< 2000	2000 - 9999	> 10000

Ice Tariff	Per T < 2000	2000	Per T > 2000	10000	Per T > 10000
1 A Super	10,0	20 000	8,5	88 000	7,5
1 A	20,0	40 000	17,0	176 000	15,0
1 B	33,6	67 200	28,6	296 000	25,2
1 C	44,9	89 800	38,2	395 400	33,7
II	50,5	101 000	42,9	444 200	37,9
III	56,1	112 200	47,7	493 800	42,1

#### 4.4 THE SUEZ TARIFF STRUCTURE.

The Suez Canal Structure of fees This is evaluated towards the current Suez Canal Tariffs applied by the *Suez Canal Authorities Circular No 3/97 as of 01 January 1998*. The structure of fees uses Special Drawing Rights and Suez Canal Tonnage as notations. The relevant values used in the model are shown below.

Type of Cargo Vessel	Suez Canal Tariffs (sdr per scnt)							
	First 5000		Next 5000		Next 10000		Next 20000	
	Laden	Ballast	Laden	Ballast	Laden	Ballast	Laden	Ballast
Crude Oil	6,49	5,52	3,62	3,08	8,25	2,77	1,4	1,19
Petroleum Products	6,75	5,52	3,77	3,08	3,43	2,77	1,93	1,19
LPG	6,75	5,52	3,77	3,08	3,43	2,92	2,42	2,06
Chemicals, Liq Bulk & LNG	7,5	6,38	4,18	3,56	3,81	3,24	2,68	2,28
Dry Bulk	7,21	6,13	4,14	3,52	2,97	2,53	1,05	0,9

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## 5 ICE CONDITION – SPEED VARIABLES.

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The input of speed variables for the eight months operation is derived from actual voyages performed by Russian vessels in transit on the NSR. Basically three approaches have been used. Data on actual transits in 1992 – 94 as compiled by the Author from Murmansk Shipping Company and previous Reports, suggest that speed move along a smoothed seasonal curve. Average values for the period July to February are 9,1 knots which is in the upper band of Frederking (98) results, but within the Standard Deviation.

Robert Frederking (98) has tested and developed overall mean and standard deviation of transit speed<sup>15</sup> valid for the period 1981 – 84 for various Russian vessels and operational areas of the NSR. Mean and standard deviation of transit speed are shown below. For ULA classed vessels in transit, mean speed was found to be 7,6 knots with standard deviation of 2,5 knots. Treated as “operating gross ice velocity” he suggest that this is true indication of speed likely to be realised on the NSR. The lower value can probably be explained by the fact that the navigation during 1983 were exceptionally hard, and that significant experience has been gained since.

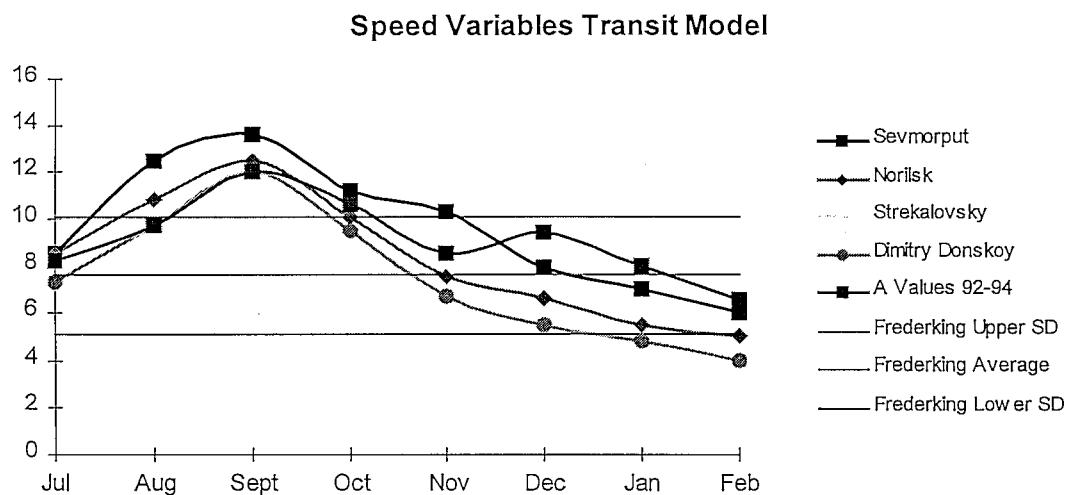
Mean and standard Deviation of Transit Speed				
Vessel	Season & Area	Mean Speed	SD	No of Samples
Ivan Susanin	All Seasons	5,9	2,4	70
Ivan Susanin	1982-83	4,8	2,6	12
Ivan Susanin	1983-84	6,5	1,7	17
Ivan Susanin	1984-85	6,7	1,7	11
ULA	83-84/Overall	8	2,1	197
ULA	83-81 / NSR	7,6	2,6	39
UL	83-84	9,3	2,5	93
LI	83-84	7,2	3,4	17

The third set of values used for evaluation is a modified variant of speed presented by Ivanov et. al (98). He puts forth speed according to vessel type for scenarios according to summer and prolonged navigation, and state correction factors for light, medium and heavy ice

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<sup>15</sup> See INSROP Discussion Paper I.2.5 – Modification of Canadian Ice Regime System to Include Ship Operations, Robert Frederking.

intensity. The paper does not present variables or underlying data set. Values are based on Sevmorput, Norilsk, M Strekalovsky and D Donskoy vessels. The values are adjusted by simple extrapolation to fit the eight months operational scenario. With regard to the service vessel properties a simple assumption should be made that it compares to Sevmorput in capacity where technology gains reflected by Azipod propulsion, lines design etc. makes up for advantages of nuclear propulsion.



## 5.1 NATURAL CONDITIONS AND FLAW POLNYA'S

The next logical step should be to adjust for information technology and tactical use of satellite pictures etc, to adjust for the significant extent of, and potential use of flaw polyna's<sup>16</sup>. To perform this task in full is beyond the scope of this paper, but it is an extremely interesting and relevant issue with regard to extension of the navigation season, a direct cost and a time reduction point of view. Some indication of the potential will be highlighted by modifying flaw polyna values for march as put forth by Breskin et. al (98).

Region							
Characteristics of flaw Polyna's							
Frequency of Occurrence %	SWK	NEK	WL	EL	WES	EES	SWC
Average Length nm	84 %	87 %	92 %	88 %	79 %	54 %	22 %
Maximum Length nm	329	271	408	210	304	167	162
Average Length adjusted for Occurr.	702	616	783	270	535	340	389
	276	235	375	184	240	90	36

<sup>16</sup> See INSROP Working Paper 121, Natural Conditions along the Selected Routes, S Breskin et. Al page 8-12

Adjusting the values to nautical miles (nm) and for their average occurrence percentage, a simple deduction is that the average extension of flaw polynas in the relevant areas is 1 436 nm. Obviously, one should not expect the polyna's to be aligned along the course of advance in full for a transit vessel. However, if adjusting for 45 degrees along the mean line of advance the result would be :

$$\cos 45 \times 1\,436 \text{ nm} = 1\,015 \text{ nm.}$$

The significance comes to light when compared to total route length of 2 108 nm. Under this assumption, in March roughly 50 % of the NSR can be navigated in zones of open water or young ice up to 30 cm thick, subject to utilising overhead reconnaissance in full. With regard to speed this would significantly reduce average time and thus cost.

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## 6 FINANCIAL CALCULATIONS

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Subject to the above-mentioned comments on legal constraints and ways to solve this, financial calculations and costing have been performed to prove that the NSR can provide a significant saving vs. the Suez Canal alternative for current vessels.

### 6.1 COMMERCIAL RISK ASSESSMENT

On comparative terms, the issue of *operational risk*, or *physical risk* which is predominant in sub -programme I-II and WP I-II, IV-VI is related to repeated single voyage risk of Hull, Machinery, Cargo and Third Party Liability. This risk can be placed in the insurance market in single or consecutive offers.

For the investment decision the ***commercial risk*** can be split into various levels of risk which are reflected as an accrued premium to the base interest rate. The implications of "Fisher Separation Principle" stated above is that the investor will undertake an investment to maximise his wealth and undertake any project until the marginal rate of return to capital on the last project, equals the market equilibrium rate of return. The concept is to be elaborated on.

The first point to be made is that in a period of recession, there often exist capital surplus, but due to lack of demand, few projects have competitive returns on capital, and competition to borrow capital is low. The base case would thus be to seek the risk free investment, to which US Government Bond comes closest, as the *default risk* of the Goverment is assumed to be zero. ***Default risk*** thus encompass ***Country Risk***, and as no potential for bankruptcy exist, a negative value is not possible. US Government bonds are available for maturities up to 30 years.

However, adverse increases in inflation could significantly affect discounting as the projected capital outlays, could grossly mismatch the income if not taken into account. Using the ***Forward Interest Rate*** (FIR) principle we avoid the inflation issue, as the future expected inflation is reflected in the FIR and thus the Yield.

The principle of FIR is established by assuming that we hold 3 different bonds with one, two and three years maturity. If we want to deduct the implied forward rate expectation between

year 2 and 3 as shown in the equation 1 :

$$1 + {}_2 f_3 = \frac{(1+0r_3)^3}{(1+0r_2)^2} \quad 1.$$

We simply use the geometric product of the 3 year maturity and divide by the 2 year maturity bond. The yield ratio result is the implied forward rate as shown below (2).

$$1 + {}_2 f_3 = \frac{(1+0r_1)^1 (1+1f_2)^2 (1+2f_3)^3}{(1+0f_1)^1 (1+1f_2)^2} \quad 2.$$

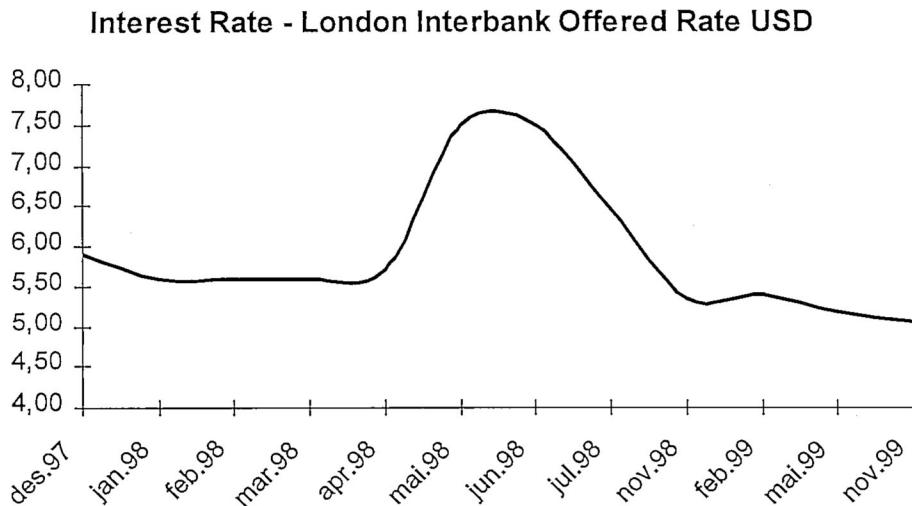
A shipping investment is capital intensive if we consider building new vessels, and lifetime for the asset is normally between 25 and 35 years. Thus for project appraisals, correct long term estimates for the discount rate should be sought. The discount period however, seldom match the full lifetime of the vessel, and normally the period would be between 15 and 20 years. The length of the period will normally match the rules and regulations for tax and depreciation of the asset in the country the corporate entity is located. To determine implied forward rate from year 14 to 15 for example, two bonds of 14 and 15 yrs maturity is required, and the same methodology applies as shown below (3).

$$1 + {}_{14} f_{15} = \frac{(1+0r_1) (1+1f_2) \dots (1+14f_{15})^5}{(1+0f_1) \dots (1+13f_{14})^4} \quad 3.$$

## 6.2 BASE INTEREST RATE

As benchmark for the relevant interest rate to use when discounting net positive cash flow differentials for the two alternatives, the London Interbank Offered Rate (LIBOR) should be used. Dependent on the mortgagee and his collateral for the loan, and the lending bank's perception of risk connected to both the collateral and the risk in the market (**co variance risk**), LIBOR + margin on top will be offered. However, if quotation for Forward LIBOR rates do not match the vessel lifetime or discount period, adjustments to compensate can be made. This by using the differential on the LIBOR rate and the Government bond that reflects the maturity.

The major issue then is whether the lending bank's risk perception towards investments in the service ship built for the NSR, and the margin they offer, match the investor's opportunity yield in the market. If so, the equilibrium rate or better has been found. For practical applications one observe that during the spring interest rates developed according to crisis in

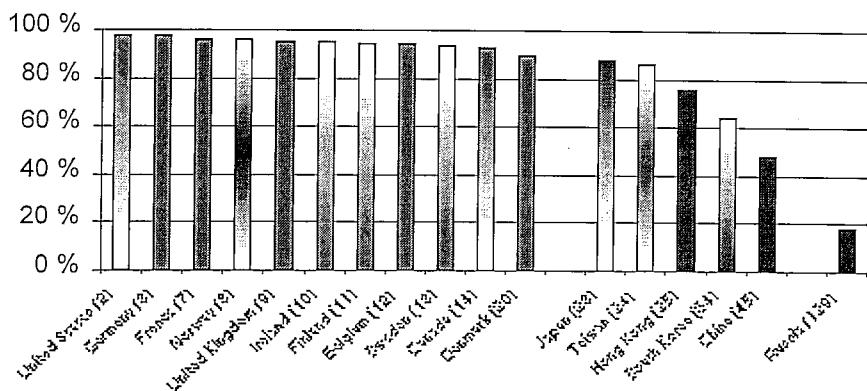


Asia and in Russia, consequently a step rise in interest rates were observed. To this situation the International Monetary Fund responded, and interest rates have come down since.

Reduction of interest rates is also due to the slow down of both the US and World economy in general. Expectations to be read from the LIBOR USD Forward Rates, is positive in the sense they trend downwards, which will affects discounted cash flows positively. The one year forward rate is 5,28 %. A depreciation period of 15 – 20 years and a cashflow period of perhaps 30 years, indicate that US Government bond of 30 year maturity is a relevant benchmark. Bond yield on par with LIBOR 5,27 % indicate that inflation neither is a problem today, nor expected in the future. This also applies to long term interest rates in the European Union. One should also take into account that normally a liquidity premium exist as short term securities, or bonds with low maturities, both are more liquid, and less sensitive to unexpected changes the economy.

An other factor could be if the Government operate large deficits, and traditional "crowding out" takes place. It applies that the Government competes for capital, interest rates are driven up, and investment in the private sector falls. However, the current situation in the Far East, and especially in Japan, is to the contrary. The government observes both recession and low interest rates, and try to stimulate private consumption by tax incentives to get the economy moving again.

## Country Risk Assessment



**Country Risk**, is a key risk issue the NSR operator should scrutinise to assess the opportunity yield in the market vs the margin on the base interest rate. It is also a difficult issue to approach pertaining to the inherent international aspect of the shipping industry.

Euromoney (Sep 98) publishes a worldwide assessment of country risk and rank countries accordingly. In the graph above the NSR relevant countries are ranked from left to right by their individual risk according to the study. The most noteworthy is that NWE and North America are grouped together to the left. They all belong to the multilateral Organisation for Economic Co-operation and Development (OECD), Trade Bloc European Union (EU) or North American Free Trade Association (NAFTA) and the Defence Alliance North Atlantic Treaty Organisation (NATO) (except of Ireland, Sweden and Finland).

The Far Eastern countries are grouped to the right, all are Asia Pacific Economic Co-operation (APEC) countries, Japan and South Korea both OECD members and Allied countries, whereas Taiwan, Hong Kong China, and Russia to the far right, do not belong to OECD or Alliances. For a sanguine risk assessment see appendix.

**Political risk** is important as it reflects the Government stability and will to observe and attend to generally accepted international legislation and standards. Sudden changes in the tax code etc. increase the *business risk*. Unclear or unsettled international disputes or legal practice as put forth by Ivanov et al (98) with regard to transit vessels in the territorial sea and through straits could be detrimental to any project. Interest rates would probably rocket on the assumptions put forth, or collateral would have to be pledged in full.

**Currency risk** can be controlled through financial instruments with currency futures and or

options. The normal practice is to match currency income and expenditure. As US Dollar is the standard revenue, and most costs are quoted accordingly, it is normally only a question to convert the debt and interest service to USD. Depending on the location of the Flag State the vessels are registered in, this may translate into ***balance sheet risk*** as USD could move adversely to domestic currency.

### 6.3 CASHFLOW

Subject to the discount rate (***k***) being decided upon, we evaluate the cashflow. Previously stated the paper compare alternatives. More specifically it evaluate ***asset value risk***; the degree to which lower direct cost due to shorter distance, and increased daily revenue due to freight being distributed over a shorter time interval, results in a net cash flow differential (***ncfd***) to justify a premium invested in higher ice class and capacity, the Investment differential (***Id***) at time ***0***.

The methodology to follow is to use the Net Present Value principle, which applies generally to investment decisions. Analogue to the "Fisher Separation Principle" the net present value method establish an equilibrium for the investor, where the annual Cash Flow (***CF***) from period ***0*** to ***n*** when discounted by discount rate ***k***, equals the initial investment ***I*** see equation 4.

$$NPV = \left[ \frac{CF_1}{(1+k)} + \frac{CF_2}{(1+k)^2} + \dots + \frac{CF_n}{(1+k)^n} \right] - I_0 \quad 4.$$

This NPV principle can thus be summed up as shown in equation 5.

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} - I_0 \quad 5.$$

Comparing two alternatives, the concern is whether the ***ncfd*** discounted for the cashflow period equals, or surpass the Investment differential at time ***0***. Subjectively having chosen an investment horizon of 20 years, the decision can be formulated as in equation 6.

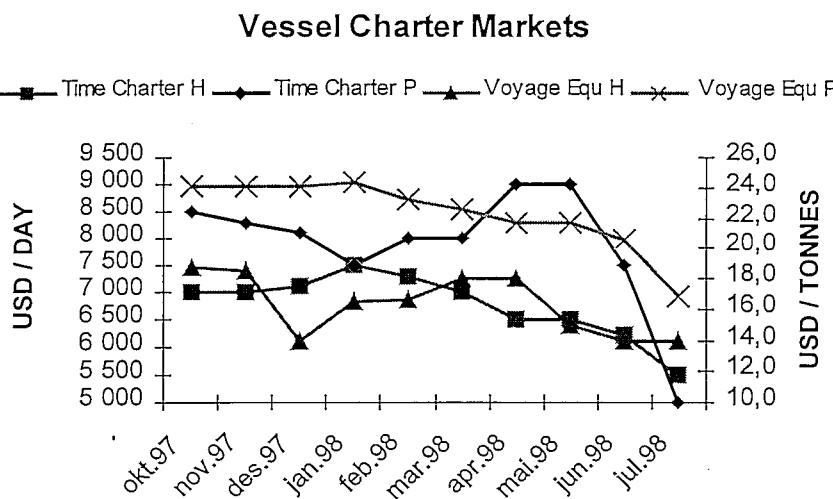
$$NPV = \sum_{t=1}^{20} \frac{NCFD_t}{(1+k)} - Id_0$$

6.

#### 6.4 THE FREIGHT MARKET

The methodology established, it is important to determine the position of the shipping cycle. The shipping cycle would normally track the business cycle reasonably well but with a potential time lag between orders and delivery for newbuildings, the business cycle can be both accentuated and reduced in effect. The supply side effect is best visualised by the tanker market oversupply between 1974 –76, with gross consequences for the owners as freight rates collapsed totally.

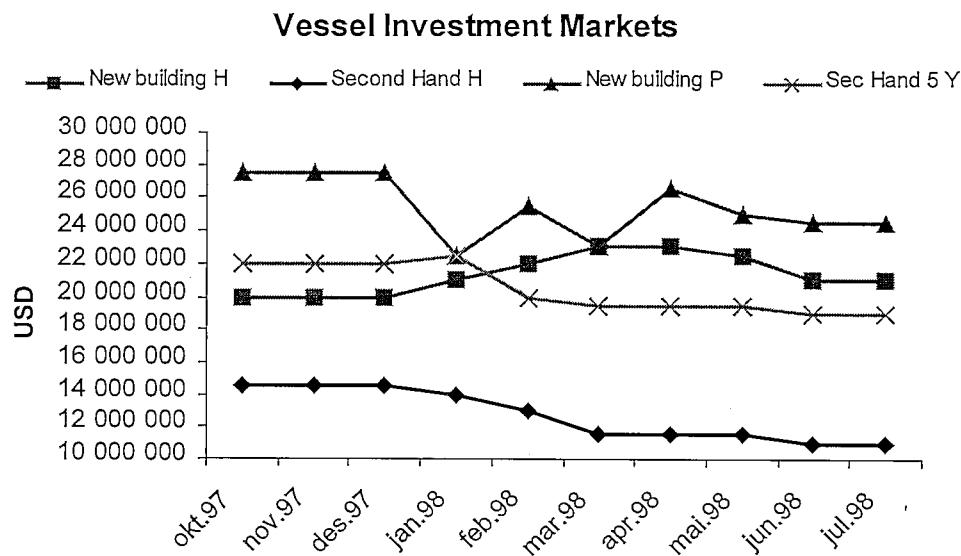
Total freight as reflected by the daily freight rates, would under assumption of comparing two competing alternatives, equally suffer by a reduction in freight rates, and reduced freight rates obviously affect the ability to service debt.



As can be seen from the graph above, Both timecharterers and their freight rate equivalent for Handymax and Panamax vessels have nosedived over the last year. This affect the asset values, as for any other investment that depend on cashflows to service debt and interest.

#### 6.5 VESSEL INVESTMENT MARKETS

We deduct from the graph below, that second hand vessel, both in the Handymax and Panamax (5 yrs) segments, sees a reduction of asset values in the same period. Newbuildings however, more stick to its price level as response time with regard to steel prices, building subsidies etc adjust more slowly. Over the last half year in 1998 the price of exported steel from South Korea and Indonesia have dropped 1/3, and the United States and European Steel industry have asked for protection from imports from both these countries and from Japanese steel production. Until the financial crisis in Asia is over, and a surplus of steel production capacity exist, it seems obvious that both the technologically advanced Japanese and the South Korean shipbuilding industry will be able offer very competitive prices for newbuildings over the next couple of years. As exchange rate movement is the major course, not domestic subsidies, it is difficult to pledge sustained claims for unfair trade practice.



## 6.6 THE ALTERNATIVE MARKET

For the NSR service ship adverse (positive) alternative cost movement such as a drastic reduction of Suez Canal rates, could be detrimental. This because we compare two alternative, and the canal rates is the major cost component that enhance the *ncfd*. Subject to sticky newbuilding prices, a fall in the canal rates would affects investor's perception of Asset Value risk most.

Once the investment decision is taken, the lending bank as providers of debt would view the NSR investor from the same angle. Initial measures could be to pledge collateral for the difference between projected asset value and loan capital invested. To reduce the *Creditor risk* cash flows are run through escrow accounts to help monitor the asset value.

When evaluating risk and potentially a significant shift of cargoes to specialised tonnage on the, the concept obviously carry a threat to the tonnage trading the Suez Canal.

In simplistic terms it is clear that as captured cargo disappear from the traditional market, the short run response would be to lower freight rates to variable cost as reflected by voyage cost. The medium term competitive response until asset "write off", would be to lower freight rates until marginal revenue equals marginal operating and voyage cost.

Much of the resistance to the NSR from the traditional shipping market can be explained by that scenario. The issue confronted is **co-variance risk**, the degree to which the shipping market moves in tandem with the rest of the market. Obviously operators already in the market with capital, knowledge, operational experience etc. would seek to avoid new entries and fronts establish along unfamiliar lines of communications.

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## **7 THE AVERAGE PARCEL SEGMENTS & VESSELS SELECTED.**

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### **7.1 THE MARKET**

The general market is used to obtain a standard vessel size for which quotation can be obtained uniformly. The general size quoted are 30 000 dwt and 55 000 dwt tonnage. Quotations are reflected in Lloyds Shipping Economist and through broker networks.

### **7.2 THE NORTH WEST EUROPE – FAR EAST TRADE.**

By analysing the vessel fixtures quoted between the two major trading areas, average vessel size and freight values are obtained. Eastbound the vessels can be split into two segments, one Handysize with average size of 31 429 dwt for which voyage charter rates of 24,43 \$ / tonnes were paid, and Handymax 50 000 dwt for which 19,60 \$ / tonnes were paid. Westbound from the Far East average size of 37 167 dwt for which 17,79 \$ / tonnes were paid.

### **7.3 THE SERVICE SHIP.**

The service ship parameters selected, 40 000 dwt, 14,5 knts at 9 200 kw is thus within the scope of the majority of parcel sizes. For the streamlined containerised cargo market it is too small to fit the average volumes and economies of scale for the major liner operators. This however, is neither the intent nor a qualitative or practical approach to the NSR. The major issue the open hatch solution address, is to increase the flexibility of the vessel being purpose designed for the trading area, and use this flexibility to increase marginal revenue to maximise the dwt capacity of the vessel.

The service ships does not correlate or state Suez Canal Net Tonnage (SNCT) or Gross Register Tonnage (GRT) which are subject to national authorities<sup>17</sup>. Further is the width set to 27.5 m, which is outside the range for tariffs stipulated for the NSR 26 m<sup>18</sup>.

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<sup>17</sup> See Juuruma et al WP 120, part 2 page 10.

<sup>18</sup> See INSROP Discussion Paper WP 7, Ivanov et.al p 14 section 3

#### **7.4 CURRENT RUSSIAN TONNAGE**

The current Russian tonnage is outside all the general parcel sizes and can not compete on economies of scale. The majority of the Strekalovsky and Donskoy vessels having passed zenith of their lifetime cyclus, these vessels will be out of the market within foreseeable future. If put into question, one must also assume that Port State Control of these opposite numbers can be facilitated as the cargo base is located in the Far East and North West Europe. This to establish a benchmark for western vessels that operators wish to use on the NSR. Port calls and control in the cargo generating area of Dimitriy Donskoy, Strekalovsky and Norilsk vessels will enable such a fair and reasonable benchmark, and Russian authorities should be invited to observe such initial controls to avoid questions of objectivity and to obtain acceptance for non - discrimination.

Conversion factors used for Dwt to Suez Canal Net Tonnage (snct) is 0,48, and to Gross Register Tonnage (grt) is 0,6. General conversion may deviate from the an individual vessel chosen as comparison, but applies in general to the market averages. Conversion is necessary as these measurements are used for international cost and tariff quotations.

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## 8 RESULTS

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The financial calculations of this paper have addressed the standard segments of the market and establish the following results versus the alternative market through Suez.

1. The discounted net cashflow differential
2. The break even ice tariffs
3. The daily cash flows difference available for the NSR for vessels in the market.

These parameters are established for a non-tariff solution only comparing with the Suez Canal. This scenario fits a free operation for the Northern Route package. Comparisons are also made towards use of the Finnish and Norwegian coastal tariff system. This scenario allows Russia to receive reasonable compensation to the services rendered to transit traffic. It should then be stated that Russia's main problem today is to re-supply the NSR area, and that additional traffic will lighten the burden of this regional logistic administration.

The result in terms NPV of the *ncfd* should be used to establish a benchmark on top of a standard newbuilding, and thus set the target criteria for the upper limit building cost differential.

### 8.1 STANDARD MARKET – NO TARIFFS

Vessel Segment	NPV of Cashflow	Daily Cashflow Diff	Break Even Ice Tariff
<b>NW Europe to Far East</b>			
50 000 – 19,6 \$ / t		10 219 USD	0, 59 cents / grt / day
31 429 – 24, 43 \$ / t		14 744 USD	0, 85 cents / grt / day
<b>Far East to NW Europe</b>			
37 167 – 17, 79 / t		14 749 USD	0, 72 cents / grt / day
<b>General Market Values</b>			
55 000 - 15,9 \$ / t		17 394 Usd	0,58 cents / grt / day
30 000 – 21, 6 \$ / t		14 743 Usd	0,89 cents / grt / day

## 8.2 STANDARD MARKET – NORWEGIAN TARIFFS TO APPLY

Vessel Segment	NPV of Cashflow	Daily Cashflow Diff	Break Even Ice Tariff
<b>NW Europe to Far East</b>			
50 000 – 19,6 \$ / t	\$ 15 739 407	16 509 USD	0, 55 cents / grt / day
31 429 – 24, 43 \$ / t	\$ 13 524 250	14 186 USD	0, 75 cents / grt / day
<b>Far East to NW Europe</b>			
37 167 – 17, 79 / t	\$ 14 268 769	14 966 USD	0, 67 cents / grt / day
<b>General Market Values</b>			
55 000 - 15,9 \$ / t	\$ 15 047 957	16 586 Usd	0,50 cents / grt / day
30 000 – 21, 6 \$ / t	\$ 13 644 715	14 312 Usd	0,80 cents / grt / day

## 8.3 STANDARD MARKET – FINNISH COASTAL TARIFFS TO APPLY

Vessel Segment	NPV of Cashflow	Daily Cashflow Diff	Break Even Ice Tariff
<b>NW Europe to Far East</b>			
50 000 – 19,6 \$ / t	\$ 15 020 148		
31 429 – 24, 43 \$ / t	\$ 14 969 113	17 974 USD	0, 87 cents / grt / day
<b>Far East to NW Europe</b>			
37 167 – 17, 79 / t	\$ 16 214 380	14 966 USD	0, 67 cents / grt / day
<b>General Market Values</b>			
55 000 - 15,9 \$ / t	\$ 18 265 178	17 974 Usd	0,62 cents / grt / day
30 000 – 21, 6 \$ / t	\$ 14 618 117	15 470 Usd	0,86 cents / grt / day

## 8.4 STANDARD MARKET – RUSSIAN TARIFFS TO APPLY

31 429 – 24, 43 \$ / t	\$ 0	326 Usd	0, 02 cents / grt / day
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## 9 CONCLUSION

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For all alternatives with the exception of the Russian NSR tariffs it is clear that a significant Net Present Value exist versus the traditional market through Suez. Thus, for the NSR investor the opinion of the shipping market should be totally irrelevant. As compared to the indicated building cost for the service ship of US \$ 66 000 000, however no alternatives match as the traditional market offer handysize for US \$ 21 687 500 and Panamax for US \$ 24 875 000. The cashflows have been discounted at discount rate LIBOR + 0,9 which is a premium rate offered. The cashflows thus reflect a scenario where the US Position on straits and innocent passage applies, and where country risk is minimised.

With regard to price a scenario where governments distribute incentives to the shipbuilding industry to lower building costs, and help place the vessels in the market, could clearly be a viable concept and within expectations pending the current economic situation in the Far East. This could achieve scale cost reductions for the export and import industry, and although OECD norms for shipbuilding subsidies, currently 9 %, applies in general, it is only the United States which has formulated restrictions to cargo access based on vessel subsidies.

Subject to of a co-operative Russia regime in the Arctic and a sanguine view of how large a tariff the market can bear, the NSR should be evaluated on terms of an individual project to which also shippers and the land side of logistics are the issue. As Governments are stakeholders in the overall industry, they do not necessarily see shipping as an end to itself. Norway with its concentration of capital in the shipping industry could probably be prone, or lobbied, to do so, whereas Japan equally dependent on seaborne trade, but where shipping in the overall picture plays a far less role, would probably not.

It is proved that Russia subject to its initial position on tariffs etc, would ruin any commercial operation on the NSR and in no way has established a favourable regime for international shipping through the NSR. This based on *the* current and best offered LIBOR + premium rate. It is also proved that the arguments put forth in work package 7 to support the Russian legal regime cannot be sustained nor justified by any calculations. Further adverse position on the transit issue by Russia would affect all projects negatively.

# I. APPENDICES

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- A.1 MODEL PARAMETRES MARINE FUEL & DIESEL COST
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F.1.2		31 429 dwt - 24,43 US \$ / Tonnes
F.1.3	<i>The Far East to NW Europe</i>	37 167 dwt - 17,79 US \$ / Tonnes
F.1.4	<i>General market Values</i>	55 000 dwt - 15,90 US \$ / Tonnes

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F.2.1	<i>NW Europe to the Far East</i>	50 000 dwt - 19,60 US \$ / Tonnes
F.2.2		31 429 dwt - 24,43 US \$ / Tonnes
F.2.3	<i>The Far East to NW Europe</i>	37 167 dwt - 17,79 US \$ / Tonnes
F.2.4	<i>General market Values</i>	55 000 dwt - 15,90 US \$ / Tonnes

### F.3 FINNISH TARIFFS TO APPLY (SOUTHERN COASTAL ROUTE)

F.3.1	<i>NW Europe to the Far East</i>	50 000 dwt - 19,60 US \$ / Tonnes
F.3.2		31 429 dwt - 24,43 US \$ / Tonnes
F.3.3	<i>The Far East to NW Europe</i>	37 167 dwt - 17,79 US \$ / Tonnes
F.3.4	<i>General market Values</i>	55 000 dwt - 15,90 US \$ / Tonnes

### F.4 RUSSIAN NSR TARIFFS TO APPLY

F.4.1		31 429 dwt - 24,43 US \$ / Tonnes
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## **A. SHIP COST USED IN THE MODEL**

A.1 MODEL PARAMETRES MARINE FUEL & DIESEL COST

A.2 REPRESENTATIVE DRY BULK DWT & CHARTERRATES 1997 - 98 EUROPE - FAR-EAST

## MODEL PARAMETERS

Period	FOREIGN EXCHANGE VS USD						MDO (USD)		IFO (USD)	
	JA / YEN	HK / \$	SK / WON	ECU	SDR	LIBOR	Rotterdam	Singapore	Rotterdam	Singapore
okt.97										
nov.97										
des.97	0,77	0,13	0,07	1,12	1,34	5,90	153	168	110	115
jan.98	0,79	0,13	0,07	1,08	1,35	5,60	155	170	115	109
feb.98	0,81	0,13	0,06	1,10	1,36	5,60	144	155	86	90
mar.98	0,74	0,13	0,07	1,08	1,33	5,60	130	120	86	62
apr.98	0,77	0,13	0,07	1,09	1,34	5,70	120	117	68	73
mai.98	0,74	0,13	0,07	1,12	1,34	7,50	125	127	84	82
jun.98	0,75	0,13	0,07	1,09	1,34	7,50	120	126	76	74
Jul.98	0,69	0,13	0,08	1,10	1,33	6,45	120	118	71	74
aug.98										
sep.98										
Period Average	0,76	0,13	0,07	1,10	1,34	6,23	133	138	87	85

## Dry Bulk Timecharter Rates North West Europe - Far East, 1997 - 98 : By Region & Ship Type

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Reredelivery Area	Rate	Region
<b>Capesize - North West Europe to the Far East</b>									
nov.97	Agios Ioannis Theologos	Mega Pacific	122,171	365	0	0	Rotterdam	\$9,750	NWE
apr.97	China Act	Daichi	151,688	Trip	0	0	ARA	\$16,000	NWE
jan.97	Mineral Europe	Yunkong	170,698	Trip	0	0	Continent	\$17,000	NWE
			148,186					\$14,250	
<b>Panamax - North West Europe to the Far East</b>									
nov.98	Anangel Progress	Hainjin	69,406	Trip	26+1,25	13,5	Hamburg	\$5,250	NWE
nov.98	Chia May	Chilsan	74,009	Trip			Skaw	\$5,570	NWE
sep.98	Atlantic Crown	Finagrain	73,538	Trip		14	Ghent	\$5,850	NWE
aug.98	Silvergate	Belships	68,158	Trip		0	Baltic	\$6,500	NWE
jul.98	Anangel Venture	Chilsan	69,409	Trip	26+1,25	13,5	Skaw	\$8,000	NWE
jul.98	Georgia	Andre	60,180	Trip	0	0	Recalada	\$7,200	Med
feb.98	Haydar	Transfield	65,337	Trip	0	0	Skaw	\$8,200	NWE
feb.98	Atlantic Savior	Transfield	64,754	Trip	0	0	Ventspils	\$8,500	NWE
feb.98	Manifest PKWN	Navix Line	60,969	Trip	0	0	Ferrol	\$11,000	NWE
dec.97	Channel Fortune	Korea Line	73,000	Trip	0	0	Ghent	\$14,000	NWE
dec.97	President G	Great Change	69,344	Trip	0	0	Antwerp	\$12,500	NWE
dec.97	Minoan Flame	Bulffracht	65,960	Trip	0	0	Skaw	\$12,000	NWE
nov.97	Maja Vestida	Daichi	70,213	Trip	33	14	Ghent	\$14,500	NWE
aug.97	Ispat Gaurav	Panocean	71,535	Trip	30+1,5	14	Ghent	\$13,000	NWE
aug.97	Northern Venture	Finagrain	68,519	Trip	30	14	Gibraltar	\$12,750	NWE
apr.97	Mass Success	Hyundai Merchant Marine	69,347	Trip	0	0	Ghent	\$14,650	NWE
mar.97	Captain George Tsangari	Albatross Shipping Lines	61,349	Trip	0	0	Skaw	\$14,500	NWE
feb.97	Bobilina	NA	64,854	Trip	0	0	Flushing	\$13,000	NWE
jan.97	Rita d'Amato	Oldendorff	69,201	Trip	0	0	Rotterdam	\$15,500	NWE
			67,846					\$10,656	
<b>Handysize - North West Europe to the Far East</b>									
dec.97	Syrena	Korea Line	48,800	Trip	37+1	14,5	Gdansk	\$14,800	NWE
jul.97	Arctic Voyager	PCL	48,131	Trip	0	0	Continent	\$9,600	NWE
jan.98	Pretty Florish	Panocean	46,932	Trip	30	14	Skaw	\$9,400	NWE
jan.98	Almavita	Panocean	45,798	Trip	27	13	Skaw	\$13,000	NWE
aug.97	Festivity	Korea Line	45,548	Trip	0	0	Continent	\$13,500	NWE
jul.97	Nan Hai	Panocean	45,189	Trip	0	0	Continent	\$8,050	NWE
feb.98	Wadi Al Kamar	Albatross Shipping Lines	45,105	Trip	28	13	Skaw	\$8,500	NWE
jan.98	Bei Hai	LD Seals	45,000	Trip	0	0	Skaw	\$11,500	NWE
mar.97	Nena F	Albatross Shipping Lines	42,263	Trip	28,6	14	Skaw	\$7,000	NWE
jun.98	Grand Spring	Albatross Shipping Lines	42,000	Trip	26	14	Skaw		

jun.97	You Sheng	Panocean	41.869	Trip	0	0	Continent	Far East	\$13.500	NWE
mai.97	Santa Rita	LD Seals	41.515	Trip	0	0	Continent	Far East	\$12.500	NWE
jul.97	An angel Success	panocean	41.502	Trip	26+0,25	14	Baltic	Far East	\$13.000	NWE
jun.98	Mandarin Moon	Albatross Shipping Lines	39.339	Trip	21+1,5	13	Baltic	Singapore	\$6.300	NWE
may.98	Nimet Pisak	Furness Whity	38.248	Trip	21,5+1,5	14	Skaw	Singapore	\$6.300	NWE
may.98	Nimet Pisak	Furness Whity	38.248	Trip	21,5+1,5	14	Skaw	Singapore	\$6.300	NWE
may.98	Rosina Topic	LD Seals	37.244	Trip	31+2	14	Skaw	Singapore	\$6.300	NWE
mar.97	Sea Crystal	Iino	28.296	Trip	0	0	Hamburg	Far East	\$9.750	NWE
feb.98	Sea Fortune	LD Seals	25.320	Trip	0	0	Gdynia	Far East	\$9.750	NWE
oct.97	Clipper Majestic	North Cape Minerals	17.154	Trip	19	13,5	Norway	Continent	\$8.300	NWE
					40.175					\$9.861

## Dry Bulk Timecharter Rates Far East to North West Europe , 1997 - 98 : By Region & Ship Type

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Rerelivery Area	Rate	Region
Handysize - Black Sea to the Far East									
nov.97 Jin Da	Chilsan	Bocimar	41.346	365	0	0	Black Sea	Far East	\$8,600 Black Sea
Capesize - Far East to Europe									
nov.97	Lowland Rose	Bocimar	153.500	Trip	0	0	Japan	Continent	\$15.500 FE
jan.97	United Resolve	British Steel	151.049	Trip	0	0	Japan	UK/Continent	\$12.250 FE
jan.97	Bao Shan	British Steel	149.396	Trip	0	0	Kaoshiung	UK/Continent	\$12.500 FE
			151.315						\$13.417
Panamax - Far East to Europe									
nov.98	An. I Angelcoussis	Furness Whitley	69.346	Trip	13,5	Taiwan	Continent	\$7.250 FE	
nov.98	Great Pescadores	Navios	70.200	Trip	30,5	14,5	Japan	Continent	\$8.100 FE
nov.98	Harmony	NA	69.073	Trip	36	Japan	Continent	\$5.600 FE	
nov.98	Kostrena	Noble	69.346	Trip	26+1,5	13,5	Japan	Sweden	\$6.000 FE
nov.98	Maia Vestida	Hanjin	70.213	Trip	14	Japan	Continent	\$8.000 FE	
sep.98	China Glory	Cosco Singapore	64.615	Trip	28+1,8	14,4	China	Continent	\$6.000 FE
aug.98	Oinussian Sky	Intermare	64.377	Trip	0	0	Hong Kong	Continent	\$6.650 FE
aug.98	Oinussian Father	Armeda	64.313	Trip	0	0	Taiwan	Skaw	\$7.250 FE
jul.98	Fu Tong	Tom Asia	71.330	Trip	0	0	Taiwan	Constanza	\$7.600 FE
jul.98	Lucky Bulker	Cosco	69.600	Trip	0	0	Bukpyong	Skaw	\$5.250 FE
jul.98	Disco Valente	Armeda	69.011	Trip	0	0	Taiwan	Eregli	\$8.300 FE
jul.98	Navios Minerva	Belships	68.000	Trip	0	0	Taiwan	Cape Passero	\$7.500 FE
may.98	Bunga Saga Empat	Aimcor	72.338	Trip	0	0	Japan	Skaw	\$8.700 FE
may.98	Lamyra	Tom Asia	64.879	Trip	0	0	S Korea	Cape Passero	\$7.200 FE
may.98	Ever Praise	Goldbeam	63.195	Trip	0	0	China	Skaw	\$5.250 FE
feb.98	Oinoussian Leader	Aimcor	71.694	Trip	0	0	Japan	Continent	\$6.000 FE
jan.98	Pacific Pearl	AIT	61.803	Trip	0	0	Shanghai	Continent	\$2.000 FE
nov.97	Ever Mighty	Navios	75.265	Trip	34,5+2	14	Pohang	Continent	\$7.000 FE
nov.97	Drin	Tom Asia	73.087	Trip	0	0	S Korea	Dunkirk	\$5.750 FE
jul.97	Giovanni Bottiglieri	Docenave	75.265	Trip	0	0	Taiwan	Skaw	\$6.950 FE
jul.97	Anaisai	British Steel	73.200	Trip	0	0	Nagoya	Continent	\$6.500 FE
jan.97	Mehmet Bey	SSM	68.789	Trip	35	14,5	Japan	Continent	\$8.250 FE
dec.97	Magnum	Hyundai Merchant Marine	68.326	Trip	34+3	12	Xingang	Skaw	\$3.250 FE
			68.996						\$6.505

Handymax - Far East to Europe		Furness Withy	52.580	Trip	33+3	13	Kaoshiung	Skaw	\$3.600	FE
feb.98	Azalea Sea									
<b>Handysize - Far East to Europe</b>										
okt.98	Alcinoe	Mitsui OSK	34.219	Trip	14,1	Japan	Continent	\$7.000	FE	
okt.98	Hua Zhuang	Panoccean	41.454	Trip	14,2	Far East	Boston	\$5.800	FE	
okt.98	Nurton Ana	Albatross	38.888	Trip	24+2	14,25	Kaoshiung	\$6.250	FE	
okt.98	Uruga	Clipper	25.912	Trip	0	15	Indonesia	\$6.000	FE	
jun.98	New World	Panoccean	38.305	Trip	0	0	Norway	\$8.250	FE	
jul.98	Balaji Premium	Panoccean	36.205	Trip	30+2	13,54	S Korea	Boston	\$6.800	FE
			35.831				Skaw			\$6.683

## **B. TARIFFS & FEES**

B.1 NO. ROYAL DECREE NO 1128, 23 DECEMBER 1994, NORWEGIAN COASTAL TARIFFS  
(KEY VALUES TRANSLATED IN CHAPTER 3)

B.2 FI. PRESIDENTIAL DECREE NO 1252, 16 DECEMBER 1983 FINNISH COASTAL & ICE  
TARIFFS (KEY VALUES TRANSLATED IN CHAPTER 3)

B.3 SUEZ CANAL AUTHORITY CIRCULAR NO 3 / 97, SUEZ CANAL TARIFFS STRUCTURE

vedkommende passasjerskip frittatt fra å betale losgebyrer for resten av 1995, med mindre fartøyet benytter statslos.  
Endret ved forskrift 25. april 1995 nr. 389.

#### VEDTATT: 21.04.1995 nr. 375

DEPARTEMENT: FI

### Forskrift om alminnelig kystgebyr.

Fastslatt ved kgl.res. 21. april 1995 med hjemmel i lov av 8. juni 1984 nr. 51 om havner og farvann § 26. Fremmet av Fiskeridepartementet.

#### Kapittel I Innledende bestemmelser

##### § 1. *Gebypunkt*

Fartøy på 200 BT eller mer skal ved innseiling til eller utseiling fra norsk indre farvann betale alminnelig kystgebyr etter denne forskriften med mindre annet er bestemt i § 3.

Betalingsplikten inntrer når fartøyet passerer grensen for gebypunktet farvann for inn- eller utseiling, jf. § 2 første ledd bokstavene a, b og c.

##### § 2. *Definisjoner*

I denne forskriften betyr:

- Gebypunkt: Farvann innenfor grunnlinjen.
  - Innseiling: Settas fra farvann utenfor grunnlinjen ved passering av grensen for gebypunktet farvann for anløp av norsk indre farvann.
  - Utseiling: Seilas til farvann utenfor grunnlinjen ved passering av grensen for gebypunktet farvann ved avgang fra norsk indre farvann. Seilas til og fra fiske- og fangstfelt regnes ikke som inn- og utseiling etter forskriften her.
- Fiskeridepartementet avgjør i tvilstilfeller hva som skal forstås med de enkelte definisjonene.

##### § 3. *Unntak fra gebypunktet*

Følgende fartøy er frittatt fra å betale gebyrer etter denne forskriften:

- Fartøy som bare utøver humanitær virksomhet i ikke-kommersielt øyemed.
- Fartøy som bare seiler som skoleskip og i ikke-kommersielt øyemed.
- Krigsfartøy og transportfartøy under militær kommando.
- Fartøy på reise fra en norsk havn til en annen. Svalbard, Jan Mayen og Bjørnøya anses for å være norsk havn i relasjon til denne bestemmelseren, når fartøyet ikke kommer fra eller skal anløpe utenlandsk havn.

f. Fartoyer i gjennomfart som ikke har stasjonære opphold i gebypunktet farvann.

Ved ivil avgjør Kystdirektoratet om vilkårene for fritak etter første ledd er til stede. Kystdirektoratet kan etter søknad innrømme fritak fra gebyrpunkten når særlige hensyn tilslies det.

#### Kapittel II Beregning av fartøyers størrelse

##### § 4. *Målekonvensjon*

Ved beregningen av fartøyers størrelse legges fartøyets størrelse i bruttotonn (BT) i henhold til skipsmålingskonvensjonen av 1969 til grunn.

##### § 5. *Fra trekk for segregerte ballasttanker*

For oljetankfartoyer med segregerte ballasttanker trekkes volumet av de segregerte ballasttanker fra når fartøyets størrelse i bruttotonn beregnes. Vilkårene for dette er:

- Volumet av de segregerte ballasttankene må framgå av målebrevet.
  - Betingelsene etter IMO-resolusjon A.748 (18) må forøvrig være til stede.
- Kystdirektoratet avgjør i tvilstilfeller ved enkeltvedtak om vilkårene for beregning etter første ledd er oppfylt.

##### § 6. *Plikt til å framlegge målebrev m.v.*

Fartøyets fører eller dets representanter plikter på forespørsel å framlegge gyldig målebrev i henhold til målereglene i norsk sjøfartslovgivning. Hvis slike målebrev ikke kan framlegges innen enuke eller det fremdeles er tvil om beregningsgrunnlaget, bestemmer vedkommende kystdistriktskontor ved losoldermannen ved enkeltvedtak hvilken størrelse som skal legges til grunn ved gebyrberegningen.

Første ledd gjelder tilsvarende for annen dokumentasjon som Kystverket måtte ha behov for ved beregningen.

#### Kapittel III Beregning og betaling av gebyr

##### § 7. *Gebyr ved inn- og utseiling*

Ved innseiling og utseiling betales kr. 0,18 pr. BT med mindre årsavgift er betalt etter § 8.

##### § 8. *Årsavgift*

Alminnelige kystgebyr kan betales i form av en årsavgift:

Årsavgiften for perioden 1. mai 1995 til 31. desember 1995 er:	Kr. 4,20	pr. BT.
For fartøy t.o.m.	5.000	BT
For fartøy f.o.m.	5.001	BT o.m. 10.000 BT Kr. 9,00 pr. BT
For fartøy over	10.000	BT Kr. 12,00 pr. BT
Årsavgiften skal være innbetalst senest 10 dager før avgiftsårets		

begynnelsen, i 1995 senest innen 25. april. Fartøy kan tiltre årsavgiftsordningen i løpet av avgiftsåret, men har ikke rett til å få ettergitt eller tilbakebetalt gebyrer for enkeltseilinger før betalingstidspunktet.

Er det betalt årsavgift for fartøy som forliser eller avhendes i avgiftsåret, kan det etter søknad til vedkommende kystdistriktskontor ved losoldermannen gis en forholdsmessig refusjon av årsavgiften.

Arsavgiften kan ikke overføres fra et fartøy til et annet.

#### § 9. Gebyrregning

Det utstedes regning for hver gang fartøyet passerer grensen for gebyrbelagt farvann for inn- eller utseling.

Gebryrene skal betales til vedkommende kystdistriktskontor ved losoldermannen. For innkrevingen gjelder forskrift om innkreving m.v. av losgebyrer til Kystverket som er fastsatt i medhold av loslovens § 18 første ledd så langt disse bestemmelser ikke måtte stride mot havne- og farvannsloven.

### Kapittel V Avsluttende bestemmelser

#### § 10. Plikt til melding

Når betalingspliktig fartøy ikke har benyttet statslos, skal føeren eller annen representant for fartøyet gi melding om seilasen til vedkommende kystdistriktskontor ved losoldermannen. Melding skal gis så snart som mulig og senest tre dager etter seilasen. Melding skal inneholde de opplysninger som kreves for å utfordre gebyrregning.

#### § 11. Klage

Enkeltvedtak som treffes etter denne forskriften kan påklages etter bestemmelserne i lov av 10. februar 1967 om behandlingsmåten i forvaltningsaker (forvaltningsloven). Kystdirektoratet er klageinstans for vedtak fattet av kystdistriktskontorene ved losoldermannene. Kystdirektoratet er klageinstans for vedtak fattet av Kystdirektoratet.

#### § 12. Endringer og utfyllende bestemmelser

Fiskeridepartementet kan endre forskriften her og gi forskrifter om utfyllende bestemmelser til denne forskriften.

### Kapittel VI Ikrafttredelse, overgangsbestemmelser

#### § 13. Ikrafttredelse

Denne forskriften trer i kraft 1. mai 1995 kl. 00.00 og får anvendelse for fartøyer som passerer grensen for norsk indre farvann for inn- eller utseiling etter dette tidspunkt.

#### § 14. Overgangsbestemmelser

Passasjerskip som i 1995 har betalt kystgebyr for 100 seilinger etter bestemmelserne i § 9 bokstav a i forskriften om takster for kystgebyr fastsatt ved kgl.res. av 23. desember 1994 nr. 1127, er frittatt fra plikten til å betale alminnelig kystgebyr for resten av 1995. Passasjerskip som i 1995 har betalt kystgebyr etter den samme bestemmelseren, men som ikke har nådd 100 seilinger, kan fortsatt betale etter reglene i denne bestemmelseren, men etter de nye satsene. Når 100 seilinger er nådd, er vedkommende passasjerskip frittatt fra å betale alminnelig kystgebyr for resten av 1995.

VEDTATT: 25.04.1995 nr. 388

DEPARTEMENT; FI

### Forskrift om innkreving m.v. av losgebyrer og alminnelig kystgebyr til Kystverket.

Fastsatt av Fiskeridepartementet 25. april 1995 med hjemmel i lov av 16. juni 1989 nr. 59 om losjenesten § 18 første ledd og kgl.res. av 21. april 1995 nr. 375 om alminnelig kystgebyr.

#### § 1. Gebyrene

Denne forskriften gjelder innkreving av losgebyrer fastsatt i medhold av loslovens § 14 og alminnelig kystgebyr fastsatt i medhold av havne- og farvannslovens § 26.

#### § 2. Skipperbevis

Skipsføreren eller annen representant for fartøyet skal påse at det for hver gebyrpliktig seilas eller gebyrpliktig periode blir fulgt ut et skipperbevis som grunnlag for gebyrregningen. Skipperbevis skal fylles ut selv om det er tvist om gebyrplikten.

Når fartøyet har nyttet statslos, leveres skipperbeviset i utfyrt stand til statlosen som har gjort tjeneste.  
Når gebyrpliktig fartøy ikke har nyttet statslos, skal skipperbevis i utfyrt stand sendes til vedkommende kystdistriktskontor ved losoldermannen. Skipsføreren eller annen representant for fartøyet kan eventuelt ved annen melding gi de nødvendige opplysninger slik at losoldermannen kan fylle ut skipperbeviset.

Kystdirektoratet fastsetter utformingen av skipperbeviset og gir nærmere retningslinjer for utfyllingen av det.

#### § 3. Avgiftsberegning

Vedkommende kystdistriktskontor ved losoldermannen regner ut samlet

gebyr og presenterer dette overfor den som er angitt som betaler på skipperbeviset. Ved utregning og presentasjon av gebyrkrevet benyttes fakturaformular som er fastsatt av Kystdirektoratet.

#### § 4. Betalingsfrister

Den alminnelige betalingsfristen er 30 dager fra regningsdato. Når et fartøy tidligere er tilagt gebyrer og disse ikke er innbetalt til tross for at de er forfalt og purring er sendt eier av fartøyet, kan losoldermannen bestemme at gebyret skal anses som forfalt umiddelbart.

#### § 5. Ikrafttreden

Denne forskriften trer i kraft 1. mai 1995 kl. 00.00 og får anvendelse for gebyrpliktige seilaser foretatt etter dette tidspunkt. Fra samme tidspunkt oppheves:

- Forskrift av 12. august 1982 nr. 1232 om utferdigelse og kontroll av lostregninger, samt om oppkrevning av kystgebyr m.v.
  - Forskrift av 18. januar 1988 nr. 101 om skjema for skipperbevis.
- Forskriften nevnt i foregående ledd skal imidlertid fortsatt gjelde for gebyrpliktige seilaser foretatt før 1. mai 1995 kl. 00.00.

**VEDTATT: 28.02.1995 nr. 186**

DEPARTEMENT: FI

## Forskrift om overgangsbestemmelser —

### Losplikt og losgebyrer.

Fastslatt av Fiskeridépartementet 28. februar 1995 med hjemmel i forskrift av 23. desember 1994 nr. 1129 om plikt til å bruke los i norske farvann § 17 jfr. lov av 16. juni 1989 nr. 59 om losjenesten § 13.

- § 1. Utan hinder av bestemmelsene i § 6 i forskrift av 23. desember 1994 nr. 1129 om plikt til å bruke los i norske farvann, kan et lospliktig fartøy seile uten å nyte statslos dersom fartøyet nyter havnelos etter ordning som er etablert før 1. mai 1995. Unntaket gjelder bare fra grensen for lospliktig farvann og inn til eller ut fra havnen langs korteste og sikreste led. Vedkommende losoldermann kan, når hensynet til sikkerheten krever det, ved enkeltvedtak pålegge fartøyet å nyte statslos.
- § 2. Utan hinder av bestemmelsene i § 6 i forskrift av 23. desember 1994 nr. 1129 om plikt til å bruke los i norske farvann kan et lospliktig fartøy, som en overgangsordning, seile uten å nyte los dersom vilkårene nedenfor er oppfylt:

- Fartøyet fører ikke last som nevnt i gruppe 1 i vedlegg 2 til forskrift av 23. desember 1994 nr. 1129 om plikt til å bruke los i norske farvann.
- Føreren har etter 1. januar 1994 hatt minst 6 seilinger hver vei med fartøyet eller et tilsvarende fartøy i den led der unntaket gjelder.
- Føreren kan kommunisere problemfritt på skandinavisk.
- Føreren har sendt søknad om farledsbevis på fastsatt skjema slik at Kystdirektoratet har mottatt den innen den fristen som er fastsatt av direktoriatet.

Ordningen gjelder ikke i områder der fartøyet pr. 30. april 1995 har plikt til å bruke los og det ikke er gitt dispensasjon fra denne plikten. Føreren må, før han vil benytte seg av overgangsordningen, fylle ut en egenerklæring som vist i vedlegg til disse overgangsbestemmelsene. Egenerklæringen sendes til Kystdirektoratet, og føreren kan ikke benytte seg av overgangsordningen før han har fått skriftlig melding fra Kystdirektoratet eller den det bestemmer, om at han kan seile uten å bruke los.

- Føreren ikke lenger benytte seg av overgangsordningen.
- Overgangsordningen kan benyttes av føreren til økningen om farledsbevis er ferdigbehandlet, og han har fått melding om utfallet av behandlingen.
- Dersom hensynet til sikkerheten krever det, kan Kystdirektoratet eller den det bemyndiger, ved enkeltvedtak bestemme at en skipsfører ikke skal kunne nyte overgangsordningen eller sette vilkår for om og hvordan ordningen skal gjelde. Dette gjelder også etter at det er gitt melding som nevnt i punkt 3.

- § 3. Ordningen som gjelder for føreren etter § 2, gjelder også, på samme vilkår som for føreren, for andre av fartøyets navigatører.
- § 4. Når et fartøy nyter overgangsordningen, må en navigator som fyller vilkårene i disse overgangsbestemmelsene, være til stede på broen og forestå manøvreringen og navigeringen. Forøvrig gjelder bestemmelsene i § 11 tredje ledd i forskrift av 23. desember 1994 nr. 1129 om plikt til å bruke los i norske farvann tilsvarende.

- § 5. Kystdirektoratet eller den det bemyndiger, kan ved enkeltvedtak bestemme at også andre enn den som er nevnt i §§ 2 og 3 kan omfattes av overgangsordningen. Ved vurderingen skal det bl.a. legges vekt på om vedkommende kan kommunisere problemfritt på skandinavisk eller engelsk.
- § 6. Overgangsordningen frirar ikke fra plikten til å betale losberedskapsgebyr.

- § 7. Disse overgangsbestemmelsene trer i kraft 1. mai 1995 og gjelder til senest 30. april 1996.

**§ 9. Årsavgift**

De betalingspliktige kan betale losberedskapsgebyret i form av en årsavgift i stedet for å betale for hver enkelt seiling.

Arsavgiften for perioden 1. mai — 31. desember 1995 er:

For fartøy t.o.m. 5000 BT	Kr. 11,00 pr. BT
For fartøy f.o.m. 5001 BT t.o.m. 10000 BT	Kr. 21,60 pr. BT
For fartøy over 10000 BT	Kr. 27,00 pr. BT

Arsavgiften fra og med 1. januar 1996 er:

For fartøy t.o.m. 5000 BT	Kr. 18,15 pr. BT
For fartøy f.o.m. 5001 BT t.o.m. 10000 BT	Kr. 35,65 pr. BT
For fartøy over 10000 BT	Kr. 44,55 pr. BT

Arsavgift skal være innbetalta senest 10 dager før avgiftsårets begynnelse, i 1995 senest innen 25. april. Fartøyene kan tiltre årsavgiftsordningen i løpet av avgiftsåret, men kan da ikke få ettergit eller tilbakebetalt gebyrer for enkeltseilinger før betalingstidspunktet.

For betalt årsavgift for fartøy som forliser eller avhendes i avgiftsåret, kan det etter søknad til vedkommende kystdistriktskontor ved losoldermannen gis en forholdsmessig refusjon i årsavgiften.

Arsavgift kan ikke overføres fra et fartøy til et annet.

Endret ved forskrift 25 april 1995 nr. 389 og ved forskrift 14. september 1995.

**§ 10. Administrasjonsgebyr**

Hvis meldeplikten etter forskriftens § 20 ikke er overholdt, kan fartøyet pålegges å dekke de kostnadene som oppsøkingen av fartøyet har påført loskontoret.

**Kapittel IV: Losingsgebyr****§ 11. Losingsgebyr**

Losingsgebyr for losninger betales i form av timesats for bruk av statslos. Antall timer regnes fra det tidspunkt hvor losingen tar til inntil det tidspunkt losen forlater fartøyet. Påbegynt time regnes som hel time.

Fartøyet skal alltid som et minimum betale for det antall timer som framkommer ved å dividere den utsilte distansen for losoppdraget i nautiske mil med 10, likevel ikke mindre enn tre timer. Påbegynt nautisk mil regnes som hel nautisk mil.

Når fartøyet anløper for å ta ombord eller landsette passasjerer, eller laste og/eller losse eller for ordre, og skipsføreren anmelder losen om å vente, belastes timer på vanlig måte, dog ikke for de første fem timene i hvert enkelt tilfelle. Foregående punktum gjelder imidlertid bare såfremt dette ikke innebærer et lavere antall timer enn det som framkommer av annet ledd. Timesatsene er differensiert etter fartøyenes størrelse på følgende måte:

Tonnasje				Timesats
Fra	0	til og med	1.000	Kr. 396,—
Fra	1.001	til og med	2.000	Kr. 495,—
Fra	2.001	til og med	4.000	Kr. 583,—
Fra	4.001	til og med	8.000	Kr. 671,—
Fra	8.001	til og med	12.000	Kr. 760,—
Fra	12.001	til og med	20.000	Kr. 847,—
Fra	20.001	til og med	30.000	Kr. 924,—
Fra	30.001	til og med	50.000	Kr. 990,—
Fra	50.001	til og med	100.000	Kr. 1.056,—
Fra	100.001	og over		Kr. 1.122,—

Endret ved forskrift 25 april 1995 nr. 389 og ved forskrift 14. september 1995.

**§ 12. Bruk av flere fartøyer**

Når to eller flere statsloser nyttas, beregnes losingsgebyr etter § 11 for hver av losene med et frattrekke på 50%.

Det betales likevel fullt ut for det antall loser som deltar i losingen samtidig.  
Endret ved forskrift 25 april 1995 nr. 389.

**§ 13. Losing av flere fartøyer**

Veiledes flere fartøyer av samme statslos, skal det beregnes losingsgebyr etter § 11 for 100% av tonnasjen til det fartøyet som har statslosen ombord, samt 20% av summen av de øvrige fartøyers tonnasje.

Endret ved forskrift 25 april 1995 nr. 389.

**§ 14. Losing av slep**

Ved losing av slep beregnes losingsgebyr etter § 11 for summen av tonnasjen for slepebåt og slep. Hvis det ikke kan oppgis tonnasje for slepet, fastsettes denne av vedkommende kystdistriktskontor ved losoldermannen.  
Endret ved forskrift 25 april 1995 nr. 389.

**§ 15. Ventepenger**

Når statslos er tilslagt av en som opptrer på fartøyets vegne til å møte fram på et bestemt sted til bestemt tid, men må vente på fartøyet mer enn en time, betales losingsgebyr i form av ventepenger etter laveste timesats i § 11, også for den første timen. Ventepenger beregnes fra opprinnelig tilkigelsesstidspunkt inntil losingen tar til.  
Hvis losingen ikke finner sted, skal det dessuten betales ventepenger pr. time for medgått tid for fram og tilbakereise.

Kystdirektoratet kan i tvilstilfeller ved enkeltvedtak bestemme hvor mange timer som skal legges til grunn ved beregningen av ventepenger.  
Endret ved forskrift 25 april 1995 nr. 389.

**§ 16. Tilllegg til losingsgebyret**

Når det er utført en uvanlig losjeneste eller når losingen har buddt på særlige vansker eller når det er medgått særskilt tid til planlegging eller forberedelse av losoppdraget, kan det kreves et særskilt tillegg til losingsgebyret. Tillegget beregnes etter laveste tímene i § 11 for det antall timer som vedkommende kystdistriktskontor ved losoldermannen bestemmer.

**Kapittel V: Fritakshbestemmelser****§ 17. Fritak fra losberedskapsgebyret**

Følgende fartøyer er frittatt fra å betale losberedskapsgebyr, når statslos ikke nyttes:

- Fartøyer som kun utøver humanitær virksomhet i ikke-kommersielt øyemed.
- Skoleskip som nyter gebyrbelagt farvann bare som skoleskip og i ikke-kommersielt øyemed.

Ved tvil avgjør Kystdirektoratet om vilkårene for fritak etter første ledd er til stede. Direktoratet kan etter søknad innrømme fritak for losberedskapsgebyr når særlige hensyn tilslir det.

**§ 18. Fritak fra losingsgebyr**

Kystdirektoratet kan etter søknad innrømme fritak fra losingsgebyr når særlige omstendigheter tilslir det.

**Kapittel VI: Fellesbestemmelser****§ 19. Regning for gebyret**

Når statslos ikke nyttes, utsedes gebyrregning for hver gang fartøyet passerer grensen for gebyrbelagt farvann for inn- eller utseiling. Når statslos nyttes, utsedes gebyrregning for hvert losoppdrag. Forøvrig bestemmer vedkommende kystdistriktskontor ved losoldermannen i hvilken periode og utseilt distanse det skal beregnes gebyr for. Gebyrene skal betales til vedkommende kystdistriktskontor ved losoldermannen.

Endret ved forskrift 25 april 1995 nr. 389.

**§ 20. Plikt til melding**

Når betalingspliktig fartøy ikke har benyttet statslos, skal føreren eller annen representant for fartøyet gi melding om seilasen til vedkommende kystdistriktskontor ved losoldermannen, jf § 10. Meldingen skal gis så snart som mulig og senest 3 dager etter seilasen. Meldingen skal inneholde tilstrekkelige opplysninger til at regning kan utfordres.

Endret ved forskrift 25 april 1995 nr. 389.

**§ 21. Klage**

Enkeltvedtak som treffes etter denne forskriften, kan påklages etter bestemmelsene i lov av 10. februar 1967 om behandlingsmåten i forvaltningsaker (forvaltningsloven). Kystdirektoratet er klageinstans for vedtak fattet av kystdistriktskontorene ved losoldermannene. Fiskeridepartementet er klageinstans for vedtak fattet av Kystdirektoratet.

Endret ved forskrift 25 april 1995 nr. 389.

**§ 22. Endringer og utfyllende bestemmelser**

Fiskeridepartementet kan endre forskriften her og gi forskrifter om utfyllende bestemmelser til denne forskriften.

**Kapittel VII: Ikrafttredelse, overgangsbestemmelser****§ 23. Ikrafttreden**

Denne forskriften trer i kraft 1. mai 1995 kl. 00.00 og får anvendelse for fartøyer som passerer grensen for gebyrbelagt farvann for inn- eller utseiling eller nytter statløs etter dette tidspunkt.

Fra samme tidspunkt oppheves følgende forskrifter:

- Forskrift om takster for kystgebyr m.v. for perioden 1. januar — 30. april 1995 fastsatt ved kgl. res. av 23. desember 1994 i medhold av lov om losvesenet av 1948.
- Forskrift om grensen i henhold til losloven mellom innensjøers og utensjøers farvann fastsatt ved kgl.res. av 14. juli 1950 nr. 8702.
- Forskrift om utvidelse av årsavgiftsordningen for kystgebyr fastsatt av Fiskeridepartementet 13. mars 1985.
- Forskrift om fratakelse fra å betale milepenger for visse fartøyer i kombinert innen- og utenriks rutefart fastsatt av Industri-, håndverk- og skipsfartsdepartementet den 30. september 1948.
- Bestemmelser om årsavgift fastsatt av Fiskeridepartementet 10. oktober 1969.

Endret ved forskrift 25 april 1995 nr. 389.

**§ 24. Overgangsbestemmelser**

Fiskeridepartementet kan ved enkeltvedtak eller forskrift gi nærmere overgangsbestemmelser, herunder gjøre unntak fra forskriften.

Passasjerskip som i 1995 har betalt kystgebyr for 100 seilinger etter bestemmelsene i § 9 bokstav a i forskrift om takster for kystgebyr fastsatt ved kgl. res. av 23. desember 1994 nr 1127, er friatt fra plikten til å betale losgebyrer for resten av 1995, med mindre fartøyet benytter statslos. Passasjerskip som i 1995 har betalt kystgebyr etter den samme bestemmelser, men som ikke har nådd 100 seilinger, kan fortsatt betale etter reglene i denne bestemmelser, men etter nye sasjer. Når 100 seilinger er nådd, er

## Vedlegg

### Egenerklæring i forbindelse med overgangsbestemmelser

Fastsatt av Fiskeridepartementet i medhold av § 17 annet ledd i forskrift om losplikt i norske farvann.

#### 1. Etiklæringen gjelder:

Førerens/navigatørens navn:

Adresse:

Telefon om bord:

Fartøyets navn: \_\_\_\_\_ Type: \_\_\_\_\_ Nasjonalitet: \_\_\_\_\_

BT: LOA: m B: m MAX D: m

Rederiets/operatørens navn:

Rederiets/operatørens adresse:

Telefon: \_\_\_\_\_ Telefax: \_\_\_\_\_

#### 2. Kvalifikasjoner m.m.:

Jeg har sett meg inn i forskrift av 28. februar 1995 nr. 186 om overgangsbestemmelser om losplikt mm. fastsatt av Fiskeridepartementet og bekrefter at jeg fyller vilkårene i bestemmelserne for å kunne seile uten å nytte los i ledene oppgitt nedenfor og der jeg etter 1. januar 1994 har foretatt navigeringen ved til sammen minst 6 seilinger hver vei med ovennevnte fartøy eller tilsvarende fartøy:

Led:

Fra

Til:  
Dersom seilingene har vært foretatt med annet fartøy enn det erkæringen gjelder for, gi følgende opplysninger om det andre fartøyet eller de andre fartøyene:

Fartøyets navn: \_\_\_\_\_ Type: \_\_\_\_\_ Nasjonalitet: \_\_\_\_\_  
BT: LOA: m B: m MAX D: m

Rederiets/operatørens navn:

Rederiets/operatørens adresse:

Har noen av fartøyene ovenfor vært underlagt regler om losplikt i noen av ledene nevnt ovenfor? Ja/Nei. Hvis svaret er ja, gi opplysninger om følgende:  
Fartøyets navn:  
Hvilke ledet det har vært losplikt:

Hvis det har vært losplikt: Ja/Nei. Hvis svaret er ja, legg ved kopi av dispensasjonen.  
Jeg bekrefter at jeg er kjent med forskrift om plikt til å bruke los i norske farvann og som trer i kraft den 1. mai 1995. Jeg er klar over at fritaket fra bruk av los bare gjelder i de farleder jeg har oppgitt ovenfor og at jeg ikke kan benytte meg av overgangsordningene før jeg har fått skriftlig melding om det fra Kystdirektoratet eller den det bemynndiger.

Jeg bekrefter at jeg har godt kjennskap til alle regler som gjelder for seilas og for anløp av havner i de leder som er nevnt ovenfor, og at jeg har godt

kjennskap til beredskap og prosedyrer av betydning for sikkerhet og miljø, herunder oljevernberedskapen. Jeg er i stand til å kommunisere problemfritt på et skandinavisk språk.

Jeg er kjent med at fritaket fra losplikten ikke gjelder dersom fartøyet fører farlig og/eller forurenende last i bulk slik som nevnt i gruppe 1 i vedlegg 2 til forskrift om plikt til å bruke los i norske farvann. Jeg er videre kjent med at fritaket heller ikke gjelder i område der fartøyet pr. 30. april 1995 ifølge generelle regler skulle nytte los, og det ikke er gitt dispensasjon.

Forniktigende underskrift  
Forpliktende underskrift

Nr 1252

**Förordning****om ändring av förordningen om farledsavgift**

Given i Helsingfors den 19 december 1997

På föredragning av trafikministern  
 ändras i förordningen den 16 december 1983 om farledsavgift (1016/83) 1 § 1 mom. samt  
 2 § 1 och 2 mom., sådana de lyder i förordning 1359/1996, som följer:

**1 §**

I inrikesfart betalas farledsavgift kalender-  
 årsvis som en årsavgift. Avgiften räknas ut  
 så att avgiftsenheten, 34 mark 50 penni,  
 multipliceras med det hela tal som anger  
 fartygets nettodräktighet. Ett fartyg i fråga  
 om vilket det tal som anger fartygets netto-  
 dräktighet understiger 1 000 betalar dock  
 endast hälften av den ovan nämnda avgiften.

**2 §**

I utrikestrafik betalas farledsavgift som  
 en engångsavgift då fartyget anländer från  
 utlandet. Engångsavgiften bestäms på grund-  
 val av fartygets isavgiftsklass och netto-  
 dräktighet enligt nedanstående tabell.  
 Engångsavgiften uppbärts dock inte till den  
 del den överstiger 648 900 mark.

Engångsavgift för utrikestrafik, grundav-  
 gifter (ga) och avgiftsenheter (ae):

Isavgiftsklass	under 2000 ae	Tal som anger ett fartygs nettodräktighet		
		2000—9999 ga	10000 eller större ae	ga
I A Super .....	10,00	20 000	8,50	88 000
I A .....	20,00	40 000	17,00	176 000
I B .....	33,60	67 200	28,60	296 000
I C .....	44,90	89 800	38,20	395 400
II .....	50,50	101 000	42,90	444 200
III .....	56,10	112 200	47,70	493 800

ga = avgiften vid den nedre gränsen för talet som anger nettodräktigheten

ae = avgift per enhet som överskrider den nedre gränsen för talet som anger nettodräktigheten

Denna förordning träder i kraft den 1 janu-  
 ari 1998.

Helsingfors den 19 december 1997

Republikens President

MARTTI AHTISAARI

Trafikminister Matti Aura

erarfartyg, som idag  
är i Sverige och Finland, är  
från skyldigheten  
en linjelots, som god  
nder förutsättning  
kar regelbunden traf  
notsvarande förmåne

ng träder i kraft den 1  
phavs förordningen de  
fricke i vissa fall för  
yldigheten att anlita h

960/410.

märkning av farled  
79/846

andels- och industrilini

ag gäller utmärkning av  
vattendrag samt annan  
sjötrafiken och frånjän

rafiken och frånjän  
ehov sådana säkerhet  
avses i 2 §, (8.3.1991/513)

För om bringande i kraft av den  
e internationella reglerna till  
sjöar, Kom 304; För förbri  
tten (Regler för farty farvatten  
av fartyr på allmänna vägar  
988/221.

ningarna för sjöfarten

Inningar är elektroniska  
ier och positionsbestämma  
en, havsfyrar, ens- och sek  
marken, kummel och  
sjötrafikmärken, ljussign  
jämförliga fasta anordni

ordningar är bojar, rem

1 utfärdar erforderliga bes

ch belysning av farlederna  
ta på de säkerhetsanordni  
iga anordningar som an  
ledder samt om anordni  
de anger samt om deras  
1991/513)

tsättning, ändring och av  
dning för sjöfarten även  
aktion; sam

v ledningar, kablar och  
ioner och anordningar som  
havet eller vattendrag.

ordningar som erfordras  
ärledd ombesörjs på stan  
det, om icke annorlunda

Säkerhetsanordning för sjöfarten får icke utan  
att uppföras, utsätts eller upprätthållas av an  
s sjöfartsväsendel. Sådant tillstånd skall sökas  
sjöfartsstyrelsen, på vilken det ankommer att pro  
tuvida anordningen är ändamålsenlig samt be  
ja villkoren för uppsförande, utsättningen och  
inlettet av anordningen.

Säkerhetsanordning för sjöfarten, vilken utsärs el  
uppförts med stöd av ovan i 1 mom. avsett till  
får icke av den som erhållit tillståndet avlägsnas  
sjöfartsstyrelsens medgivande, om icke sjöfarts  
sen vid beviljandet av tillståndet eller annars an  
med föreskrivit.

ovan i 1 mom. avsedd, med stöd tillstånd uppför  
eller utsatt säkerhetsanordning bristfällig eller  
jämte, skall sjöfartsmyndighet uppmana den  
är skyldig att upprätthålla anordningen att inom  
tid reparera den. Underlätes reparerandet av an  
ingen, oaktat uppmötningen, äger sjöfartsmyndig  
befogenhet att utföra reparationen på dens be  
and som är skyldig att underhålla anordningen.

13 §. I näheten av farled eller annat sjötrafikområ  
är ej utsättas reklamljus, signalljus eller annan  
anordning som på ett visseleddande sätt liknar nä  
säkerhetsanordning för sjöfarten eller som annars  
medföra fara för sjöfarten.

1. Om för sjöfarten viktiga ändringar beträffan  
säkerhetsanordningar meddelar sjöfartsstyrelsen i  
publicering "Underrättelser för sjöfara". I  
diskande fall kan sjöfartsstyrelsen meddela om änd  
ringar även via rundradion och kustradiostationerna.

2. (8.3.1991/513) Om någon observerar att en  
hetsanordning för sjöfarten inte fungerar på  
rigvet sätt eller att en sådan anordning har försvun  
blivit skadad, förskjuts från sin plats eller av nä  
annan orsak är visseleddande, skall han anmäla  
om till närmaste lotsstation eller sjöfartsdistrikts  
sjöfartsstyrelsen eller till någon annan sjöfarts  
myndighet.

3. Om ett fartyg, en fartygsdel eller gods som  
inkrit i en farled eller inom något annat sjötrafikom  
medföra fara eller olägenhet för sjöfarten eller  
havsförstrafiken, skall fartygets ägare eller den i vars  
ägning fartyget eller godset var så fort som möjligt  
meddela det sjunkna föremålet. Den som sakn gäller  
allt vid behov sätta upp på platsen i fråga ett lämpligt  
fallig märke för att varna sjöfara samt utan  
möjlig annuva det inträffade till närmaste lotssta  
tion eller sjöfartsdistrikts till sjöfartsstyrelsen eller till  
någon annan sjöfartsmyndighet. (8.3.1991/513)

Angående skyldighet att ersätta skada, som föran  
tas av underlättet att vidtaga i 1 mom. avsedd å  
tard, gäller vad därom är i skadeståndslagen (412/74)  
gått. Sjöfartsmyndigheterna är berättigade att på  
forsumliges bekostnad vidtaga erforderliga åtgär  
er för att avvara faran eller undanträffa hindret.

4. Den som bryter mot stadgandena i denna  
förfatning eller med stöd av den utfärdade föreskrif  
skall dömas, om icke strängare straff för garningen  
stodtagit annorställes i lag, för förseelse beträffande ut  
räkning av farled till böter.

Den som vid en flytande säkerhetsanordning fast  
fartyg, båt, fängstredskap eller annat dylikt skall  
dömas, även om garningen icke skulle ha förorsakat  
att anordningen har förskjutit sig från sin plats eller

blivit skadad, för övertyrande av säkerhetsanordnings  
funktionsduglighet till böter.

11 §. De kostnader, som foranlets av åtgärder,  
vilka sjöfartsmyndigheter vidtagit i enlighet med stad  
gandena i 5 § 3 mom. och 9 § 2 mom., indrivs hos den  
betalningsskyldiga i den ordning som om indrivning av  
skatter och avgifter i utsökningväg är stadgat.

Se SkatteUL, Pr 608.

12 §. Tillsynen över efterlevnaden av denna fö  
ordning och med stöd därav utfärdade bestämmelser  
ankommer på sjöfarts-, polis-, gränsbevaknings- och  
tullmyndigheterna.

13 §. (8.3.1991/513) Närmare bestämmelser om  
illämplingen av denna förordning utfärdas vid behov  
av trafikministeriet.

14 §. Denna förordning träder i kraft den 1 januari  
1980.

Genom denna förordning upphävs förordningen  
den 25 februari 1961 om säkerhetsanordningar för  
sjöfarten (125/61) jämte däri senare föregagna ände  
ringar. Förordningens om säkerhetsanordningar för  
sjöfarten 4 och 5 §§, av dessa lagrum 4 § sådan den ly  
der i förordningar av den 30 december 1963 och den  
16 mars 1979 (658/63 och 312/79), är i kraft bekräft  
lande havsområdena till utgången av år 1980 och be  
träffande de inre farvattnen till utgången av år 1981.

LAGEN

Kom 309 L om farledsavift 30.12.1980

1028

I §. Till räckande av de kostnader som staten  
åsamkas genom byggander, underhåll och skötseln  
av allmänna farleder för sjöfarten och av säkerhetsan  
ordningar som behövs för sjötrafiken samt av isbrytar  
assistanse uppbärs till staten farledsavift i enlighet  
med vad i denna lag stadgas.

Angående lösningsavgift, som uppbärs för räckande  
av de kostnader staten åsamkas genom lösnings  
verksamheten, och avgift för den bogsering som utförs  
av sjöfartsväsendets fartyg stadgas särskilt.

Se LösningsF kap. 3; Koi 306; TMb om sjöfartsverkets avgifa  
belägda prestationser 16.12.1993/1291.

2 §. Envar som idtar handelssjöfart i Finlands ter  
ritorialvatten med registrerat finskt fartyg eller ul  
ändiskt fartyg är skyldig att erlägga farledsavift.

Under de vintermånader som stadgas genom fö  
ordning kan farledsaviften höjas genom uppbörd av  
ett särskilt vintertillägg.

Skyldighet att erlägga farledsavift föreligger inte då  
fartyg på väg från en uländsk hamn till en annan pas  
serar genom Finlands territorialvatten utan att anlöpa  
finskt hamn.

3 §. Farledsavifternas storlek stadgas genom fö  
ordning med beaktande av fartygets nettdräktighet  
och lämplighet för vintertrafik. Med farledsaviften  
täcks kostnaderna för byggander, underhåll och  
skötseln av de i 1 § nämnda allmänna farlederna och  
säkerhetsanordningarna för sjöfarten samt kostnader  
na för isbrytarassistanse. Av de avgifter som uppbärs  
till staten för isbrytarassistanse kan dock en del lämn  
nas obekrädda då genom förfatning stadgas om detal  
jerade avgiftsgrunder eller avgifter.

Förutom fartygets nettodräktighet och lämplighet för vintertrafik kan vid fastställdet av farledsavgiften storlek beaktas även andra faktorer som inverkar på fartygets konstruktion och på trafiken med fartyget.

Farledsavgift kan erläggas särskilt för varje resa, för månad eller för kalenderår.

4 §. För fartyg i urikesträfik skall fartygsanmålan samt övriga i förordning närmare nämnda uppgifter och handlingar inlämnas till den tullanstalt, där fartyget ut- eller inklarerats.

Motsvarande uppgifter om fartyg i intikesfart skall lämnas till den tullanstalt som är närmast fartygets hemort. För erläggande av årsavgift skall uppgifterna lämnas årligen före urgången av mars månad eller, om fartyget då inte är i trafik, så snart fartyget inleder trafiken. För månadsavgift skall anmålan göras så snart fartyget anträder en resa.

5 §. Befriade från farledsavgift är fartyg:

- 1) som används enbart i insjötrafik;
- 2) som staten äger;
- 3) som av tvingande skäl eller enbart för inhämtande av order för vildare resa eller för iståndsättning eller undersökning angående behovet av iståndsättning anlöper fisk hamin utan att lossa eller intaga last eller avlämna eller taga passagerare; eller

4) som har gjort ett i förordning närmare stadgat antal resor, för vilka har erlagts ett farledsavgiftsbelopp som motsvarar de gjorda resorna.

Befriade från att på nytt erlägga farledsavgift är även fartyg, som under en och samma resa mellan lastningarna i Finland av lastnings- eller stuvningstekniska skäl anlöper utländsk hamn för att fylla på sin last.

Se F om farledsavgift § 8, Kom 310; F om lämna beträffande lastnings- och farledsavgifterna i Saima kanal och Saimens vattenområde 13.3.1981/203.

6 §. Handels- och industriministeriet kan på grunder, om vilka stadgas genom förordning, i enskilda fall bevilja nedsättning av eller befrielse från farledsavgift eller bestämma, att redan erlagd farledsavgift eller del därv skall återbetalas.

Genom förordning kan tullstyrelsen bemynligas att bevilja i l mom. avsedd nedsättning av, befrielse från eller återbaring av avgift, då beloppet av den förmån som beviljas inte överstiger en summa, som bestäms genom förordning, och det inte är fråga om ändring av tidigare praxis eller eljest om ett principiellt viktigt fall.

Se F om farledsavgift § 10, Kom 310.

7 §. Fartygets ägare svarar för att avgiften erläggs. Samma ansvar avtar den som för ägarens räkning anmäler fartyget till in- eller utklaring.

Betalningsskyldig som inte är bosatt i Finland samt utländsk betalningsskyldig skall ha ett av distriktsfullmäktige godkänt, i Finland bosatt ombud, som ansvarar för de förfatelser och -påföljder som stadganden i denna lag medför för den betalningsskyldige.

8 §. Den som försummar anmälnings- eller annan skyldigheter, som avses i denna lag eller med stöd av den utfärdade stadganden eller bestämmelser, eller som annars bryter mot närminda stadganden eller bestämmelser skall, såvida strängare straff för handlingen inte annostades i lag är stadgat, för farledsavgiftsförseelse dömas till böter eller till fängelse i högst sex månader.

9 §. Tullverket utövar tillsyn över efterlevnaden av denna lag samt ombesörjer fastställdet, debiteringen och uppborde vid den därti avsedda farledsavgiften.

Sjöfartsmyndigheterna skall tillställa tullverket material, utredningar och utlätanden som erfordras tillämpningen av denna lag samt vid behov giva annan handräckning.

10 §. Om fastställdet och erläggandet av farledsavgift, myndigheter, anmälningsskyldighet, avgiftsrätte, efterdebitering, avgiftshöjning, felavgift, derlåtenthet att erlägga avgift och sökande av ändring samt även i övrigt gäller, såfamt ej annat är stadgat i denna lag, i tillämpliga delar vad i tulllagen (573/1966) eller med stöd av den är stadgat.

Se Tull, Sk 520.

11 §. I handels- och industriministeriets eller tullstyrelsens beslut i ärende som avses i 6 § får ändringen sättas genom besvr.

12 §. Närmare stadganden om verkställighet av denna lag utfärdas genom förordning.

Om uppborde vid Saima kanal av den i denna lag avsedda avgiften stadgas genom förordning.

Se hanv. vid § 5.

13 §. Denna lag träder i kraft den 1 mars 1983. Genom denna lag upphävs lagen den 19 augusti 1921 om erläggande av syravgift (196/21) och lagen den 3 december 1920 om erläggande av isavgift för handels sjöfart vintertid (324/20) samt förordningen den 2 oktober 1963 om uppåtstående av sjöfartsavgifter för shelterdäckade fartyg i vissa fall (463/63).

1252

Kom 310 F om farledsavgift 16.12.1983/  
1016

På föredragning av ministern för handläggning av ärenden som hör till handels- och industriministeriets verksamhetsområde stadgas med stöd av 2, 3, 6 och 1288 lagen den 30 december 1980 om farledsavgift (1028/80):

1 §. I intikesfart betalas farledsavgift kalenderårsvis som en årsavgift. Avgiften räknas ut så att avgifts-enheten, 33 mark 50 penni, multipliceras med det he-lal som anger fartygets nettodräktighet. Ett fartyg i fråga om vilket det tal som anger fartygets nettodräktighet understiger 1000 betalar dock endast hälfen av den ovan nämnda avgiften. (30.12.1996/1359)

En resa mellan två hamnar i Finland anses ske i intikesfart, om inte under den besöks utländsk hamn för lastning eller lossning eller för upptagande eller lämnande av passagerare.

2 §. I urikesträfik betalas farledsavgift som en engångsavgift då fartyget anländer från utlandet. Engångsavgiften bestäms på grundval av fartygets isavgiftsklass och nettodräktighet enligt nedanstående tabell. Engångsavgiften uppbär dock inte till den del den överstiger 63 000 mark. (30.12.1996/1359)

Engångsavgift för urikesträfik, grundavgifter (ga) och avgilsenheter (ae):

Tal som anger ett fartygs nettodräktighet  
under 2000: 9999 10000 eller större  
2000

Isavgiftsklass ae ga ae ga ae  
I A Super ... 9,70 19400 8,30 85800 7,40

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**SUEZ CANAL DUES RATES TO BE APPLIED  
AS FROM FIRST OF JANUARY 1998 IN ACCORDANCE WITH CIRCULAR No 1/97**

Type of vessel	Suez Canal net tonnage						Rest of Tonnage			
	First 5000 T.	Next 5000 T.	Next 10 000 T.	Next 20 000 T.	Next 30 000 T.	Ballast				
Laden	Ballast	Laden	Ballast	Laden	Ballast	Laden	Ballast	Laden	Ballast	
1) Crude Oil Tankers	6.49	5.52	3.62	3.08	3.25	2.77	1.40	1.19	1.40	1.19
2) Tankers of Petroleum Products	6.75	5.52	3.77	3.08	3.43	2.77	1.93	1.19	1.93	1.19
3) LPG Carriers	6.75	5.75	3.77	3.21	3.43	2.92	2.12	2.06	2.42	2.06
4) Chemicals, Bulk liquid & LNG Carriers (1)	7.50	6.38	4.18	3.56	3.81	3.24	2.68	2.38	2.68	2.38
5) Dry Bulk Carriers	7.21	6.13	4.14	3.52	2.97	2.53	1.05	0.90	1.00	0.85
6) Combined carriers :-										0.85
a) If carrying Crude Oil only	6.49	-	3.62	-	3.25	-	1.40	-	1.40	-
b) If carrying Petroleum Products only	6.75	-	3.77	-	3.43	-	1.93	-	1.93	-
c) If carrying more than one kind of Cargo	6.75	-	3.77	-	3.43	-	1.93	-	1.93	-
d) If carrying Dry Bulk Cargo only	7.21	-	4.14	-	2.97	-	1.05	-	1.00	-
e) If carrying other bulk liquid	7.50	-	4.18	-	3.81	-	2.68	-	2.68	-
f) If in ballast	-	6.13	-	3.52	-	2.53	-	.90	-	0.85
7) Container vessels and Vehicle carriers	7.21	6.13	4.10	3.49	3.37	2.87	2.42	2.06	2.42	2.06
8) Other Vessels	(2)	7.21	6.13	4.14	3.52	3.77	3.21	2.63	2.24	2.63

(1) If in ballast, chemical/oil tankers are to be charged at the same rate of oil tankers.

(2) Other than special floating units mentioned in the Explanatory Note.

M/s

Rashed

## C. ICE CONDITIONS & SPEED VARIABLES

C.1 SHIP SPEED NSR TRANSIT PASSAGES 1992 - 93, MURMANSK SHIPPING COMPANY  
VESSELS

**NSR TRANSIT PASSAGES 1992-1993 BY MURMANSK SHIPPING COMPANY VESSELS**

NAME OF VESSEL	FROM	TO	DEPARTURE	ARRIVAL/DEP	HRS	DIST	KNTS	FROM	TO	ARRIVAL/DEP	HRS	DIST	KNTS
<b>1992</b>													
Admiral Ushakov	Karski Varota	Murmansk	04.08.92 17:00	06.08.92 02:00	33,0	545,0	16,5	Provideniya	Karski Varota	14.07.92 17:00	504,0	3155,0	6,3
Capitan Kudlai	Murmansk	Karski Varota	16.07.92 22:00	19.07.92 06:00	56,0	545,0	9,7	Karski Varota	Provideniya	01.08.92 07:30	313,5	3155,0	10,1
Yury Arshenovsky	Karski Varota	Murmansk	25.08.92 18:00	28.08.92 18:00	72,0	545,0	7,6	Provideniya	Karski Varota	15.08.92 12:00	246,0	3155,0	12,8
Pavel Avilov	Karski Varota	Murmansk	04.09.92 23:59	06.09.92 07:45	31,8	545,0	17,2	Provideniya	Karski Varota	20.08.92 01:00	383,0	3155,0	8,2
Capitan Nazaruev	Murmansk	Karski Varota	28.08.92 14:00	30.08.92 23:59	58,0	545,0	9,4	Karski Varota	Provideniya	11.09.92 18:00	282,0	3155,0	11,2
Ivan Bogun	Karski Varota	Murmansk	21.09.92 15:00	23.09.92 15:00	48,0	545,0	11,4	Provideniya	Karski Varota	08.09.92 23:00	304,0	3155,0	10,4
Mikhail Strekalovsky	Karski Varota	Murmansk	21.09.92 20:00	23.09.92 15:20	43,3	545,0	12,6	Provideniya	Karski Varota	11.09.92 18:00	242,0	3155,0	13,0
Capitan Vakula	Murmansk	Karski Varota	10.09.92 13:00	12.09.92 20:00	55,0	545,0	9,9	Karski Varota	Provideniya	23.09.92 23:59	268,0	3155,0	11,8
Mikhail Kutuzov	Karski Varota	Murmansk	26.09.92 02:00	27.09.92 19:00	41,0	545,0	13,3	Provideniya	Karski Varota	13.09.92 17:00	297,0	3155,0	10,6
Pavel Avilov	Murmansk	Karski Varota	07.10.92 01:20	09.10.92 11:35	58,3	545,0	9,4	Karski Varota	Provideniya	21.10.92 18:00	294,4	3155,0	10,7
Capitan Kudlai	Karski Varota	Murmansk	28.10.92 04:00	29.10.92 13:00	33,0	545,0	16,5	Provideniya	Karski Varota	06.10.92 20:00	512,0	3155,0	6,2
Average				48,1	545,0	11,3		Average		331,4	3155,0		9,5
<b>1993</b>													
Yuri Dolgorukiy	Murmansk	Karski Varota	04.07.93 00:00	05.07.93 20:00	44,0	545,0	12,4	Karski Varota	Provideniya	21.07.93 22:00	386,0	3155,0	8,2
Capitan Sviridov	Karski Varota	Murmansk	21.08.93 18:00	28.08.93 12:30	162,5	545,0	3,4	Provideniya	Karski Varota	10.08.93 01:00	281,0	3155,0	11,2
Capitan Bochek	Karski Varota	Murmansk	04.09.93 18:00	11.09.93 10:00	160,0	545,0	3,4	Provideniya	Karski Varota	14.08.93 07:00	515,0	3155,0	6,1
Tim Buck	Murmansk	Karski Varota	21.08.93 23:00	24.08.93 19:00	68,0	545,0	8,0	Karski Varota	Provideniya	05.09.93 20:00	289,0	3155,0	10,9
Mikhail Strekalovsky	Murmansk	Karski Varota	03.09.93 11:00	05.09.93 21:00	58,0	545,0	9,4	Karski Varota	Provideniya	14.09.93 23:59	219,0	3155,0	14,4
Capitan Nazaryev	Murmansk	Mys Zhelaniya	09.09.93 01:00	10.09.93 18:00	41,0	680,0	16,6	Mys Zhelaniya	Provideniya	19.09.93 06:00	204,0	2720,0	13,3
Ivan Bogun	Karski Varota	Murmansk	22.09.93 18:00	24.09.93 09:45	39,8	545,0	13,7	Provideniya	Karski Varota	12.09.93 01:00	257,0	3155,0	12,3
Capitan Chuhchin	Karski Varota	Murmansk	18.10.93 14:00	20.10.93 07:00	41,0	545,0	13,3	Provideniya	Karski Varota	08.10.93 14:00	240,0	3155,0	13,1
Capitan Sviridov	Murmansk	Mys Zhelaniya	05.10.93 23:00	09.10.93 12:00	85,0	680,0	8,0	Mys Zhelaniya	Provideniya	18.10.93 18:00	222,0	2720,0	12,3
Mikhail Kutuzov	Karski Varota	Murmansk	01.11.93 23:00	04.11.93 20:00	69,0	545,0	7,9	Karski Varota	Provideniya	16.11.93 08:00	276,0	3155,0	11,4
Capitan Kudlai	Karski Varota	Murmansk	01.11.93 15:00	05.11.93 15:00	96,0	545,0	5,7	Karski Varota	Provideniya	23.11.93 23:00	440,0	3155,0	7,2
Tim Back	Karski Varota	Murmansk	25.11.93 12:00	27.11.93 21:30	57,5	545,0	9,5	Provideniya	Karski Varota	06.11.93 12:00	456,0	3155,0	6,9
Capitan Vakula	Murmansk	Karski Varota	04.12.93 09:00	06.12.93 12:00	51,0	545,0	10,7	Karski Varota	Provideniya	20.12.93 12:00	336,0	3155,0	9,4
Average				74,8	565,8	9,4		Average		317,0	3088,1		10,5

## **D. FINANCIAL CALCULATIONS**

D.1 COUNTRY RISK ASSESSMENT, NSR REGIONS OF NW EUROPE, US CAN WEST COAST & THE FAR EAST

D.2 VESSEL INVESTMENT MARKETS

# COUNTRY RISK ASSESSMENT

Country	Rank	Economic Performance		Political Risk		Debt Indicators		Debt in Default or Rescheduled		Credit Rating		Bank Finance		Access to Short Term Finance		Access to Capital Markets		Discount on Forfaiting	
		Total Score	25,00 %	25,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,99 %	
United States	1	97	98	97,85 %	24,97 %	22,88 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,99 %	
Germany	6	3	97,85 %	24,89 %	22,10 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,50 %	
France	11	7	95,87 %	24,22 %	21,69 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,95 %	
Norway	4	8	95,83 %	22,91 %	23,03 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,89 %	
United Kingdo	5	9	95,01 %	25,00 %	20,04 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,97 %	
Ireland	12	10	94,87 %	23,02 %	22,61 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,66 %	
Finland	13	11	94,52 %	22,54 %	22,47 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,66 %	
Belgium	14	12	94,25 %	23,72 %	21,01 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,95 %	
Sweden	15	13	93,39 %	23,25 %	21,49 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,93 %	
Canada	8	14	93,02 %	22,98 %	21,21 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,89 %	
Denmark	9	20	89,67 %	23,74 %	21,91 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	4,66 %	
Japan	18	23	88,02 %	23,39 %	15,85 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	5,00 %	5,00 %	5,00 %	3,79 %	
Taiwan	23	24	86,49 %	22,28 %	19,52 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	4,64 %	4,64 %	3,30 %	3,30 %	3,02 %		
Hong Kong	30	25	75,75 %	19,32 %	16,20 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	5,00 %	5,00 %	3,21 %	3,21 %	0,00 %		
South Korea	30	34	64,47 %	15,11 %	14,06 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	10,00 %	3,62 %	3,62 %	3,87 %	3,87 %	2,26 %	0,55 %	
China	39	45	47,97 %	17,08 %	16,32 %	0,35 %	0,35 %	0,35 %	0,35 %	0,35 %	0,35 %	0,35 %	5,96 %	5,96 %	0,01 %	2,68 %	2,83 %	2,74 %	
Russia	79	129	17,67 %	5,35 %	8,25 %	0,48 %	0,48 %	0,48 %	0,48 %	0,48 %	0,48 %	0,48 %	0,00 %	0,00 %	1,92 %	1,92 %	0,94 %	0,00 %	

## MODEL PARAMETERS

Period	HANDYSIZED ( 30 000 dwt )			PANAMAX ( 55 000 )			PANAMAX ( 70 000 )			Containerships	
	Time Charter	Voyage Equ \$ / Tonnes	Newbuilding	Second Hand	Time Charter	\$ / Ton Voyage Equ	Newbuilding	Sec Hand	5 Yrs	1000 TEU	Index
okt.97	7 000	24,1	20 000 000	14 500 000	8 500	18,7	27 500 000	22 000 000	9 020	878	
nov.97	7 000	24,1	20 000 000	14 500 000	8 275	18,5	27 500 000	22 000 000	9 080	878	
des.97	7 100	24,1	20 000 000	14 500 000	8 100	13,9	27 500 000	22 000 000	9 000	877	
jan.98	7 500	24,3	21 000 000	14 000 000	7 500	16,5	22 500 000	22 500 000	9 100	877	
feb.98	7 300	23,2	22 000 000	13 000 000	8 000	16,6	25 500 000	20 000 000	8 930	829	
mar.98	7 000	22,6	23 000 000	11 500 000	8 000	18,0	23 000 000	19 500 000	8 350	804	
apr.98	6 500	21,7	23 000 000	11 500 000	9 000	18,0	26 500 000	19 500 000	8 350	800	
mai.98	6 500	21,7	22 500 000	11 500 000	9 000	15,0	25 000 000	19 500 000	8 230	775	
jun.98	6 200	20,6	21 000 000	11 000 000	7 500	13,9	24 500 000	19 000 000	7 420	695	
jul.98	5 500	16,8	21 000 000	11 000 000	5 000	14,0	24 500 000	19 000 000	7 690	728	
aug.98											
sep.98											
Period Average	6 700	21,9	21 687 500	12 250 000	7 763	15,7	24 875 000	20 125 000	8 384	798	

## **E. THE AVERAGE PARCEL SEGMENT & VESSELS SELECTED**

E.1 THE FREIGHT MARKET VESSEL VOYAGE CHARTER RATES

E.2 THE FREIGHT MARKET VESSEL TIME CHARTER RATES

## Dry Bulk Charter Rates NWE, Black Sea & Far East, 1997 - 98 : By Region

Period	Ship name	Charterer	Quantity	Cargo	Load Area	Discharge Area Rate	Region
<b>North West Europe to the Far East</b>							
oct.98	TBN	Dreyfus	30000	Grain	Rouen	China	\$17,50 NWE
oct.98	TBN	Finagrain	30000	Rapeseed	Rostock	China	\$17,00 NWE
sep.98	Arctic	Toepfer	50000	Rapeseed	La Pallice	China	\$13,50 NWE
sep.98	TBN	Gelncore	33000	HSS	Denmark	China	\$17,50 NWE
jul.98		Mitsubishi	50000	Rye - Gen	Ghent	Japan	\$16,25 NWE
mai.98	TBN	Von Appen	25000	Fertilizer	Amsterdam	SEA	\$23,00 NWE
feb.98	Optimist	Panocean	140000	Ore	Narvik	Cigading	\$9,25 NWE
nov.97	Velos	NA	42000	Scrap	Antwerp	Taiwan	\$27,00 NWE
jul.97	Yick Kam	Mitsui-Osk	50000	Rye - Gen	Sweden	Japan	\$23,65 NWE
mai.97	World Agamennon	Glencore	30000	Scrap	Antwerp	S Korea	\$35,00 NWE
mar.97	Stone Gemini	Exelsior	50000	Potash	Ventspils	China	\$25,00 NWE
jan.97	Handy River	Norsk Hydro	30000	Fertilizer	Murmansk	Chivan	\$34,00 NWE
<b>Far East to Europe</b>							
jul.98	Chunjin	Oldendorff	40000	Coke - Gen	Xingang	Sepetiba	\$9,25 FE
mai.98	Hsing may	Nobile	40000	Coke,Gen	Xingang	Sepetiba	\$13,00 FE
feb.98	Golden Glow	SSM	40000	Petr Coke	Xingang	ARA	\$15,75 FE
feb.98	TBN	Heinrich Hanno	35000	Iron Pil Fms	S Korea	Italy	\$500 000,00 FE
apr.97	TBN	Rimarco	10000	Iron / Steel G	Black Sea	Xingang	\$34,00 FE
feb.97	Tai Zhou Hai	Hyundai Merchant m	40000	Petr Coke	Xingang	Flushing	\$16,95 FE
<b>Black Sea to the Far East</b>							
mai.98	Kyrenia	Glencore	53000	Wheat,Gen	Constanza	S Korea	\$14,00 Black Sea
mai.98	TBN	Glencore	50000	HSS	Constanza	S Korea	\$15,00 Black Sea
apr.98	TBN	Glencore	35000	HSS	Constanza	S Korea	\$17,50 Black Sea
apr.98	TBN	Glencore	52000	HSS	Constanza	S Korea	\$18,50 Black Sea
apr.98	TBN	Soufflet	35000	Wheat Gen	Black Sea	S Korea	\$25,00 Black Sea
jun.97	TBN	Sinochem	30000	potash	Illichevsk	China	\$29,00 Black Sea
jul.97	TBN	Grand International	50000	Urea - Gen	Odessa	China	\$21,50 Black Sea
mai.97	Obo Engin	Chem Import	55000	Fertilizer	Yuzhny	China	\$19,50 Black Sea
apr.97	C.Mehmet	Conagra	45000	Urea - Bulk	Yuzhny	China	\$19,50 Black Sea
apr.97	TBN	United Intercean	23000	Potash	Illichevsk	China	\$31,50 Black Sea

## Dry Bulk Charter Rates NWE - Far East 1997 - 98 By Region & Segment

Period	Ship name	Charterer	Quantity	Cargo	Load Area	Discharge Area Rate	Region
<b>Handymax North West Europe to Far East</b>							
sep.98	Arctic	Toepfer	50 000	Rapeseed	La Pallice	China	\$13,50 NWE
Jul.98	Mint Condition	Mitsubishi	50 000	Rye - Gen	Ghent	Japan	\$16,25 NWE
Jul.97	Yick Kam	Mitsui-Osk	50 000	Rye - Gen	Sweden	Japan	\$23,65 NWE
Mar.97	Stone Gemini	Exelsior	50 000	Potash	Ventspils	China	\$25,00 NWE
			50 000				\$19,60
<b>Handysize - North West Europe to the Far East</b>							
Oct.98	TBN	Finagrain	30000	Rapeseed	Rostock	China	\$17,00 NWE
Oct.98	TBN	Dreyfus	30000	Grain	Rouen	China	\$17,50 NWE
Sep.98	TBN	Gelncore	33 000	HSS	Denmark	China	\$17,50 NWE
mai.98	TBN	Von Appen	25 000	Fertilizer	Amsterdam	SEA	\$23,00 NWE
Nov.97	Velos	NA	42 000	Scrap	Antwerp	Taiwan	\$27,00 NWE
mai.97	World Agamemnon	Glencore	30 000	Scrap	Antwerp	S Korea	\$35,00 NWE
Jan.97	Handy River	Norsk Hydro	30 000	Fertilizer	Murmansk	Chivian	\$34,00 NWE
			31 429				\$24,43
<b>Handysize - Far East to North West Europe</b>							
Jul.98	Chunjin	Oldendorff	40 000	Coke - Gen	Xingang	Sepetiba	\$9,25 FE
mai.98	Hsing may	Nobile	40 000	Coke,Gen	Xingang	Sepetiba	\$13,00 FE
Feb.98	TBN	Heinrich Hanno	35 000	Iron Pri Fms	S Korea	Italy	\$500 000,00 FE
Feb.98	Golden Glow	SSM	40 000	Petr Coke	Xingang	ARA	\$15,75 FE
Apr.97	TBN	Rimarco	10 000	Iron / Steel G	Black Sea	Xingang	\$34,00 FE
Feb.97	Tai Zhou Hai	Hyundai Merchant m	40 000	Petr Coke	Xingang	Flushing	\$16,95 FE
			34 167				\$17,79
<b>Handysize - Black Sea to the Far East</b>							
mai.98	TBN	Glencore	50 000	HSS	Constanza	S Korea	\$15,00 Black Sea
mai.98	Kyrenia	Glencore	53 000	Wheat, Gen	Constanza	S Korea	\$14,00 Black Sea
apr.98	TBN	Glencore	52 000	HSS	Constanza	S Korea	\$18,50 Black Sea
Jun.97	TBN	Grand International	50 000	Urea - Gen	Odessa	China	\$21,50 Black Sea
mai.97	Obo Engin	Chem Import	55 000	Fertilizer	Yuzhnyy	China	\$19,50 Black Sea
			52 000				\$17,70

# Dry Bulk Timecharter Rates Far East to North West Europe , 1997 - 98 : By Region

Period	Ship name	Charterer	DWT	Per I	Consumpt Speed	Delivery Area	Redelivery Area	Rate	Region
<b>Far East to Europe</b>									
nov.98	Daria	Albatross	41.260	Trip		14	Japan	\$7.300	FE
okt.98	Alcinoe	Mitsui OSK	34.219	Trip		14,1	Japan	\$7.000	FE
okt.98	Hua Zhuang	Panocean	41.454	Trip		14,2	Far East	\$5.800	FE
okt.98	Nurton Ana	Albatross'	38.888	Trip	24+2	14,25	Kaoshiung	\$6.250	FE
sep.98	China Glory	Cosco Singapore	64.615	Trip	28+1,8	14,4	China	\$6.000	FE
aug.98	Oinussian Sky	Intermare	64.377	Trip	0	0	Hong Kong	\$6.650	FE
aug.98	Oinussian Father	Armada	64.313	Trip	0	0	Taiwan	\$7.250	FE
jul.98	Fu Tong	Torm Asia	71.330	Trip	0	0	Taiwan	\$7.600	FE
jul.98	Lucky Bulker	Cosco	69.600	Trip	0	0	Bukpyong	\$5.250	FE
jul.98	Disco Valente	Armada	69.011	Trip	0	0	Taiwan	\$8.300	FE
jul.98	Navios Minerva	Belships	68.000	Trip	0	0	Taiwan	\$7.500	FE
jul.98	Balaji Premium	Panocean	36.205	Trip	30+2	13,54	S Korea	\$6.800	FE
jun.98	New World	Panocean	38.305	Trip	0	0	Far East	\$8.250	FE
may.98	Bunga Saga Empat	Aimcor	72.338	Trip	0	0	Japan	\$8.700	FE
may.98	Lamyra	Torm Asia	64.879	Trip	0	0	S Korea	\$7.200	FE
may.98	Ever Praise	Goldbeam	63.195	Trip	0	0	China	\$5.250	FE
feb.98	Oinussian Leader	Aimcor	71.694	Trip	0	0	Japan	\$6.000	FE
feb.98	Azalea Sea	Furness Withy	52.580	Trip	33+3	13	Kaoshiung	\$3.600	FE
jan.98	Pacific Pearl	AIT	61.803	Trip	0	0	Shanghai	\$2.000	FE
dec.97	Magnum	Hyundai Merchant Marine	68.326	Trip	34+3	12	Xingang	\$3.250	FE
nov.97	Ever Mighty	Navios	75.265	Trip	34,5+2	14	Pohang	\$7.000	FE
nov.97	Drin	Torm Asia	73.087	Trip	0	0	S Korea	\$5.750	FE
jul.97	Giovanni Bottiglieri	Docenave	75.265	Trip	0	0	Taiwan	\$6.950	FE
jul.97	Anaisai	British Steel	73.200	Trip	0	0	Nagoya	\$6.500	FE
apr.97	Lowland Rose	Bocimar	153.500	Trip	0	0	Japan	\$15.500	FE
jan.97	United Resolve	British Steel	151.049	Trip	0	0	Japan	\$12.250	FE
jan.97	Bao Shan	British Steel	149.396	Trip	0	0	Kaoshiung	\$12.500	FE
jan.97	Mehmet Bey	SSM	68.789	Trip	35	14,5	Japan	\$8.250	FE

## Dry Bulk Timecharter Rates North West Europe - Far East, 1997 - 98 : By Region

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Redelivery Area	Rate	Region
North West Europe to the Far East									
nov.98	Express Aberdeen	NA	17.422	Trip	19,5+2	14,25	Continent	Far East	\$4,250 NWE
nov.98	Alpha Faiths	LD Seals	32.900	Trip	14,75	Skaw	Singapore	\$5,000 NWE	
may.98	Nimet Pisak	Furness Whity	38.248	Trip	21,5+1,5	14	Skaw	\$6,300 NWE	
may.98	Rosina Topic	LD Seals	37.244	Trip	31+2	14	Skaw	\$6,300 NWE	
sep.98	Atlantic Crown	Finagrain	73.538	Trip		14	Ghent	\$5,850 NWE	
aug.98	Silvergate	Belships	68.158	Trip	0	0	Baltic	\$6,500 NWE	
jul.98	Georgia	Andre	60.180	Trip	0	0	Recalada	\$7,200 Med	
jul.98	Anangel Venture	Chilisan	69.409	Trip	26+1,25	13,5	Skaw	\$8,000 NWE	
jun.98	Grand Spring	Albatross Shipping Lines	42.000	Trip	26	14	Skaw	\$7,000 NWE	
jun.98	Mandarin Moon	Albatross Shipping Lines	39.339	Trip	21+1,5	13	Baltic	\$6,300 NWE	
feb.98	Haydar	Transfield	65.337	Trip	0	0	Skaw	\$8,200 NWE	
feb.98	Atlantic Savior	Transfield	64.754	Trip	0	0	Ventspils	\$8,500 NWE	
feb.98	Manifest PKWN	Navix Line	60.969	Trip	0	0	Ferrol	\$11,000 NWE	
feb.98	Wadi Al Kamar	Albatross Shipping Lines	45.105	Trip	28	13	Skaw	\$8,050 NWE	
feb.98	Sea Fortune	LD Seals	25.320	Trip	0	0	Gdynia	\$9,750 NWE	
jan.98	Pretty Florish	Panoccean	46.932	Trip	30	14	Skaw	\$9,600 NWE	
jan.98	Almavita	Panoccean	45.798	Trip	27	13	Skaw	\$9,400 NWE	
jan.98	Bei Hai	LD Seals	45.000	Trip	0	0	Singapore	\$8,500 NWE	
dec.97	Channel Fortune	Korea Line	73.000	Trip	0	0	Far East	\$14,000 NWE	
dec.97	President G	Great Change	69.344	Trip	0	0	Far East	\$12,500 NWE	
dec.97	Minoan Flame	Bulfracht	65.960	Trip	0	0	Antwerp	\$12,000 NWE	
dec.97	Syrena	Korea Line	48.800	Trip	37+1	14,5	Gdansk	NWE	
nov.97	Agios Ioannis Theologos	Mega Pacific	122.171	Trip	0	0	Rotterdam	\$9,750 NWE	
nov.97	Maja Vestida	Daichi	70.213	Trip	33	14	Ghent	\$14,500 NWE	
oct.97	Clipper Majestic	North Cape Minerals	17.154	Trip	19	13,5	Norway	\$8,300 NWE	
aug.97	Ispat Gaurav	Panoccean	71.535	Trip	30+1,5	14	Ghent	\$13,000 NWE	
aug.97	Northern Venture	Finagrain	68.519	Trip	30	14	Gibraltar	\$12,750 NWE	
aug.97	Festivity	Korea Line	45.548	Trip	0	0	Continent	\$13,000 NWE	
jul.97	Arctic Voyager	PCL	48.131	Trip	0	0	Continent	\$14,800 NWE	
jul.97	Arctic Voyager	PCL	48.131	Trip	0	0	Continent	\$14,800 NWE	
jul.97	Nan Hai	Panoccean	45.189	Trip	0	0	Continent	\$13,500 NWE	
jul.97	Nan Hai	panoccean	45.189	Trip	0	0	Continent	\$13,500 NWE	
jul.97	Anangel Success	panoccean	41.502	Trip	26+0,25	14	Baltic	\$13,000 NWE	
jun.97	You Sheng	Panoccean	41.869	Trip	0	0	Continent	\$13,500 NWE	
mai.97	Santa Rita	LD Seals	41.515	Trip	0	0	Continent	\$12,500 NWE	
mai.97	Anangel Success	Panoccean	41.502	Trip	26+0,25	14	Baltic	\$13,000 NWE	
apr.97	China Act	Daichi	151.688	Trip	0	0	ARA	\$16,000 NWE	

apr.97	Mass Success	Hyundai Merchant Marine	69.347	Trip	0	0	Ghent	Japan	\$14.650
mar.97	Captain George	Tsangari Albatross Shipping Lines	61.349	Trip	0	0	Skaw	Singapore	\$14.500
mar.97	Nena F	Albatross Shipping Lines	42.263	Trip	28,6	14	Skaw	Far East	\$11.500
mar.97	Sea Crystal	Iino	28.296	Trip	0	0	Hamburg	Far East	\$9.750
feb.97	Bobilna	NA	64.854	Trip	0	0	Flushing	Far East	\$13.000
jan.97	Mineral Europe	Yunkong	170.698	Trip	0	0	Continent	S Korea	\$17.000
ian.97	Rita d'Amato	Oldendorff	69.201	Trip	0	0	Rotterdam	Japan	\$15.500

## Dry Bulk Timecharter Rates Far East to North West Europe , 1997 - 98 : By Region

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	edelivery Are	Rate	Region	
<b>Far East to Europe</b>										
nov.98	Daria	Albatross	41 260	Trip	14	Japan	Continent	\$7 300	FE	
okt.98	Alcinoe	Mitsui OSK	34 219	Trip	14,1	Japan	Continent	\$7 000	FE	
okt.98	Hua Zhuang	Panoccean	41 454	Trip	14,2	Far East	Boston	\$5 800	FE	
okt.98	Nurton Ana	Albatross	38 888	Trip	24+2	Kaoshiung	Skaw	\$6 250	FE	
sep.98	China Glory	Cosco Singapore	64 615	Trip	28+1,8	14,4	China	\$6 000	FE	
aug.98	Oinussian Sky	Intermare	64 377	Trip	0	0	Hong Kong	\$6 650	FE	
aug.98	Oinussian Father	Armada	64 313	Trip	0	0	Taiwan	\$7 250	FE	
jul.98	Fu Tong	Torm Asia	71 330	Trip	0	0	Taiwan	\$7 600	FE	
jul.98	Lucky Bulker	Cosco	69 600	Trip	0	0	Bukpyong	\$5 250	FE	
jul.98	Disco Valente	Armada	69 011	Trip	0	0	Taiwan	\$8 300	FE	
jul.98	Navios Minerva	Beiships	68 000	Trip	0	0	Taiwan	Cape Passe	\$7 500	FE
jul.98	Balaji Premium	Panoccean	36 205	Trip	30+2	13,54	S Korea	Skaw	\$6 800	FE
jun.98	New World	Panocean	38 305	Trip	0	0	Boston	\$8 250	FE	
may.98	Bunga Saga Empat	Aimcor	72 338	Trip	0	0	Japan	Skaw	\$8 700	FE
may.98	Lamyra	Torm Asia	64 879	Trip	0	0	S Korea	Cape Passe	\$7 200	FE
may.98	Ever Praise	Goldbeam	63 195	Trip	0	0	China	Skaw	\$5 250	FE
feb.98	Oinussian Leader	Aimcor	71 694	Trip	0	0	Japan	Continent	\$6 000	FE
feb.98	Azalea Sea	Furness Withy	52 580	Trip	33+3	13	Kaoshiung	Skaw	\$3 600	FE
jan.98	Pacific Pearl	AIT	61 803	Trip	0	0	Shanghai	Continent	\$2 000	FE
dec.97	Magnum	Hyundai Merchant Marine	68 326	Trip	34+3	12	Xingang	Skaw	\$3 250	FE
nov.97	Ever Mighty	Navios	75 265	Trip	34,5+2	14	Pohang	Continent	\$7 000	FE
nov.97	Drin	Torm Asia	73 087	Trip	0	0	S Korea	Dunkirk	\$5 750	FE
jul.97	Giovanni Bottiglieri	Docenave	75 265	Trip	0	0	Taiwan	Skaw	\$6 950	FE
jul.97	Anaisai	British Steel	73 200	Trip	0	0	Nagoya	Continent	\$6 500	FE
apr.97	Lowland Rose	Bocimar	153 500	Trip	0	0	Japan	Continent	\$15 500	FE
jan.97	United Resolve	British Steel	151 049	Trip	0	0	Japan	UK/Continen	\$12 250	FE
jan.97	Bao Shan	British Steel	149 396	Trip	0	0	Kaoshiung	UK/Continen	\$12 500	FE
jan.97	Mehmet Bey	SSM	68 789	Trip	35	14,5	Japan	Continent	\$8 250	FE

## Dry Bulk Timecharter Rates North West Europe - Far East, 1997 - 98 : By Region

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	eDelivery Are	Rate	Region
<b>North West Europe to the Far East</b>									
nov.98	Express Aberdeen	NA	17 422	Trip	19,5+2	14,25	Continent	Far East	\$4 250 NWE
nov.98	Alpha Faiths	LD Seals	32 900	Trip	14,75	Skaw	Singapore	\$5 000 NWE	
may.98	Nimet Pisak	Furness Whity	38 248	Trip	21,5+1,5	14	Skaw	Singapore	\$6 300 NWE
may.98	Rosina Topic	LD Seals	37 244	Trip	31+2	14	Skaw	Singapore	\$6 300 NWE
sep.98	Atlantic Crown	Finagrain	73 538	Trip	14	Ghent	Far East	\$5 850 NWE	
aug.98	Silvergate	Belships	68 158	Trip	0	0	Baltic	Singapore	\$6 500 NWE
jul.98	Georgia	Andre	60 180	Trip	26+1,25	0	Recalada	Far East	\$7 200 Med
jul.98	Anangel Venture	Chilsan	69 409	Trip	21+1,5	13,5	Skaw	China	\$8 000 NWE
jun.98	Grand Spring	Albatross Shipping Lines	42 000	Trip	26	14	Skaw	Far East	\$7 000 NWE
jun.98	Mandarin Moon	Albatross Shipping Lines	39 339	Trip	21+1,5	13	Baltic	Singapore	\$6 300 NWE
feb.98	Haydar	Transfield	65 337	Trip	0	0	Skaw	China	\$8 200 NWE
feb.98	Atlantic Savior	Transfield	64 754	Trip	0	0	Ventspils	China	\$8 500 NWE
feb.98	Manifest PKWN	Navix Line	60 969	Trip	0	0	Ferrol	Japan	\$11 000 NWE
feb.98	Wadi Al Kamar	Albatross Shipping Lines	45 105	Trip	28	13	Skaw	Singapore	\$8 050 NWE
feb.98	Sea Fortune	LD Seals	25 320	Trip	0	0	Gdynia	Far East	\$9 750 NWE
jan.98	Pretty Florish	Panocean	46 932	Trip	30	14	Skaw	Singapore	\$9 600 NWE
jan.98	Almavita	Panocean	45 798	Trip	27	13	Skaw	Far East	\$9 400 NWE
jan.98	Bei Hai	LD Seals	45 000	Trip	0	0	Skaw	Singapore	\$8 500 NWE
dec.97	Channel Fortune	Korea Line	73 000	Trip	0	0	Ghent	Far East	\$14 000 NWE
dec.97	President G	Great Change	69 344	Trip	0	0	Antwerp	Far East	\$12 500 NWE
dec.97	Minoan Flame	Bulfracht	65 960	Trip	0	0	Skaw	China	\$12 000 NWE
dec.97	Syrena	Korea Line	48 800	Trip	37+1	14,5	Gdansk	Singapore	NWE
nov.97	Agios Ioannis Theologos	Mega Pacific	122 171	365	0	0	Rotterdam	Far East	\$9 750 NWE
nov.97	Maja Vestida	Daichi	70 213	Trip	33	14	Ghent	Japan	\$14 500 NWE
oct.97	Clipper Majestic	North Cape Minerals	17 154	Trip	19	13,5	Norway	Continent	\$8 300 NWE
aug.97	Ispat Gaurav	Panocean	71 535	Trip	30+1,5	14	Ghent	China	\$13 000 NWE
aug.97	Northern Venture	Finagrain	68 519	Trip	30	14	Gibraltar	Far East	\$12 750 NWE
aug.97	Festivity	Korea Line	45 548	Trip	0	0	Continent	Far East	\$13 000 NWE
jul.97	Arctic Voyager	PCL	48 131	Trip	0	0	Continent	Far East	\$14 800 NWE
jul.97	Arctic Voyager	PCL	48 131	Trip	0	0	Continent	Far East	\$14 800 NWE
jul.97	Nan Hai	Panocean	45 189	Trip	0	0	Continent	Far East	\$13 500 NWE
jul.97	Nan Hai	panocean	45 189	Trip	0	0	Continent	Far East	\$13 500 NWE
jul.97	Anangel Success	panocean	41 502	Trip	26+0,25	14	Baltic	Far East	\$13 000 NWE
jul.97	You Sheng	Panocean	41 869	Trip	0	0	Continent	Far East	\$13 500 NWE
mai.97	Santa Rita	LD Seals	41 515	Trip	0	0	Continent	Far East	\$12 500 NWE
mai.97	Anangel Success	Panocean	41 502	Trip	26+0,25	14	Baltic	Far East	\$13 000 NWE
apr.97	China Act	Daichi	151 688	Trip	0	0	ARA	Japan	\$16 000 NWE
apr.97	Mass Success	Hyundai Merchant Marine	69 347	Trip	0	0	Ghent	Japan	\$14 650 NWE

mar.97	Captain George Tsangari	Albatross Shipping Lines	61 349	Trip	0	0	Skaw	\$14 500	NWE
	Nena F	Albatross Shipping Lines	42 263	Trip	28,6	14	Skaw	\$11 500	NWE
mar.97	Sea Crystal	Iino	28 296	Trip	0	0	Hamburg	\$9 750	NWE
mar.97	Bobilina	NA	64 854	Trip	0	0	Flushing	\$13 000	NWE
feb.97	Mineral Europe	Yunkong	170 698	Trip	0	0	Continent	\$17 000	NWE
jan.97	Rita d'Amato	Oldendorff	69 201	Trip	0	0	Rotterdam	\$15 500	NWE

## Dry Bulk Timecharter Rates Black Sea - Far East - USEC America, 1997 - 98 : By Region

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Redelivery Area	Rate	Region
<b>Black Sea to the Far East</b>									
nov.97	Jin Da	Chilsan	41.346	365	0	0	Black Sea	Far East	\$8.600 Black Sea
<b>South East Asia to the Europe</b>									
aug.98	Navios Bulker	Malco	69.737	Trip	0	0	Kosicichang	Continent	\$6.750 SEA
okt.98	Uruga	Clipper	25.912	Trip	15	Indonesia	Norway		\$6.000 SEA
<b>North East Coast America to Far East</b>									
jul.98	Haiji	Nippon Yusen Kaisha	70.083	Trip	0	0	Abott Point	Japan	\$7.200 USEC

## Dry Bulk Timecharter Rates Canada US West Coast - (North West) Europe, 1997 - 98 : By Region & Ship Segment

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Rerelivery Area	Rate	Region
<b>Canada to Europe</b>									
jan.98	Bestore	Transfield	70.181	Trip	0	0	Roberts Bank	ARA	\$5.000 Can
okt.97	Sea Pride	SSM	66.980	Trip	0	0	Roberts Bank	ARA	\$6.100 Can
aug.97	Cathy	Hyundai Merchant Marine	75.200	Trip	0	0	Roberts Bank	Luleå	Can
aug.97	Clymene	Aimcor	60.194	Trip	0	0	Roberts Bank	UK/Continent	\$6.800 Can
jun.97	Timios Stavros	Deuilemar	64.657	Trip	0	0	Roberts Bank	Genoa	\$7.000 Can

### Panamax - Canada to Europe

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Rerelivery Area	Rate	Region
<b>Canada to Europe</b>									
jan.98	Bestore	Transfield	70.181	Trip	0	0	Roberts Bank	ARA	\$5.000 Can
okt.97	Sea Pride	SSM	66.980	Trip	0	0	Roberts Bank	ARA	\$6.100 Can
aug.97	Cathy	Hyundai Merchant Marine	75.200	Trip	0	0	Roberts Bank	Luleå	Can
aug.97	Clymene	Aimcor	60.194	Trip	0	0	Roberts Bank	UK/Continent	\$6.800 Can
jun.97	Timios Stavros	Deuilemar	64.657	Trip	0	0	Roberts Bank	Genoa	\$7.000 Can
			67.442					\$6.900	

## Dry Bulk Timecharter Rates Black Sea - Far East - USEC America, 1997 - 98 : By Region & Ship Segment

Period	Ship name	Charterer	DWT	Per (DA)	Consump Speed	Delivery Area	Reredelivery Area	Rate	Region
<b>Panamax - South East Asia to the Europe</b>									
aug.98	Navios Bulker	Maitco	69.737	Trip	0	0	Kosichang	Continent	SEA
nov.98	Oceanic Pilot	TPK	58.371	Trip	15	0	Ko Sichang	Continent	SEA
okt.98	Uruga	Clipper	25.912	Trip	15	Indonesia	Norway	\$6.000	SEA
<b>Panamax - North East Coast America to Far East</b>									
jul.98	Haiji	Nippon Yusen Kaisha	70.083	Trip	0	0	Abott Point	Japan	\$7.200 USEC
<b>Handysize - Far East - North East Coast America</b>									
okt.98	Hua Zhuang	Panocean	41.454	Trip	14,2	Far East	Boston	\$5.800	FE

## F. RESULTS : NSR - SUEZ COMPARISON

### F.1 NO TARIFFS TO APPLY (NORTHERN ROUTE)

<i>F.1.1</i>	<i>NW Europe to the Far East</i>	<i>50 000 dwt - 19,60 US \$ / Tonnes</i>
<i>F.1.2</i>		<i>31 429 dwt - 24,43 US \$ / Tonnes</i>
<i>F.1.3</i>	<i>The Far East to NW Europe</i>	<i>37 167 dwt - 17,79 US \$ / Tonnes</i>
<i>F.1.4</i>	<i>General market Values</i>	<i>55 000 dwt - 15,90 US \$ / Tonnes</i>

### F.2 NORWEGIAN TARIFFS TO APPLY (SOUTHERN COASTAL ROUTE)

<i>F.2.1</i>	<i>NW Europe to the Far East</i>	<i>50 000 dwt - 19,60 US \$ / Tonnes</i>
<i>F.2.2</i>		<i>31 429 dwt - 24,43 US \$ / Tonnes</i>
<i>F.2.3</i>	<i>The Far East to NW Europe</i>	<i>37 167 dwt - 17,79 US \$ / Tonnes</i>
<i>F.2.4</i>	<i>General market Values</i>	<i>55 000 dwt - 15,90 US \$ / Tonnes</i>

### F.3 FINNISH TARIFFS TO APPLY (SOUTHERN COASTAL ROUTE)

<i>F.3.1</i>	<i>NW Europe to the Far East</i>	<i>50 000 dwt - 19,60 US \$ / Tonnes</i>
<i>F.3.2</i>		<i>31 429 dwt - 24,43 US \$ / Tonnes</i>
<i>F.3.3</i>	<i>The Far East to NW Europe</i>	<i>37 167 dwt - 17,79 US \$. / Tonnes</i>
<i>F.3.4</i>	<i>General market Values</i>	<i>55 000 dwt - 15,90 US \$ / Tonnes</i>

### F.4 RUSSIAN NSR TARIFFS TO APPLY

<i>F.4.1</i>	<i>31 429 dwt - 24,43 US \$ / Tonnes</i>
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## Sensitivity Analysis, North West Europe - Far East : Handysize market

Report Date	03.11.98 Final Values	
Daily Net Cash Flow Differential - No Ice Tariffs or Support		10 219
Speed Suez & NSR 1st and 3rd leg	June	14,5
Speed Suez & NSR 1st and 3rd leg	July	14,5
Speed Suez & NSR 1st and 3rd leg	August	14,5
Speed Suez & NSR 1st and 3rd leg	September	14,5
Speed Suez & NSR 1st and 3rd leg	October	14,5
Speed Suez & NSR 1st and 3rd leg	November	14,5
Speed Suez & NSR 1st and 3rd leg	December	14,5
Speed Suez & NSR 1st and 3rd leg	January	14,5
Speed Suez & NSR 1st and 3rd leg	February	14,5
Speed NSR Arctic Leg	June	6,0
Speed NSR Arctic Leg	July	8,2
Speed NSR Arctic Leg	August	9,7
Speed NSR Arctic Leg	September	12,0
Speed NSR Arctic Leg	October	10,6
Speed NSR Arctic Leg	November	8,5
Speed NSR Arctic Leg	December	9,4
Speed NSR Arctic Leg	January	8,0
Speed NSR Arctic Leg	February	7,0
Distance Rotterdam - Karski Varota		2.050
Distance Provideniya - Yokohama		2.530
Distance Karski Varota - Provideniya		2.183
Operating Expenses		133.000
Suez Canal Tariffs		48.173
First 5 000 SCNT US \$		27.604
Next 5 000 SCNT US \$		39.262
Next 10 000 SCNT US \$		14.070
Next 10 000 SCNT US \$		0
IFO US \$ / Tonnes Rotterdam		62
IFO US \$ / Tonnes Dudinka		62
Distance Rotterdam - Yokohama through Suez		11.188
Freight Rate /US \$ / dwt NSR		19,6
Cargo Capacity (dwt) NSR		50.000
Break Even Freight Rate (vs Suez) US\$ per grt pr day		0,59
Bunker Consumption max Speed ; Tonnes per day NSR		45

## Sensitivity Analysis North West Europe - Far East : Handysize market

Report Date	03.11.98 Final Values	
Daily Net Cash Flow Differential - No Ice Tariffs or Support		\$14.744,0
Speed Suez & NSR 1st and 3rd leg	June	14,5
Speed Suez & NSR 1st and 3rd leg	July	14,5
Speed Suez & NSR 1st and 3rd leg	August	14,5
Speed Suez & NSR 1st and 3rd leg	September	14,5
Speed Suez & NSR 1st and 3rd leg	October	14,5
Speed Suez & NSR 1st and 3rd leg	November	14,5
Speed Suez & NSR 1st and 3rd leg	December	14,5
Speed Suez & NSR 1st and 3rd leg	January	14,5
Speed Suez & NSR 1st and 3rd leg	February	14,5
Speed NSR Arctic Leg	June	6,0
Speed NSR Arctic Leg	July	8,2
Speed NSR Arctic Leg	August	9,7
Speed NSR Arctic Leg	September	12,0
Speed NSR Arctic Leg	October	10,6
Speed NSR Arctic Leg	November	8,5
Speed NSR Arctic Leg	December	9,4
Speed NSR Arctic Leg	January	8,0
Speed NSR Arctic Leg	February	7,0
Distance Rotterdam - Karski Varota		2.050
Distance Provideniya - Yokohama		2.530
Distance Karski Varota - Provideniya		2.183
Operating Expenses		133.000
Suez Canal Tariffs		
First 5 000 SCNT US \$		48.173
Next 5 000 SCNT US \$		27.604
Next 10 000 SCNT US \$		34.776
Next 10 000 SCNT US \$		0
IFO US \$ / Tonnes Rotterdam		62
IFO US \$ / Tonnes Dudinka		62
Distance Rotterdam - Yokohama through Suez		11.188
Freight Rate /US \$ / dwt NSR		24,43
Cargo Capacity (dwt) NSR		31.429
Break Even Freight Rate (vs Suez) US\$ per grt pr day		0,85
Bunker Consumption max Speed ; Tonnes per day NSR		45

## Sensitivity Analysis, Far East - North West Europe : Handysize market

Report Date	03.11.98 Final Values	
Daily Net Cash Flow Differential - No Ice Tariffs or Support		\$14.749,0
Speed Suez & NSR 1st and 3rd leg	June	14,5
Speed Suez & NSR 1st and 3rd leg	July	14,5
Speed Suez & NSR 1st and 3rd leg	August	14,5
Speed Suez & NSR 1st and 3rd leg	September	14,5
Speed Suez & NSR 1st and 3rd leg	October	14,5
Speed Suez & NSR 1st and 3rd leg	November	14,5
Speed Suez & NSR 1st and 3rd leg	December	14,5
Speed Suez & NSR 1st and 3rd leg	January	14,5
Speed Suez & NSR 1st and 3rd leg	February	14,5
Speed NSR Arctic Leg	June	6,0
Speed NSR Arctic Leg	July	8,2
Speed NSR Arctic Leg	August	9,7
Speed NSR Arctic Leg	September	12,0
Speed NSR Arctic Leg	October	10,6
Speed NSR Arctic Leg	November	8,5
Speed NSR Arctic Leg	December	9,4
Speed NSR Arctic Leg	January	8,0
Speed NSR Arctic Leg	February	7,0
Distance Rotterdam - Karski Varota		2.050
Distance Provideniya - Yokohama		2.530
Distance Karski Varota - Provideniya		2.183
Operating Expenses		133.000
Suez Canal Tariffs		
First 5 000 SCNT US \$		48.173
Next 5 000 SCNT US \$		27.604
Next 10 000 SCNT US \$		34.776
Next 10 000 SCNT US \$		0
IFO US \$ / Tonnes Rotterdam		62
IFO US \$ / Tonnes Dudinka		62
Distance Rotterdam - Yokohama through Suez		11.188
Freight Rate /US \$ / dwt NSR		17,79
Cargo Capacity (dwt) NSR		37.167
Break Even Freight Rate (vs Suez) US\$ per grt pr day		0,72
Bunker Consumption max Speed ; Tonnes per day NSR		45

### Sensitivity Analysis, General Market Values : Handysized Market

Report Date	03.11.98 Final Values	
Daily Net Cash Flow Differential - No Ice Tariffs or Support		\$14.743,0
Speed Suez & NSR 1st and 3rd leg	June	14,5
Speed Suez & NSR 1st and 3rd leg	July	14,5
Speed Suez & NSR 1st and 3rd leg	August	14,5
Speed Suez & NSR 1st and 3rd leg	September	14,5
Speed Suez & NSR 1st and 3rd leg	October	14,5
Speed Suez & NSR 1st and 3rd leg	November	14,5
Speed Suez & NSR 1st and 3rd leg	December	14,5
Speed Suez & NSR 1st and 3rd leg	January	14,5
Speed Suez & NSR 1st and 3rd leg	February	14,5
Speed NSR Arctic Leg	June	6,0
Speed NSR Arctic Leg	July	8,2
Speed NSR Arctic Leg	August	9,7
Speed NSR Arctic Leg	September	12,0
Speed NSR Arctic Leg	October	10,6
Speed NSR Arctic Leg	November	8,5
Speed NSR Arctic Leg	December	9,4
Speed NSR Arctic Leg	January	8,0
Speed NSR Arctic Leg	February	7,0
Distance Rotterdam - Karski Varota		2.050
Distance Provideniya - Yokohama		2.530
Distance Karski Varota - Provideniya		2.183
Operating Expenses		133.000
Suez Canal Tariffs		
First 5 000 SCNT US \$		48.173
Next 5 000 SCNT US \$		27.604
Next 10 000 SCNT US \$		34.776
Next 10 000 SCNT US \$		0
IFO US \$ / Tonnes Rotterdam		62
IFO US \$ / Tonnes Dudinka		62
Distance Rotterdam - Yokohama through Suez		11.188
Freight Rate /US \$ / dwt NSR		21,9
Cargo Capacity (dwt) NSR		30.000
Break Even Freight Rate (vs Suez) US\$ per grt pr day		0,89
Bunker Consumption max Speed ; Tonnes per day NSR		45

## Sensitivity Analysis, General Market Values : Handysized Market

Report Date	03.11.98 Final Values	
Daily Net Cash Flow Differential - No Ice Tariffs or Support		\$17.394,0
Speed Suez & NSR 1st and 3rd leg	June	14,5
Speed Suez & NSR 1st and 3rd leg	July	14,5
Speed Suez & NSR 1st and 3rd leg	August	14,5
Speed Suez & NSR 1st and 3rd leg	September	14,5
Speed Suez & NSR 1st and 3rd leg	October	14,5
Speed Suez & NSR 1st and 3rd leg	November	14,5
Speed Suez & NSR 1st and 3rd leg	December	14,5
Speed Suez & NSR 1st and 3rd leg	January	14,5
Speed Suez & NSR 1st and 3rd leg	February	14,5
Speed NSR Arctic Leg	June	6,0
Speed NSR Arctic Leg	July	8,2
Speed NSR Arctic Leg	August	9,7
Speed NSR Arctic Leg	September	12,0
Speed NSR Arctic Leg	October	10,6
Speed NSR Arctic Leg	November	8,5
Speed NSR Arctic Leg	December	9,4
Speed NSR Arctic Leg	January	8,0
Speed NSR Arctic Leg	February	7,0
Distance Rotterdam - Karski Varota		2.050
Distance Provideniya - Yokohama		2.530
Distance Karski Varota - Provideniya		2.183
Operating Expenses		133.000
Suez Canal Tariffs		
First 5 000 SCNT US \$		51.238
Next 5 000 SCNT US \$		29.377
Next 10 000 SCNT US \$		41.889
Next 10 000 SCNT US \$		15.115
Next 10 000 SCNT US \$		5.727
IFO US \$ / Tonnes Rotterdam		62
IFO US \$ / Tonnes Dudinka		62
Distance Rotterdam - Yokohama through Suez		11.188
Freight Rate /US \$ / dwt NSR		15,9
Cargo Capacity (dwt) NSR		55.000
Break Even Freight Rate (vs Suez) US\$ per grt pr day		0,58
Bunker Consumption max Speed ; Tonnes per day NSR		45

## EXOGENOUS VARIABLES

<u>Ship and cargo</u>	<u>Data</u>	<u>NSR</u>	<u>Suez</u>
Freight rate (US\$ pr dwt)		\$ 19,60	\$ 19,60
Cargo capacity (dwt)		50 000	50 000
Gross Tonnage (grt)		30 000	30 000
Suez Canal Net Tonnage (SNCT)		24 000	24 000
Bunker consumption max speed; BC Sm (Tonnes pr day)		38	38
Max speed; Sm (Knots)		15,5	15,5
TC-Rate pr trip		\$ 980 000	\$ 980 000
Average TC-Rate pr day NSR / TC-Rate pr day Suez		\$ 41 539	\$ 30 016

Currencies		Exchange rates		Insurance Arctic leg	
NSR	Suez	SDR/NOK	US\$NOK	US\$ pr day	0,00
\$ 19,60	\$ 19,60				
50 000	50 000				
30 000	30 000				
24 000	24 000				
		38	38		
		15,5	15,5		
		\$ 980 000	\$ 980 000	US\$ pr day	\$ 0,00
		\$ 41 539	\$ 30 016		

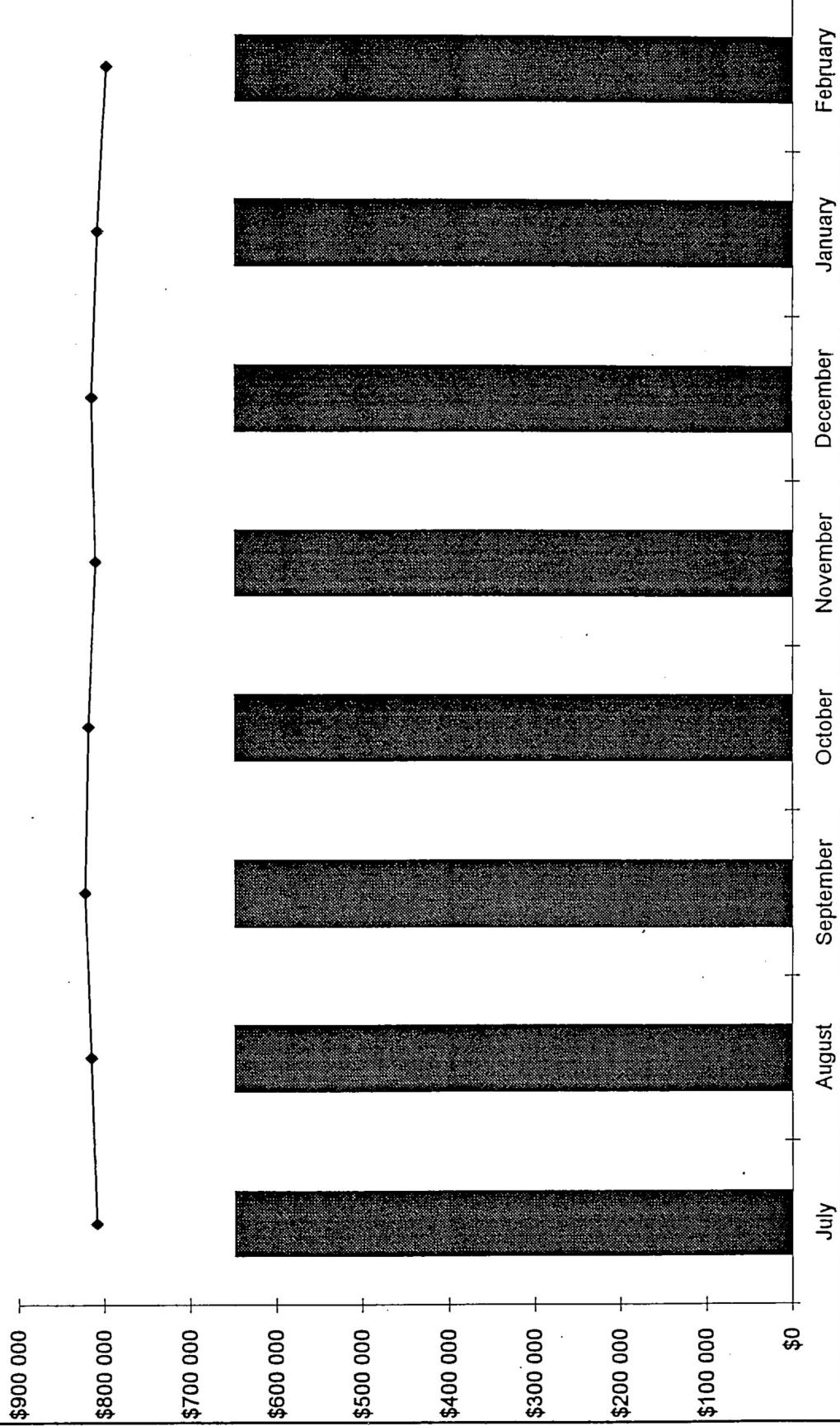
Bunker Price	Dudinka	\$ 62	\$ 62	\$ 133 000
Rotterdam		\$ 62	Average pr month	
OPEX				

<u>Distance Nm</u>	<u>Distance Nm</u>
NSR	SUEZ

Investment Margin Newbuilding Ice							
Cash Flow Net Difference ( 8 mth operation)		\$1 313 179					
Interest Rate	6,2 %			Int Waters	High Seas	Int - Te Water	High Seas
Period (Yrs)	20			Te Waters	5 %	105	
Net Present Value of Cashflow	\$15 739 407				1 %	21	
Suez				N Coastal Tariffs			
Canal Fee	First	Next	Next	Next	Next	GRT	GRT
SCNT	5000	.5000	10000	10000	1,06	0 - 5000	5001 - 10000
SDR pr SCNT	7,19	4,12	2,93		0,97		> 10 000
SDR - NOK	35 936	20 586	29 276	4 245	0	0	0
US\$	\$ 48 154	\$ 27 585	\$ 39 230	\$ 5 689	\$ 0		1 696 500
US\$ total per trip	\$ 120 655						\$ 26 493

**WP 3 : NSR - Suez Comparison - ncfd**  
Norwegian Tariffs, 50 000 dwt 19,6 \$ tonnes

Suez      NSR



## EXOGENOUS VARIABLES

Ship and cargo	
Data	NSR
Freight rate (US\$ pr dwt)	\$ 19,60
Cargo capacity (dwt)	50 000
Gross Tonnage (grt)	30 000
Suez Canal Net Tonnage (SNCT)	24 000
Bunker consumption max speed; BC Sni (Tonnes pr day)	38
Max speed; Sni (Knots)	15,5
TC-Rate pr trip	\$ 980 000
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 41 539

Currencies		Bunker Price	
Exchange rates		Rotterdam	Dudinka
SDR/NOK		\$ 62	\$ 62
US\$NOK			7,50
SDR/US\$			1,34
OPEX			
Average pr month			\$ 133 000

Distance Nm		Distance Nm			
SUEZ		NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Yokohama	Hamburg	Mys Zheleniya	Bering Strait	Yokohama
			2 029	2 108	2 721
		Int Waters	5 %	105	6 858
		Te Waters	1 %	21	
Investment Margin Newbuilding Ice		N Coastal Tariffs			
Cash Flow Net Difference ( 8 mth operation)		Suez	GRT	GRT	GRT
Interest Rate	6,2 %	First	Next	Next	
Period (Yrs)	20				
Net Present Value of Cashflow	\$0				
Canal Fee					
SCNT	5000	5000	10000	10000	0 - 5000 5001 - 10000 > 10 000
SDR pr SCNT	7,19	4,12	2,93	1,06	0,97
SDR - NOK	35 936	20 586	29 276	4 245	0
US\$	\$ 48 154	\$ 27 585	\$ 39 230	\$ 5 689	\$ 0
US\$ total per trip	\$ 120 658				\$26 493
Positive cash flows after expenses 1)		July	August	September	October
Month					
Suez	\$646 904	\$646 904	\$646 904	\$646 904	\$646 904
NSR	\$631 340	\$665 080	\$700 132	\$680 655	\$639 059

## EXOGENOUS VARIABLES

Ship and cargo	NSR	Suez
Data		
Freight rate (US\$ pr dwt)	\$ 24,43	\$ 24,43
Cargo capacity (dwt)	31 429	31 429
Gross Tonnage (grt)	18 857	18 857
Suez Canal Net Tonnage (SNCT)	15 086	15 086
Bunker consumption max speed; BC Sm (Tonnes pr day)	28	28
Max speed; Sm (Knots)	15,5	15,5
TC-Rate pr trip	\$ 767 810	\$ 767 810
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 32 545	\$ 23 517

Currencies	Bunker Price	
	Rotterdam	Dudinka
Exchange rates		
SDR/NOK	\$ 62	\$ 62
USS/NOK		7,50
SDR/USS		1,34
OPEX		
Insurance Arctic leg		
USS pr grt pr day	0,00	
USS pr day	\$ 0	
Average pr month	\$ 133 000	

Distance Nm	Distance Nm			
	NSR	1. Leg	Arctic Leg	3. Leg
SUEZ				Total
Hamburg		Mys Zheleniya	Bering Strait	Yokohama
		2 029	2 108	2 721
				6 858
Investment Margin Newbuilding Ice				
Cash Flow Net Difference ( 8 mth operation)	\$ 1 128 363			
Interest Rate	6,2 %			
Period (Yrs)	20			
Net Present Value of Cashflow	\$ 13 524 250			
Suez				N Coastal Tariffs
Canal Fee	First	Next	Next	
SCNT	5000	5000	10000	
SDR pr SCNT	7,19	4,12	2,93	
SDR - NOK	35 936	20 586	14 890	-5 216
USS	\$ 48 154	\$ 27 585	\$ 19 952	\$ 0
USS total per trip	\$ 95 691			\$ 16 653
Positive cash flows after expences 1)				
Month	July	August	September	October
Suez	\$477 997	\$477 997	\$477 997	\$477 997
NSR	\$616 040	\$622 657	\$629 372	\$625 666
				December
				January
				February

**ENDOGENOUS VARIABILITIES** \$1 120 262

Month	July	August	September	October	November	December	January	February
TC equivalent rate pr trip	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810
Bunker cost pr trip	\$ 28 595	\$ 29 222	\$ 30 095	\$ 29 575	\$ 28 725	\$ 29 101	\$ 28 507	\$ 27 810
Ice damage insurance cost pr trip	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
N Coastal Tariffs	\$ 16 653	\$ 16 653	\$ 16 653	\$ 16 653	\$ 16 653	\$ 16 653	\$ 16 653	\$ 16 653
OPEX pr trip	\$ 106 522	\$ 99 279	\$ 91 690	\$ 95 917	\$ 104 869	\$ 100 543	\$ 107 698	\$ 118 771
Total cost pr trip	\$ 151 770	\$ 145 154	\$ 138 439	\$ 142 145	\$ 150 247	\$ 146 296	\$ 152 858	\$ 163 234
Positive cash flow pr trip NSR	\$ 616 040	\$ 622 657	\$ 629 372	\$ 625 666	\$ 617 564	\$ 621 514	\$ 614 953	\$ 604 576

## Calculations

Daily route induced costs Hamburg - Yokohama depending on monthly ice variations in the NSR 7)	
Month	
Speed Suez and 1. & 3. Leg NSR	14,5
Speed NSR Arctic Leg	8,2
NSR Arctic Leg insurance cost 4)	\$ 0,00
NSR Ice damage insurance rate (US\$ pr grt pr day)	\$ 0,00
NSR Ice damage insurance cost pr day	\$ 0

Suez and NSR bunker cost 3)	
Month	
Bunker cost pr day Suez	\$ 1.571
Bunker cost pr day NSR Arctic Leg	\$ 668
Bunker cost pr day NSR 1. & 3. Leg	\$ 1.571

Days needed Hamburg - Yokohama depending on monthly ice variations in the NSR 8)	
Month	
Suez	32,6
NSR	24,4
NSR; Days in Arctic waters	10,7
NSR; Days in Normal waters	13,6
Trips pr month (through Suez 9)	0,81
Trips pr month (through NSR 9)	1,04

Rate and bunker cost pr day through the Suez Canal	
Month	
TC equivalent rate pr trip	\$ 767 810
TC equivalent rate pr day	\$ 23 517
Bunker cost pr day	\$ 1.571
Canal fee pr day	\$ 2.931
Positive cash flow before OPEX	\$ 19 016

Daily route induced costs Hamburg - Yokohama depending on monthly ice variations in the NSR 7)	
Month	
Speed Suez and 1. & 3. Leg NSR	14,5
Speed NSR Arctic Leg	9,7
NSR Arctic Leg insurance cost 4)	\$ 0,00
NSR Ice damage insurance rate (US\$ pr grt pr day)	\$ 0,00
NSR Ice damage insurance cost pr day	\$ 0

Days needed Hamburg - Yokohama depending on monthly ice variations in the NSR 8)	
Month	
Suez	32,6
NSR	22,7
NSR; Days in Arctic waters	9,1
NSR; Days in Normal waters	13,6
Trips pr month (through Suez 9)	0,81
Trips pr month (through NSR 9)	1,10

Rate and bunker cost pr day through the Suez Canal	
Month	
TC equivalent rate pr trip	\$ 767 810
TC equivalent rate pr day	\$ 23 517
Bunker cost pr day	\$ 1.571
Canal fee pr day	\$ 2.931
Positive cash flow before OPEX	\$ 19 016

## Calculations

Rate and bunker & insurance cost pr day depending on monthly ice variations in the NSR

Month	July	August	September	October	November	December	January	February
TC equivalent rate pr trip	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810
TC equivalent rate pr day	\$ 31 518	\$ 33 818	\$ 36 617	\$ 35 003	\$ 32 015	\$ 33 393	\$ 31 174	\$ 28 268
Bunker & ice damage insurance pr day Arctic NSR	\$ 668	\$ 859	\$ 1 183	\$ 982	\$ 705	\$ 820	\$ 644	\$ 471
Cost pr day 1. & 3. leg NSR	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571
Average cost pr day NSR	\$ 1 174	\$ 1 287	\$ 1 435	\$ 1 348	\$ 1 198	\$ 1 266	\$ 1 157	\$ 1 024
Positive cash flow before OPEX	\$ 30 345	\$ 32 531	\$ 35 181	\$ 33 655	\$ 30 817	\$ 32 127	\$ 30 017	\$ 27 244

### **Operating Costs (average pr month) 6)**

Total costs pr single trip (constant in Suez monthly variations in NSR)						
Month	July	August	September	October	November	December
Canal cost Suez	\$ 95 691	\$ 95 691	\$ 95 691	\$ 95 691	\$ 95 691	\$ 95 691
Suez Bunker Cost	\$ 50 499	\$ 50 499	\$ 50 499	\$ 50 499	\$ 50 499	\$ 50 499
NSR Bunker and Ice damage insurance Cost	\$ 28 595	\$ 29 222	\$ 30 095	\$ 29 945	\$ 28 725	\$ 28 678
Operating cost pr trip Suez	\$ 142 839	\$ 142 839	\$ 142 839	\$ 142 839	\$ 142 839	\$ 142 839
Operating cost pr trip NSR	\$ 106 578	\$ 99 331	\$ 91 739	\$ 95 967	\$ 104 924	\$ 100 595
Total cost Suez	\$ 289 028	\$ 289 028	\$ 289 028	\$ 289 028	\$ 289 028	\$ 289 028
Total cost NSR	\$ 135 173	\$ 128 553	\$ 121 834	\$ 125 913	\$ 133 649	\$ 129 273

## Calculations

**Cash flow pr single trip after route induced and operating costs (constant in Suez monthly variations in NSR)**

Month	July	August	September	October	November	December	January	February
Positive Cash Flow Suez	\$ 478 783	\$ 478 783	\$ 478 783	\$ 478 783	\$ 478 783	\$ 478 783	\$ 478 783	\$ 478 783
Positive Cashflow NSR	\$ 632 637	\$ 639 258	\$ 645 976	\$ 641 898	\$ 634 162	\$ 638 537	\$ 631 549	\$ 621 167

**Cumulated total costs pr day (constant in Suez monthly variations in NSR)**

Month	July	August	September	October	November	December	January	February
NSR Bunker	\$ 1 174	\$ 1 287	\$ 1 348	\$ 1 198	\$ 1 266	\$ 1 157	\$ 1 024	\$ 1 024
NSR Bunker and Ice damage insurance	\$ 1 174	\$ 1 287	\$ 1 365	\$ 1 198	\$ 1 247	\$ 1 157	\$ 1 024	\$ 1 024
NSR daily cost	\$ 5 549	\$ 5 662	\$ 5 810	\$ 5 740	\$ 5 573	\$ 5 622	\$ 5 532	\$ 5 399
Suez Bunker	\$ 1 547	\$ 1 547	\$ 1 547	\$ 1 547	\$ 1 547	\$ 1 547	\$ 1 547	\$ 1 547
Suez Bunker and Canal	\$ 4 478	\$ 4 478	\$ 4 478	\$ 4 478	\$ 4 478	\$ 4 478	\$ 4 478	\$ 4 478
Suez daily cost	\$ 8 853	\$ 8 853	\$ 8 853	\$ 8 853	\$ 8 853	\$ 8 853	\$ 8 853	\$ 8 853

**Positive cash flow pr day after route induced and operating costs (constant in Suez monthly variations in NSR)**

Month	July	August	September	October	November	December	January	February
Positive Cash Flow Suez	\$ 14 665	\$ 14 665	\$ 14 665	\$ 14 665	\$ 14 665	\$ 14 665	\$ 14 665	\$ 14 665
Positive Cashflow NSR	\$ 25 970	\$ 28 156	\$ 30 806	\$ 29 263	\$ 26 442	\$ 27 771	\$ 25 642	\$ 22 869

**Positive cash flow pr day after route induced and operating costs (constant in Suez monthly variations in NSR)**

Month	July	August	September	October	November	December	January	February
Suez TC equivalent rate pr day	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517
Suez Bunker cost pr day	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571
Suez Operating cost pr day	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375
Suez Canal fee pr day	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931
Positive cash flow pr day Suez	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641

NSR TC equivalent rate pr day	\$ 31 518	\$ 33 818	\$ 36 617	\$ 35 003	\$ 32 015	\$ 33 393	\$ 31 174	\$ 28 268
NSR Average bunker & ice damage insurance cost pr	\$ 1 174	\$ 1 287	\$ 1 435	\$ 1 348	\$ 1 198	\$ 1 266	\$ 1 157	\$ 1 024
NSR Operating cost pr day	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375
Positive cash flow pr day NSR	\$ 25 970	\$ 28 156	\$ 30 806	\$ 29 280	\$ 26 442	\$ 27 752	\$ 25 642	\$ 22 869

## Calculations

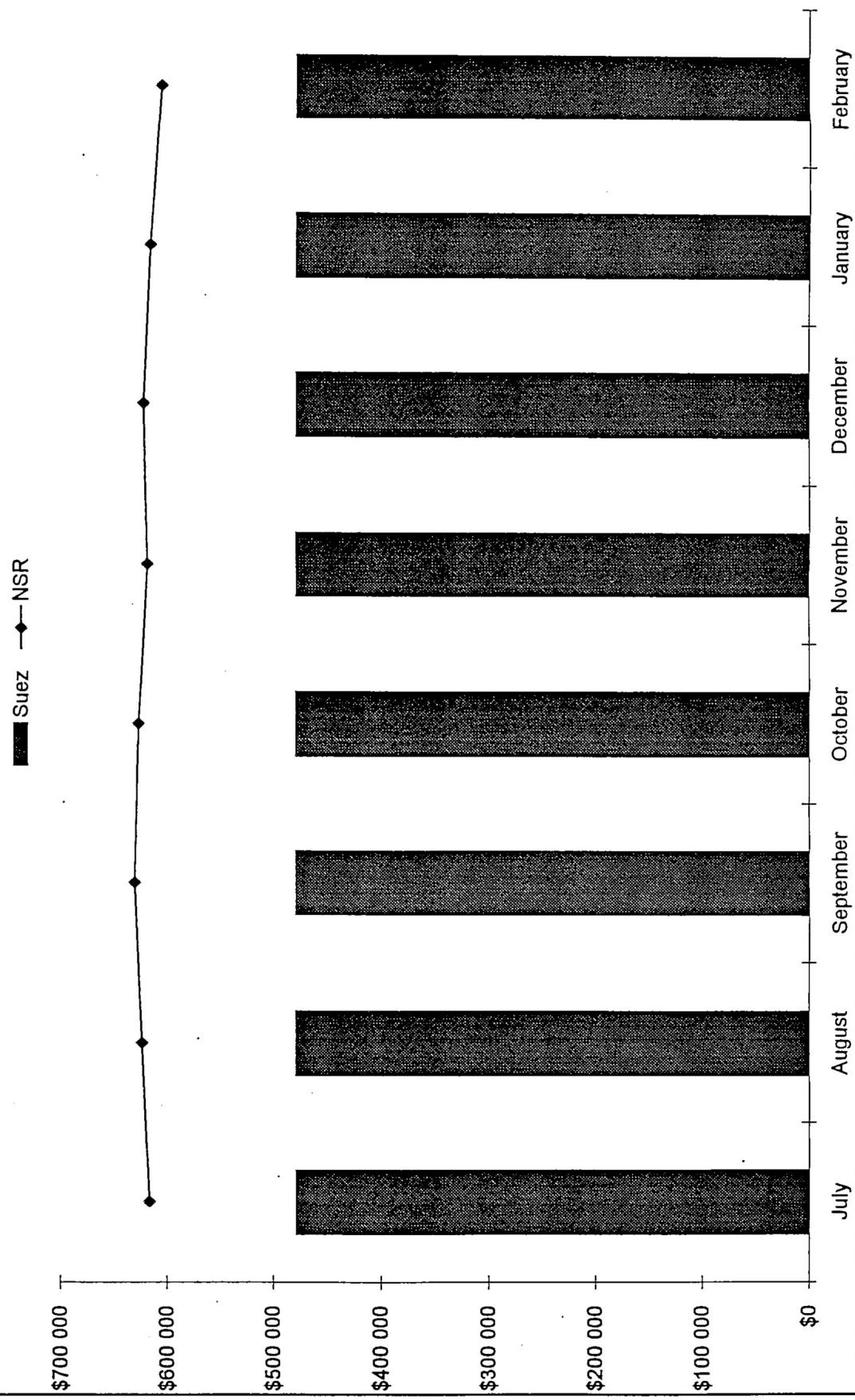
### Positive cash flow pr day after route induced and operating costs

Month	July	August	September	October	November	December	January	February
Suez TC equivalent rate pr day	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517
Suez Bunker cost pr day	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571	\$ 1 571
Suez Bunker and Operating cost pr day	\$ 5 946	\$ 5 946	\$ 5 946	\$ 5 946	\$ 5 946	\$ 5 946	\$ 5 946	\$ 5 946
Suez Bunker, Operating and Canal cost pr day	\$ 8 877	\$ 8 877	\$ 8 877	\$ 8 877	\$ 8 877	\$ 8 877	\$ 8 877	\$ 8 877
Positive cash flow pr day Suez	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641	\$ 14 641
NSR TC equivalent rate pr day	\$ 31 518	\$ 33 818	\$ 36 617	\$ 35 003	\$ 32 015	\$ 33 393	\$ 31 174	\$ 28 268
NSR Bunker cost pr day	\$ 1 174	\$ 1 287	\$ 1 435	\$ 1 348	\$ 1 198	\$ 1 266	\$ 1 157	\$ 1 024
NSR Bunker and Ice damage insurance cost pr day	\$ 1 174	\$ 1 287	\$ 1 435	\$ 1 348	\$ 1 198	\$ 1 266	\$ 1 157	\$ 1 024
NSR Operating, Bunker and Insurance cost pr day	\$ 5 549	\$ 5 662	\$ 5 810	\$ 5 723	\$ 5 573	\$ 5 641	\$ 5 532	\$ 5 399
Positive cash flow pr day NSR	\$ 25 970	\$ 28 156	\$ 30 806	\$ 29 280	\$ 26 442	\$ 27 752	\$ 25 642	\$ 22 869

### Notes

- 1) TC equivalent rates less bunker cost, OPEX, canal fee (Suez) and Ice insurance (NSR), excluding ballast bonus/repositioning loss
- 2) Rate pr tonne cargo converted to Time Charter equivalent rates divided by total time Hamburg - Yokohama
- 3) Time weighted average of bunker cost in Arctic and non Arctic legs of NSR
- 4) Total Ice insurance cost for the Arctic leg of NSR (based on gross registered tonnage), divided by total time Hamburg - Yokohama
- 5) Panama canal fee (based on Lump Sum ), divided by total time Hamburg - Yokohama
- 6) Operating expenses (OPEX), taken from Lloyds Shipping Economist oct 98
- 7) Suez and NSR 1. & 3. Leg: Normal speed Hamburg - Yokohama Arctic Leg speed based on actual transit passages in 1992-94
- 8) Distance divided by the product of speed pr hour and hours pr day
- 9) Excluding ports in both ends

**WP 3 : NSR - Suez Comparison - ncfd**  
Norwegian Tariffs, 31 429 dwt 24,34 \$ tonnes



## EXOGENOUS VARIABLES

<u>Ship and cargo</u>			
Data	NSR	Suez	
Freight rate (US\$ pr dwt)	\$ 24,43	\$ 24,43	
Cargo capacity (dwt)	31 429	31 429	
Gross Tonnage (grt)	18 857	18 857	
Suez Canal Net Tonnage (SNCT)	15 086	15 086	
Bunker consumption max speed; BC Sm (Tonnes pr day)	28	28	
Max speed; Sm (Knots)	15,5	15,5	
TC-Rate pr trip	\$ 767 810	\$ 767 810	
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 32 545	\$ 23 517	

<u>Distance Nm</u>			
SUEZ			
Hamburg	Yokohama		

<u>Distance Nm</u>			
NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Mys Zheleniya	Bering Strait	Yokohama

<u>Investment Margin Newbuilding Ice</u>			
Cash Flow Net Difference ( 8 mth operation)	\$0		
Interest Rate	6,2 %		
Period (Yrs)	20		
Net Present Value of Cashflow	\$0		
		Suez	
Canal Fee	First	Next	Next
SCNT	5000	10000	10000
SDR pr SCNT	7,19	4,12	2,93
SDR - NOK	35 936	20 586	14 890
US\$	\$ 48 154	\$ 27 585	\$ 19 952
US\$ total per trip	\$ 95 691		

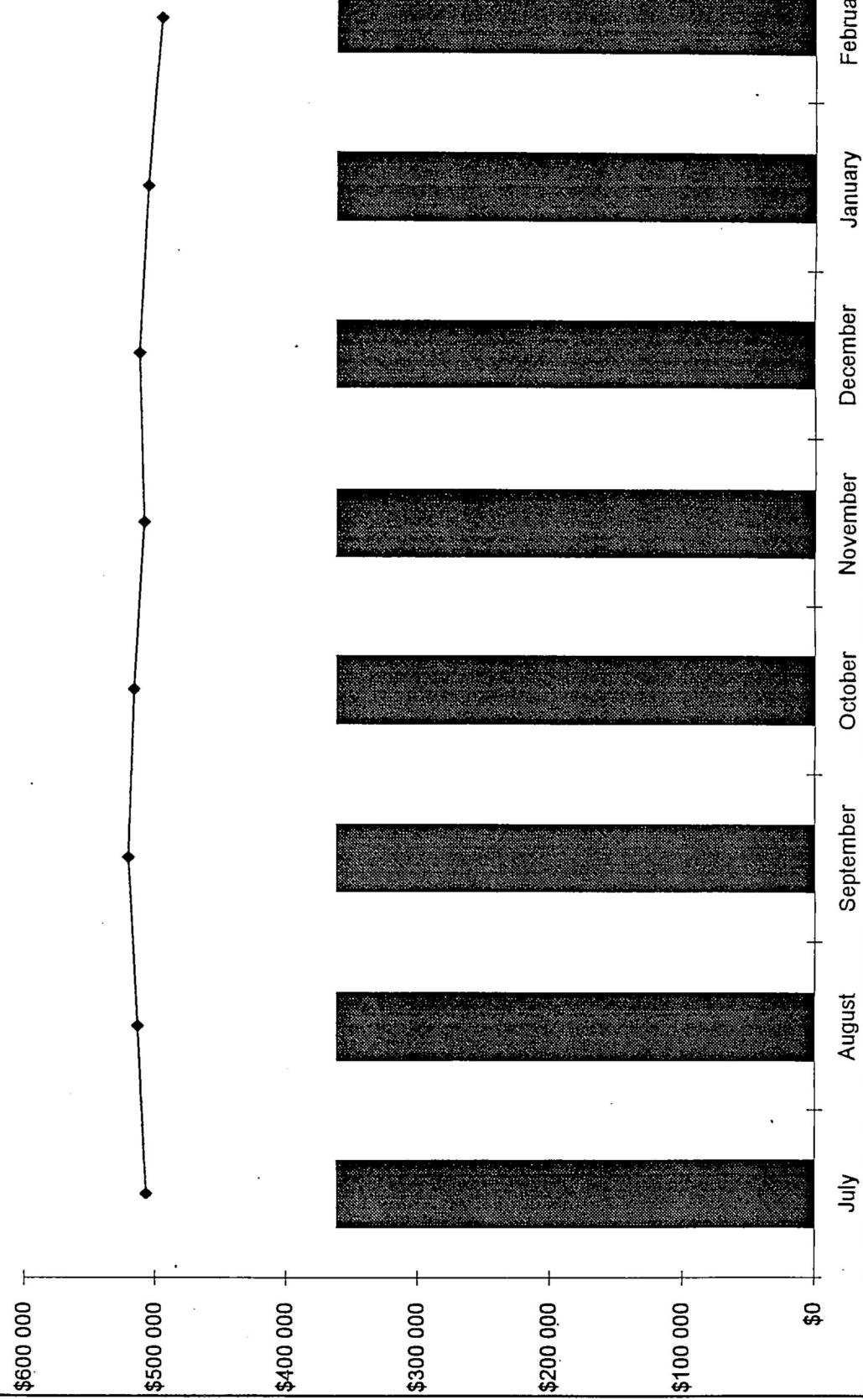
<u>Positive cash flows after expenses 1)</u>			
Month	July	August	September
Suez	\$477 997	\$477 997	\$477 997
NSR	\$464 091	\$494 206	\$525 538

<u>Currencies</u>		<u>Bunker Price</u>	
Exchange rates			
SDR/Nok		\$ 62	Dudinka
US\$/Nok			
SDR/US\$			
<u>Insurance Arctic leg</u>		<u>OPEX</u>	
US\$ pr grt pr day		0,75	
US\$ pr day		\$ 14 186	
		\$ 133 000	
<u>Distance Nm</u>			
NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Mys Zheleniya	Bering Strait	Yokohama
		2 029	2 108
			2 721
			6 858
<u>Regime</u>			
Int Waters	5 %	105	
Tc Waters	1 %	21	
<u>N Coastal Tariffs</u>			
		GRT	GRT
		0 - 5000	5001 - 10000
		0,97	> 10 000
		0	0
		\$ 0	1 066 386
		\$ 0	\$ 16 653

Ark1 Diagram 4

**WP 3 : NSR - Suez Comparison - ncfd**  
Norwegian Tariffs, 37 167 dwt 17,79 \$ tonnes

Suez      ♦— NSR



## EXOGENOUS VARIABLES

Ship and cargo	NSR	Suez
Freight rate (US\$ pr dwt)	\$ 17,79	\$ 17,79
Cargo capacity (dwt)	37 167	37 167
Gross Tonnage (grt)	22 300	22 300
Suez Canal Net Tonnage (SCNT)	17 840	17 840
Bunker consumption max speed; BC Sm (Tonnes pr day)	28	28
Max speed; Sm (Knots)	15,5	15,5
TC-Rate pr trip	\$ 661 201	\$ 661 201
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 28 026	\$ 20 252

	Currencies		Bunker Price
Data	NSR	Suez	Rotterdam
SDR/Nok			\$ 62
US\$ Nok			
SDR/US\$			
			Dudinka
			\$ 62
			\$ 62

	OPEX	
Average pr month		
US\$ pr grt pr day		0,00
US\$ pr day		\$ 0

Distance Nm	Distance Nm			
SUEZ	NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Hamburg	Mys Zheteniya	Bering Strait	Yokohama
		2 029	2 108	2 721
				Total
				6 858

Regime	High Seas	Int - Te Water	High Seas
Int Waters	5 %	105	
Te Waters	1 %	21	

Investment Margin Newbuilding Ice				
Cash Flow Net Difference ( 8 mth operation)	\$ 1 190 480			
Interest Rate	6,2 %			
Period (Yrs)	20			
Net Present Value of Cashflow	\$ 14 268 769			

Suez				
First	Next	Next	Next	Next
5000	5000	10000	10000	
7,19	4,12	2,93	1,06	0,97
35 936	20 586	22 953	-2 292	0
\$ 48 154	\$ 27 585	\$ 30 757	\$ 0	\$ 0
US\$ total per trip	\$ 106 496			\$ 19 693

Positive cash flows after expences 1)				
Month	July	August	September	October
Suez	\$360 583	\$360 583	\$360 583	\$360 583
NSR	\$506 390	\$513 007	\$519 722	\$516 016

Positive cash flows after expences 1)	January	February
Month		
Suez	\$360 583	\$360 583
NSR	\$505 303	\$505 303

## EXOGENOUS VARIABLES

Ship and cargo		Bunker Price			
Data		NSR	Suez	Rotterdam	Dudinka
Freight rate (US\$ pr dwt)		\$ 17,79	\$ 17,79	\$ 62	\$ 62
Cargo capacity (dwt)		37 167	37 167		
Gross Tonnage (grt)		22 300	22 300		
Suez Canal Net Tonnage (SNCT)		17 840	17 840		
Bunker consumption max speed; BC Sm (Tonnes pr day)		28	28		
Max speed; Sm (Knots)		15,5	15,5		
TC-Rate pr trip		\$ 661 201	\$ 661 201		
Average TC-Rate pr day NSR / TC-Rate pr day Suez		\$ 28 026	\$ 20 252		

Distance Nm		Currencies	
		Exchange rates	
		SDR/NOK	
		US\$ / NOK	7,50
		SDR/US\$	1,34

Distance Nm		OPEX	
		Average pr month	
		0,67	
		US\$ pr grt pr day	
		US\$ pr day	\$ 14 966
			\$ 133 000

Distance Nm		Regime		N Coastal Tariffs	
		NSR	Hamburg	1. Leg	Arctic Leg
			Mys Zheleniya	Bering Strait	Yokohama
				2 029	2 108
				2 721	2 721
					6 858

Investment Margin Newbuilding Ice		Regime		High Seas		Int - Te Water		High Seas	
		NSR	Hamburg	1. Leg	Arctic Leg	3. Leg	Total		
Cash Flow Net Difference ( 8 mth operation)	( \$0 )								
Interest Rate	6,2 %								
Period (Yrs)	20								
Net Present Value of Cashflow	- \$0								

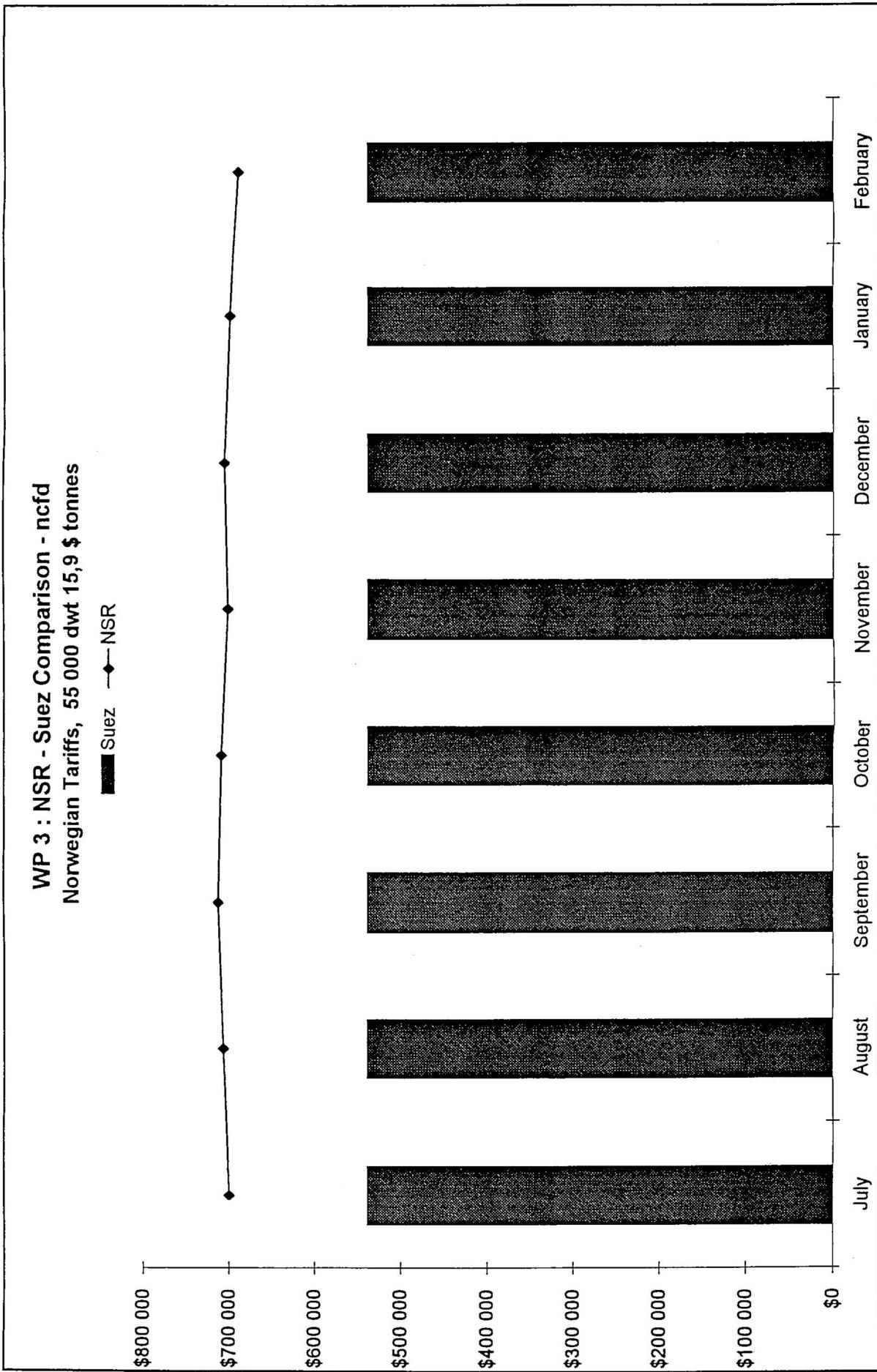
  

Canal Fee		Suez		N Coastal Tariffs	
		First	Next	Next	GRIT
SCNT		5000	5000	10000	0 - 50000 5001 - 100000 > 10 000
SDR pr SCNT		7,19	4,12	2,93	0,97
SDR - NOK		35 936	20 586	22 953	0
US\$		\$ 48 154	\$ 27 585	\$ 30 757	\$ 0
US\$ Total per trip		\$ 106 496			\$ 19 693

Positive cash flows after expences 1)		July	August	September	October	November	December	January	February
Month									
Suez	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583	\$ 360 583
NSR	\$ 346 076	\$ 377 485	\$ 410 172	\$ 392 000	\$ 353 258	\$ 372 017	\$ 340 965	\$ 292 687	

Ark1 Diagram 4



## EXOGENOUS VARIABLES

<u>Ship and cargo</u>			
	NSR	Suez	
Freight rate (US\$ pr dwt)	\$ 15,90	\$ 15,90	
Cargo capacity (dwt)	55 000	55 000	
Gross Tonnage (grt)	33 000	33 000	
Suez Canal Net Tonnage (SNCT)	26 400	26 400	
Bunker consumption max speed; BC Sm (Tonnes pr day)	28	28	
Max speed; Sm (Knots)	15,5	15,5	
TC-Rate pr trip	\$ 874 500	\$ 874 500	
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 37 068	\$ 26 785	

Currencies	Bunker Price	OPEX
Exchange rates		Average pr month
SDR/NOK	\$ 62	\$ 133 000
US\$ NOK	7,50	
SDR/US\$	1,34	
Insurance Arctic leg		
US\$ pr day	0,00	
US\$ pr day		

## EXOGENOUS VARIABLES

Ship and cargo			
Data	NSR	Suez	
Freight rate (US\$ pr dwt)	\$ 15,90	\$ 15,90	
Cargo capacity (dwt)	55 000	55 000	
Gross Tonnage (grt)	33 000	33 000	
Suez Canal Net Tonnage (SNT)	26 400	26 400	
Bunker consumption max speed; BC Sm (Tonnes pr day)	38	38	
Max speed; Sm (Knots)	15,5	15,5	
TC-Rate pr trip	\$ 874 500	\$ 874 500	
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 37 068	\$ 26 785	

### Distance Nm

SUEZ		
Hamburg	Yokohama	11 188

### Investment Margin Newbuilding Ice

Cash Flow Net Difference ( 8 mth operation)	\$0
Interest Rate	6,2 %
Period (Yrs)	20
Net Present Value of Cashflow	\$0

### Distance Nm

NSR		
Hamburg	Mys Zheleniya	2 029

### Cash Flow Net Difference ( 8 mth operation)

Interest Rate	High Seas	Int - Te Water	High Seas
Int Waters	5 %	105	
Te Waters	1 %	21	

### Suez

Canal Fee	First	Next	Next	Next	Next	GRIT	GRIT	GRIT
SCNT	5000	5000	10000	10000		0 - 5000	5001 - 10000	> 10 000
SDR pr SCNT	7,19	4,12	2,93	1,06	0,97			
SDR - NOK	35 936	20 586	29 276	6 793	0	0	0	1 866 150
US\$	\$ 48 154	\$ 27 585	\$ 39 230	\$ 9 102	\$ 0			
US\$ total per trip	\$ 124 071					\$29 142		

### Positive cash flows after expences 1)

Month	July	August	September	October	November	December	January	February
Suez	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991
NSR	\$522 368	\$556 235	\$591 421	\$571 869	\$530 116	\$550 342	\$516 853	\$464 723

### Currencies

	Exchange rates	
SDR/NOK	\$ 62	Dudinka
US\$ /NOK	7,50	
SDR/US\$	1,34	

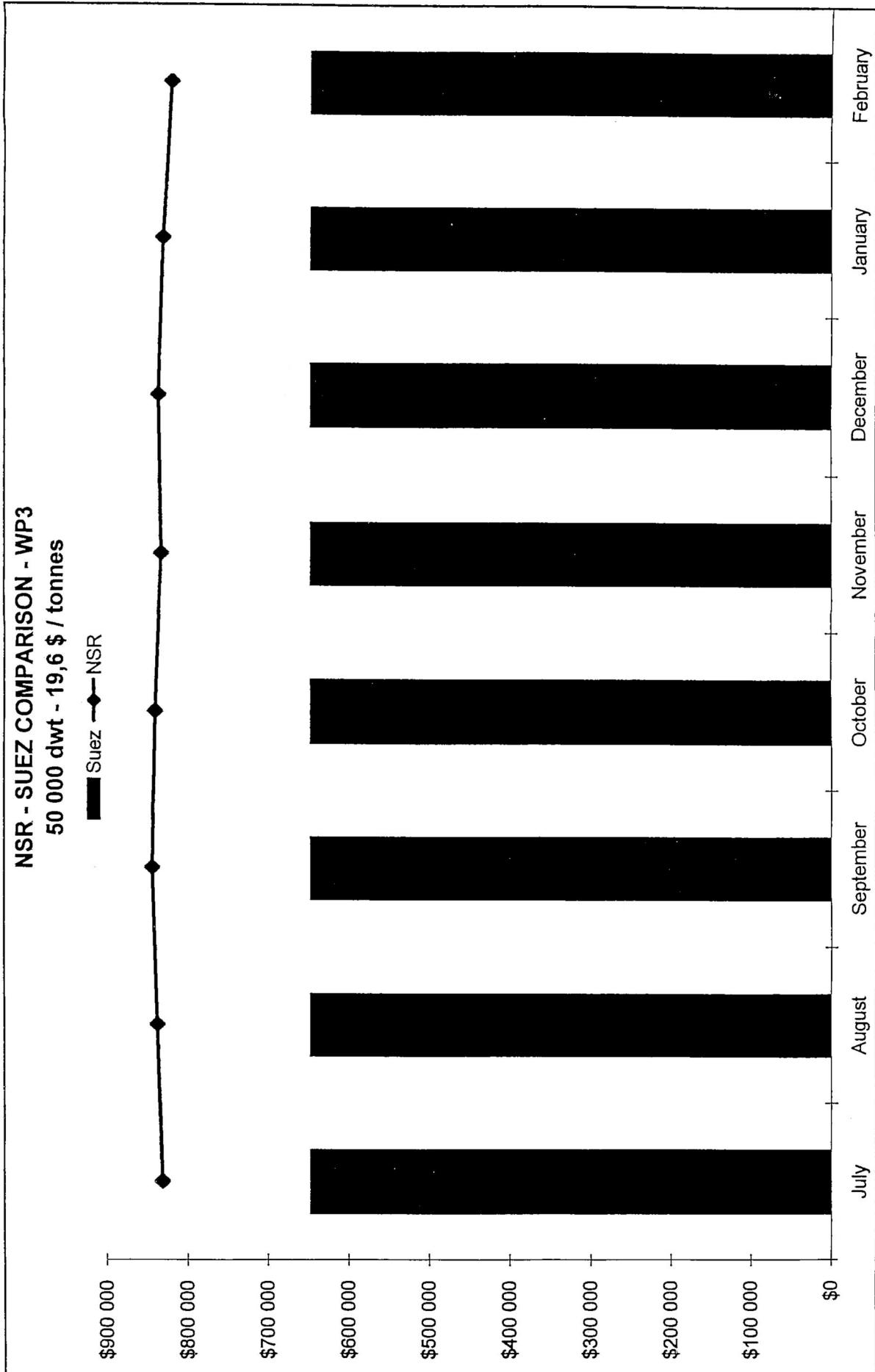
### Bunker Price

	Rotterdam	Dudinka
	\$ 62	\$ 62

	OPEX	
Average pr month		
US\$ pr day	\$ 16 586	\$ 133 000

	N Coastal Tariffs	
NSR	1. Leg	Total
Hamburg	Mys Zheleniya	Yokohama
	2 029	2 108
		2 721
		6 858

Ark1 Diagram 7

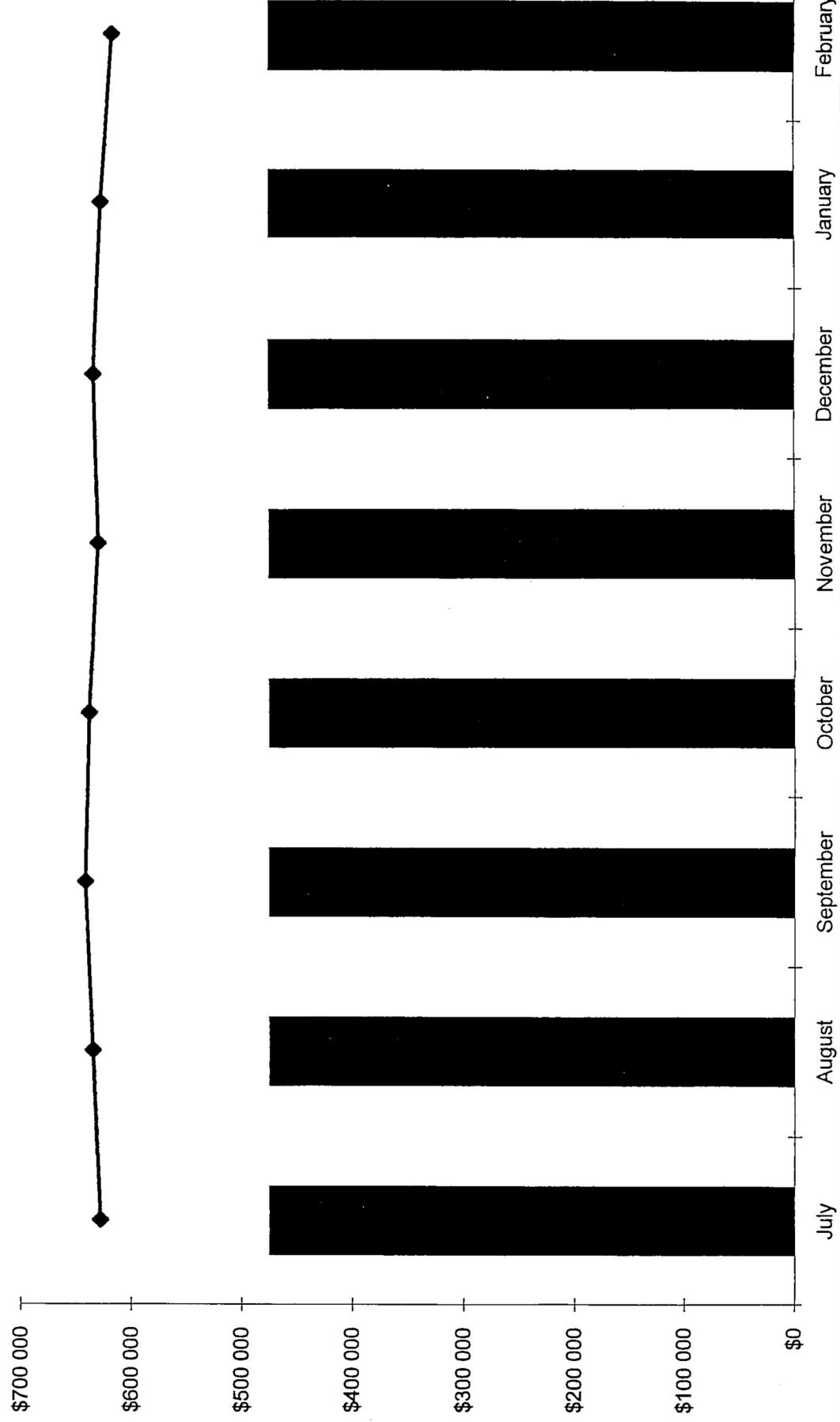


## EXOGENOUS VARIABLES

Ship and cargo		Bunker Price	
Data	NSR	Suez	Dudinka
Freight rate (US\$ pr dwt)	\$ 19,60	\$ 19,60	\$ 62
Cargo capacity (dwt)	50 000	50 000	\$ 62
Gross Tonnage (grt)	30 000	30 000	5,07
Suez Canal Net Tonnage (SNCT)	24 000	24 000	1,34
Net Register Tonnes	15000	15000	
Bunker consumption max speed; BC Sm (Tonnes pr day)	38	38	
Max speed; Sm (Knots)	15,5	15,5	
TC-Rate pr trip	\$ 980 000	\$ 980 000	
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 41 539	\$ 30 016	
Distance Nm		Distance Nm	
SUEZ	Yokohama	NSR	1. Leg
Hamburg	11 188	Hamburg	Mys Zheleniya
			Bering Strait
			Yokohama
			2 029
			2 108
			2 721
			6 858
Investment Margin Newbuilding Ice		Regime	
Cash Flow Net Difference ( 8 mth operation)	\$ 1 501 933	High Seas	Int - Te Water
Interest Rate	6,2 %	5 %	High Seas
Period (Yrs)	20	1 %	
Net Present Value of Cashflow	\$17 963 452		
Positive cash flows after expences 1)		Suez	
Canal Fee	First	Next	Next
SCNT	5000	5000	10000
SDR pr SCNT	7,19	4,12	2,93
SDR - NOK	35 936	20 586	29 276
US\$	\$ 48 154	\$ 27 585	\$ 39 230
US\$ total per trip	\$ 120 658		\$ 5 689
			\$ 0
Finnish Coastal Tariffs		<NRT>	
Canal Fee	First	Next	Next
SCNT	5000	5000	10000
SDR pr SCNT	7,19	4,12	2,93
SDR - NOK	35 936	20 586	29 276
US\$	\$ 48 154	\$ 27 585	\$ 39 230
US\$ total per trip	\$ 120 658		\$ 5 689
			\$ 0
Positive cash flows after expences 1)		July	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		August	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		September	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		October	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		November	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		December	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		January	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587
Positive cash flows after expences 1)		February	
Canal Fee	First	Next	Next
SCNT	\$646 904	\$646 904	\$646 904
SDR pr SCNT	\$838 172	\$838 164	\$844 567
SDR - NOK			\$841 047
US\$			\$873 249
US\$ total per trip			\$837 065
			\$830 716
			\$820 587

### NSR - SUEZ COMPARISON - WP3

Suez      NSR



## EXOGENOUS VARIABLES

Ship and cargo			
Data	NSR	Suez	
Freight rate (US\$ pr dwt)	\$ 24,43	\$ 24,43	
Cargo capacity (dwt)	31 429	31 429	
Gross Tonnage (grt)	18 857	18 857	
Suez Canal Net Tonnage (SNCT)	15 086	15 086	
Net Register Tonnes			
Bunker consumption max speed; BC Sm (Tonnes pr day)	9428,7	9428,7	
Max speed; Sm (Knots)	30	30	
TC-Rate pr trip	\$ 767 810	\$ 767 810	
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 32 545	\$ 23 517	

### Distance Nm

SUEZ			
Hamburg	Yokohama		
	11 188		

Investment Margin Newbuilding Ice		
Cash Flow Net Difference ( 8 mth operation)	\$ 1 255 842	
Interest Rate	6,2 %	
Period (Yrs)	20	
Net Present Value of Cashflow	\$ 15 020 148	

### Currencies

		Bunker Price		
			Rotterdam	Dudinka
Exchange rates			\$ 62	\$ 62
SDR/NOK				
US\$/Fimarkka			5,07	
SDR/US\$			1,34	
Insurance Arctic leg				OPEX
US\$ pr grt pr day			0,00	Average pr month
US\$ pr day			\$ 0	\$ 133 000

### Distance Nm

				Total
NSR	1. Leg	Arctic Leg	3. Leg	
Hamburg	Mys Zheleniya	Bering Strait	Yokohama	
	2 029	2 108	2 721	6 858

Regime	High Seas	Int - Te Water	High Seas	
Int Waters	5 %	105		
Te Waters	1 %	21		

Canal Fee					Finnish Coastal Tariffs
SCNT					<NRT>
SDR pr SCNT					10 000
SDR - NOK					7,5
US\$					0
US\$ total per trip	\$ 95 691				\$ 2 313

### Positive cash flows after expenses 1)

Month	July	August	September	October	November	December	January	February
Suez	\$ 474 334	\$ 474 334	\$ 474 334	\$ 474 334	\$ 474 334	\$ 474 334	\$ 474 334	\$ 474 334
NSR	\$ 628 338	\$ 634 909	\$ 641 562	\$ 637 893	\$ 629 852	\$ 633 776	\$ 627 257	\$ 616 929

## ENDOGENOUS VARIABLES

\$1 255 842

Month	July	August	September	October	November	December	January	February
TC equivalent rate pr trip	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810	\$ 767 810
Bunker cost pr trip	\$ 30 637	\$ 31 309	\$ 32 245	\$ 31 687	\$ 30 776	\$ 31 179	\$ 30 543	\$ 29 797
Ice damage insurance cost pr trip	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
N Coastal Tariffs	\$ 2 313	\$ 2 313	\$ 2 313	\$ 2 313	\$ 2 313	\$ 2 313	\$ 2 313	\$ 2 313
OPEX pr trip	\$ 106 522	\$ 99 279	\$ 91 690	\$ 95 917	\$ 104 869	\$ 100 543	\$ 107 698	\$ 118 771
Total cost pr trip	\$ 139 473	\$ 132 901	\$ 126 249	\$ 129 917	\$ 137 959	\$ 134 035	\$ 140 554	\$ 150 881
Positive cash flow pr trip NSR	\$ 628 338	\$ 634 909	\$ 641 562	\$ 637 893	\$ 629 852	\$ 633 776	\$ 627 257	\$ 616 929



## Calculations

Daily route induced costs Hamburg - Yokohama depending on monthly ice variations in the NSR 7

Shez and NSR bunker cost 3)

Days needed Hamburg - Yokohama depending on monthly ice variations in the NSR 8)

Bata and buntkes cost no day through the Suez Canal

## Calculations

Cash flow pr single trip after route induced and operating costs (constant in Suez monthly variations in NSR)						
Month	July	August	September	October	November	December
Positive Cash Flow Suez	\$ 475 176	\$ 475 176	\$ 475 176	\$ 475 176	\$ 475 176	\$ 475 176
Positive Cashflow NSR	\$ 630 595	\$ 630 595	\$ 637 170	\$ 643 827	\$ 639 759	\$ 632 110

### Accumulated total costs pr day (constant in Suez monthly variations in NSR)

Month	July	August	September	October	November	December
NSR Bunker	\$ 1 258	\$ 1 379	\$ 1 538	\$ 1 445	\$ 1 283	\$ 1 356
NSR Bunker and Ice damage insurance	\$ 1 258	\$ 1 379	\$ 1 538	\$ 1 463	\$ 1 283	\$ 1 336
NSR daily cost	\$ 5 633	\$ 5 754	\$ 5 913	\$ 5 838	\$ 5 658	\$ 5 711
Suez Bunker	\$ 1 657	\$ 1 657	\$ 1 657	\$ 1 657	\$ 1 657	\$ 1 657
Suez Bunker and Canal	\$ 4 588	\$ 4 588	\$ 4 588	\$ 4 588	\$ 4 588	\$ 4 588
Suez daily cost	\$ 8 963	\$ 8 963	\$ 8 963	\$ 8 963	\$ 8 963	\$ 8 963

### Positive cash flow pr day after route induced and operating costs (constant in Suez monthly variations in NSR)

Month	July	August	September	October	November	December
Positive Cash Flow Suez	\$ 14 554	\$ 14 554	\$ 14 554	\$ 14 554	\$ 14 554	\$ 14 554
Positive Cashflow NSR	\$ 25 886	\$ 28 064	\$ 30 704	\$ 29 166	\$ 26 357	\$ 27 682

### Positive cash flow pr day after route induced and operating costs (constant in Suez monthly variations in NSR)

Month	July	August	September	October	November	December
Suez TC equivalent rate pr day	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517
Suez Bunker cost pr day	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683
Suez Operating cost pr day	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375
Suez Canal fee pr day	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931	\$ 2 931
Positive cash flow pr day Suez	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528

NSR TC equivalent rate pr day	\$ 31 518	\$ 33 818	\$ 36 617	\$ 35 003	\$ 32 015	\$ 33 393	\$ 31 174	\$ 28 268
NSR Average bunker & ice damage insurance cost pr	\$ 1 258	\$ 1 379	\$ 1 538	\$ 1 445	\$ 1 283	\$ 1 356	\$ 1 240	\$ 1 097
NSR Operating cost pr day	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375	\$ 4 375
Positive cash flow pr day NSR	\$ 25 886	\$ 28 064	\$ 30 704	\$ 29 184	\$ 26 357	\$ 27 662	\$ 25 559	\$ 22 796

## Calculations

Positive cash flow pr day after route induced and operating costs (cumulated) (constant in Suez monthly variations in NSR)

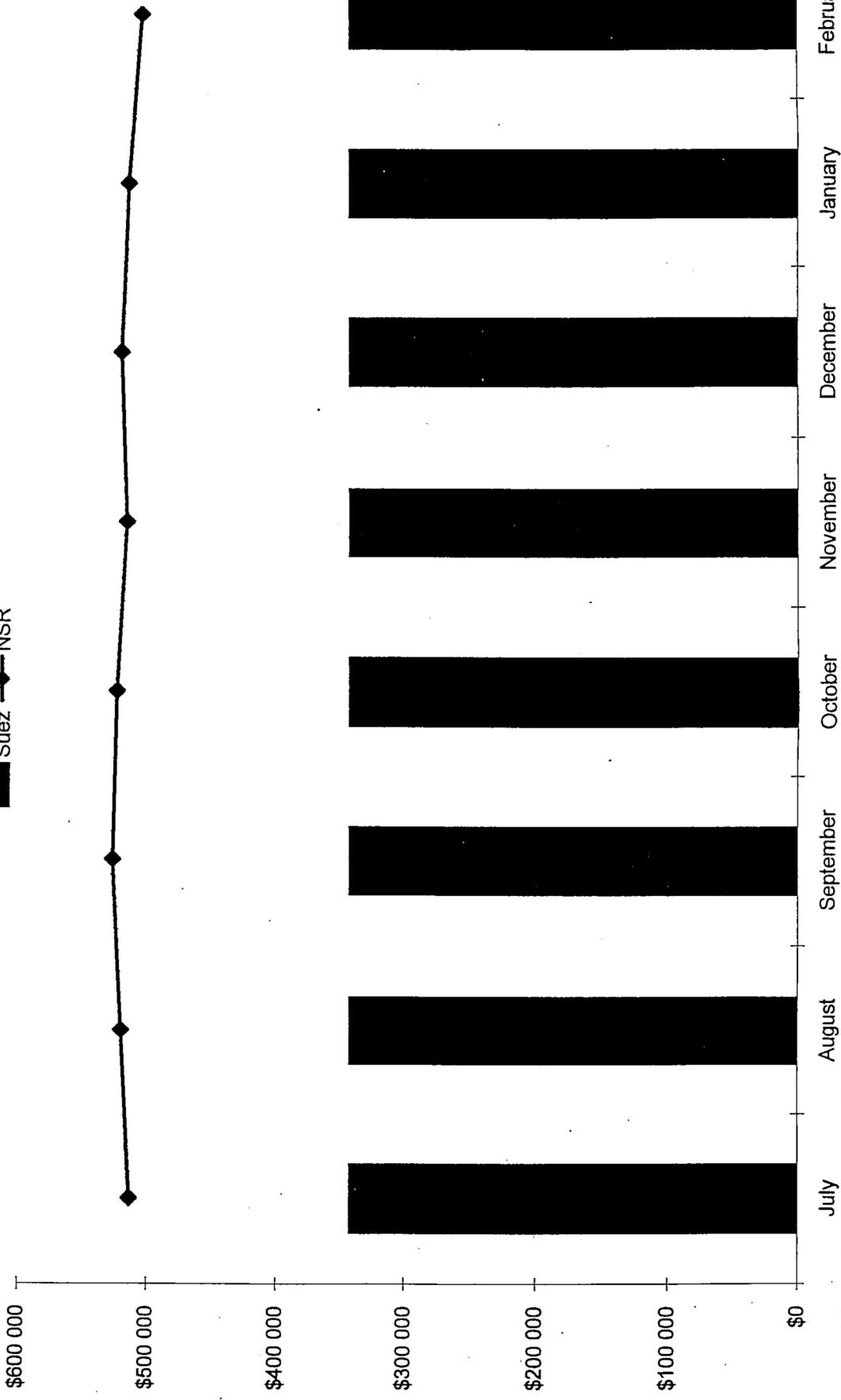
Month	July	August	September	October	November	December	January	February
Suez TC equivalent rate pr day	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517	\$ 23 517
Suez Bunker cost pr day	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683	\$ 1 683
Suez Bunker and Operating cost pr day	\$ 6 058	\$ 6 058	\$ 6 058	\$ 6 058	\$ 6 058	\$ 6 058	\$ 6 058	\$ 6 058
Suez Bunker, Operating and Canal cost pr day	\$ 8 989	\$ 8 989	\$ 8 989	\$ 8 989	\$ 8 989	\$ 8 989	\$ 8 989	\$ 8 989
Positive cash flow pr day Suez	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528	\$ 14 528
NSR TC equivalent rate pr day	\$ 31 518	\$ 33 818	\$ 36 617	\$ 35 003	\$ 32 015	\$ 33 393	\$ 31 174	\$ 28 268
NSR Bunker cost pr day	\$ 1 258	\$ 1 379	\$ 1 538	\$ 1 445	\$ 1 283	\$ 1 356	\$ 1 240	\$ 1 097
NSR Bunker and Ice damage insurance cost pr day	\$ 1 258	\$ 1 379	\$ 1 538	\$ 1 445	\$ 1 283	\$ 1 356	\$ 1 240	\$ 1 097
NSR Operating, Bunker and Insurance cost pr day	\$ 5 633	\$ 5 754	\$ 5 913	\$ 5 820	\$ 5 658	\$ 5 731	\$ 5 615	\$ 5 472
Positive cash flow pr day NSR	\$ 25 886	\$ 28 064	\$ 30 704	\$ 29 184	\$ 26 357	\$ 27 662	\$ 25 559	\$ 22 796

## Notes

- 1) TC equivalent rates less bunker cost, OPEX, canal fee (Suez) and Ice insurance (NSR), excluding ballast bonus/repositioning loss
- 2) Rate pr tonne cargo converted to Time Charter equivalent rates divided by total time Hamburg - Yokohama
- 3) Time weighted average of bunker cost in Arctic and non Arctic legs of NSR
- 4) Total Ice insurance cost for the Arctic leg of NSR (based on gross registered tonnage), divided by total time Hamburg - Yokohama
- 5) Suez Canal fee (based on Lump Sum ), divided by total time Hamburg - Yokohama
- 6) Operating expences (OPEX), taken from Lloyds Shipping Economist oct 98
- 7) Suez and NSR 1. & 3. Leg: Normal speed Hamburg - Yokohama Arctic Leg speed based on actual transit passages in 1992-94
- 8) Distance divided by the product of speed pr hour and hours pr day
- 9) Excluding ports in both ends

**NSR - SUEZ COMPARISON - WP3**  
**37 167 dwt - 17,79 \$ / tonnes**

Suez      NSR



## EXOGENOUS VARIABLES

<u>Ship and cargo</u>	<u>NSR</u>	<u>Suez</u>
Data		
Freight rate (US\$ pr dwt)	\$ 17,79	\$ 17,79
Cargo capacity (dwt)	37 167	37 167
Gross Tonnage (grt)	22 300	22 300
Suez Canal Net Tonnage (SNCT)	17 840	17 840
Net Register Tonnes	11150,1	11150,1
Bunker consumption max speed; BC Sm (Tonnes pr day)	32	32
Max speed; Sm (Knots)	15,5	15,5
TC-Rate pr trip	\$ 661 201	\$ 661 201
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 28 026	\$ 20 252

### Distance Nm

<u>SUEZ</u>	<u>NSR</u>	<u>1. Leg</u>	<u>Arctic Leg</u>	<u>3. Leg</u>	<u>Total</u>
Hamburg	Yokohama	Mys Zheleniya	Bering Strait	Yokohama	
		11 188	2 029	2 108	2 721

### Investment Margin Newbuilding Ice

<u>Cash Flow Net Difference ( 8 mth operation)</u>	<u>\$1 355 693</u>
Interest Rate	6,2 %
Period (Yrs)	20
Net Present Value of Cashflow	\$16 214 380

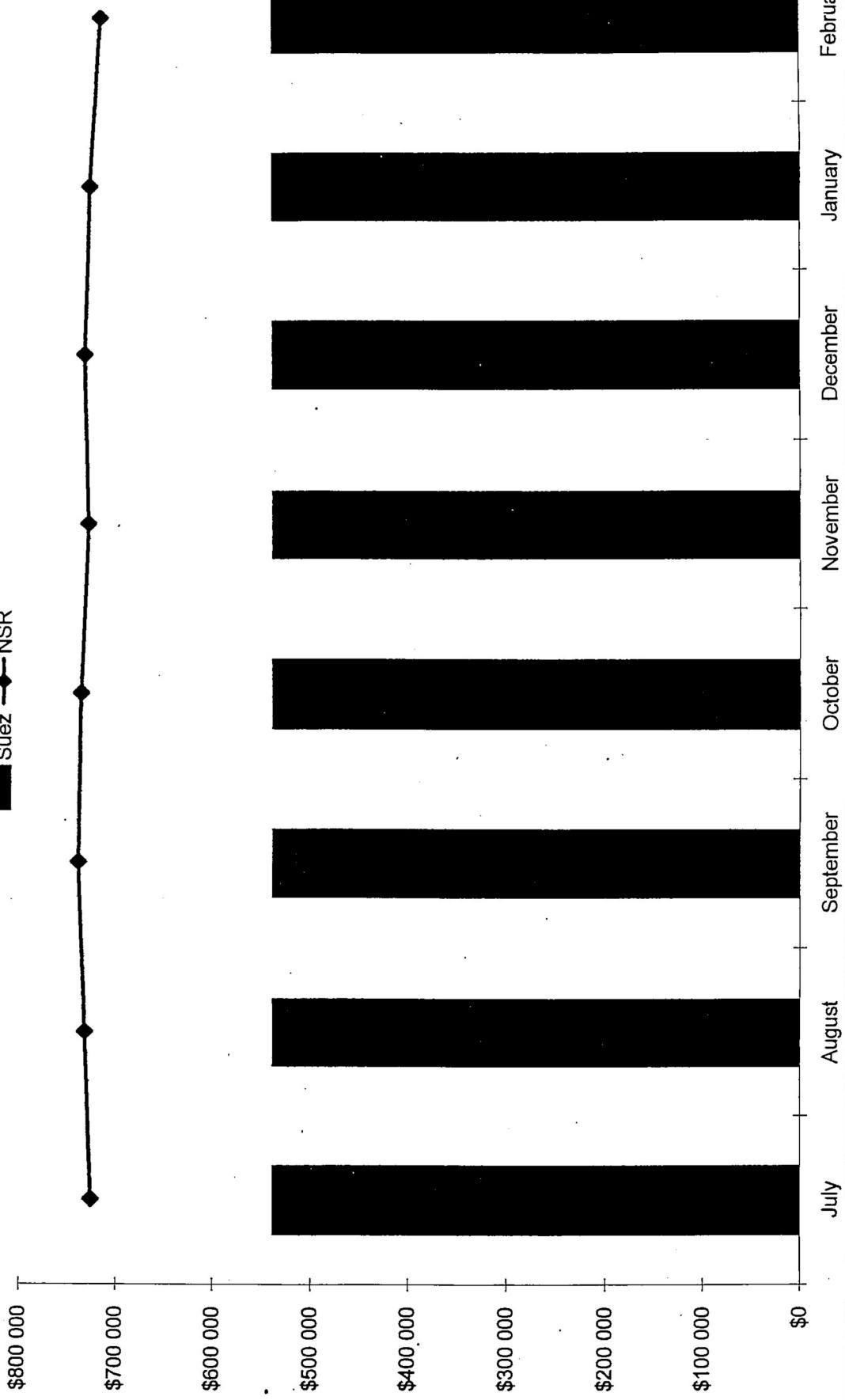
<u>Canal Fee</u>	<u>Suez</u>	<u>First</u>	<u>Next</u>	<u>Next</u>	<u>Next</u>	<u>NRIT &lt;</u>	<u>&lt;NRT&gt;</u>	<u>&lt;NRT</u>
SCNT		5000	10000	10000		1999	9999	10 000
SDR pr SCNT		7,19	4,12	2,93	1,06	0,97	10	8,5
SDR - NOK		35 936	20 586	22 953	-2 292	0	0	7,5
US\$		\$ 48 154	\$ 27 585	\$ 30 757	\$ 0	\$ 0		96 626
US\$ total per trip		\$ 106 496					\$2 232	

### Positive cash flows after expenses 1)

	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>
Suez	\$353 256	\$353 256	\$353 256	\$353 256	\$353 256	\$353 256	\$353 256	\$353 256
NSR	\$519 767	\$526 294	\$532 884	\$529 252	\$521 272	\$525 169	\$518 692	\$508 415

**NSR - SUEZ COMPARISON - WP3**  
**55 000 dwt - 15,9 \$ / tonnes**

Suez      NSR



## EXOGENOUS VARIABLES

Ship and cargo	NSR	Suez
Data		
Freight rate (US\$ pr dwt)	\$ 15,90	\$ 15,90
Cargo capacity (dwt)	55 000	55 000
Gross Tonnage (grt)	33 000	33 000
Suez Canal Net Tonnage (SNCT)	26 400	26 400
Net Register Tonnes	16500	16500
Bunker consumption max speed; BC Sm (Tonnes pr day)	38	38
Max speed; Sm (Knots)	15,5	15,5
TC-Rate pr trip	\$ 874 500	\$ 874 500
Average TC-Rate pr day NSR / TC-Rate pr day Suez	\$ 37 068	\$ 26 785
Distance Nm		
SUEZ		
Hamburg	Yokohama	
	11 188	

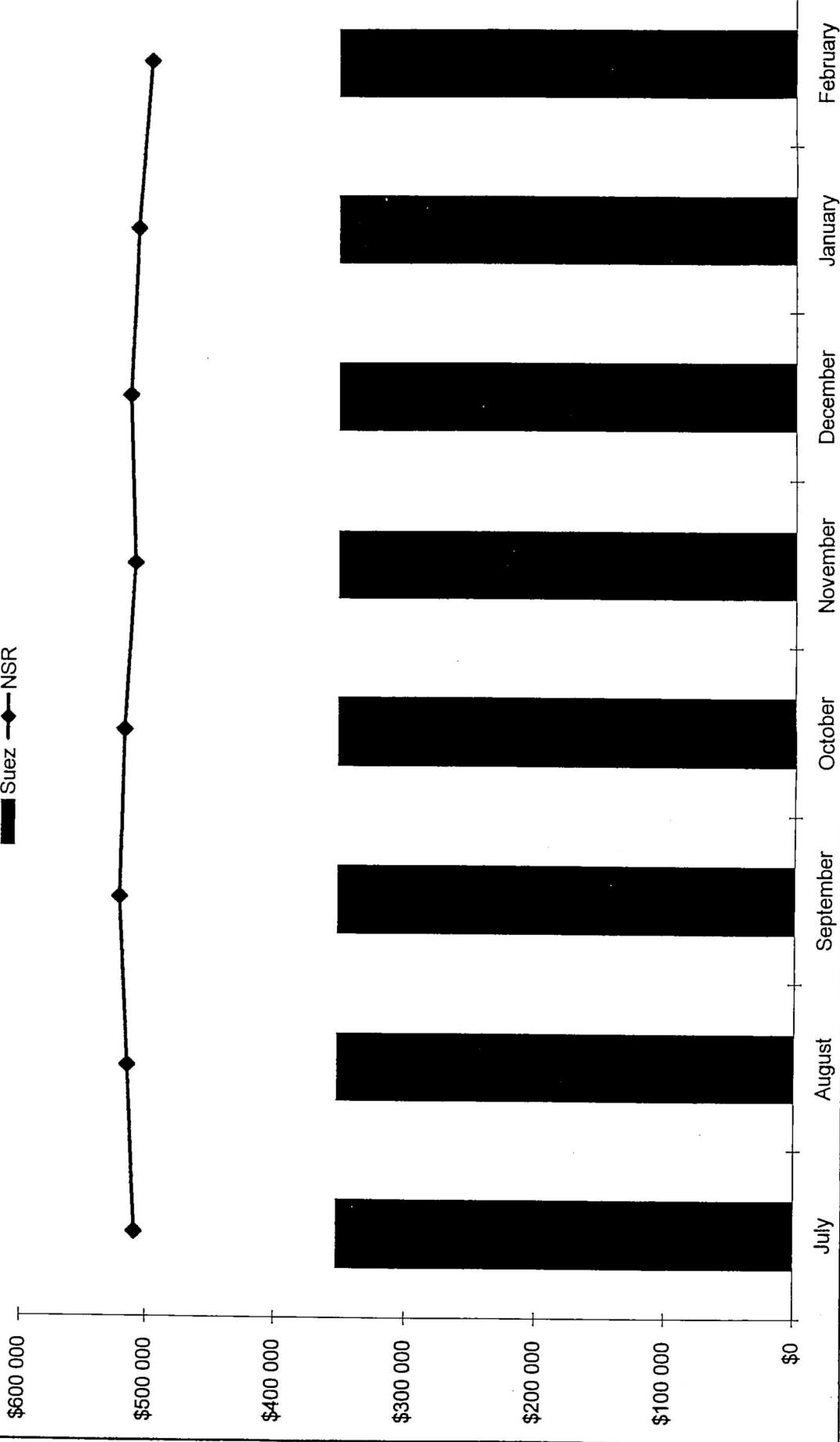
Investment Margin Newbuilding Ice	
Cash Flow Net Difference ( 8 mth operation)	\$1 527 161
Interest Rate	6,2 %
Period (Yrs)	20
Net Present Value of Cashflow	\$18 265 178

Canal Fee	First	Next	Next	Next	Next	NRT<	<NRT>	>NRT
SCNT	5000	5000	10000	10000		1999	9999	10 000
SDR pr SCNT	7,19	4,12	2,93	1,06	0,97	10	8,5	7,5
SDR - FIN Markka	35 936	20 586	29 276	6 793	0	0	0	136 750
US\$	\$ 48 154	\$ 27 585	\$ 39 230	\$ 9 102	\$ 0			
US\$ total per trip	\$ 124 071					\$3 159		

Positive cash flows after expences 1)	July	August	September	October	November	December	January	February
Suez	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991	\$537 991
NSR	\$726 012	\$732 404	\$738 807	\$735 287	\$727 489	\$731 305	\$724 956	\$714 828

**NSR - SUEZ COMPARISON - WP3**  
**30 000 dwt - 21,9 \$ / tonnes**

Suez —◆— NSR



## EXOGENOUS VARIABLES

## EXOGENOUS VARIABLES

<u>Ship and cargo</u>	NSR	Suez
Data	\$ 24,43	\$ 24,43
Freight rate (US\$ pr dwt)	31 429	31 429
Cargo capacity (dwt)	18 857	18 857
Gross Tonnage (grt)	15 086	15 086
Suez Canal Net Tonnage (SNCT)	28	28
Bunker consumption max speed; BC Sm (Tonnes pr day)	15,5	15,5
Max speed; Sm (Knots)	\$ 767 810	\$ 767 810
TC-Rate pr trip	\$ 32 545	\$ 23 517
Average TC-Rate pr day NSR / TC-Rate pr day Suez		

<u>Distance Nm</u>	<u>Currencies</u>			
SUEZ	NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Yokohama	Mys Zheleniya	Bering Strait	Yokohama
		2 029	2 108	2 721
				6 858

## Investment Margin Newbuilding Ice

Cash Flow Net Difference ( 8 mth operation)	\$0
Interest Rate	6,2 %
Period (Yrs)	20
Net Present Value of Cashflow	\$0

<u>Distance Nm</u>	<u>Bunker Price</u>			
SUEZ	Rotterdam	Dudinka	GRIT	GRIT
	\$ 62	\$ 62	\$ 62	\$ 62
	SDR/Nok	SDR/Nok	SDR/Nok	SDR/Nok
	US\$/Nok	US\$/Nok	US\$/Nok	US\$/Nok
	SDR/US\$	SDR/US\$	SDR/US\$	SDR/US\$

<u>Distance Nm</u>	<u>OPEX</u>			
SUEZ	NSR	1. Leg	Arctic Leg	3. Leg
Hamburg	Mys Zheleniya	Bering Strait	Yokohama	Total
	2 029	2 108	2 721	
				6 858

Positive cash flows after expences 1)

**Department of Shipping, Trade and Finance**

**Professor Costas Th. Grammenos, OBE, DSc**  
Head of Department  
Pro-Vice Chancellor, City University



14 February, 1999

Claes Lykke Ragner  
INSROP Secretariat  
PO Box 326  
N-1324 Lysaker  
Norway

Dear Claes,

**Re: Box B, Work Package 3: "Economic Evaluation of NSR Commercial Shipping", by Trond R. Ramsland**

I have now finished reviewing the above paper and here are my reactions.

The author has collected a large amount of information and has quite an ambitious task at hand, i.e. assess the commercial viability of the NSR as a sea lane between Western Europe and the Far East, compared with the current alternative of routes via the Suez canal.

I am afraid I have found the whole approach rather confusing and as a result the focus on the matter at hand is often missed. As a general comment, I would have to say that the author does not make clear from which viewpoint this analysis is conducted. Is it the viewpoint of a shipowner (who tries to maximise profits), a cargo owner (who tries to optimise costs), or the Russian administration (who has to charge adequate tariffs in order to keep the NSR option alive)?

I have chosen to make comments on each section separately, which the author might want to take into account in a possible review.

*I. Assumptions on the Legal Regime*

I cannot quite understand the purpose of this section. I understand the need for the assumption of a suitable regime, but this section completely confuses the reader as to the purpose of the paper. As this is not a discussion of the political and regulatory regime in the NSR it is better to use a simplifying assumption and then revisit the whole commercial analysis in the light of political/regulatory complications, if any.

## *2. Commercial Implications*

This is an extension of the previous section, and again the same comments are valid here. The paper is supposed to make a completely impartial financial evaluation of the benefits (if any) of using the NSR as an alternative passage to Suez. As such, any discussion on other aspects (political, social, etc.) on why NSR operations should be supported is out of place.

## *3. Barriers to Trade and 4. Comparison to Norwegian Legislation*

Again, similar comments as before. The discussion focuses on regulatory issues that had better be left alone.

## *5. Ice Coverage Related to Transit Passage*

No comment here.

## *6. Tariffs and Fees*

I think the comparison between Suez and NSR fees is really necessary here. The Norwegian and Finnish tariff structure would be relevant only if there were a discussion on the appropriateness of the NSR tariff structure.

## *7. Ice Condition*

No comments here

## *8. Ship Costs used in the Model*

No comments here

## *9. Financial Calculations*

This section does not really shed any light on the assumptions used in the subsequent cash flow calculations. The 'primer' on investment appraisal techniques and the time value of money is not really necessary. What is of much more interest is how risks identified in that section (especially the political risk) are incorporated in the cash flows and how feasible it is to account for such risks.

## *Sections 10-13*

No comments

In addition:

- The inclusion of an appendix (A) in any language other than English is inappropriate.
- Is the country risk assessment (appendix C) based on the author's estimates or other sources? If the latter, reference to the source is necessary. Also, as these risk assessments are relevant to the commercial evaluation, how are they incorporated in the cash flows?
- Appendices H and J are rather confusing. Again, from whose point of view are the cash flows calculated? How long is the project horizon? (In all cash flows only a 12 month period is used).
- On the same issue, the principle for the cash flow calculations is not clear. If the point of view is that of the shipowner, including bunkers in cost is wrong. The use of T/C equivalents implies the use of time charter. In a time charter bunkers are the responsibility of the charterer, not the shipowner. As a result costs to the shipowner are overestimated. Even in the case that we are talking about voyage charters, a proper T/C equivalent rate should already have taken bunkers into account.
- If the cash flow is from the point of view of the cargo owner (charterer) then the whole calculation does not make sense.
- The usage of higher T/C rates from NSR passage is rather arbitrary. No explanation is given as to why such higher rates should (or indeed would) be paid for NSR passage.

In short, I believe that the paper has an important contribution to make, but it needs a considerable amount of work has yet to be done. The first step must be to succinctly identify the aims of the paper. Then make all the necessary assumption in a clear and concise manner and finally 'cut to the chase' and focus on the interpretation of the numbers.

I hope my comments will be helpful.

Sincerely yours

A handwritten signature in black ink that reads "Michael". A horizontal line is drawn underneath the signature.

Michael Tamvakis

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Tamvakis, Michael  
Director  
MSc in Shipping Trade & Finance  
City University Business School

Bergen 18 February 99

### COMMENT TO THE REVIEW OF INSROP WORK PACKAGE 3.

First I appreciate an interesting chose as refers to a Reviewer himself at work within the INSROP Integration study. My initial reaction to Tamvakis's review is to point out that initially the Work Package 3 consist of two parts;

1. An analysis of the relevant cost parameters necessary to produce cost tables and revenue to compare the NSR for a given vessel size, with an identical operation through Suez.
2. An analysis of the cargo flows and their geographic origin pertaining relevant use for a NSR operation.

As refers to cargo flows this part has been amalgamated in total with project III.10.2-3 to provide a uniform and complete listing and analysis of the cargo base.

I regret that the Reviewer is confused and has not paid attention to the model put forth. For reference to the conceptual approach and its applicability, the author refers to INSROP Working paper no 59 and corresponding review. In short "an extremely practical and effective report". As regards the approach of this paper, which is an extension of no 59, the author observes that a slight difference of opinion exist between the practitioners in the risk assessment market and the reviewer.

To solve any inconvenience for the reviewer in the prolongation of his work and for first-time readers, this reference will be explicitly stated in the introduction.

#### THE MODEL & PACKAGE APPROACH

The main point has been to compare the actual cost component differential, and their associated risk, of two widely different geographic and climatic shipping operations, but between the identical point of origin and destination in Europe and the Far East. The alternatives of the Northern Sea Route or the Suez Canal.

As such it diverts from the traditional approach of an operation where the costs itself are stationary, but where a contractual split of cost and risks differ whether entering into a voyage or time charter. Tamvakis phrase this as the view of a

shipowner or that of a charterer, whereas this author takes that of neither, but an objective observer.

Referring to page 3 on principle for cash flow calculation, the reviewer has failed to realise that the NSR differential arise from the function of shorter distance, thus direct cost, and that of increased revenue as a function of less time used. The revenue approach is explicitly that of a US \$/tonnes for cost tables, thus I find it hard to accept that this implies time charters. Each alternative in the costing is that of two operators attacking the voyage market at a given US \$ tonnes rate computed from the voyage market average values in 97 – 98.

However obvious, this will be stated in the introduction.

The T/C equivalent rates are not the input to the model, but the output of the cost and time differentials that arise. As such there is no usage of a higher T/C rates, but two modes shipping on identical US \$ / tonnes rate where differences in direct cost arise as a function of less distance, and less time per voyage accrue to potential net revenue. As the increased net revenue is divided by less number of days used for the individual passage, the result implies a higher T/C if converted to daily or monthly equivalent. Thus no arbitrary rates are used to favour the NSR.

This concept is the raison d'etre for the whole NSR evaluation, and I thus take that the reviewer has been misled by the traditional (contractual) approach.

#### RISK & REGULATORY ENVIRONMENT

The reviewer's comments on 9, Financial Calculations, as refers to political risk, contradict his comments related to section 1 to 4. Political risk is identical with the regulatory environment and the only remaining stumbling block, both as the technicality and operational use of the NSR are proved through the actual use, and potentially improved by this program. It would thus be improper to leave the issue out, however convenient or "politically correct".

As Joint Research C and the project outlay find a comparison between Norwegian and Finnish tariffs necessary, I do not concur to the reviewer's comment. One route alternative, the Southern Route as put forth by Work Package 1 & 2, is a coastal route that accentuate this, whereas the alternative and relevant depth of the Northern Route reflects reality. Subject to Russia maintaining its view on the regulatory issues, the comparison shed light on its relevance and applicability.

The author also refers to the review of Edgar Gold and his comments on WP 7 INSROP Working Paper no 128, see review paragraph 3 to 7. These issues are regulatory, and must consequently be addressed to as refers to political risk. I also like to stress that the opinions have been reached independently and unaware of the other. As the Reviewer himself is at work with the integration book, I assume that this material has been accessible to him, or might find it useful to consult for the finalisation.

The Risk assessment source is referred to under section 9.2 Euromoney magazine September 98 issue (in brackets). As refer to the time horizon this is stated under

Exogenous Variables (Investment Margin Newbuilding Ice) that the period (yrs) is 20.

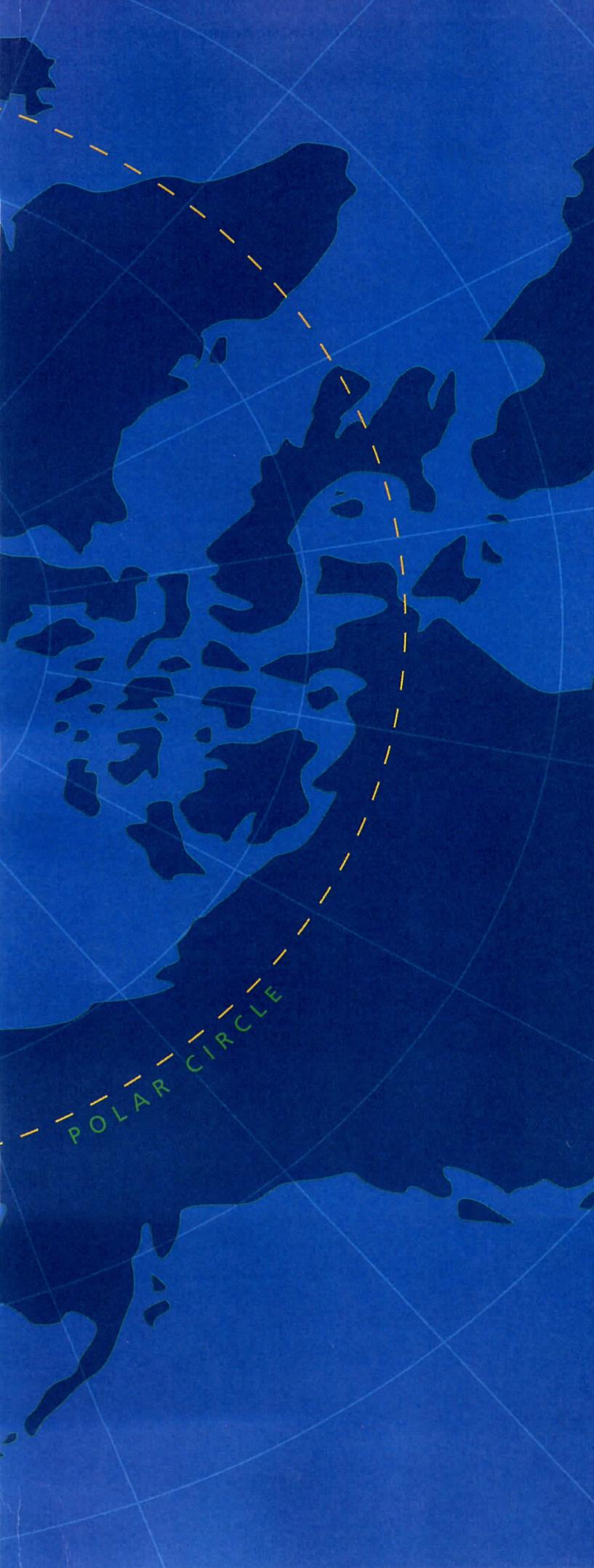
**C O N C L U D I N G   R E M A R K**

I agree with the reviewer that a short introduction to the conceptual approach can be useful, although covered by previous sub-programme III Working paper.

Finally I take the opportunity to invite the reviewer to apply the traditional approach of the shipowner or charterer in the integration book, either through the "spherical approach", or through the discounted net cash flow differential, and wish him every success at his work.

Sincerely

Trond Ragnvald Ramsland



**Ship & Ocean Foundation (SOF),  
Tokyo, Japan.**

SOF was established in 1975 as a non-profit organization to advance modernization and rationalization of Japan's shipbuilding and related industries, and to give assistance to non-profit organizations associated with these industries. SOF is provided with operation funds by the Sasakawa Foundation, the world's largest foundation operated with revenue from motorboat racing. An integral part of SOF, the Tsukuba Institute, carries out experimental research into ocean environment protection and ocean development.



**Central Marine Research & Design  
Institute (CNIIMF), St. Petersburg, Russia.**

CNIIMF was founded in 1929. The institute's research focus is applied and technological with four main goals: the improvement of merchant fleet efficiency; shipping safety; technical development of the merchant fleet; and design support for future fleet development. CNIIMF was a Russian state institution up to 1993, when it was converted into a stock-holding company.



**The Fridtjof Nansen Institute (FNI),  
Lysaker, Norway.**

FNI was founded in 1958 and is based at Polhøgda, the home of Fridtjof Nansen, famous Norwegian polar explorer, scientist, humanist and statesman. The institute specializes in applied social science research, with special focus on international resource and environmental management. In addition to INSROP, the research is organized in six integrated programmes. Typical of FNI research is a multi-disciplinary approach, entailing extensive cooperation with other research institutions both at home and abroad. The INSROP Secretariat is located at FNI.