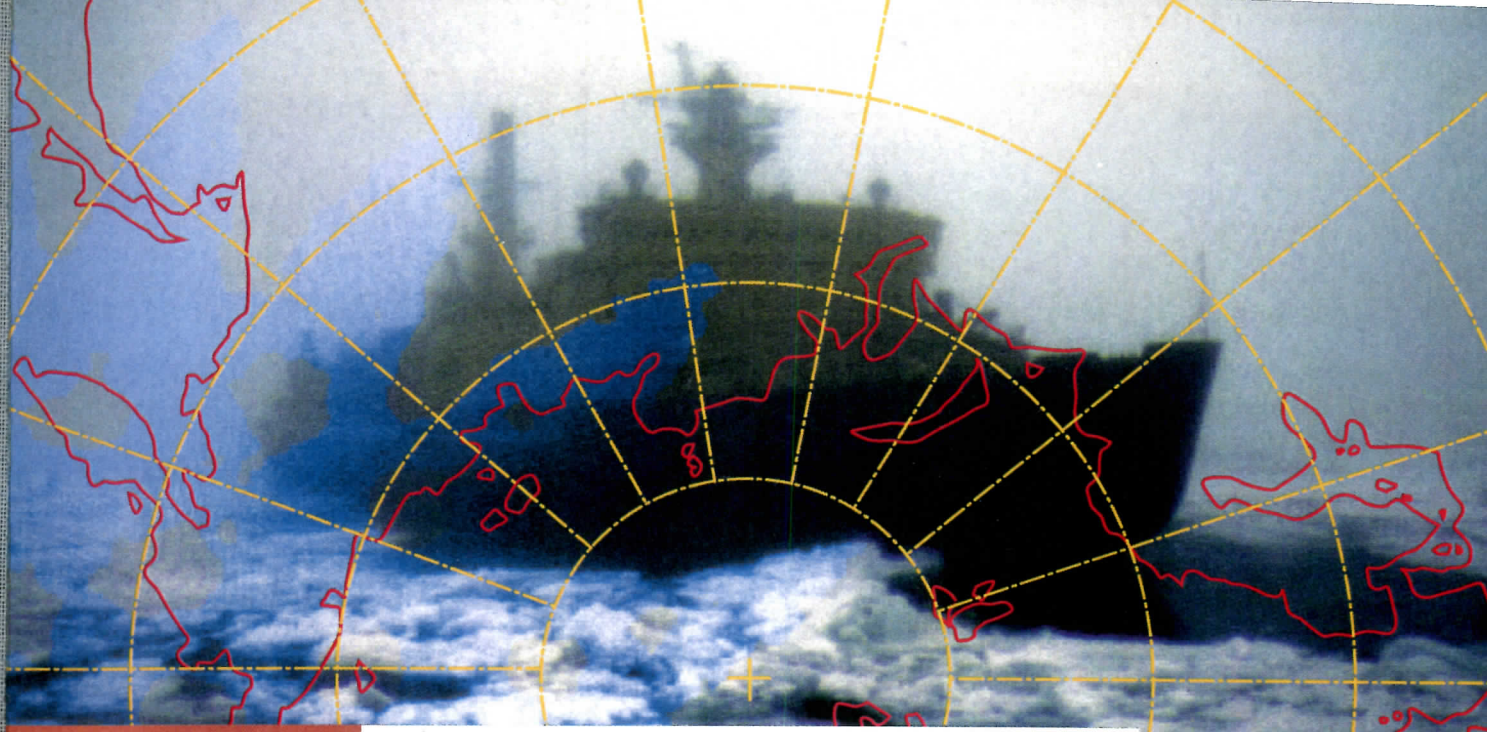

INSROP WORKING PAPER
NO. 85 - 1997, IV.3.3

Marine Insurance for the Northern Sea Route: The Feasibility of a New Risk Regime. Some Initial Conclusions.

By Edgar Gold, John A. Cantello and Peter L. Wright.

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

The Fridtjof Nansen Institute, Norway

Ship & Ocean Foundation, Japan

INSROP WORKING PAPER NO. 85-1997

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Supervisor:	Edgar Gold
Title:	**Marine Insurance for the Northern Sea Route: The Feasibility of a New Risk Regime. Some Initial Conclusions.**
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What is an INSROP Working Paper and how to handle it:

This publication forms part of a Working Paper series from the **International Northern Sea Route Programme - INSROP**. This Working Paper has been evaluated by a reviewer and can be circulated for comments both within and outside the INSROP team, as well as be published in parallel by the researching institution. A Working Paper will in some cases be the final documentation of a technical part of a project, and it can also sometimes be published as part of a more comprehensive INSROP Report. For any comments, please contact the authors of this Working Paper.

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.

The complete series of publications may be obtained from the Fridtjof Nansen Institute.

SPONSORS FOR INSROP

- Nippon Foundation/Ship & Ocean Foundation, Japan
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- The Norwegian Research Council
- The Norwegian Ministry of Foreign Affairs
- The Norwegian Ministry of Industry and Trade
- The Norwegian Ministry of the Environment
- State Industry and Regional Development Fund, Norway
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- Norwegian Federation of Shipowners
- Fridtjof Nansen Institute
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- Ship & Ocean Foundation, Japan
- Central Marine Research & Design Institute, Russia
- Fridtjof Nansen Institute, Norway
- National Institute of Polar Research, Japan
- Ship Research Institute, Japan
- Murmansk Shipping Company, Russia
- Northern Sea Route Administration, Russia
- Arctic & Antarctic Research Institute, Russia
- ARTEC, Norway
- Norwegian Polar Research Institute
- Norwegian School of Economics and Business Administration
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INSROP PROJECT IV.3.3

MARINE INSURANCE FOR THE NORTHERN SEA ROUTE:

THE FEASIBILITY OF A NEW RISK REGIME

Some Initial Conclusions

By

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MARINE INSURANCE FOR THE NORTHERN SEA ROUTE:

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A. INTRODUCTION

1. The International Northern Sea Route Programme (INSROP) is a multi-disciplinary and multilateral research programme which, since 1993, has been examining the feasibility of the navigational use of Arctic waters from various aspects: environmental, technical, political, commercial and legal. The multi-funded programme is coordinated by the Fridtjof Nansen Institute (FNI) of Oslo, Norway in cooperation with the Ship and Ocean Foundation (SOF) of Tokyo, Japan, and the Central Marine Research and Design Institute (CNIIMF) of St. Petersburg, Russia. The principal purpose of INSROP is to build up a knowledge base that is adequate to provide a foundation for long-term planning by governments and private industry for the promotion of rational decision-making concerning the use of the Northern Sea Route for maritime transit and regional development.

2. One of INSROP's sub-projects has been engaged in an examination of the feasibility of providing the projected shipping services with adequate risk coverage. There is full agreement

that INSROP could not proceed if the international marine insurance market could or would not provide the required risk coverage. Accordingly, marine insurance coverage is considered to be an essential foundation for the Northern Sea Route. Such route would have no viability without commercial users and users cannot operate vessels without adequate insurance coverage. This paper describes the process and the progress of this research and, at the same time, draws some initial conclusions.

B. THE RESEARCH PROCESS

3. The marine insurance sub-project's research group realized from the start of their work that INSROP would be taking the marine insurance sector into relatively uncharted territory. Not only did the ice-infested waters of the Northern Sea Route involve new marine risks, but the waters of this route also involved the Russian Federation, which was only just emerging from its lengthy isolation and, as result, would present private industry with a large number of unknown factors. In addition, it was also known that the marine insurance industry, although immensely practical, responsive and innovative, had little experience in reacting to challenges that, at this stage, would be theoretical and hypothetical. Although the industry had some limited experience with Russian operations in northern waters, the idea of using the Northern Sea Route for regular international transit, possibly throughout the year, was entirely new.

4. As a result, it was decided that the sub-project's research would have to consist not only of developing an adequate risk coverage knowledge base for INSROP itself, but also to

determine what information the insurance sector would need in order to make rational risk coverage decisions. This would require contacts with most of the major insurance markets and, at the same time, provide decision makers in such markets with basic information about INSROP. In retrospect, it appears that the latter factor would become of critical importance for the sub-project specifically and INSROP generally.

5. In order to carry out its work the sub-project group established the following research objectives:

a.) Northern Sea Route Overview: to gain an overview of Northern Sea Route region's natural conditions, ice navigation, environmental factors, trade and commercial shipping aspects, and political, legal and strategic factors;

b.) Northern Sea Route History: to examine the history, longer term statistical results, and actuarial records of vessels and cargoes operating in the region;

c.) Northern Sea Route Marine Insurance Interests: to identify and establish contact with hull and machinery, cargo, and liability (P&I) underwriters and the principal marine insurance brokers who may have an interest in the projected INSROP "market";

d.) Northern Sea Route Shipping and Ancillary Interests: to identify and establish contact with shipping companies, ship construction companies, marine surveyors, shipping agents, maritime law firms and other parties who may have operational experience and/or an interest in the Northern Sea Route;

e.) The Northern Sea Route's Initial Knowledge Base: to develop an initial knowledge base, drawn from the above work, to provide INSROP generally, and the various marine insurance, shipping and ancillary interests specifically, with an initial feasibility study on the provision of risk coverage.

C. NORTHERN SEA ROUTE OVERVIEW

6. The marine insurance sub-project worked within INSROP's overall research programme consisting of four sub-programmes:

i.) Natural Conditions and Ice Navigation;

ii.) Environmental Factors;

iii.)Trade and Commercial Shipping Aspects of the Northern Sea Route; and,

iv.) Political, Legal and Strategic Factors.

These sub-programmes consist of approximately 70 sub-projects that are designed to examine specific aspects in considerable detail. The numerous working and discussion papers setting out the work of these sub-projects, and published by INSROP, form the best and most systematic knowledge and research base on the Northern Sea Route ever assembled. An important aspect of INSROP has also been its inter-disciplinary development. It was understood in the beginning that INSROP was not simply a thorough scientific exercise, but that it had very real and practical implications, that would require very significant economic decision-making on various levels.

7. In 1994, in the early stages of its work, the marine insurance sub-project circulated its

first working paper[1], that provided a general overview of the marine insurance sector, to the INSROP research groups. This paper was subsequently circulated more widely to other interested parties. The study not only provided the other INSROP research groups with an insight into the risk coverage factor, but also acquainted marine insurance, shipping and related interests with basic information on INSROP. Since then the sub-project has completed a number of other working and discussion papers[2], that have been published and widely circulated by INSROP.

8. The culmination of the first stage of INSROP was the first INSROP Symposium, held in Tokyo in October 1995. This symposium brought the bulk of the INSROP research groups together for the first time. The five-day meeting, coordinated by the Ship and Ocean Foundation (SOF) of Japan, involved researchers from the three INSROP supporting states: Japan, Russia and Norway, as well as from Finland, Canada, Germany, the United Kingdom, and the U.S.A. Some 60 papers on all aspects of INSROP's four principal research areas were presented.[3] These presentations summarized the research carried out by INSROP during its first two years and, at the same time, coomprised the first systematic compilation of a knowledge base on the Northern Sea Route.

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[1] Torrens, D.L., Marine Insurance for the Northern Sea Route. INSROP Working Paper IV.3.3. No.1-1994.

[2] Musin, V.A., Conceptual Grounds of Hull, Cargo and Shipowners' Liability Insurance when using the Northern Seaway. INSROP Working Paper IV.3.3. No.3-1994; Gold, E., Cantello, L.A., & Wright, P.L., Marine Insurance for the NSR: Towards a New Risk Regime? INSROP Working Paper IV.3.3. No.46-1996; Fakhry, A., Freezing Damage to Northern Sea Route Cargo: Liability and Insurance Considerations. INSROP Working Paper IV.3.3. No.72–1996; Musin, V.A., Marine Insurance for the Northern Sea Route. INSROP Discussion Paper, March 1997.

[3] INSROP Symposium Tokyo '95: Proceedings. INSROP-SOF 1996.

9. During the symposium, the SOF, one of INSROP's principal contributors, also presented the preliminary conclusions of the first INSROP experimental voyage from Japan to Norway in the summer of 1995. This voyage took the KANDALAKSHA, a Russian-flag, 15,000 DWT, SA-15 type, ice-strengthened vessel on a commercial voyage in 21 days, including time spent in ice and other scientific experiments. Although the voyage was principally undertaken for scientific and technical reasons, it provided clear and practical evidence that the Northern Sea Route was navigable in summer without ice-breaker assistance and would significantly reduce the normal Far East-Europe transit time. On the other hand, the various research results presented at the Tokyo Symposium, also identified a number of important problems and research gaps that would require further research attention during the next stages of INSROP.

D. NORTHERN SEA ROUTE HISTORY

10. The INSROP marine insurance research group realized from the beginning of its work that the gathering of historical evidence and statistical records of shipping operations along the Northern Sea Route would be a critical part of the required research. Furthermore, some actuarial records of marine insurance claims for ship and cargo operations in the region would also be essential. This has been a very difficult task and the information gathered is, at best, superficial and fragmented. The main reason for this difficulty is that the vessels and their cargoes, that have moved on the Northern Sea Route for well over 50 years, have been almost exclusively owned and operated, until relatively recently, by the government of the former USSR. These operations were carried out for the USSR's national interests and commerciality,

including risk coverage, was basically of secondary consideration. As the region was generally closed to non-USSR operations for much of its history, there is almost no information on "foreign" users of the route. There is one important, but recent, exception. Some Finnish interests have been operating from Russian Arctic ports via the Northern Sea Route for the past few years.[4]

11. Nevertheless, the various Russian shipping companies, that have operated and are operating in the region, have significant experience. In fact, it has been clearly determined that Russian seafarers are amongst the most experienced in the world when it comes to operations in ice-infested waters. Furthermore, the Russian ice-strengthened fleet remains the largest in the world and is also supported by the world's largest fleet of ice-breakers. Operational experience, throughout the year, is quite unique. However, in the past, marine losses in the region, no matter how caused, were generally simply passed on to and absorbed by the USSR government. Records, if they were kept at all, are simply not available.

12. One insurance area, in which some information is available, is in the protection and indemnity (P&I) liability area. This is due to the fact that Russian P&I insurance has, for many years been placed in the United Kingdom P&I market--principally with the U.K. P&I Club. Initial contacts with the U.K. P&I Club seem to indicate that the claims experiences with Russian Arctic operations have been "good".[5] The U.K. P&I Club also confirmed that, in their

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[4] Niini, M., "Experiences of Three Years of Oil Transportation in the Russian Arctic with a Western Fleet"; and, Backlund, A., "Seaborned Oil and Gas Transportation from Northern Russia". Ibid.

[5] The U.K. P&I Club reported one minor oil pollution incident, involving a stranding, in 1995.

opinion, Russian crews are well trained and reliable. On the other hand, there is almost no experience in terms of risk coverage with Russian vessels operating under normal commercial market conditions. However, all Russian shipping companies have now been "privatized" and have placed their risk coverage in the open market. Accordingly, better claims information will eventually become available. However, this will take time.

13. An important aspect of INSROP research, that was fully revealed at the Tokyo symposium, was that the Northern Sea Route was being increasingly considered from two separate aspects. Firstly, there is the traditional aspect--i.e. the route for transit from the Far East to Europe--to save 12-20 days of transit time, when compared to the route via the Panama or Suez Canals, which also involve substantial toll payments. This has been the main "selling point" of the viability of the route. However, it would also require some very significant "re-thinking" of existing ship operations. The newer aspect is the "opening up" of the vast resources of the Russian Arctic region to international exploitation. This development could only occur with adequate shipping services. Considerable evidence of the availability of significant oil, gas, mineral and a number of other natural resources in the region region has now been presented. However, access to most of these resources is almost universally difficult. Apart from ice-infestation for a great part of the year, some of these resources would have to be transported along shallow river systems to ports that are either primitive or, at this stage, almost non-existent. Nevertheless, the Russian government appears to be giving Arctic re-development some priority. Furthermore, for the industrial "North", access to these resources will, within a relatively short period of time, become essential.

E. NORTHERN SEA ROUTE MARINE INSURANCE INTERESTS

14. The INSROP marine insurance research group realized that any practicable response to adequate risk coverage for Northern Sea Route operations would, firstly, require direct contacts with the various marine insurance markets and interests. However, in addition, such markets and interests would need the fullest possible information on INSROP generally, and those aspects of importance for risk coverage specifically. The latter aspect was especially critical. The marine insurance industry is generally reactive rather than proactive. In other words, marine insurers are usually capable of responding to potential risks in many innovative ways, providing that such risks are in existence or about to become operative. On the other hand, the industry is not very comfortable with responding to theoretical ideas and hypothetical projects. This is one of the INSROP difficulties. Although the Northern Sea Route has been used for many years, any sustained use by non-Russian shipping is still very much in the theoretical stage.

15. The marine insurance research group has been fortunate in making contacts with most of the major marine insurance interests in the United Kingdom, Norway, U.S.A., Japan, Russia, and Canada. A full list of the these contacts is contained in Appendix I. These include hull and machinery, cargo and P&I underwriters, brokers, and related interests. During the 1995-1997 period, members of the marine insurance research group held about eighty meetings with these interests during some twenty visits to London, Moscow, St. Petersburg, Murmansk, New York, Oslo, Tokyo, Montreal and Vancouver. These meetings generally served to provide the various insurance interests with information on INSROP, and to determine interest in and requirements

for Northern Sea Route risk coverage. It was clear from the beginning that, with the exception of the U.K. P&I Club, which had over 25 years of experience with Russian ships operating in the region, and the various Russian insurance interests, that the marine insurance industry knew very little about the Northern Sea Route generally or INSROP specifically! In other words, one of the major tasks of the sub-project has been to acquaint the industry with the subject matter.

16. Accordingly, members of the research group held individual and group meetings in the various centres, as already indicated above. These meetings provided:

a.) an opportunity for the research group to fully describe INSROP;

b.) a forum for the various marine insurance interests to raise their own questions and concerns that, in turn, could be responded to by the research group;

c.) an insight into the criteria that the various insurance interests would require in order to assess the potential risk should coverage be requested.[6]

F. NORTHERN SEA ROUTE SHIPPING AND ANCILLARY INTERESTS

17. The marine insurance research group also realized that contacts with a number of shipping and ancillary interests would be essential. As a result contacts were made and meetings held with maritime law firms, marine surveyors, shipping companies, Arctic research and development groups, shipping agencies, energy companies, other cargo interests, shipping associations and international institutions, in London, Oslo, Moscow, St. Peterburg, Murmansk,

[6] The main criteria were already identified in an earlier study. See, Gold, Cantello & Wright, note 2 supra.

Helsinki, New York, Montreal and Vancouver. (See Appendix II) The same methodology of information exchange, as that utilized for the marine insurance interests, was used. In addition, contact was also made on a continuing basis with the three main INSROP supporters, the Fridtjof Nansen Institute (FNI), as INSROP's principal coordinator,in Oslo, the SOF in Tokyo, and the CNIIMF in St. Petersburg.

18. In 1996 the research group was asked to undertake a related project by one of INSROP's major private-sector supporters, the Norwegian-Finnish shipping/ship-construction group, Kvaerner Masa-Yards (KMY), through their Arctic Research and Development operation in Helsinki, Finland. KMY, is heavily involved in Arctic research and has the experience and capability to develop and build a new generation of vessels for Northern Sea Route operations. However, they were interested to determine if the INSROP research base, as it existed, could provide sufficient information for marine insurance to be realistically determined. In order to do this KMY presented the research group with two "hypothetical" vessels, that would require hull and machinery, cargo and liability insurance. One vessel was in existence, i.e. a Russian vessel of the KANDALAKSHA class, whilst the other would be a totally new vessel especially designed for the export of mineral resources from the Russian Arctic. (Appendix III)

G. THE NORTHERN SEA ROUTE'S INITIAL KNOWLEDGE BASE

19. As the INSROP Phase I period ends it is clear that the project has established a very significant Northern Sea Route knowledge base in all of its four major research areas: Natural

Conditions and Ice Navigation; Environmental Factors; Trade and Commercial Shipping Aspects; and, Political and Legal Aspects. Given that the project commenced with very little data, much has been achieved. An important by-product of this research has not only been the inter-disciplinary nature of the research, but also its multi-national approach. For the first time Russian data, previously unknown or unobtainable, has become freely available and Russian researchers and experts have been extensively involved in all aspects of the project. This should not be surprising. Russia has the most direct interest in the success of the Northern Sea Route. Not only would Russian vessels, ice-breakers and crews be centrally involved, but Russian resources, ports and ancillary services specifically and the Russian Arctic generally, would see significant development.

20. A large part of INSROP's research data has concentrated on important aspects related to ship design for ice navigation, ice-breaking criteria and ice-conditions. This research has shown that in more severe ice conditions, vessels will continue to require ice-breaker assistance. Furthermore, even in the summer season, vessels without ice-strengthening are at greatest risk. INSROP's environmental research has shown that the Arctic environment is significantly more vulnerable to oil and chemical spills, and that environmental factors, conceptual design and environmental impact assessment must be a prime consideration for navigation in the region. It was also shown that, despite severe land-based pollution in the Russian Arctic, the ecological safety of the region was being given high priority by the Russian government. In other words, it seems clear that vessel operations in the region will face environmental regulations at least as strict as elsewhere in the world. Nevertheless, a significant amount of this data will be very

valuable for the commercial and risk coverage decisions that will have to be made if the Northern Sea Route is to become a reality.

21. INSROP research on commercial aspects is, at this stage, still relatively fragmented. There are three reasons for this. Firstly, the collapse of the USSR system has had a disastrous effect on the Russian Arctic regions, which have lost the guaranteed state support and investment they had relied on for so long, almost overnight. As a result, commercial development in the region is virtually at a standstill and the formidable Russian Northern Sea Route fleet, of merchant ships, ice-breakers and other support vessels, is basically "out of service". Secondly, although the Russian Federation welcomes foreign investment and joint-ventures for the development of the Russian Arctic, these have been very slow in coming forward. As already indicated, two Finnish projects, involving oil and gas exports from the region, have been in operation for some years. However, at this stage costs outweigh profits, and it is clearly a long-term venture. Finally, very little interest in the Northern Sea Route has so far been shown by shipping and cargo interests generally.[7] Although some of the INSROP research seems to point to the commercial viability and other advantages of the Northern Sea Route, this information does not seem to have captured the interest of the shipping industry sufficiently at this stage.

H. THE FEASIBILITY OF A NEW RISK REGIME: INITIAL CONCLUSIONS

22. It was clear, almost from the commencement of INSROP's research, that risk coverage

[7] This was emphasized in the opening address by the Director of the FNI at the Tokyo Symposium. Cited, ibid, p.23.

for Northern Sea Route operations would be one of the key foundations upon which the idea would either succeed or fail. Over four years of detailed research have amply confirmed this fact. During this period the marine insurance research group has made contact with all major marine insurance markets, covering hull and machinery, cargo and liability claims. As already indicated, this involved not only an assessment of the availability of coverage, but also providing insurance interests with information on the Northern Sea Route and its commercial possibilities. In other words, direct contacts with the insurance industry in London, New York, Moscow, Oslo, Montreal and Vancouver has opened the door to the possibility of developing a new risk regime. Although marine insurers have provided coverage for Arctic shipping operations for some years, this has occurred on a relatively irregular basis and has never formed a major part of the marine insurance market.

23. However, the Northern Sea Route is projected to become a regular trade route, both for the transit of vessels from and to the Far East and Europe, as well as for the export of Russian Arctic resources. If this is to become a reality, then traditional marine insurance coverage will probably not suffice and a new risk regime will have to be created. This will present marine insurers with a significant challenge. However, marine insurance is an industry that, in the past, has always responded well to innovative needs. It is an industry that has developed new risk regimes for super tankers and their larger VLCC and ULCC sisters, a whole series of high risk/high-value offshore oil and gas operations, LNG and LPG carriers, and highest-risk cruise vessels. Accordingly, the Northern Sea Route should not present marine insurers with risks that cannot be covered. Hesitation would only arise if the information needed to properly assess the

risk were incomplete.

24. The INSROP marine insurance sub-project has attempted to fill the information gaps for marine insurers throughout the project. However, the perceived weakness in this approach was that, at this stage, the Northern Sea Route is still a hypothetical theory. This problem was exacerbated by the fact that the shipping and cargo sector has not so far shown any significant commitment to "try" the route. In other words, the research group has been unable to present marine insurers with "real" ships and cargoes, to pass through the Northern Sea Route, on which a risk could be assessed. Even the Kvaerner Masa-Yards ancillary project, that presented relatively "realistic" hypothetical ship profiles, has had great difficulties in persuading marine insurers to actually "quote" on the information provided. Although some quotations were received from insurers in New York, Vancouver, Oslo and Moscow, these were generally rough estimates but, nevertheless, provide a general idea. (See Appendix IV) On the other hand, despite a number of attempts, the London market, which will be the real "key" to Northern Sea Route marine insurance, has so far reserved any decision on this part of the project.

25. INSROP research has not so far sufficiently determined the types of ships and cargoes that would transit the Northern Sea Route. Furthermore, the position of the Russian government, as well as the types nad reliability of the shipping services available along the route, remain unclear. There are many open questions:

a. Would shipowners be willing to risk high-value vessels, such as large, new-generation container vessels, on the route?

b. Would operations be year-round, or would vessels have to be re-positioned during the year?

c. Would a whole new generation of ice-strengthened vessels have to be purpose-built for the route?

d. Would the Northern Sea Route saving in passage time over the Panama/Suez Canal routes be a sufficient economic inducement?

e. Is the present Russian ice-strengthened merchant fleet capable of meeting initial chartering requirements and, if so, are these vessels capable, in terms of operational quality to meet the highest international requirements?

f. Would single-hull tankers and bulk carriers be able to operate along the route and in and out of Russian resource export ports?

g. Can the assistance of Russian ice-breaker support be guaranteed and, if so, at reasonable cost?

h. Would ship operations in close proximity to ice-breakers, including nuclear-powered vessels, require special navigational skills?

i. Is there sufficient interest by cargo exporting and importing interests in Japan and in Europe in the use of the route and its commensurate advantages?

j. Is there sufficient interest by European and Japanese energy and other resource importers in the development of Russian resources areas--including the ports and terminals?

k. Is there further discernible commitment by the Russian government, Northern Sea Route ports and municipalities and other interests in providing reliable services in the region, i.e. pilotage, towage, salvage, repair facilities, communications systems, etc.

26. These and many other questions need to be addressed if there is to be a further INSROP research phase. For example, the marine insurance research group, from its contacts in Tokyo, learned that Japanese shipping and resource interests would still need to be much better informed on the viability of the Northern Sea Route if they were to participate. It is obvious that the route must be of particular importance to Japanese interests if it is to become a reality. In other words, Japanese commercial commitment to the Northern Sea Route is a prerequisite! It is understood that the Ship and Ocean Foundation (SOF) of Japan, as one the principal INSROP partners, is planning a further experimental voyage along the Northern Sea Route in 1998-99. However, it is planned to use a non-Russian vessel and to navigate the route in the shoulder season rather than in mid-summer. This will be an important test--not least because it might also test the marine insurance market.[8]

27. Finally, it is also clear that INSROP's marine insurance sub-project needs to carry on its "missionary" work to inform the marine insurance and related shipping sectors of the importance of the project. In the end it is these contacts, already well-developed, that will lead to a reliable data base that could assist insurers in their risk assessment decisions. Some of this can be furthered through contacts with industry organizations such as the International Union of Marine Insurers (IUMI), the Institute of London Underwriters (ILU), the American Institute of Marine Underwriters (AIMU), The Insurance Institute of London, the International Chamber of Shipping (ICS), INTERTANKO, the International Group of P&I Clubs, the Petroleum Association of Japan, the Japan Shipping Exchange, and others. For example, it has been suggested that any

[8] It is understood that the mv KANDALAKSHA, on its test voyage in 1995, was not insured.

further study of this subject area must involve close cooperation with the Salvage Association which is heavily relied upon, particularly by the London marine insurance market. This work should provide the necessary combination of direct involvement, reliable knowledge base, tested data, and some assurance of commercial viability to turn an important, innovative international research project into economic reality.

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Peter L. Wright, C.Arb.: is a marine insurance consultant and marine arbitrator in Vancouver, B.C., Canada. He is Secretary of the Vancouver Maritime Arbitrators Association and a member of the Canadian Maritime Law Association. He has been directly involved in the marine insurance area for almost 50 years as broker, underwriters, consultant, lecturer and arbitrator. During this lengthy career he has established strong connections in the Canadian, London and Tokyo marine insurance markets. He is a Senior Research Associate with the Oceans Institute of Canada.

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The Oceans Institute of Canada/Institut canadien des océans: is the base for INSROP Project IV.3.3 (marine insurance). The Institute is a federally incorporated, non-profit organization established in 1976 with its head office in Halifax, N.S., Canada and a regional office in Vancouver, B.C., Canada. The Institute is considered to be Canada's centre of excellence dedicated to promoting responsible management of the world's oceans and sustainable development of marine resources. It carries out inter-disciplinary research into all aspects of ocean use and development.

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APPENDIX I

Marine Insurance Contacts

The INSROP marine insurance research group has established contacts with and consulted the following marine insurance interests during the period 1995-1997:

A. Marine Insurers

NORWAY:	Uni Storebrand Skadeforsikring A.S., Oslo
	Unitas Gjensidig Assuranseforening, Oslo
	Vesta Forsikring A.S., Oslo
RUSSIA:	ASKO-Petersburg Insurance Co., St. Petersburg
	Guideh Insurance Co., St. Petersburg
	Ingostrakh, Moscow
	Military Insurance Co., Moscow
	Rossiya Insurance Co., Moscow
	Zurich Insurance Co., Moscow
LONDON:	BMS Marine Reinsurance Services Ltd.
	Brookbank--Lloyd's Syndicate 861
	Camat Assurances
	Colonia-Baltica Insurance Management Ltd.
	Bernard Devereese--Lloyd's Syndicate 228
	Trevor Hart--Lloyd's Marine Syndicate 62

	Hiscox Syndicates Ltd.--Lloyd's Syndicate 625
	Sun Alliance International
TOKYO:	Mitsui Marine and Fire Insurance Co., Ltd.
	The Sumitomo Marine and Fire Insurance Co., Ltd.
	The Tokio Marine and Fire Insurance Co., Ltd.
	The Yasuda Fire and Marine Insurance Co., Ltd
CANADA:	Allianz Insurance Co. of Canada Ltd.
	Axa Pacific Ltd.
	CIGNA Insurance Ltd.
	Coast Underwriters Ltd.
	Harloch Williams Lemon Ltd.
	Liberty Mutual Insurance Ltd.
	MOAC
	Murray Underwriting Ltd.
	Oceanic Underwriters Ltd.
NEW YORK:	All American Slip Insurance Inc.
	American Hull Insurance Syndicate
	Atlantic Mutual Insurance Company
	Mutual Marine Office
	St. Paul Fire and Marine Insurance Comapny
	Somerset Marine Inc.

B. Marine Insurance Brokers

RUSSIA:	Interconsult
LONDON:	Alexander Howden Marine
	Bowring
	Jardine Insurance Services Ltd.
	Johnson & Higgins
	Nicholson Leslie Group
	Sedgwick
	Willis Faber & Dumas
JAPAN:	Alexander & Alexander of Japan Inc.
	Johnson & Higgins of Japan Inc.
	Marsh & McLennan Inc.
	Nicholson Leslie Ltd.
	Sedgwick Japan Ltd.
NEW YORK:	Aon Risk Services Inc.
	B. & P. International Inc.
	Johnson & Higgins Inc.
	Marsh & McLennan Inc.
	Sedgwick Marine and Cargo Services Inc.

C. P&I Clubs

NORWAY:	Assuranceforeningen Gard
	Assuranceforeningen Skuld
LONDON:	Britannia Protection & Indemnity
	U.K. P&I Club
	West of England P&I
JAPAN:	Japan P&I Club

D. Marine Insurance Associations

International Group of P&I Clubs

International Union of Marine Insurers (IUMI)

Institute of London Underwriters (ILU)

American Institute of Marine Underwriters (AIMU)

The London Insurance Institute

Canadian Board of Marine Underwriters (CBMU)

Association of Marine Underwriters of British Columbia (AMUBC)

The Salvage Association

APPENDIX II

Shipping and Ancillary Services Contacts

The INSROP marine insurance research group has established contact with and consulted the following shipping and related ancillary services during the period 1995-1997:

A. Shipping Lines

Canarctic Shipping Ltd., Ottawa

Far East Shipping Co., Moscow/Vladivostok

Fednav Ltd., Montreal

Fednav Asia Ltd., Tokyo

Kawasaki Kishen Kaisha (K-Line) Ltd., Tokyo

Mitsui O.S.K. Lines Ltd., Tokyo

Murmansk Shipping Company, Murmansk/Moscow

NYK Lines Ltd., Tokyo

Showa Line Ltd., Tokyo

B. Maritime Law Firms

(with experience in Arctic/Far East shipping)

Campney & Murphy, Vancouver

Clyde & Co., London

Ince & Co., London

Jurinflot, Moscow

Musin & Partners, St. Petersburg

Oland & Co., Vancouver

Sokolov, Maslov & Partners, Moscow

Yoshida & Partners, Tokyo

C. Organizations

Federation of Electric Power Companies of Japan

International Chamber of Shipping (ICS)

International Oil Pollution Claims Fund (IOPCF)

International Tanker Owners Pollution Federation (ITOPF)

Japan Energy Law Institute

Japan Shipping Exchange Inc.

Petroleum Association of Japan

D. Others

Exod-Dangerous Substances Experts Ltd., Moscow

Kvaerner Masa-Yards Arctic R&D, Helsinki

Mopac Shipping Agencies, Ltd., Tokyo

Tokyo Gas Co., Ltd, Tokyo

Vaara & Partners Independent Surveyors, St. Petersburg

APPENDIX III

INSROP/KAVAERNER MASA-YARDS PROJECT

This project is evaluating the INSROP data base so far collected. We require marine insurance quotes on an existing vessel as well as on a projected vessel on a voyage from the Russian Arctic via the Northern Sea Route to a western European port in the summer, early winter and mid-winter.

VESSEL 1: (existing vessel example) M.V. IGARKA , Lloyd's Reg. No. 8013027 Class SA-15 (sistership to the KANDALAKSHA*)
Built 1983, Wartsila, Finland. Ice Rank: 2
16,500 GRT; 14,700 DWT (Arctic); LOA 174 m;
Draft 9 m (Arctic) Geared Bulk/Containers
Power: 14,200 kW. Flag: Russian. Value: USD 10m.

VESSEL 2: (planned vessel to be built in Finland)
DNV Icebeaker Class 15. Capable of navigation without icebreaker support. Shallow draft for rivers.
Length: 241 m; Beam: 33 m; Draft: 9 m
DWT: 41,000 ; Cargo Capacity: 38,000 tonnes
Machinery: Diesel-Electric, 36 MW. Value: USD 70m.

CREW: Russian (It would be useful to know if this has a negative or positive impact on marine insurance)

CARGO: Ore (mainly Nickel) No value specified so far.

VOYAGE: From Dudinka on the Yenisey River, past Dikson, across the Kara Sea to the Kara Gate (between Novaya Zemilya and the Taimyr Peninsula) across the Barents Sea, along the Norwegian coast and discharge in Rotterdam. In ice the existing vessel will be assisted by a Russian icebreaker.

TIME: It would be helpful to obtain quotes for three different periods in the year, i.e.

a.) September (summer)
b.) early January (early winter)
c.) early April (severe winter)

* M.V. KANDALAKSHA carried out a succesful experimental voyage from Yokohama to northern Norway in August 1995.

INSROP/KVAERNER MASA-YARDS PROJECT

Information on projected vessel. Probably built in Finland

VESSEL: No Name
DNV Icebreaker Ice Class 15
Length: 241 m Breadth: 33 m Draft: 9 m
DWT: 41,000 Cargo Capacity: 38,000 tonnes
Machinery: Diesel-Electric, 36 MW
Value: USD 70m
Specially designed shallow draft vessel for river/NSR navigation without icebreaker assistance

VOYAGE: Dudinka on the Yenisey River to Rotterdam (Same as for the other vessel)

CREW: Russian (Differences if other ?)

CARGO: Ore (mainly Nickel) No value given so far

TIME: Would help to have quotes for three different periods, i.e. as for other vessel: September, January and April

INSROP/KAVAERNER MASA-YARDS PROJECT

This project is evaluating the INSROP data base so far collected. For the marine insurance sector they would like marine insurance quotes on an existing vessel as well as on a projected vessel on a voyage from the Russian Arctic via the NSR to a western European port in the summer, early winter and mid-winter. We should try to get quotes from the London, Tokyo and Norwegian markets. At this stage we have only received information on the existing vessel as follows:

VESSEL: M.V. IGARKA , Lloyd's Reg. No. 8013027
Class SA-15 (sistership to the KANDALAKSHA)
Built 1983, Wartsila, Finland. Ice Rank: 2
16,500 GRT; 14,700 DWT (Arctic); LOA 174 m;
Draft 9 m (Arctic) Geared Bulk/Containers
Power: 14,200 kW. Flag: Russian. Value: USD 10m.

CREW: Russian (It would be useful to know if this has a negative or positive impact on marine insurance)

CARGO: Ore (mainly Nickel) No value specified so far.

VOYAGE: From Dudinka on the Yenisey River, past Dikson, across the Kara Sea to the Kara Gate (between Novaya Zemilya and the Taimyr Peninsula) across the Barents Sea, along the Norwegian coast and discharge in Rotterdam. In ice the vessel will be assisted by a Russian icebreaker.

TIME: It would be helpful to obtain quotes for three different periods in the year, i.e.

a.) September (summer)
b.) early January (early winter)
c.) early April (severe winter)

Please let me know if you need more information.

APPENDIX IV

INSROP

KVAERNER MASA-YARDS PROJECT

Hypothetical Marine Insurance Quotations
(See also APPENDIX III)

NOTE: Underwriters in several major marine insurance markets were requested to quote on two hypothetical vessels and cargo. Quotes were received from underwriters in New York, Tokyo, Russia and Canada. London underwriters reserved any decision pending further available information. The following quotes represent a range of hypothetical quotations/indications for rates and conditions that, however, are in no way binding. They are simply indications of what might be quoted based on the limited information available. It should further be noted that quotations/indications were only received on the mv IGARKA, an existing vessel and, therefore, known in the markets. Full vessel and planned voyage/cargo details APPENDIX III.

HULL AND MACHINERY COVERAGE

Summer:

Indicated rates per voyage range:

From:

0.6% with USD 100,000 Deductible. Plus Ice Damage Deductible of USD 100,000 or 25%, whichever is larger, per claim.

TO:

5.00% with USD 100,000 Deductible any one accident except Total Loss. Institute Time Clauses (01-10-83). Warranted Technical Management/Supervision.

Indicated rates per annum range:

From:

1.275% with USD 150,000 Deductible plus Ice Damage Deductible of USD 250,000. Institute Voyage Clause-Hulls (01-11-95) with Classification and Ice Warranties.

TO:

2.5% with USD 150,000 Deductible each and every loss except Ice Damage USD 250,000 Deductible each and every loss. American Institute Hull Clauses - Warranted vessel Ice Classed and Maintained.

Winter: (NOTE: early winter and severe winter rates are combined as some underwriters have not differentiated)

Indicated rates per voyage range:

From:

1.2% with USD 100,000 Deductible plus Ice Damage and Machinery Deductible of USD 100,000 or 25%, whichever is larger for each claim. Institute Time Hull Clauses excluding 3/4 Running Down Clause.

TO:

10.00% with USD 100,000 Deductible any one accident except Total Loss. Institute Time Clauses - Hulls (01-10-83). Warranted that voyage is planned and carried out under Technical Management/Supervision.

Indicated rates per annum range:

FROM:

2.295% with various seasonal Deductibles each claim. Minimum Deductible USD 300,000. Institute Time Hulls - with Class, Construction, Crewing etc. Warranties.

TO:

2.58% with USD 150,000 Deductible plus Ice Damage Deductible of USD 250,000. Institute Voyage Clause - Hulls (01-11-95) with Ice Class, Crewing, etc. Warranties.

CARGO COVERAGE

Rates range from 0.45% (Summer) to 1.3% (winter). Conditions: Institute Cargo Clauses (B) and (C). Deductible ranges from zero to USD 25,000. Loading Surveys may apply.

Unitas
Gjensidig Assuranseforening

Oslo:
P. O. Box 1290 Vika
0111 Oslo, Norway
Telephone: 22 47 72 30
Telex: 7 10 76
Telefax: 22 42 38 67 Claims Dept.
Telefax: 22 41 50 43 Underwriting Dept.
Company code: 948352877

Kristiansand:
P. O. Box 489
4601 Kristiansand, Norway
Telephone: 38 02 76 00
Telex: 2 13 83
Telefax: 38 02 76 75

Oslo, 05.08.97

International Northern Sea Route Programme (INSROP)
c/o The Fridtjof Nansen Institute
P.O.Box 326
1324 Lysaker

Dear Sirs,

Re.: Review of «Marine Insurance for the Northern Sea Route: The Feasibility of a new Risk Regime. Some Initial Conclusions.» By Edgar Gold, John A. Cantello and Peter L. Wright.

It is an honour for me to be asked to review the INSROP report prepared by Edgar Gold, John A. Cantello and Peter L. Wright. The purpose of the present INSROP project has been to examine the feasibility of providing possible shipping activities in arctic waters with adequate risk coverage.

The three authors constituting the INSROP marine insurance research group have done an excellent job in analysing the situation. They have in a very good way described the problems and the issues which have to be discussed and possibly solved before one could expect risk takers to be seriously interested in participating in any Northern Sea Route coverage.

The insurance research group has experienced that the marine insurance market is not very responsive to theoretical projects. This, however, should not mean that cover would not be available once an actual risk is presented to them.

The insurance research group has been in contact with all major insurance markets and the conclusion which can be drawn seems to be clear - even though London has not yet responded: It would today be possible to find insurance cover for a ship with adequate ice strength and provided necessary ice-breaker support could be guaranteed. The question which apparently still remains open is the price (premium) which would be required.

Experience has shown that in lack of necessary statistical date the premium charged by any insurer tend to be excessive and only when history has learnt us that the risk in question is within certain limits the price is brought down to an acceptable level.

For the Northern Sea Route to be used by shipping operators it has to have some commercial advantages to existing alternatives. Consequently the INSROP-project is of vital importance by gathering as much information as at all possible. In lack of statistical data underwriters will be able to use the data collected by INSROP. In this respect the marine insurance research group has done a good job; a job, however, which has to be continued.

The marine insurance research group seems to be of the opinion that if the Northern Sea Route is to become a regular trade route traditional marine insurance coverage will probably not suffice and a new risk regime shall have to be created. For P&I this may perhaps be correct, but not that much for hull and machinery insurance. For hull underwriters it is more a question of gathering as much information as possible in order to evaluate the risk.

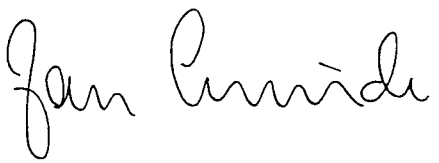
One risk which is not part of an owner's ordinary hull and machinery insurance and which is not dealt with by the research group is the loss of hire insurance. This particular risk will not automatically form part of an owner's insurance cover. For an operator utilising the Northern Sea Route it could, however, be very costly to have his ship out of operation for a prolonged period of time. The potential for such economical loss would definitely be higher in an area such as this where the availability of spare parts, adequate repair facilities etc. is not very good.

The loss of hire insurance covers loss of time attributable to the ship being wholly or partly incapable of working normally by reason of damage sustained. Such loss is, however, only recoverable provided that the damage is covered by the hull & machinery insurance.

Little interest in the Northern Sea Route has so far been shown by the shipping and cargo interests. However, a saving of 12 - 20 days for transit from the Far East to Europe combined with the fact that there seem to be considerable evidence of the availability of significant natural resources in the Russian Arctic area should mean that it is just a question of time before the Northern Sea Route will be commercially utilised.

I wish the INSROP marine insurance group all the best with future work to be carried out.

With kind regards,
Unitas



Jan Lunde
man.director

Authors' Response to the Review

The reviewer raises two important critical points which require our response:

1. The Northern Sea Route as a New Marine Insurance Risk

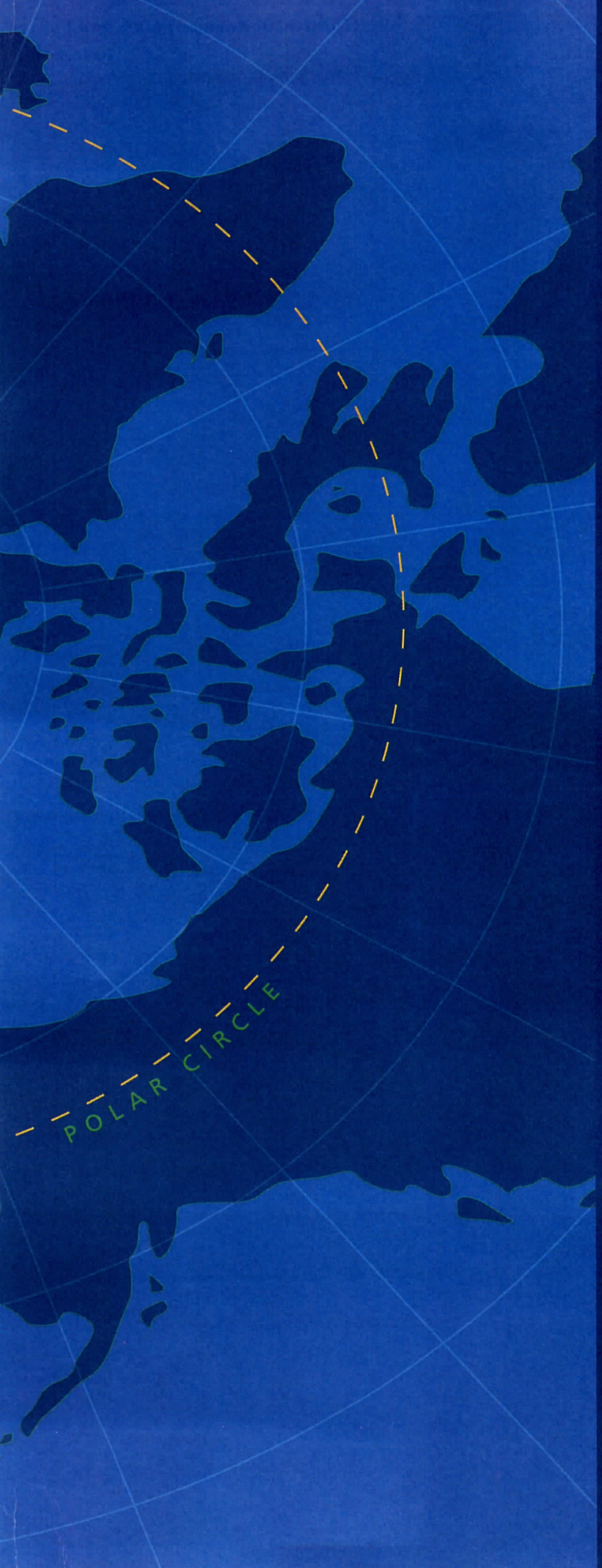
The reviewer states that this may be true for P&I insurance but that for hull and machinery underwriters it is more a question of having sufficient information to assess the risk. In our opinion it is still too early to judge if this view is correct. Although hull and machinery underwriters have an excellent record of accepting new risks, the Northern Sea Route may well be so unique that it will require some basic re-thinking of risk assessment even by the most innovative underwriters. The underwriting world has extremely little actuarial records of vessels operating in one of the most hostile environments imaginable. So far, Arctic and Antarctic navigational risks have involved relatively few vessels - many of which were highly specialized and/or purpose-built. However, INSROP envisages regular, scheduled navigation, perhaps even year-round, by all types of vessels, with and without ice-breaker support. As a result, it may well be correct to state that underwriters will accept the risk if they have the necessary information for proper assessment, but that data base may itself be required to be so extensive that it basically presents underwriters with a new insurance risk. In other words, what we are suggesting is that the Northern Sea Route is likely to be another milestone in the development of new marine insurance risks that have moved underwriting risks from sailing vessel to steamship; to tanker; to VLCC; to ULCC; to LNG vessel; to super cruise liner; to super container vessel etc. Yet all of these different types of vessels basically operated in the same navigational environment as vessels in ancient times - only size, type and operational capacity had changed. In the Northern Sea Route it is the navigational environment itself that provides the major challenge and, possibly, a new insurance risk.

2. Loss of Hire Insurance

The reviewer's point is well taken. This is an important risk that may well be of a special significance in Northern Sea Route operations where operational delays may often be the rule rather that the exception. However, it is one of a number of special risks that will have to be taken into consideration when the route begins to operate and the various types of delays can be assessed.

Edgar Gold
John Cantello
Peter Wright

18 August 1997



The three main cooperating institutions of INSROP

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 improvment 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 spesializes 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.