

**INSROP WORKING PAPER
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**Shipping and Marine Insurance
on the Northern Sea Route:
Conclusions 1993-1998**

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

INSROP International Northern Sea Route Programme



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Sub-Programme IV: Political, Legal and Strategic Factors

Project IV.3.3: Marine Insurance for the Northern Sea Route

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Title: Shipping and Marine Insurance on the Northern Sea Route: Conclusions 1993-1998

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What is an INSROP Working Paper and how to handle it:

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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.

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

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- The Norwegian Ministry of Foreign Affairs
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- Fridtjof Nansen Institute, Norway
- National Institute of Polar Research, Japan
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- Murmansk Shipping Company, Russia
- Northern Sea Route Administration, Russia
- Arctic & Antarctic Research Institute, Russia
- Norwegian Polar Research Institute
- SINTEF (Foundation for Scientific and Industrial Research - Civil and Environmental Engineering), Norway.

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SHIPPING AND MARINE INSURANCE ON THE NORTHERN SEA ROUTE:

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A. INTRODUCTION

It was quite apparent from its beginnings that the Northern Sea Route (NSR) would never move from innovative idea to practical reality if shipowners would not send their vessels through this new navigational shortcut. On the other hand, it was also quite clear that even if owners were willing to try the route, the risks and liabilities involved would require adequate marine insurance. An assessment of the latter aspect was the principal object of the International Northern Sea Route Programme (INSROP) Sub-Project IV.3.3 (Marine Insurance for the Northern Sea Route) which commenced operations in early 1993 and was concluded in late 1998.

In retrospect, it can be stated that the importance of this subject may well not have been fully recognized when INSROP was designed. The shipping industry and its risk assurance sector are conservative entities not known for changing well-tried and traditional operations quickly. Furthermore, the general economic difficulties of shipping generally, and the Asian region specifically, contributed to the fact that new, untried initiatives would not receive priority. In other words, it appeared unlikely that the shipping industry would develop an interest in the NSR on its own at this stage. On the other hand, the marine insurance industry generally reacts only to the demands of its clients and, therefore, rarely prone to develop new initiatives.

This paper consists of the final conclusions on the work carried out by Sub-Project IV.3.3 during the period 1993-1998. The principal terms of reference for the sub-project consisted of an examination of the marine insurance industry in order to assess if regular navigation on the Northern Sea Route would be insurable. This task

was somewhat expanded in 1996-1997 to include a preliminary assessment of the shipping industry's interest in utilizing the Northern Sea Route. It had become clear that it was not appropriate to simply examine marine insurance aspects without, at least, making a preliminary assessment of the shipping industry's interest in the new sea route.

B. SUB-PROJECT OPERATIONS 1993-1998

The marine insurance sub-project has, for the past five years, been centrally involved in acquainting the industry with INSROP. In other words, what was required was a significant amount of "missionary work" to assure the industry that INSROP was not some sort of esoteric, academic dream but a serious, innovative idea that could be of significant economic benefit to world shipping. At first, it was difficult to spread this message. Sub-project team members met with all sectors of the marine insurance industry, i.e. underwriters, brokers, insurance companies, P&I underwriters, lawyers, as well as the various insurance associations in most major centres where marine insurance was negotiated and written. Presentations on INSROP were made and information on INSROP's wide data base was supplied but, initially, progress was quite slow. In addition, one of the difficulties appeared to be that the shipping industry itself was not very much aware of INSROP and, therefore, had not taken a position on the subject.

By 1996-97 there were discernible changes. Some of this was due to the fact that marine insurers were finally becoming intrigued by INSROP's potential. For example, the sub-project was fortunate in being invited to address the world congress of the International Union of Marine Insurance (IUMI) in Paris in September 1997. IUMI is the principal international forum for the industry and chooses subjects for presentation very carefully. As a result, INSROP was not only being given critical exposure, but was also to raise significant interest before a very high level of decision-making insurers.¹ Another factor, that appears to have led to some changes in interest, seems to originate from the sub-project's decision to cast the "missionary net" a little wider by also making contacts with the shipping industry whenever

feasible. Although this was not strictly within the sub-project's original parameters, in the absence of other sub-projects addressing this aspect, the sub-project's terms of reference were widened sufficiently to accommodate this research. It was seen that simply concentrating on marine insurance, without at least attempting to see what interest shipping had in INSROP, would be insufficient.

In any case, this dual approach seems to have led to the changes that have occurred. Although some other INSROP sub-projects are examining commercial shipping factors, none of these appear to be making the direct contacts that have been developed by Sub-Project IV.3.3. During the final stage of Phase II of INSROP this work has, therefore, concentrated specifically on this issue whilst, at the same time continuing to develop marine insurance contacts. In other words, work continued in two different, although related directions. Firstly, the marine insurance contacts in London, New York, Tokyo, Canada and Russia have been further strengthened through meetings, presentations as well as interviews with the industry press. Secondly, although contacts with the Japanese shipping industry, which is so critical for INSROP's success have been established, a number of new contacts were also made during the final stage of the work. It had become clear that the shipping interests of the Republic of Korea, the People's Republic of China, Hong Kong, and Taiwan, could all benefit from INSROP. As a result, the sub-project made INSROP presentations to the principal shipping interests in these states during 1998.

It should be clear that regular Northern Sea Route shipping traffic is still some years away. A number of major obstacles would still have to be overcome, not the least of which is the continued real or perceived instability in Russia. However, INSROP's data base, consisting of over 150 working papers, proceedings and other publications, amounting to well over 10,000 pages, and covering all aspects of NSR navigation, now provides the maritime sector with the first-ever systematic collection of information on the NSR. At the same time, INSROP's marine insurance Sub-Project IV.3. appears to have opened direct lines of access to shipping and marine insurance decision-making levels in the key regions of the world. That should move INSROP forward towards practical reality.

During the period 1993-1998 the sub-project produced six working papers in addition to numerous other presentations and papers produced for other meetings and occasions. The first paper, *Marine Insurance for the Northern Sea Route*², published in 1994, provided a general overview of the marine insurance sector. This paper was designed to provide the other INSROP research groups with an insight into the risk coverage factor and, at the same time, acquaint marine insurance, shipping and related interests with basic information on the NSR. The Russian-based sub-project research group also completed another working paper in 1994 entitled *Conceptual Grounds of Hull, Cargo and Shipowners' Liability Insurance when using the Northern Seaway*.³ This paper first suggested that there existed limited capacity for NSR marine insurance in Russia. This fact would eventually be confirmed by research undertaken in Russia under the sub-project.

In 1996 a further study was published entitled *Marine Insurance for the NSR: Towards a New Risk Regime?*⁴ This paper provides a further assessment of the marine insurance requirements for the NSR. It included an initial assessment of the capacities of the major insurance markets to accept this type of risk. This was based on actual "field" research, carried out under the sub-project during the period 1993-1996 in the major marine insurance markets of Tokyo, London, New York, and Norway, as well as research in various Russian centres. In addition, the paper also reflected the large amount of complementary information available from the 1995 Tokyo INSROP Symposium.⁵

Also in 1996 a further Working Paper, entitled *Freezing Damage to Northern Sea Route Cargo: Liability and Insurance Considerations* was published.⁶ This paper consists of a practical examination of cargo insurance and liability problems that may be encountered in the carriage of goods through the NSR. In 1997 with the publication of a Working Paper entitled *Marine Insurance for the Northern Sea Route: The Feasibility of a New Risk Regime. Some Initial Conclusions*⁷, the sub-project had entered its final phase. This study drew some initial conclusions on the work that had been carried out since INSROP began in 1993. It had become clear that the NSR would present marine underwriters with a new risk regime, but not one

that the industry could not handle. This was the conclusion drawn through further contacts with insurance markets in New York, Moscow, Toronto, Vancouver and Oslo. The study indicated that, since work had commenced, the research group had made contacts with and/or presentations to: 36 insurers; 18 major insurance brokers; 6 liability insurers; 8 major insurance associations; 9 shipping lines; 8 maritime law firms with experience in Arctic shipping; and, 13 ancilliary associations and corporations, based in London, New York, St. Petersburg, Moscow, Murmansk, Oslo, Tokyo, Arendal, Helsinki, Montreal, and Vancouver.⁸

This practical research, nevertheless, showed that the principal weakness in INSROP would continue to be the fact that it was more hypothetical theory than factual reality. Although, shipping had used the NSR for many years, this had been confined to specialized, mainly Russian shipping.⁹ In other words, the research had not so far been able to present marine insurers with “real” ships and cargoes. Even the KANDALAKSHA experimental voyage carried out by INSROP in 1995¹⁰, was a more a test of propulsion technology, communications and navigation systems, ice strength, ship hull design, etc. than a commercial venture. Although the experiment was important and highly successful it needed further trial voyages in order that the commercial aspects could be tested. Although the Ship and Ocean Foundation of Japan, one of INSROP’s principal co-sponsors was planning a further test voyage for 1998-99, this test has, at the time of writing, been postponed indefinitely.

The lack of practical experience on the NSR and the need to test the acquired INSROP data was also the impetus for research work undertaken by sub-project III.07.5, which was assisted by this sub-project. This resulted in the publication of *Using the INSROP Phase I Data in a Transport Evaluation Process*¹¹ in 1998. This paper evaluated INSROP Phase I data through a case study method utilizing a hypothetical commercial shipping project. It was based on a realistic example: a West European vessel carrying nickel concentrate ore from Russian Arctic ports to Rotterdam. The project was divided into six components that examined: required investment; operating costs; income and competition aspects; operating risks; legal requirements and restrictions; and, marine insurance coverage factors. It should be

noted that the lead author of the study was a senior researcher with the Kvaerner Group, which appeared to have a vested interest in Arctic development due to its polar ship construction expertise and capabilities.

Finally, also in 1998, a further paper was published by the sub-project's Russian research group. This paper was entitled *Marine Insurance for the Northern Sea Route*,¹² and concluded the Russia-based research of the sub-project. This paper reached some important conclusions. It illustrated that the state monopoly in the Russian insurance sector had ceased to exist and that Russia was now a proper marine insurance market with many companies competing for business for various types of risk coverage. This has been assisted by a modernized legal system under the Civil Code of the Russian Federation. In other words, it is suggested that the Russian marine insurance market is today able to underwrite marine risks generally and NSR coverage specifically.

C. MARINE INSURANCE RESEARCH 1993-1998

In terms of its actual research work this sub-project had established the following objectives:

- a.) Northern Sea Route Overview
- b.) Northern Sea Route History
- c.) Northern Sea Route Marine Insurance Perspectives
- d.) Northern Sea Route Shipping and Ancillary Perspectives
- e.) Northern Sea Route Initial Data Base

Northern Sea Route Overview: In this area the sub-project drew from INSROP's extensive, overall research base that, during INSROP Phase I, consisted of four sub-programmes:

- i.) Natural Conditions and Ice Navigation;
- ii.) Environmental Factors;
- iii.) Trade and Commercial Aspects of the NSR; and,
- iv.) Political, Legal and Strategic Factors.

These sub-programmes consisted of over 75 sub-projects designed to examine specific subjects in some detail. As already indicated above, this work produced over 150 working papers and other materials, that form the best and most systematic knowledge and research base on the Northern Sea Route ever assembled. In fact, it is probably correct to state, that there has hardly ever been an aspect of the maritime sector that has been so well researched and fully documented.

INSROP Phase II, which operated for a two-year period, 1997-1998, narrowed this focus somewhat.¹³ The results of INSROP Phase I were now integrated in order to achieve a final "Integration Project" as well as a culminating "Simulation Project". (APPENDIX I) In addition, a few "Support Projects", from the original four sub-programmes, would also filter their results in this data base. The Support Projects consisted of those sub-projects that were considered to be of vital interest to the overall success of INSROP as a whole. The marine insurance sub-project was considered to be in this category. In other words, the Integration Project has not only produced a synthesis of the research results from the four sub-programmes during INSROP Phases I and II, but also completed a comprehensive, integrated and interdisciplinary final report on the state-of-the-art of the NSR. This report is based on the total research results of the five-year programme.

The Simulation Project consists of the results of eight practical simulations related to NSR operations:

1. Routes and Operational Infrastructure;
2. Natural Conditions along the selected Routes;
3. Potential Cargo Flow Analysis and Economic Evaluation;
4. Design of Vessels;
5. Collection of SA-15 Vessel Operation Data;
6. Ship Transit Velocity Simulation;
7. Legal and Environmental Evaluation of the selected Routes; and
8. Simulation based on year-round and seasonal Operation.

Northern Sea Route History: INSROP researchers generally, and the marine insurance research group specifically, understood from the beginning of the project, that historical evidence and statistical records of NSR shipping operations were an important aspect of the whole project. In marine insurance terms “what has gone before” and what the results were are essential parts of risk coverage. This is especially so in an area where little reliable actuarial data exists. The search for this information was extremely difficult and the information gathered is, at best, fragmented. Although ships of cargoes have moved along the NSR in excess of five decades, these operations have almost exclusively taken place in the “closed” setting of the former USSR at a time when the NSR was also closed to anyone else. As these operations were basically carried out as a component of the former USSR’s national interest, commercial success, let alone risk coverage, were strictly secondary considerations, if they were considered at all.

On the other hand, the various Russian shipping operations that have been using the NSR have significant practical experience. Furthermore, the Russian ice-strengthened fleet, although aging, remains the largest in the world and is supported by an impressive nuclear-powered and non-nuclear-powered ice-breaker fleet. Russian NSR experience at all times of the year, is quite unique. Nevertheless, there are few statistics on actual operations, problems encountered, groundings, collisions etc. Also, the information on support services, such as repair facilities, towage and salvage capability, pilotage, as well as the costs involved, is still scanty. For example, INSROP research has so far been unable to determine exactly the charges involved in using ice-breakers. Some information that has come forward seems to indicate that such charges may be unrealistically high. There is evidence that the ice-breaker fleet no longer receives sufficient state subsidies and that operations, therefore, would have to be carried out on a “cost recovery plus” basis. If this were so it would seriously affect commercial viability.

There is some historical experience in protection and indemnity (P&I) liability insurance coverage for NSR operations. Even in the days of the USSR, P&I insurance had been placed in the United Kingdom, principally with the U.K. P&I Club.

This club has good claims experience with their Russian members and has confirmed that the standard of competence of Russian seafarers is generally very high. Nevertheless, there is far less experience with Russian vessels operating under “normal commercial” conditions. However, as Russian shipping companies have all now been privatized, it is likely that more claims experience will become available.

Northern Sea Route Marine Insurance Perspectives: This was, obviously, the “heart” of the marine insurance sub-project’s research work. It was realized that potential insurers would need a reliable and extensive data base in order that risk coverage could be made available. Accordingly, the sub-project concentrated on providing the major insurance markets in London, Tokyo, New York, Norway and Canada with the fullest possible information on the NSR and on the results of INSROP’s research. As already indicated above, these contacts included hull and machinery, cargo and P&I underwriters, brokers and related interests. During the life of the sub-project almost 100 individual and group meetings with these interests were held, during over twenty visits to London, New York, St. Petersburg, Oslo, Tokyo, Montreal and Vancouver. In addition to the main purpose of describing INSROP, these meetings also provided a forum for the various marine insurance interests to raise their own questions and concerns as well as providing an insight into the criteria that insurers would seek in order to assess potential risk coverage requests.¹⁴

Nevertheless, one of the main difficulties, already referred to above, continues. Marine insurers are generally reactive rather than proactive. In other words, they are capable of responding to new risk coverage demands in many innovative ways. However, such risks must be in existence as tangible operations. On the other hand, insurers are not comfortable in responding to hypothetical or theoretical projects. This difficulty is exacerbated by the fact that the shipping industry has not so far taken a discernible position on NSR use. In other words, with a few specialized exceptions, shipowners have not so far requested quotes from marine underwriters for NSR coverage! Amongst these exceptions are Arctic operations carried out by Finnish¹⁵ and Canadian¹⁶ shipping companies in the

Russian and Canadian Arctic. Although, exact insurance costs for these operations are confidential, it is clear that they are significantly higher than in normal operations¹⁷.

Nevertheless, it is unlikely that marine insurers would refuse NSR coverage. On the contrary. Marine insurance is an innovative, highly competitive business that has always reacted positively to new market demands. As a result, the sub-project has determined from its contacts with the various markets, that marine insurance coverage will be available if and when required. Of course, questions such as premium cost, exceptions and conditions can only be determined when the potential risk is presented. It is also most likely that insurers, especially those in the leading London market, will require that some more specific investigations be carried out by marine insurance research groups such as the Salvage Association. This sub-project has suggested that the NSR is a “new” marine insurance risk. However, at least one experienced underwriter has disagreed with this and maintains that the NSR will simply be treated like any marine insurance risk, subject only to sufficient data being available¹⁸. New insurance risk or not, it does seem clear that marine insurance for the NSR will be available if and when the shipping industry wants to utilize the NSR.

Northern Sea Route Shipping and Ancillary Perspectives: At an early stage in the development of the various studies undertaken by the sub-project, it was realized that contacts with a number of shipping and ancillary interests would be essential. As a result, contacts were established with many shipping companies, shipping associations, maritime law firms, marine surveyors, average adjusters, energy companies, Arctic research groups, cargo interests, and international institutions in London, Oslo, Moscow, St. Petersburg, Murmansk, Helsinki, Montreal, Ottawa, and Vancouver.¹⁹ In addition, the sub-project was also requested to assist a related research project undertaken by one of INSROP’s major private-sector supporters, the Kvaerner Masa-Yards group, through their Arctic Research and Development Department in Helsinki. This project was designed to actually test the then available INSROP data in a projected shipping operations. As already indicated, this study was later published by INSROP.²⁰

D. SHIPPING INDUSTRY RESEARCH 1996-1998

It was already quite apparent in the early stages of the sub-project's research work, that simply examining possible access to risk coverage without a closer examination of the shipping sector that would operate on the NSR, would not be enough. This factor became increasingly clear in the latter stages of the research in INSROP Phase II. As a result and, as already indicated above, the research base of the sub-project was broadened with the acquiescence of the INSROP directorate. One of the problems identified in the overall INSROP research was the lack of a sub-project that would specifically examine potential ship operators that might utilize the NSR. Such a project would have been complementary to this sub-project, as shipping cannot operate without risk coverage and vice versa. However, although INSROP had developed at least 11 sub-projects addressing various NSR shipping aspects, these all concentrated more on specific commercial matters²¹ instead of making a more comprehensive inquiry into the global shipping industry's actual interest in utilizing the NSR. In retrospect, this may well be perceived to be a weakness in the overall INSROP research plan. Nevertheless, it is suggested that this sub-project was able to at least partially address this problem through the broadening of its research base.

It was, therefore, decided that the sub-project's research in its final phase would concentrate more specifically on contacts with the major, regional shipping industries that could derive benefits from the NSR. These would be the shipping sector based in Japan, Hong Kong, Taiwan, South Korea and China. These Asian states all operate major fleets in addition to their important international trading status. In addition, it was also felt that at least some superficial contacts with the Greek shipping sector, as a major, international "cross trader" would also be useful.

Japan: As one of the principal INSROP supporters, from the very beginning Japan appeared to have a vested interest in the NSR in terms of its usefulness as a rapid transit route to and from Japan, as a viable alternative to the Suez and

Panama Canals and the Russian rail “land bridge”. In addition, there also appeared to be some interest in NSR technology by the Japanese ship construction sector. In order to explore this further the sub-project held a briefing seminar in Tokyo in November 1996. This meeting was attended by 12 leading members of the Japanese shipping, energy, and marine insurance sector.²² This meeting was extremely interesting. It indicated, firstly, that these sectors were almost unaware about INSROP as it appeared that the Ship and Ocean Foundation, the main Japanese INSROP cooperating group had not briefed these sectors on the project. As a result, these sectors had not really taken a position on the subject. In fact, there are to date relatively few INSROP research results that examine Japanese interests in the NSR in trading terms.²³ Nevertheless, there was cautious interest in INSROP. However, the major shipping lines represented were quite clear in stating that re-positioning their valuable vessels via the NSR would require significant further study and, perhaps, would only be feasible as a “last resort” if other sea routes were not available. There was more interest in Russian energy sources, but also the realization that in a global market awash with cheap energy, the investments required and the continuing instability of Russia would also place that development “on hold”. It was originally expected that the sub-project would plan a further meeting in Japan in 1998, but this was ultimately not considered essential.

Hong Kong: The changed status from British crown colony to Special Administrative Region of China has had little effect on Hong Kong’s importance as a shipping centre. In fact, it appears that the close relationship between China and Hong Kong shipping that, had already existed for a long time, may be even more consolidated today. Nevertheless, Hong Kong as a shipping hub is starting to receive some competition from some of China’s “rapid-growth” port cities—especially Shanghai. In addition, the overall Asian economic downturn has not spared Hong Kong, although it appears that it has fared rather better than some other states in the region—at least at this stage.

The Hong Kong shipping industry has long had a reputation for innovation and a lack of fear of risk taking. It is, of course, a major centre, with a number of the

leading global shipping companies based there. In terms of throughput the Hong Kong container port is also amongst the leading ones in the world. Accordingly, it was most appropriate to present some of the INSROP findings before a Hong Kong shipping audience. This was arranged in August 1998 by the Hong Kong Shipowners' Association (HKSOA) which staged a special seminar attended by over 60 of its members as well as a number of guests drawn from other parts of the maritime sector.²⁴ It was apparent that little was known about INSROP and the seminar served, in part, as a means to acquaint the audience with INSROP. There was considerable interest in the project and spirited discussion. As expected, it was premature to reach any conclusions on the Hong Kong shipping industry's willingness to "try" the NSR. It was clear that more information would be required before valuable vessels, especially those engaged in the liner trade, could be repositioned via the NSR. Nevertheless, views were also expressed that the route might be of interest to the bulk and/or lower-value cargo sector.

Taiwan: Despite its rather ambiguous status as a nation, Taiwan continues to be a major Asian economic power as well as a major ship-owning centre. Furthermore, Taiwan has so far weathered the Asian economic turmoil far better than any other state in the region. As a result, it was also considered appropriate to acquaint Taiwan's shipping sector with INSROP. This was arranged by the National Association of Chinese Shipowners (NACS) through a seminar attended by approximately 25 persons from NACS and several of the leading Taiwan-based shipping companies. In fact the seminar was held in the head office premises of Evergreen International Marine Corporation, one of the largest container shipping companies in the world.

Once again, it was immediately apparent that INSROP was not known in Taiwan and the seminar served mainly to disseminate INSROP information. It was made clear that the Evergreen/Uniglory group, which was involved in round-the-world container shipping operations on very tight schedules, would not easily reposition vessels for NSR transit unless there were very clearly demonstrated economic advantages. Furthermore, a further requirement would be to provide

reliable, tested evidence that the time saving would be real. It was also indicated that the Evergreen Group was investing quite heavily in the Panama Canal region in order to assure its position through this route.

Republic of Korea: For many years South Korea has been another major “player” in the Asian maritime field due to its formidable ship construction and ship-operating sectors. Like Japan, Korea also depends on the energy “lifeline” from the Middle East and elsewhere and is a major importer of other natural resources from many parts of the globe. Korea also has a significant manufacturing base ranging from heavy industry, through automobiles to textiles and electronics. As a result, it was also appropriate to brief the South Korean maritime sector on INSROP. It was interesting to note that Korean maritime and shipping policies are within the jurisdiction of the Foreign Ministry which, through its Institute of Foreign Affairs and National Security funds and operates a special Sea Lanes of Communications Study Group (SLOC).

An INSROP briefing seminar was arranged in Seoul by the Korea Shipowners’ Association (KSA) in cooperation with SLOC and attended by approximately 30 persons. Those attending came from the KSA, SLOC, several major shipping companies, the Ministry of Maritime Affairs and Fisheries, and the Korea Maritime Institute. Once again, it was apparent that nothing was known about INSROP and there was interesting discussion followed by many questions. It was stated that Korea was undergoing very severe economic difficulties which had cut deeply into all sectors of the economy. The shipping sector had been seriously affected. Nevertheless, Korea still depends totally on energy and other resource imports and its export industry was as dependent upon shipping as ever. Although, it was, again, clear that Korean shipowners would not “rush” to the NSR, they were most interested to learn about a potentially viable alternative to the traditional routes. It was also noted that Korea is an Antarctic research operator with significant polar experience.

China: Despite its very painful transition from central planning to free market economy, China is today a “superpower in the making”. This is especially so in terms

of sea trade, ship construction and ship operations. China has also not been totally spared from the economic downturn besetting Asia, although at this stage it is doing better than first expected. Chinese trade is growing quickly in almost all areas, not least in the oil and gas sector. Low labour costs still ensure an important manufacturing sector and the overall economic "open door" policy appears to encourage investment in many sectors. In the shipping area, government-owned and private-sector joint venture shipping companies operate competitively and many new ports along the country's lengthy coasts are being developed and modernized. Furthermore, the Chinese shipbuilding industry has also moved into the forefront with an international order book from all parts of the world.

As a result, it was appropriate to arrange an INSROP briefing seminar in Beijing in August 1998. It would also have been useful to stage a similar event in Shanghai, but time and budget did not permit this. The Beijing seminar was arranged by the China Institute for Marine Development Strategy. This institute, which reports to the Ministry of Transport and Communications, is China's leading research and policy development "think-tank" in the marine area. The seminar was attended by approximately 30 members of the Chinese maritime sector, including the principal shipping companies, as well as several senior members of various involved government agencies. As expected, there was no knowledge of INSROP and there appeared to be a fair amount of interest in the project. In fact, it became apparent that it was quite likely that one or two studies to examine the NSR and its implications for China would now be undertaken. Like South Korea, China also has polar interests as well as experience in Antarctic research.

Earlier in 1998 it was also possible to provide an informal briefing to several members of the Greek ship-owning community. As already indicated, Greece continues to be a major shipping state, especially in terms of tanker and bulk carrier tonnage. As a result any alternative sea route that provides an economic advantage is of interest to Greek shipowners. The future of the Panama Canal, after the end of the millenium, current delays in the Panama Canal, as well as the political uncertainties in the Suez Canal region, were clearly expressed concerns for this

shipping sector. It was hoped that the INSROP data base would be freely available so that NSR information could be consulted when required for future decision-making.

It should by now be apparent that the sub-project's "excursion" into the shipping sector was very much worth while. It had become clear that the shipping industry had been insufficiently involved in INSROP and that, at the very least, a thorough briefing on the project was required. At this stage, therefore, the major shipping centres in the world know something about INSROP as well as where to go to find out more!

E. RESEARCH RESULTS AND DATA 1993-1998

The Northern Sea Route Initial Knowledge Base: After five years of concentrated, inter-disciplinary research INSROP has established the most advanced Northern Sea Route knowledge base ever assembled. Despite the fact that very little data was available when INSROP commenced in 1993, this has significantly changed in all four major research areas: Natural Conditions and Ice Navigation; Environmental Factors; Trade and Commercial Shipping Aspects; and, Political and Legal Aspects. In addition to the inter-disciplinary nature of the research carried out, data has also been assembled through the multinational approach of INSROP. Russian data, previously unknown, unobtainable or restricted had generally become available and Russian researchers and experts have been extensively involved in all aspects of the project. Russian input and interest is, of course, not surprising as Russia has the most direct interest in the success and viability of the Northern Sea Route. Not only would Russian vessels, ice-breakers, crews and pilots be centrally involved, but Russian resources, ports, services and infrastructure specifically and the Russian Arctic region generally would be direct beneficiaries.

That is not to say that there were no problems regarding data development. The four research areas developed their data acquisition somewhat unevenly which

reflects their different disciplinary cultures. For example, a significant part of INSROP's research data has been assembled on important aspects related to ship design for ice navigation, ice-breaking criteria and ice conditions. Much of this type of data is, of course, acquired through traditional, systematic, scientific and technical research. It was concluded that in more severe ice conditions, vessels navigating the Northern Sea Route will require ice-breaker assistance. Furthermore, even in the summer season, vessels without ice-strengthening are at greatest risk. In general, the data supports the construction of vessels specially built or strengthened for ice navigation. This has obvious implications for potential Northern Sea Route users.

Environmental Research: INSROP's environmental research provides data that confirms that the Arctic's environment is significantly more vulnerable to oil and chemical spills. As a result, it is shown that environmental factors, conceptual design and environmental impact assessment must be a prime consideration for navigating the Northern Sea Route. Useful data on particularly vulnerable areas, fauna and flora and other aspects has also been assembled. It was concluded that despite the very severe land-based and in-shore pollution in the Russian Arctic, that the ecological safety of the region was being given a very high priority by the Russian central and regional governments.²⁵ Research also concluded that navigation in the region will face environmental regulations at least as strict as anywhere in the world. However, the INSROP environmental data assembled will provide a very valuable basis for risk coverage, marine spill control, vulnerable areas, and environmental administration in the future. Undoubtedly, additional scientific research on the subject in Russia and elsewhere will further strengthen this knowledge base.

Commercial Aspects Research: As already indicated, INSROP's research on commercial aspects of Northern Sea Route utilization was somewhat fragmented. There were three reasons for this: Firstly, the collapse of the USSR central planning system has had a particularly disastrous effect on the Russian Arctic regions which, almost overnight, lost their guaranteed state support and investment. The continuing economic difficulties in Russia today have further exacerbated this decline as the "free-market" system has not yet been implemented. 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 idle. Ports and other ancillary services are also steadily deteriorating. Secondly, although Russia openly welcomes and encourages foreign investment, joint-ventures and other business and industrial activities for the Russian Arctic, these are developing only slowly. As already referred to above, two Finnish projects, involving oil and gas exports from the region have been in operation for some years. However, even these projects have yet to show a profit. Contacts with the Japanese energy industry revealed very little appetite for development and investment in the region at this stage. Finally, as already indicated in some detail above, there is at this stage very little interest in utilizing the Northern Sea Route by international shipping and cargo interests. Although INSROP data reveals the commercial viability and other advantages of the Northern Sea Route, this information has not, at this stage, captured the full interest of the industry.

Political and Legal Aspects Research: INSROP's fourth major research area on Political and Legal Aspects has provided a rich variety of data ranging from geo-political to sociological aspects. It was generally concluded that some confusion still exists in terms of administrative responsibilities between central and regional governments which could cause difficulties for those using the route.²⁶ It has also been shown that, in terms of international law, some problems still persist regarding maritime boundaries²⁷ and international straits²⁸. A significant part of the data reveals concerns for the protection of the rights of native and indigenous peoples in the Russian Arctic region²⁹. Much of this work breaks new ground and reveals an aspect that was really not considered under Russia's former regime. It is shown that, although the development of the Northern Sea Route will bring with it needed economic development for the region³⁰, the social, cultural and environmental impact on the indigenous peoples must be fully considered.³¹

INSROP's collected data will be consolidated in the final stages of the project in 1998-99 in to a Geographical Information System (GIS). The GIS will be an extensive data base for the whole Northern Sea Route area, providing data for

analytical, statistical and presentational purposes. It will contain data from all INSROP sub-programmes, including all available information on: climate, ice conditions, shipping lanes, indigenous peoples, wildlife, ports, economy and infrastructure, commercial aspects, legal, administrative and jurisdictional aspects etc. In addition, the data collected separately by the Norwegian, Russian and other international partners, will be merged in to a single data base that will be available "on-line"³² for external users. Such users will be able to obtain documentation, charts and maps, query and select data in an interactive manner, analyze data, and print the results.

F. CONCLUSIONS

In the marine insurance research group's earlier working paper: *Marine Insurance for the Northern Sea Route: The Feasibility of a New, Risk Regime. Some Initial Conclusions*³³, eleven open questions arising out of INSROP's research were posed. These questions can now be answered, although the responses may not, in every case, be totally satisfactory:

i.) *Would shipowners be willing to risk high-value vessels, such as large, new-generation container vessels, on the route?* The answer is "not yet". At this stage, there is little indication that shipping companies are considering NSR use, particularly for high-value vessels. Such vessels are generally not constructed for navigation in ice. Furthermore, the shipping industry has yet to carry out its own economic analyses of the actual economic advantages of the route.

ii.) *Would operations be year-round or would vessels have to be re-positioned during the year?* The answer follows on from the response in i.) above. Although limited low-value, bulk cargo operations may be considered, it is unlikely that even such operations would take place on a year-round basis. For container vessels, one of the main objections appears to be the need to re-position vessels at least twice during the year. One of the suggested alternatives is a feeder-vessel system for the NSR. However, this would require transshipment facilities at either end.

iii.) Would a whole new generation of ice-strengthened vessels have to be purpose-built for the route? The answer depends on how much the route would be used. If the route were only utilized during the relatively ice-free summer season, ice-strengthening may not be a requirement. However, for longer seasonal use, purpose-built vessels would be required. It is also likely that marine insurers may require ice strengthening for navigating the NSR at any time. Much would depend on how much ice-strengthening is required. Many vessels today already are classed for some ice navigation.

iv.) Would the Northern Sea Route saving in passage time over the Panama/Suez Canal routes be sufficient economic inducement? The answer is not yet known. Although the actual time saved can easily be transposed into economic advantage, the hidden costs require further research by the shipping industry. Costs of ice-breakers, ice-pilots, possible delays, cargo damage due to temperature variations, possible ice-damage, higher hull and machinery and liability insurance costs, etc. must be set off against the passage time saved.

v.) 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? The answer is “yes, in the short term”. Russia has a significant ice-strengthened fleet, crewed by competent personnel with long Arctic navigational experience. However, in general, these ships are today on average 12-15 years old and, due to the general difficulties in Russia, deteriorating rapidly. Many vessels have been idle for some time and maintenance has been minimal at best. Some Arctic resource operations, such as the Finnish Neste project is, in fact chartering Russian vessels at this stage. Furthermore, INSROP’s experimental voyage utilized a Russian vessel with very positive results.

vi.) Would single-hull tankers and bulk carriers be able to operate along the route and in and out of Russian resource export ports? The answer is again: “Yes in the short term”. Russian single-hull tankers and bulk carriers are presently operating in

the region. However, it is likely that new IMO requirements will curtail such operations in the future. It is also likely that marine insurers will have some input into such decisions. Furthermore, increasingly strong Russian environmental regulations may also require vessels with double hulls and other new safety innovations in order for vessels to operate on the NSR.

vii.) Can the assistance of Russian ice-breaker support be guaranteed and, if so, at reasonable cost? Russia has one of the best ice-breaker fleets in the world ranging from the most powerful nuclear-powered vessels to small river vessels. This fleet would be quite capable of guaranteeing adequate support for all foreseeable NSR navigation for some years to come. On the other hand, the second part of the question cannot be answered at this stage. The Russian ice-breaker fleet presently receives only very minimal government support and is, accordingly, required to look for "cost-recovery". What this actually means is, at least at this stage, not clear. Full cost recovery for some of these very expensive vessels would make NSR operations very uneconomic. This requires clear government policy responses which have not been forthcoming at this stage.

viii.) Would ship operations in close proximity to ice-breakers, including nuclear-powered vessels, require special navigational skills? The answer is clearly "yes". Most mariners are not trained in this area and would require special training and/or utilize Russian ice-pilots whilst navigating the NSR.

ix.) Is there sufficient interest by cargo exporting and importing interests in Japan and Europe in the use of the route and its commensurate advantages? At this stage the answer is "no". As indicated elsewhere in this paper, cargo interests at this time have little awareness of the NSR. In general, such interests are mainly concerned in having their goods delivered as quickly as possible. Accordingly, should shipowners decide to use the route and, thus, deliver cargoes more quickly it would be supported by cargo interests. On the other hand, if there are additional cargo insurance costs, this interest may be lessened. For example, the Russian transcontinental railway "land-bridge", which started with significant promise and considerable support from

cargo interests has, in the recent past experienced cargo theft on a grand scale raising cargo insurance premiums significantly.

x.) 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? There is limited interest by European interests as shown by the Finnish operations and the ArcDev project, partially funded by the European Union³⁴. On the other hand, there is as yet no discernible interest in this development by Japanese or other Asian interests. This is despite the fact that significant energy and other resources have been clearly identified in the Russian Arctic. It is felt that this lack of interest may only be a reflection of the general Asian economic difficulties, a plentiful supply of resources elsewhere, the uncertainty of the Russian political system, and the significant investment costs required.

xi.) 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.? The answer is “yes, probably”. However, as already indicated elsewhere in this paper, this is also an area where further clarification is required. The Russian system generally and the Arctic regions specifically, are very much affected by the general disarray that pervades Russia at this time. This leads to confusion amongst jurisdictions, overlapping or non-existing responsibilities and, almost everywhere, a chronic shortage of funds. For NSR navigation this is a critical area, as shipowners and their marine insurers will demand reliable, predictable services along the route before regular navigation can take place.

The overall conclusion of INSROP Sub-Project IV.3.3 leads to two final questions:

What is the likelihood of regular navigational use of the Northern Sea Route in the foreseeable future? As already indicated elsewhere in this paper, the sub-project explored this question at some length in various parts of the world with most of the major shipping interests. At this stage it is too early to provide an answer to this

question. However, the likelihood of “regular” use is probably still some years away and would require further significant research by the shipping industry in terms of economic and operational advantage, the suitability and re-positioning of vessels, cargo interests etc. However, it is also clear that priorities can change rapidly. Political or operational problems in the Panama Canal after its reversion to the Republic of Panama at the end of 1999, another crisis in the Middle East affecting the Suez Canal, and problems in Russia affecting the Asian “land-bridge” railway connection, could all quickly make an alternative sea route more attractive. This has also recently been recognized with the revival of the Kra Canal proposal across the narrowest part of Thailand that would reduce the distance between the Gulf and East Asia by some 2,000 miles but would cost at least USD 20 billion.³⁵ As already indicated, the development of Russian Arctic resources, which has already commenced, will also result in more shipping in the region. The full development of these resources, however, depends on global energy prices, the willingness to invest in the Russian Arctic region, and the overall stability of Russia in the coming years.

The final question takes us back to the basic terms of reference of Sub-Project IV.3.3. *Would the international insurance market be willing and able to underwrite Northern Sea Route risks?* **The answer is a clear “yes”.** As indicated throughout the sub-project’s research output, marine insurers are innovative and responsive to the demands and requirements of the shipping industry. In that respect NSR risks will be treated no differently, but will require further development of the data base already assembled by INSROP. Marine insurers will require their own studies, undertaken by the Salvage Association, and instructed by the Joint Hull Committee of the Institute of London Underwriters, which will respond to the specific needs and demands of underwriters and which will, at the same time, take account of the special risks involved in navigating Arctic waters. In other words, if shipping wants to use the NSR, insurers will provide the necessary risk coverage. Although the traditional, alternative sea routes through the Suez and Panama Canals and new routes, such as the Russian land-bridge, are presently still available, political and other problems may encourage shipping to seek a new navigational frontier—the

Northern Sea Route—in the new millenium. The INSROP data will provide an excellent guide line at this time.

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- ¹⁰ Yamaguchi, H. "NSR Sea Trial Test", Tokyo Symposium Papers, note 5 supra
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- ¹³ INSROP Project Catalogue 1998
- ¹⁴ The main criteria were already enumerated in an earlier Working Paper, note 4 supra
- ¹⁵ See, M. Niini, "Experiences of Three Years of Oil Transportation in the Russian Arctic with a Western Fleet"; and, A. Backlund, *Seaborne Oil and Gas Transportation from Northern Russia*". Note 6, supra
- ¹⁶ Canarctic Shipping Inc., of Ottawa, Canada, operates 6 ice-strengthened vessels
- ¹⁷ Neste Oy of Helsinki, Finland, which has operated the tankers UIKKO and LUNNI under Ice Class 1A Super marine insurance conditions, and now operates the UIKKO in the Arcdev project, disclosed that hull and machinery coverage operates with a much higher than normal deductible. However, the choice between higher deductible or higher premium was made due to the fact that there has not been any major hull damage in past operations.

¹⁸ Jan Lunde, former Managing Director of Unitas Marine Insurance, of Oslo, in his review of INSROP Working Paper No.46 - 1996, IV.3.3. note 4 supra.

¹⁹ Supra Note 7, Appendix II

²⁰ Supra Note 11

²¹ Such as: oil and LNG exports from Russia; potential cargo volumes; and, logistic modelling.

²² See, Sub-Project IV.3.3 Final Report: 1995-1996, Appendix I

²³ An exception is K. Shikano and H. Kitagawa, *The NSR in Japanese Views of Trade*. INSROP Working Paper No. 100 - 1998, III.08.1

²⁴ See, Sub-Project IV.3.3 Final Report: 1997-1998, Appendix I

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³³ Note 7, Supra

³⁴ Details of the ARCDEV project's objectives and operations can be found on the Internet at <http://www.arcdev.neste.com>

³⁵ Anthony Paul, "Digging your Way out of Recession", *Fortune*, 7 September 1998, p. 18

NOTE ON THE AUTHORS

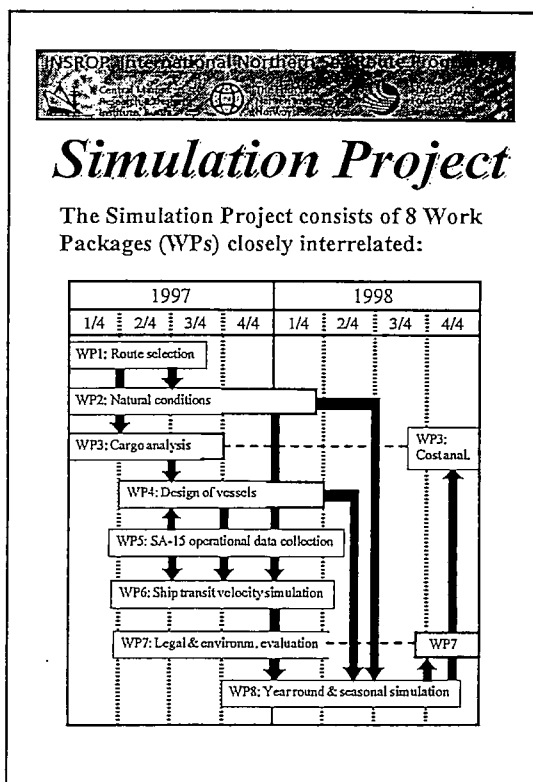
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The Oceans Institute of Canada/Institut canadien des océans: is the research base for INSROP Sub-Project IV.3.3 on Marine Insurance for the Northern Sea Route. The Institute is a federally incorporated, non-profit organization, established in 1976, 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.

APPENDIX I



WP1 will select four route alternatives

WP2 will provide data concerning ice, climate and natural conditions along the selected routes.

WP3 will look at the potential cargoes to be transported along the selected routes. This will provide input to the vessel design chosen in WP4. At the end of the Simulation Project, WP3 will also set up cost tables for the different scenarios simulated.

WP4 will design an optimal cargo ship for the NSR.

WP5 will collect data on Russian shipping experience along the NSR, to correct WP4 results.

WP6 will use data from WPs 1,2,4 and 5 to simulate ship velocities under different scenarios.

WP7 will assess the simulated scenarios on the basis of Russian Law, as well as perform Environmental Impact Assessments.

WP8 will run the final simulation, using data from WPs 1-6. The simulation results will finally go through a cost analysis (WP3) as well as legal and environmental assessments (WP7), and this together will provide the basis for conclusions and recommendations concerning future international use of the NSR.

Arendal, 15th December 1998

International Northern Sea Route Programme (INSROP)

c/o The Fridtjof Nansen Institute

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1324 Lysaker

Dear Sirs,

Re.: Review of «Shipping and Marine Insurance on the Northern Sea Route: Conclusions 1993-1998». By Edgar Gold, John A. Cantello and Peter L. Wright.

It is an honour for me once again to be asked to review an INSROP-report. The paper presently under review has been prepared by Edgar Gold, John A Cantello and Peter L. Wright and comprises the final conclusions on the work carried out by Sub-Project IV.3.3. (Marine Insurance for the Northern Sea Route). It is titled: «Shipping and Marine Insurance on the Northern Sea Route: Conclusions 1993-1998».

One question which repeatedly has come to mind when reading previous reports prepared by Sub-Project IV.3.3 has been «How does the practical life respond to INSROP. Is it possible that the Northern Sea Route will ever be utilised by the commercial shipping industry?» Apparently the shipping industry has not previously been asked this question - at least not in the direct way as now performed by Sub-Project IV.3.3.

It is quite obvious that there is no sense in making research work of possible access to risk coverage without knowing whether it would at all serve any practical purposes. Even though it may not have been within this sub-project's original parameters, Sub-Project IV.3.3 deserves credit for having taken initiative to make INSROP presentations to the principal shipping interests in those area of the globe which would in particular benefit from a commercial utilisation of the Northern Sea Route.

The result of this presentation can best be summarised by a «wait and see» - attitude. It may, however, be assumed that principal shipping interests at least in the Far East might be willing to try the Northern Sea Route as soon as the conditions for doing so seem right. For the time being, however, there may yet be a relatively long way to go.

In addition to «cast the 'missionary net' a little wider» to use the sub-project's own expression by making direct contacts with the shipping industry, Sub-Project IV.3.3 experienced another important change in their research work by the fact that marine insurers in general had become more familiar with INSROP and by it's potential. The fact that the sub-project in 1997 was invited to present INSROP at the annual world congress of the International Union of Marine Insurance (IUMI) may undoubtedly have played an important role in this respect.

Sub-Project IV.3.3 raised some interesting questions at the conclusion of Working Paper No. 85 which was issued in 1997. Some of them quite vital in order to determine the types of ships and cargoes that would make use of the Northern Sea Route. It is most interesting to read the answers to those questions, eleven in all, which have now been given, and Sub-Project IV.3.3 deserves credit for making the result of part of it's final conclusions of the research work so easily available to it's readers; many of whom may not be that familiar with the professional language used elsewhere in the INSROP reports.

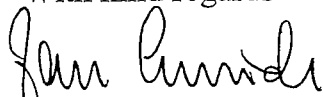


The final question raised by Sub-Project IV.3.3 is of course whether the international marine insurance market would be willing to underwrite Northern Sea Route risks? No great risk is taken by giving a positive answer to such a question. As also thoroughly discussed by Sub-Project IV.3.3 in previous reports there would definitely be a market for such risks, and as stated by the authors: «Marine insurance is an innovative, highly competitive business that has always reacted positively to new market demands». It is, however, necessary to stress particularly at times when the insurance market is a bit vulnerable as may today be the case that only first class security is being used.

As a conclusion it may be said that Sub-Project IV.3.3 has done an outstanding research work. Firstly it has been most interesting to follow how gradually the sub-project has gathered information on the possibilities to underwrite and at the same time experience how the insurance market has got to know about INSROP, and secondly it has been interesting to learn in what way the commercial world of shipping has responded to the work carried out by INSROP.

Sub-Project IV.3.3 informs its readers that all the information gathered by INSROP will be consolidated into a Geographical Information System (GIS) which in turn will be available 'on-line' for external users. Not only is this quite vital. As important is, however, to make sure that possible, future users of the Northern Sea Route - those who might be interested to look into this alternative sea route in about five to ten years time - are aware of where to look for such information.

With kind regards


Jan Lunde

former managing director of Unitas



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 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.

POLAR CIRCLE