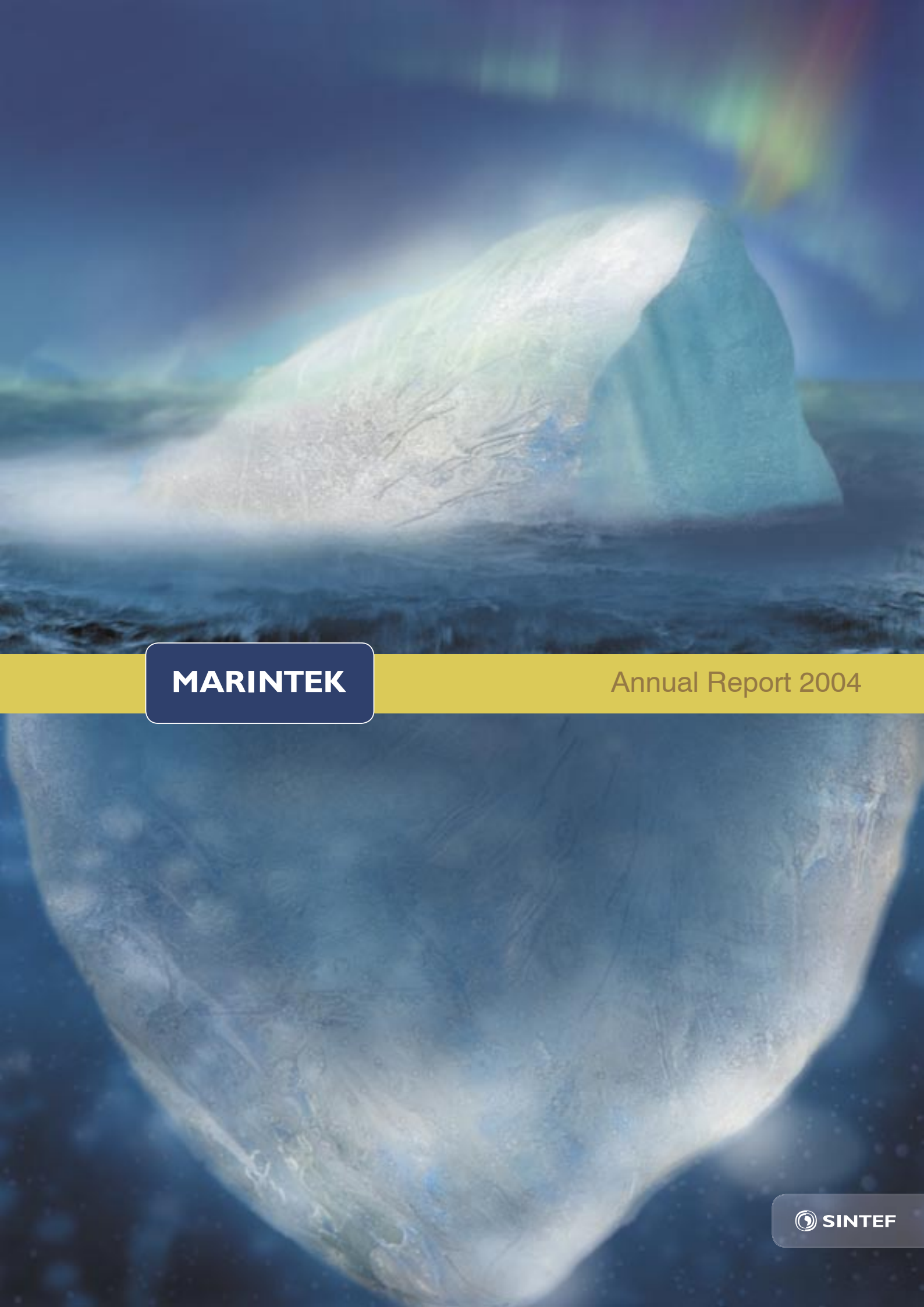


MARINTEK

Annual Report 2004

SINTEF

Cold climate

Operations in Arctic waters make everything just a bit more difficult and risky

Moving north

Oddvar Aam, President

In the course of the past 35 years, Norway has demonstrated an impressive ability to develop the knowledge that has enabled us to exploit the huge oil and gas resources that lie beneath the seabed. Many of the people who were mobilised to man this industry had acquired their knowledge in the maritime sector, where we were able to draw upon hundreds of years of experience in the shipping and fishing industries. We have learned to master the enormous forces that the North Sea and the Norwegian Sea can display when the weather gods are in the mood.

Our Arctic explorers also felt a special need to subdue the most powerful forces of nature, and they set themselves audacious goals to be the first to set foot on unknown landscapes. In our own time, with 25% of our estimated undiscovered oil and gas reserves lying in the Arctic, new players are targeting this challenging region of the globe.

While earlier pioneers put their own lives and possessions on the line, it is clear that the new “Arctic explorers” are taking risks that can concern all of us. The challenges lie in the necessity to do this with a great deal of caution because of the potential environmental consequences involved, and in the fact that we are challenging marine regions of the utmost importance for our fisheries resources and the biological diversity of the oceans.

Many people have already started up various types of activity on the Russian side of the boundary line, and irrespective of what the Norwegian authorities do, we are going to see a considerable amount of activity in our own part of the Arctic. Large quantities of oil and gas will soon be shipped along our vulnerable coastline to the European and American continents. In fact, we may even be able to speak of a modern version of traditional Pomor trading activities, but a version that will need to take place under controlled, safe conditions. The USA, Canada, Norway and Russia will probably have to agree on common norms for operating in these sensitive areas, and it is also likely that the EU will have to set aside funding for responsible regional development of the Arctic.

Optimal management of the ocean space will probably be addressed by the EU in its 7th Framework Programme, and Norway has been a driving force behind efforts to give this high priority on the agenda. We believe that this will be adopted, and we are certain that a great deal of research will have to be done before we can claim to be in complete control of this still partially unknown global space. Indeed, it may well be that we know more about outer space than we do we do about the ocean space.

Whatever happens, it is up to the politicians and the authorities to make the final decisions regarding the exploitation of the Arctic, on the basis of the advice offered by the research sector and the resources management authorities. In MARINTEK, we will do our best to ensure that all who set a course for the north will meet with success. We possess a great deal of knowledge that we believe can be of benefit to such people, and are ready to use our systematic methods of approaching problems to acquire the new knowledge that is essential for success in such demanding operations.

Logistics and business development

MARINTEK is active in the development of new competitive goods chains. In conjunction with shipping companies and cargo owners, we make use of scenario analysis as a tool to help our customers in their strategic efforts to evaluate new business concepts. Planning and steering complete logistics chains (SCM - supply chain management) reduces time and costs while improving precision and flexibility. In combination with combining cargoes for several transport customers and a focus on a good balance of destinations and a high load factor, major savings can be made. We have developed logistics solutions that combine coastal transport between Norway and Europe with supply transport to North Sea oilfields. We have also developed solutions that efficiently combine coastal transport with the use of inland waterways, both via terminals and by means of "transloading" operations.

Intermodal logistics that combine short-sea routes, inland waterways and land transport.

vessels and offshore installations, and we collaborate with industry in several areas, such as developing measures to reduce NOx and mapping and reducing emissions of VOCs (Volatile Organic Compounds) during buoy loading of oil.

MARINTEK also hosts the secretariats of a number of users whose common goal is to provide the shipping industry with expertise regarding how best to deal with ever stricter environmental requirements. These include the "Marine Machinery User Forum", the Forum for Reducing Sulphur Emissions from Shipping", and the "TBT-free Antifouling Paint Test Forum".

Oil discharges from tankers

We have been collaborating with other SINTEF departments on problems related to the risk of oil discharges originating from petroleum transportation on the Norwegian coast. We are still far from having sufficient material and trained personnel capable of dealing with a situation in which a crude oil tanker is in distress at sea. MARINTEK is studying emergency cargo transfer to barges in close cooperation with the Ship Manoeuvring Simulator Centre. Preventing or limiting discharges from a damaged vessel should be given priority over efforts to improve the efficiency of mopping up oil spills at sea or in the shore zone.

Logistics and environmental challenges

The environment

The environmental profile of the shipping industry is always in focus. MARINTEK plays a central role in Norway's efforts in the International Maritime Organisation (IMO) to develop an international policy to reduce the shipping industry's emissions of greenhouse gases. We are heavily involved in efforts to reduce emissions to the atmosphere from


MARINTEK is active in developing engine technology and new concepts for the use of natural gas in supply vessels.

Operational improvements and condition control for ships at sea

Shipping companies are demonstrating a growing interest in being able to utilise technical operational data as a basis for improving decision-making processes. Operating vessels efficiently is obviously a competitive advantage when profit margins are under pressure. Increasing demands for safety and regularity are leading to more stringent requirements for traceable and operational documentation. In collaboration with NTNU and DNV, MARINTEK has taken the initiative of setting up a Technical Operations Competence Center (TOCC). The first task of the new centre has been to develop methods for monitoring the technical condition of a vessel's main machinery on the basis of available operating data. TOCC has aroused a great deal of interest in the shipping industry. Aggregating operating information for ongoing decision support will offer a basis for a steady flow of operational improvements in shipping companies.

Decision support for operating damaged vessels

MARINTEK is leading a European project which will develop an efficient on-board and land-based decision-support system for damaged

vessels. Core topics being studied by the project include simulation and support modules for dealing with major crisis situations, and how information should be filtered to avoid information overload in situations of this sort. The project emphasises the importance of presenting correct vital information to the appropriate level of decision-makers on board the vessel. A further aim of the project is to develop efficient systems for land-based support from the shipping company

RCCL's "Voyager of the Seas" has a modern, highly integrated safety system, which MARINTEK helped to develop.

Safety

High traffic density in northern waters makes heavy demands of redundant solutions.

and dedicated command centres. In order to provide these with the best possible overview of the situation on board the vessel, systems for automatic transmission of condition data from selected on-board systems will also be developed.

The MARUT initiative

As part of the Government's "Innovation 2010" action plan, the Ministry of Trade and Industry has taken the initiative to increase the effort put into maritime research. MARINTEK is participating actively in this task in order to raise awareness of maritime R&D among politicians and the maritime sector. This is a joint effort involving the Ministry of Trade and Industry, the Norwegian Shipowners' Federation, Innovation Norway, DNV and MARINTEK, organized through the project MARUT (maritime development).

Navigation

Freight transport in the Arctic will require new solutions for dealing with ice, among other problems.

The shipping sector

Studies of parameters that will influence the demand for transport capacity in the future will enable us to sketch a range of possible solutions designed to meet future transport needs, and the make-up of means of transport, warehouse facilities and terminals for optimal solutions. Such analyses may lead to specific requirements as regards types and sizes of vessel, service speed requirements and handling characteristics. In addition to testing traditional types of cargo vessel, we have been working on high-speed cargo ships, cruise ships, offshore vessels, navy vessels and new gas-powered ferries.

Pentamarans

In collaboration with BMT Nigel Gee and Associates, MARINTEK has been working on the design and testing of the super-fast cargo vessel. One of the concepts studied is based on a pentamaran design with a long slim

Vessels of this sort will offer serious competition to land transport.

centre hull which is flanked by two smaller hulls on each side. The two after hulls pierce the surface of the sea and help to give the vessel dynamic stability, while the forward pair is positioned above the waterline and provides improved stability and better sea-keeping characteristics in heavy seas. The service speed of these vessels will be around 40 knots.

Trimarans

Trimaran designs have much in common with the pentamaran hull, in that both types of vessel are “stabilised” monohulls. MARINTEK has played a central role in the development of

Austal's new trimaran concept, which has been built for Fred. Olsen. This is a car/passenger ferry with a length of more than 125 m and a service speed of 38 knots. The prototype vessel will enter service in March 2005.

The car and passenger ferry of the future - Austal's trimaran for Fred. Olsen.

Specialised vessels from Norwegian shipyards

Norwegian shipyards are maintaining their dominant position in the design of offshore vessels. During the past year we have tested a number of combination vessels which will carry both supplies and crew from shore bases out to offshore installations.

In conjunction with a number of Norwegian consulting companies and builders we have developed new concepts for Coastguard vessels for the national and international markets. In 2004, we have reinforced our collaboration with Norwegian manufacturers of small, lightweight passenger and ambulance vessels in carbon fibre/PVC. Developments in this sector are moving in the direction of larger catamarans which will offer higher speeds.

We have also carried out tests of the next generation of rescue boats, which will be nearly twice as fast as today's vessels. They will be driven by water-jets to enable them to operate in shallow waters, and will have extremely good manoeuvrability.


Brødr. Aa Ltd., a pioneer company in the development of modern ambulance vessels and passenger craft in composite materials.

Simulation - a tool for design studies and operational training

Simulators are being increasingly used as engineering tools in the design of new vessels and their control systems. In collaboration with clients, we are continuing to develop new, more complex simulation models and scenarios, based on a ship model that includes six degrees of freedom for vessel motions. This has involved merging models of manoeuvrability and vessel motions. The model has been verified against several of MARINTEK's software packages and model and field tests. With this simulator, we "build" a vessel by combining modules such as propulsion, rudder, the six degrees of freedom model, sensors, control systems, etc.

LNG terminals

MARINTEK performed model tests of LNG carriers and terminals in the Ocean Basin for ExxonMobil. In order to determine the need for tug assistance, an analysis of manoeuvring operation to and from terminals was carried out. The analysis was performed under a range of wind, current and wave conditions. Three tugs were used, employing two different operational strategies. The study utilised the ShipX Station-Keeping program package to identify optimal tug placement and power requirements under given sets of environmental conditions. Wave coefficients were found with the aid of WAMIT, while wind and current coefficients were based on models tests.

Propulsion

Dynamic variations in propeller loads have led to a number of mechanical problems. Such variations are often due to ventilation resulting from the vessel's wave-induced motions. In general, the dynamic variations can be divided into two main categories:

- Low-frequency variations in the range around the encounter frequency
- High-frequency variations in the range around the propeller's blade frequency.

Low-frequency variations are due to the vertical motion of the vessel relative to the waves, which may lead to partial or complete ventilation of the propeller. For vessels in high seas, such load variations may lead to fatigue or failure of mechanical components, at the same time as they significantly reduce the mean value of the power supplied by the propeller. Blade-frequency variations are a combination of an inhomogeneous inflow to the propeller and the propeller piercing the surface of the water.

For many types of offshore vessels and FPSOs, dynamic power variations are of importance for the regularity of critical operations. MARINTEK has developed experimental techniques and methods for studying variations in propeller loads and performance on vessels in heavy seas.

New types of vessel

Petroleum-related activities

Growing global demand for oil and gas has raised oil prices and, in turn, interest in the continued operation of existing oilfields and in developing new offshore fields. In 2004, the focus has been on deepwater fields , and we have also noted growing interest in the Arctic. Concepts based on floaters and/or subsea production have been tested in the Ocean Basin, while we have simultaneously carried out analytical studies with the aid of various software packages. Extensive studies of offshore loading and terminal operations have been carried out, and experimental studies have been complemented by simulations.

FPSO for the Daila field offshore Angola.

Field development

During of the last year, deepwater testing has concentrated on production solutions for West African offshore fields. Loading buoys and FPSO systems have been tested. Special topics have included loads on deepwater mooring systems, the effects of wind gusts and product transfer from FPSOs to shuttle tankers.

We continued to do basic research related to flexible risers in 2004. This included model tests of a range of external geometries in order to determine how this affected vortex shedding on the riser and associated vortex-induced vibrations. We have also performed numerical studies with the aim of generating new knowledge of interactions between adjacent risers and the possibility of risers colliding as a result of current loads and vortex-induced motions.

Deep water brings new challenges as regards electrical power transmission over long distances. One of the problems is that of joining copper conductors, since welding such conductors reduces cable strength. New methods of producing these cables in such a way as to eliminate joints are therefore being developed. The design of this type of cable cross-section requires efficient mathematical models, and Kværner Oilfield Products AS has signed a contract with MARINTEK to develop a model capable of estimating the tension on new types of power transmission cable. This has resulted in a new version of our USAP software, which includes modelling of more general cable cross-sections as well as simulations of spooling.

Petroleum transportation

Sevan SSP 330 - deepwater production platform for Brazil.

Installation

We have carried out experimental and theoretical studies of marine operations in connection with the installation of sub-sea frames, protection structures, manifolds and various types of extension tubing. Studies of the installation of the Ormen Lange structures are particularly worth mentioning. New modules for the SIMO simulation software have been developed, with the result that this software is now better adapted for studies of marine operations. This simulator has also been "packaged" in such a way that it can be used as a training and decision-support tool for personnel who are working on a particular installation job.

On the development side we have focused on deepwater operations, where vertical variations in current strength in the water column introduce new problems.

Heavy lift operations for deck structures form part of the cooperative project being run by Norway and Singapore. This work started with the creation of a link between a program that optimises the static lifting configuration, and SIMO, which estimates dynamic effects in an offshore lifting operation.

Offshore loading (tandem and side-by-side)

Solutions for new and marginal fields at long distances from existing pipeline grids often involve loading from a buoy, production or storage vessel. Several new fields and concepts have been tested in the Ocean Basin. At the same time, we have also held working meetings with operational personnel, representatives of oil companies and the captains of tankers in order to study operational challenges related to approaching, connecting and loading under various weather conditions, for vessels with different types of equipment. Tandem loading in areas with significant surface currents is a topic that will require a wide-ranging programme of model trials and the development of new numerical methods. A growing number of moored

Tandem offloading offshore West Africa.

petroleum storage and export vessels are operating in the Arctic, receiving petroleum product from small tankers (20 - 70.000 dwt) and exporting their cargo via vessels in the size range 140 - 150,000 dwt.

The supply chain and operating logistics

The supply chain and operating logistics systems of offshore installations act as a real lifeline between shore-based suppliers of goods and services and the installations offshore. The strategic development of these systems is important as a way of ensuring that they will be capable of meeting future challenges and possibilities. As part of this development, in 2004 MARINTEK performed projects aimed at benchmarking and standardising processes related to supply base services. Supply bases form an important part of supply chain and operating logistics systems, and an adequate allocation of roles, not to mention their planning and implementation in the form of good processes, will reinforce the usefulness of supply bases.

Maintenance analyses

MARINTEK is continuing to focus on assisting oil companies improve the efficiency of their offshore installation maintenance processes. We carry out failure mode analyses of topside equipment on production installations in order to identify critical equipment and thus improve maintenance efficiency. An example of a production facility that we have recently analysed is the Ormen Lange onshore plant.

LNG chains, transport units and markets

A high level of activity has centred on the design of offshore LNG terminals. Both global and local loads on terminal structures have been studied by means of

Pipeline laying

The Ormen Lange concept is a potential solution for Arctic regions

Ocean Basin tests. We have looked in particular at the probability of taking green seas on deck and on conditions due to locating such terminals in shallow waters. For LNG vessels close to and lying by floating or fixed terminals, we have analysed a number of technical factors, such as mooring vessels that are waiting to call at a terminal, the number of tugs required to assist LNG vessels move to and from the quay, and the relative motions of vessels at a terminal and how these affect the design of the mooring systems. Hydrodynamic interactions between vessel and terminal are important factors to be considered. We have also evaluated procedures for approaching and leaving the quay, the accessibility of the terminal under different weather conditions during individual operational phases (arrival, approach to quay, waiting at the quay, cargo transfer and departure). Among other findings, the analyses have identified extreme stretching in loading hoses under variable

LNG terminal being tested in the Ocean Basin.

We have also been very active in studies of LNG vessels in 2004. The growth in the size of LNG vessels means larger membrane tanks, and sloshing in such tanks is a growing problem. Sloshing and the wave loads are extremely non-linear processes, and have to be studied by means of model tests.

The main aim of these studies has been to identify maximum pressures, pressure levels, duration and location in the tank. In such tests the model of the membrane tank will

Floating production

Simple floaters could be a way of avoiding the threat offered by drifting icebergs

weather conditions, movement characteristics of loading arms, the recommended number and positions of mooring lines and fenders, and weather-dependent limitations on carrying out loading operations.

The future development of LNG terminals in the Arctic will require further studies in the vicinity of terminals and probably also of various types of reverse barge transfer operations in ice-infested regions.

be subjected to irregular motions that will be derived from estimates of vessel motions in realistic sea states.

At the same time, the sloshing will affect the vessel's sea-keeping abilities and will be studied in particular by means of models that relate vessel motions to sloshing. In 2004, Exxon was our main customer for studies of sloshing in membrane tanks in LNG vessels.

Model testing for Statoil - docking a process barge for the Snøhvit project on Melkøya.

Income statement 2004

(extract of MARINTEK's consolidated accounts)
(all figures in thousand NOK)

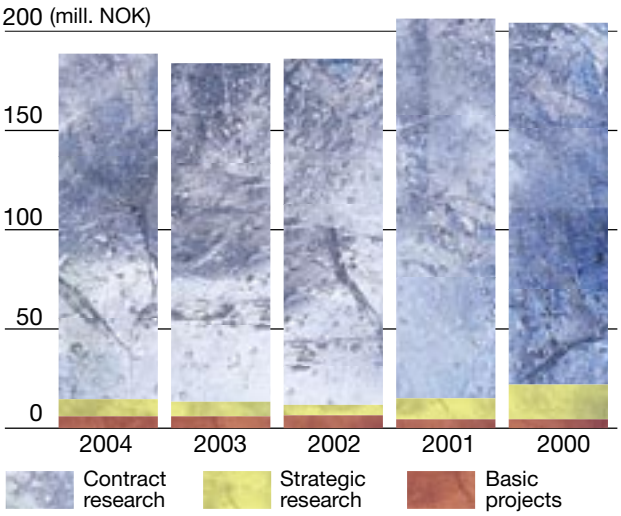
Operating revenues and expenses	
Revenues	188 950
- Direct project expenses	36 504
Net operating revenues	152 446
Salaries, social sec. and other sec. costs	114 591
Other operating expenses	38 187
Net operating expenses	152 778
Operating result	-333
Financial income and expenses	351
Annual result	18

Balance sheet 2004

(extract) (all figures in thousand NOK)

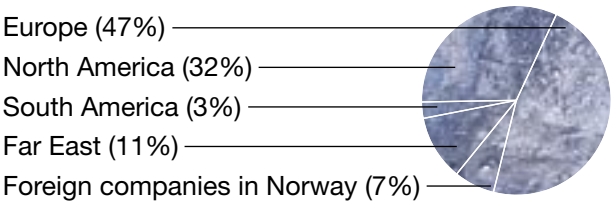
Assets	176 582
Fixed assets	27 365
Fixed operating assets	22 356
Financial long-term assets	5 009
Current assets	149 217
Other current assets	89 661
Cash, bank accounts	59 556
Equity and liabilities	176 582
Equity	95 218
Paid-up equity	11 600
Earned equity	83 618
Liabilities	81 364
Long term liabilities	3 129
Current liabilities	78 235

Project-related specification of turnover

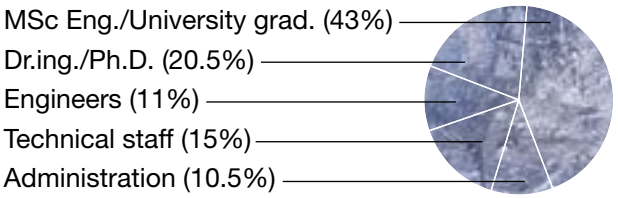


Foreign trade

(34% of total turnover)



Personell (Total staff: 176)



Key data (Norwegian parent company)

	2004		2003		2002		2001		2000	
	NOK1000	%	NOK1000	%	NOK1000	%	NOK1000	%	NOK1000	%
Revenues	188 711	100.0	183 904	100.0	186 170	100.0	207 347	100.0	212 083	100.0
incl income research council	14 620	7.7	13 359	7.3	11 763	6.3	15 051	7.3	21 985	10.4
Operating income	-325	-0.2	3 075	1.7	-9 076	-4.9	20 217	9.8	25 317	11.9
Net profit	18	0	3 247	1.8	-7 773	-4.2	23 779	11.5	27 638	13.0
Number of staff		176	179		176		173		175	
Salaries and soc. expenses	113 864	60.3	109 282	59.4	107 230	57.6	94 463	45.6	96 339	45.4
Profitability		0		3		-10.0		20		33
Liquidity ration		1.9		1.8		1.6		1.6		1.6
Working capital 31 Dec.	70 514		61 081		49 906		63 907		54 918	
Liquidity	34 160		24 433		34 231		73 547		58 026	
Equity	95 219	54	95 200	55	91 954	50	99 726	50	75 947	44

Current exchange rate: 1 USD = NOK 6.13 - 1 EUR = NOK 8.22

Auditors: Deloitte

Icing Icing offers additional challenges to equipment and crews.

Report of the Board (extract)

Activities

MARINTEK performs research and development for industry and public-sector bodies involved in marine activities. The company operates in an international market, developing new technologies in the fields of floating petroleum production, subsea pipelines for oil and gas transportation, vessel development, the shipbuilding and maritime equipment industries, shipping and logistics.

The headquarters of the company are in Trondheim, and it has a subsidiary in Houston, Texas: MARINTEK (USA), Inc., which was set up as an element of our strategy of focusing on the international market, in collaboration with other Norwegian companies that wish to export Norwegian petroleum technology.

An important aspect of our work is operating the marine technology laboratories at Tyholt in Trondheim, of which the Ocean Basin Laboratory, the Ship Model Tank and the Structural Design Laboratory are the major units. These laboratories are also utilised by NTNU's Department of Marine Technology, in a fruitful collaboration with our own groups. Most of our research scientists are recruited from this milieu.

The development of mathematical models and the integration of these into simulators for the study of physical phenomena and marine structures are responsible for a growing proportion of our contracts. We use our laboratories to calibrate the mathematical models in order to ensure that these form the optimal point of departure for more detailed studies of the complex structures and constructions that will be built by our clients. During the past few years, in conjunction with NTNU, MARINTEK has developed a unique range of expertise in carrying out integrated laboratory-supported studies of this sort. This has enabled us to increase our international involvement, and today, we are a strategic technology partner for major international companies operating in the shipping and offshore sectors.

Markets and technology

The reduction in funding for user-controlled maritime research funded by the Research Council of Norway and the Norwegian Shipowners' Association is a serious challenge for our Department of Logistics and Operating Technology. We have compensated for this situation by adopting goal-oriented measures aimed at selected key customers in the field of offshore operations, but it has taken some time to build up a sufficient volume of activity in these segments of the market. This has forced us to carry out a significant programme of restructuring and capacity adjustment in the affected department, which is the cause of much of the weakening of our result.

The poorer result is otherwise due to the fact that the level of activity in the field of testing large offshore structures has been somewhat lower than in recent years, and our facilities have largely been used for testing vessel manoeuvrability. Such projects are somewhat less profitable, and this has been a challenge for our organisation. We have also carried out a significant amount of maintenance of our ocean laboratory, which has reduced the amount of time available for external contracts.

MARINTEK's market in the fields of risers, cable and pipelines continued to be positive in 2004. We have performed research and verification contracts for the Ormen Lange project and other field developments on the Norwegian and foreign continental shelves.

A rise in the level of activity in the Norwegian shipping market towards the end of the year led to an increase in contracts for testing vessels in our hydrodynamic laboratories. The market in offshore special vessels, for example, has improved.

We have also carried out tests on advanced types of vessels for overseas ship consultants and international ship operators. Testing LNG tanks and terminals, and analyses of LNG value chains, have formed an impor-

tant part of our activity in the course of the past year.

Increasing use of gas in Norway is another area in which both the authorities and industrial companies have made use of MARINTEK's expertise in gas technology. Among other things, we have taken part in parliamentary hearings on this subject.

Profit and loss accounts and balance sheet

The company presents a poorer than anticipated result. With a gross turnover of MNOK 188.7 and net operating income of MNOK 150.9, we made an operating loss of MNOK 0.3. A positive financial result of MNOK 0.3 left a profit after financial items of KNOK 18, which the Board proposes to transfer to the company's other equity capital.

Of a total capital of MNOK 176.1, our equity capital comes to MNOK 95.2, equivalent to an equity capital ratio of 54.0%. Working capital is MNOK 70.5, which represents a rise of MNOK 9.4. The most liquid assets come to MNOK 52.6, an increase of MNOK 10.4.

All in all, the Board regards the liquidity situation as satisfactory, and our equity is quite adequate for continued operation, given the planned activities of the company.

The company's order reserve stands at MNOK 74.5, compared with MNOK 74.9 at the same point in time last year.

The Board is not aware of any other factors arising since balance day that are of significance for evaluation of the company's financial position.

Cooperation with NTNU and other SINTEF units

NTNU's Department of Marine Technology and MARINTEK are actively working to integrate their strategic programmes, so that there will be full coordination of the efforts of NTNU's Centre of Excellence in the Marine Technology Centre at Tyholt and MARINTEK's own research programmes. Cooperation of this sort is taking place within such areas as hydrodynamics and sea loads, marine structures, including risers and pipelines, and marine cybernetics. These efforts are coordinated both vis-à-vis industrial clients and the Research Council of Norway, thus enabling MARINTEK and NTNU to act in concert as one of the most powerful centres of civil maritime R & D in the western world. MARINTEK helps to finance the Centre of Excellence, and some of our scientists are involved in the Centre's research programmes.

We have established a Gemini Centre in the field of structural design and are working on the establishment of a further Gemini Centre in connection with MARINTEK's Operating Technology Competence Centre (OTCC).

In 2004, we planned the establishment of a University Technology Centre (UTC) which will be a collaborative effort involving Rolls Royce, NTNU and MARINTEK. By exchanging personnel between MARINTEK and NTNU we aim to guarantee the long-term development of competence that will benefit the maritime industry.

Prospects for the future

Towards the end of last year we were pleased to observe a general improvement in our shipping and offshore markets. Nevertheless the downward pressure on prices in certain of our market segments remains strong.

We also perceive a certain improvement in the market for research services, in the form of larger grants for applied research in those industrial sectors, such as the maritime and offshore industries, in which Norway has traditionally enjoyed a competitive advantage.

The maritime cluster has been this country's largest internationally focused service-based creator of wealth. Foreign buy-outs, uncertain general conditions of operation for the shipping industry and a focus on industrial neutrality on the part of the Norwegian authorities with respect to the use of policy instruments, mean that there is a danger of large parts of this important sector either becoming fossilized or moving out of the country. These challenges have been addressed in the government's recent White Paper on Shipping. We are still at an advantage in operating from Norway as a supplier of products and services to the international maritime industry. At MARINTEK we are playing an active role in the government-inspired innovation process through our participation in the Innovation 2010 programme, in which maritime industrial development is one of the main areas of effort. This is one of a series of measures that have been introduced to ensure the continuation of a viable maritime industrial cluster in Norway.

The development of the natural resources of the Arctic is an area on which all sectors of Norwegian industry are focusing sharply. The challenge, however, lies in developing these resources in such a way as to satisfy demands for a sustainable environment in this sensitive region. This will require a significant research effort and international cooperation on the part of the many participants in the process. MARINTEK is actively positioning itself as an important player in the task of dealing with these challenges.

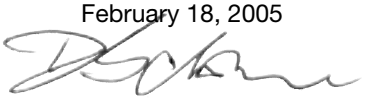
In the oil and gas industry, it is essential to focus on increasing exports, and MARINTEK is positioning itself as a knowledge-rich partner for major Norwegian companies that are currently targeting international markets.

In view of the above-mentioned market prospects, and the reorganisation and improvements undertaken by the company, the Board expects to see a considerable improvement in our results in 2005.

Thanks to our employees

The Board extends its thanks to our customers and employees, and to NTNU staff involved in MARINTEK's activities, for their excellent collaboration in 2004.

Trondheim, December 31, 2004
February 18, 2005



Diderik Schnitler (Chairman of the Board)

Ownership

MARINTEK's shareholders:

SINTEF	6.5 MNOK	56%
Norw. Shipowners' Assoc.	3.0 MNOK	26%
Det Norske Veritas	1.0 MNOK	9%
Found. of Shipbuilders' Fund for Research and Education	0.5 MNOK	4%
Directorate of Shipping	0.5 MNOK	4%
Federation of Norwegian Coastal Shipping	0.1 MNOK	1%
Total share capital	11.6 MNOK	100%

Board of directors

Director Diderik Schnitler, chairman
Managing director Sigbjørn Akselvoll
Division manager Per Marius Berrefjord
Professor Odd Faltinsen
Managing director Rebekka Glasser
Deputy managing director Svein Sivertsen
Senior research engineer Eivind Dale
Senior research engineer Halvor Lie
EDP engineer Arve Loktu

University cooperation - the basis of our activities

The Norwegian authorities have put a significant effort into building up the marine environment at Tyholt in Trondheim, where there is a good atmosphere of close co-operation between NTNU's Department of Marine Technology and MARINTEK. The Department of Marine Technology is responsible for education and basic research, while MARINTEK's existence is based on contracts for industry, where the Research Council of Norway provides partial funding for certain contracts. The centre operates advanced laboratories for verifying structures and theoretical models developed by industrial companies and scientists.

Centre of Excellence in Research

Similar to the way in which the EU structures its research, the Research Council of Norway wishes to concentrate its resources in units which have the potential to become "Centres of Excellence in Research". In 2002, the Research Council of Norway set up a Centre of Excellence in Research (SFF) at the Marine Technology Centre at Tyholt in Trondheim. The SFF is organised as a separate unit of NTNU and reports directly to the University Senate.
MARINTEK is a partner in the SFF and contributes both research staff and funding. The Centre will focus on vessel and marine structures, with hydrodynamics, construction technology and marine cybernetics as important elements of its scientific activity (http://www.cesos.ntnu.no/).

Maintenance

Long distances and a challenging climate demand detailed planning of maintenance operations.

Management

President Oddvar Aam
Finance manager Birger Åldstedt
Vice president - Marketing Kjell O. Holden
Division manager Atle Minsaas
Division manager Terje Nedrelid
Division manager Oddvar Eide

MARINTEK - a certified institute

MARINTEK is the only unit of the SINTEF Group that has chosen to certify the whole company to the ISO-9001:2001 standard. We have mapped out all of our work processes, including laboratory activities, theoretical studies and analytical work. This is intended to ensure that our customers enjoy quality in all the work that we do for them.

MARINTEK and NTNU - largest in the western world

The combination of MARINTEK and NTNU's Department of Marine Technology, including the Centre of Excellence in Research, is the largest civil centre of marine research and education in the western world.

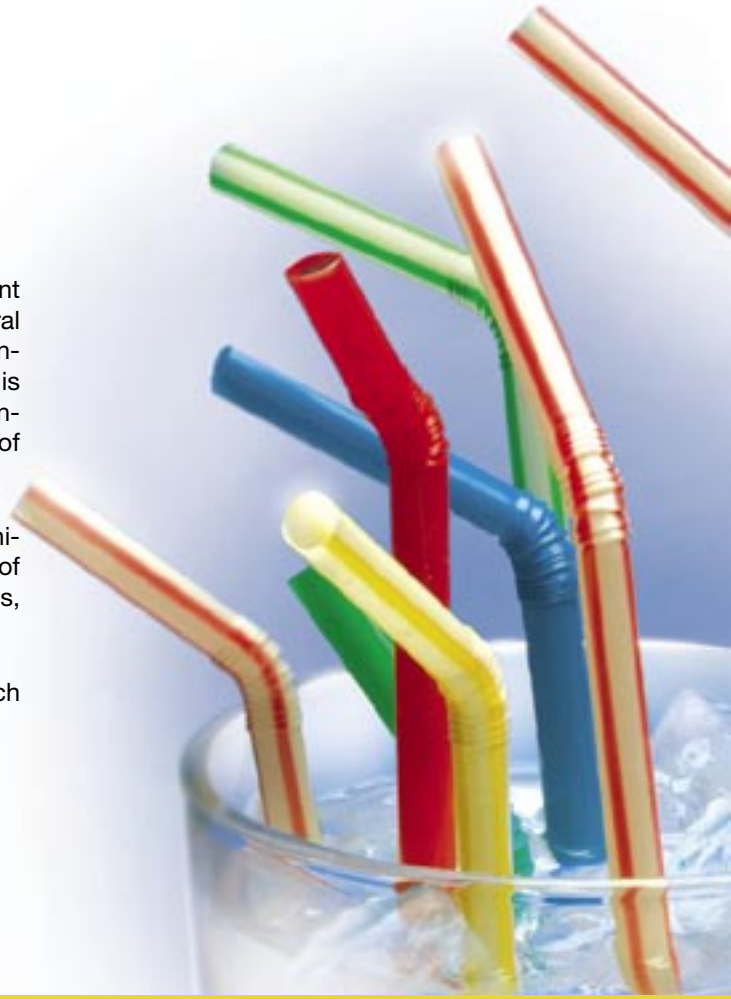
The SINTEF Group – one of the largest applied research institutes in Europe

The SINTEF Group performs contract research and development for industry and the public sector in technological areas, the natural and social sciences and medicine. With 1800 employees and an annual turnover of NOK 1.7 billion (207 mill Euro), the SINTEF Group is one of Europe's largest independent research organizations. Contracts for industry and the public sector account for 93 percent of operating revenues.

The SINTEF Group collaborates closely with the Norwegian University of Science and Technology (NTNU) and the University of Oslo (UiO). Experts in various disciplines work together on projects, sharing laboratories and equipment.

The SINTEF Group consists of the following companies, all of which perform applied research:

SINTEF (parent company)	(Foundation)
SINTEF Energy Research	(61% owned)
SINTEF Petroleum Research	(100% owned)
SINTEF Fisheries and Aquaculture	(97% owned)
MARINTEK (Norwegian Marine Technology Research Institute)	(56% owned)



Industrial participants

Several international operating companies are currently positioning themselves for petroleum operations in the Arctic.

For operational purposes, the SINTEF Group has been divided into six research divisions:

- SINTEF ICT
- SINTEF Health Research
- SINTEF Technology and Society
- SINTEF Materials and Chemistry
- SINTEF Petroleum and Energy, which consists of:
  - SINTEF Energy Research
  - SINTEF Petroleum Research
- SINTEF Marine, which consists of:
  - MARINTEK
  - SINTEF Fisheries and Aquaculture
  - SINTEF Marine Environmental Technology

MARINTEK (USA), Inc.

MARINTEK is dependent on being close to its key customers, some of whom operate in the offshore industry. Every day, Houston and Texas are becoming more and more obviously the global centre of gravity in offshore structure design, and these centres are active vis-à-vis deepwater field developers in Brazil and West Africa as well as field developments in the Mexico Gulf. MARINTEK also operates a subsidiary in Houston and is involved in studies aimed at taking up the challenges of ultra-deep water.

MARINTEK

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