

ClassNK

ANNUAL REPORT 2004



Profile

Nippon Kaiji Kyokai, also known as ClassNK or just “NK,” is a ship classification society. The principal work of the Society’s expert technical staff is to undertake surveys to ensure that the Rules which it has developed are applied to newbuildings and existing ships in order to ensure the safety of these vessels. The Rules cover not only hull structures but also safety equipment, cargo handling gear, engines, machinery, and electrical and electronic systems, among others. By the end of December 2004, the Society had 6,290 ships totaling 126.9 million gross tons (gt) on its Register. This figure represents approximately 20% of the world merchant fleet currently under class. Although based in Japan, where it has 21 offices, ClassNK has worldwide representation through a network of 73 exclusive surveyor sites in 39 countries. ClassNK surveyors work in shipbuilding and repair yards and at ports across the world, wherever they may be called upon to examine the condition of a ship, so that all of the Society’s services are available worldwide. On the 15th of November 1999, Nippon Kaiji Kyokai celebrated the centenary of its foundation.

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The NK Mission

ClassNK is dedicated to ensuring the safety of life and property at sea, and the prevention of pollution of the marine environment.

To achieve this mission ClassNK will:

- Focus on delivering the highest quality classification services by the highest quality personnel while maintaining its totally independent third party, non-profit status.
- Focus on the development of relevant Rules, procedures and guidance, and maintain and develop its commitment to scientific and technological research, development and education.
- Maintain and develop its global operations in line with the needs of those using its services.

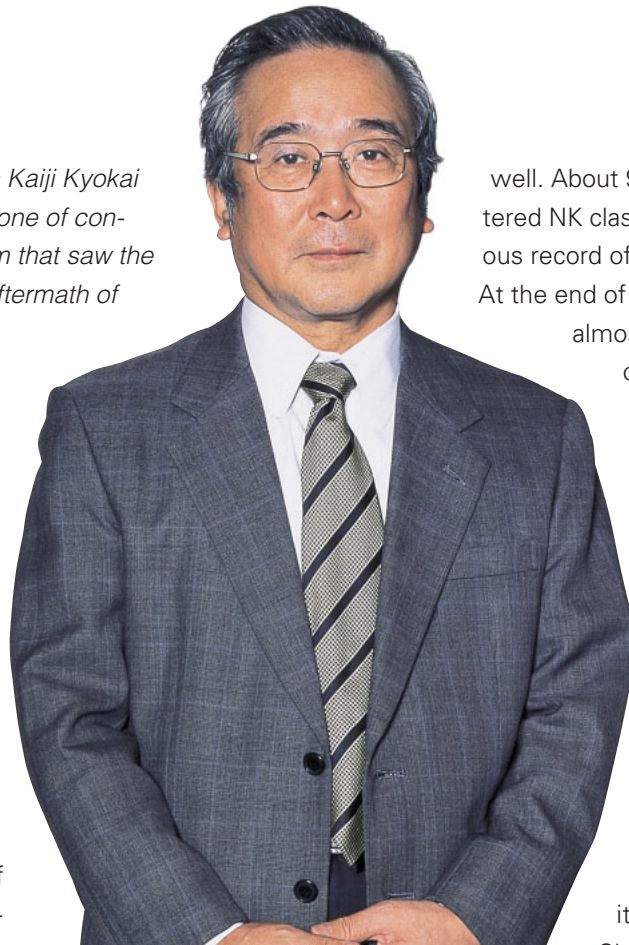
Chairman's Message

Welcome to the 2004 Nippon Kaiji Kyokai Annual report. The year was one of contrasts. It was an unstable term that saw the outbreak of terrorism in the aftermath of the war in Iraq, while Japan experienced many natural disasters, such as typhoons, heavy rains and earthquakes.

As if that were not enough, the year ended with a major tsunami striking across the Indian Ocean after a huge earthquake off the waters of Sumatra, Indonesia, on the 26th of December. On the other hand, the various countries of East Asia, led by China, maintained a healthy trend of positive economic growth for the year, while most of the West also underwent an economic shift upwards. Although Japan continued to experience mild deflation, the real economic growth rate recovered somewhat to reach 2.1%.

In the midst of all this, the global maritime industry boomed, enjoying record-breaking prosperity. Although accurate details are difficult to establish, it is estimated that newbuilding activity reached around 14 million gt in both Japan and Korea and about 4 million gt in China, with the global total reaching some 40 million gt.

I am pleased to say that the Society was able to capitalize on these favorable conditions and performed extremely



well. About 9.4 million gt of newbuildings entered NK class last year, 20% above the previous record of 7.7 million gt attained in 2003. At the end of December 2004, the Society had almost 127 million gt of ships under class, representing 20% of the world's commercial fleet. Very importantly, there were no major casualties suffered by any ship under NK class.

The year saw the long-awaited liberalization of the classification of Japanese-flagged vessels, something that NK had long sought. NK has traditionally been the sole body entrusted by the Japanese Government to undertake surveys on its behalf. This was based on the Ship Safety Law of Japan, which, along with other relevant laws, was revised as a part of steps taken to reform and liberalize this system. This is the first time in more than 70 years that Article 8 of this law has been revised, heralding a shift from a ship classification society authorization system to a registration system. This revision accordingly gave rise to the need for the Society to register under this new system. I am pleased to report that on the 30th of August 2004, the Society was formally registered as a recognized ship classification society under the Japanese law, and the Society's Rules and regulations covering its various activities were formally approved by Japan's Ministry of Land, Infrastructure and Transport. The relevant Rules and regulations came into effect from the 1st of September 2004.

One important benefit of this liberalization is that it is expected to make it easier for the Society to obtain authorization from other developed countries that had reasonably expected reciprocity, which Japan had not allowed. One tangible outcome of this type of liberalization for the Society is that NK recently received approval to conduct statutory survey work on U.K.-registered vessels. NK had previously only been authorized on a case-by-case basis for several years by the Maritime and Coastguard Agency (MCA) of the United Kingdom to undertake statutory surveys on U.K.-flagged vessels in response to owners' requests.

The other major event of the year was the entering into force on the 1st of July 2004 of the International Ship and Port Facility Security (ISPS) Code. In response, NK developed registration rules for this, and was authorized by many flag states to undertake various audit and certification activities related to the code on their behalf. NK also played a leading role in the International Association of Classification Societies (IACS) in the development of the Common Structure Rules. Without a doubt, 2004 was an extremely busy and challenging year for the Society.

It is generally expected that the maritime industry will continue to enjoy prosperous conditions in 2005. Accordingly, it is expected that over 13 million gt of newbuildings will enter NK class. In other words, with surveys and audits of some 13 million gt of newbuildings and class maintenance surveys for nearly 130 million gt of existing ships to do in 2005, it will be a truly busy year for NK in terms of workload. Since most of our work is carried out on site, it is very important for each individual to concentrate, avoid making any careless mistakes, and perform in the most appropriate and professional manner possible. If any of the ships under NK class were to experience a

casualty similar to those of the *Erica* or the *Prestige*, not only would the credibility of the Society suffer, but the Society would also most likely face a major managerial crisis.

I believe that we must continue to focus on quality as we cope with the great increases in quantity. Thus, I believe it is necessary for us to engage in technical research and development, the promotion of IT services, the enhancement of the NK survey system and network, and similar activities even more aggressively than we have until now.

To that end, all management and staff of NK, including myself, all board members, general managers, managers, and other members of the staff, thank you for your support in 2004 and assure you that again in 2005 we will continue to provide the best possible service to all NK-related parties.

March 2005



Kenji Ogawa
Chairman and President

NK At a Glance



U.K. Statutory Survey Approval

NK received approval to conduct statutory surveys on U.K.-registered vessels from MCA. Previous authorizations of NK were on a case-by-case basis. The official agreement was signed in Tokyo on the 2nd of December 2004 by Capt. Stephen Bligh, chief executive of MCA, and Kenji Ogawa, chairman and president of NK.

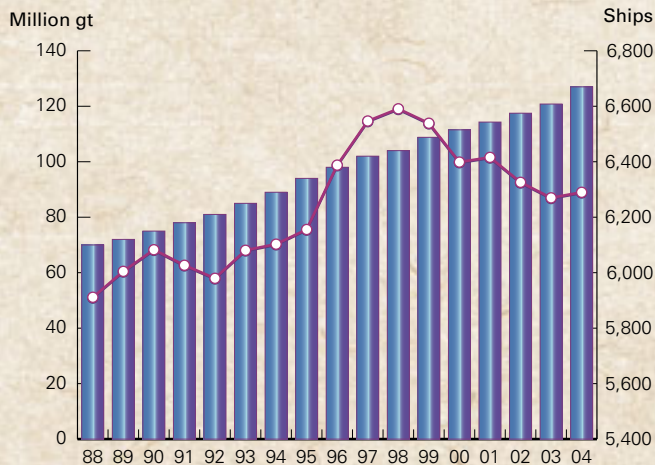


New Committees

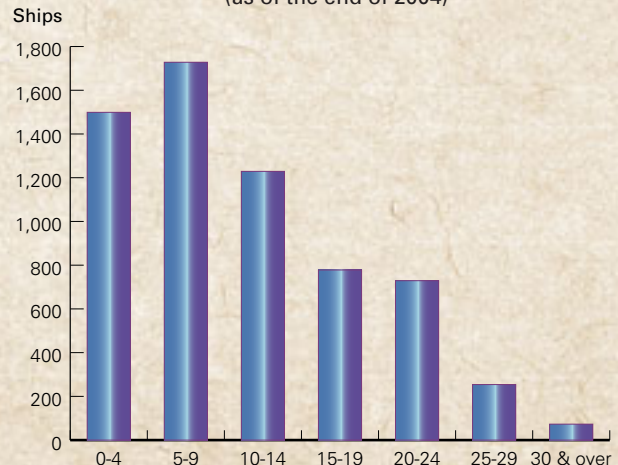
1. A Turkish Committee comprising distinguished leaders from the maritime industry in Turkey was established, and the first meeting was held on the 10th of February 2004.
2. A Singapore Committee of distinguished leaders from the maritime industry in Singapore was established, with the first meeting being held on the 8th of July.
3. A new office was opened in Ho Chi Minh City, Vietnam, in August, as the second survey site in Vietnam.



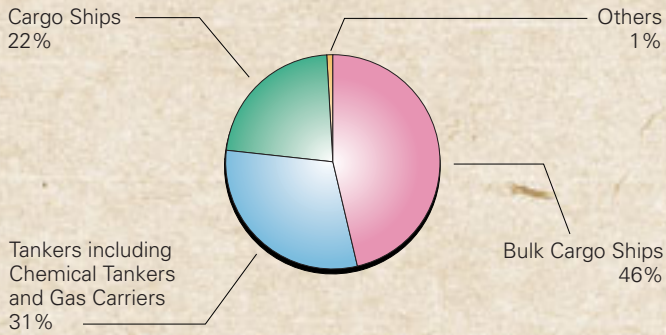
■ Aggregate Total Gross Tonnage of Ships Classed
○ Total Number of Ships Classed



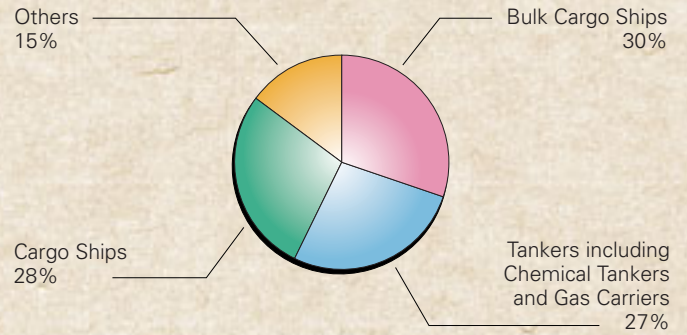
Breakdown of NK-Classified Ships by Age
 Average age of 6,290 ships in total: 10.6 years
 (as of the end of 2004)



Breakdown of NK-Classed Ships by Type
Total 126,896,068 gt



Breakdown of NK-Classed Ships by Type
Total 6,290 ships



PSC Corner Established on NK Website

A Port State Control (PSC) corner was established in the Information Services section of the ClassNK website in response to comments received in a survey of shipowners and ship managers carried out last year. It contains a range of information and materials on PSC-related matters, such as an explanation of PSC, information on PSC campaigns, links to major memoranda of understanding (MOU) websites, ClassNK's annual reports on PSC, and other related documents and publications.

ISPS Code Audit Authorization Begun

The ISPS Code came into effect on the 1st of July 1 2004, and NK has received authorization for conducting ISPS Code audits from 41 countries. Applications for Ship Security Plans (SSPs) began to increase from February 2004, and 76% of the total of SSP approvals were done from March to June 2004. NK now has 34 ISPS maritime security auditors.

International Exhibitions

The Society participated in three major international exhibitions in 2004:

1. LNG 14, held in Doha at the Qatar International Exhibition Center from the 21st to the 24th of March.
2. SEA JAPAN 2004, held in Tokyo at Tokyo Big Sight from the 14th to the 16th of April.
3. POSIDONIA 2004, held in Piraeus, Greece, at the Piraeus Exhibition Center from the 7th to the 11th of June.



1



2



3



NK

IN ACTION

The Classed Fleet

The number of NK-registered ships as of the end of December 2004 totaled 6,290, or 20 more than at the close of 2003. The total gross tonnage of NK-registered ships at the end of December 2004 was 126,896,068 gt, up 6,093,217 gt from a year earlier. The average age of the NK fleet was 10.8 years old (for ships of 100 gt and over).

Additions to the Register during the year numbered 399 ships, or 10,345,716 gt, 34 ships more than joined in 2003 and 6,093,217 gt more than the total for that year. This was the first time in the Society's history that additions topped 10 million gt.

A total of 379 ships, of 4,262,492 gt, left the Register, or 42 fewer than in 2003, although this represented 922,923 more tonnage than that "lost" in 2003. Of these ships, 90 were removed for reasons of noncompliance with the Society's rules, and 78 vessels transferred to other classification societies.

On balance, these figures once again support the trend seen over the last few years of the Register covering fewer, but much larger, vessels.

The number of NK-registered ships flagged outside Japan as at the end of December 2004 was 5,265 ships, or 83.7% of the total. These vessels totaled 116,992,929 gt, or 92.2% of the Register. The ports of registry were spread across 63 nations and territories. Nevertheless, ships fly-





CARIBBEAN SPIRIT
A 46,383 dwt oil/chemical carrier built by Shin Kurushima Dockyards Co., Ltd., for Fuyo Kaiun Co., Ltd.

ing the flags of Panama, Japan, Liberia, Singapore and Hong Kong accounted for 74.72% of the total number and 81.9% of the total gross tonnage classed by the Society.

Newbuildings

At 347, the number of newly constructed ships classed by the Society increased by 8.9% over the previous year, and the 9,663,412 gt classed represented an increase of 1,979,888 gt over the total added in the previous year, a record for the Society.

In terms of the number of ships, these newbuildings represented 87.0% of the ships added to the Register and 93.4% of the additional tonnage. Of the 347 vessels, 88, or 25.4%, were built by shipbuilders outside Japan.

The newbuildings broken down roughly by ship type were as follows:

- Bulk Carriers
124 ships for 4,981,548gt
(2003: 88 ships for 3,196,550 gt)
- Tankers and Gas Carriers
93 ships for 3,277,703 gt
(2003: 89 ships for 2,773,830 gt)
- Cargo Ships
52 ships, 1,333,584 gt
(2003: 57 ships for 1,627,409 gt)

Survey Activities and Approvals

In Japan, 3,592 surveys were carried out, while in other areas 8,981 surveys were carried out, for a grand total of 12,573 surveys.

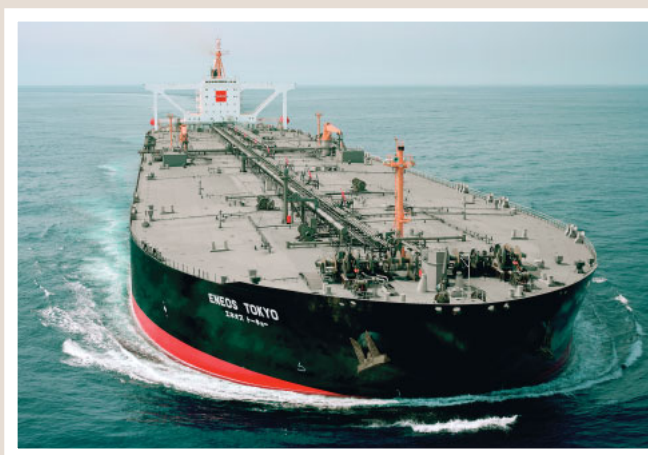
In 2004, 18 radio service companies were approved around the world, bringing to 198 the total number of companies approved at the end of the year.

The Society approved 32 companies in relation to Launching Appliances, Life Boats, and Rescue Boats as Life Saving Appliances in 2004. It also certified 69 items (including for the Bulkhead, Door, Window, and Ceiling categories) as Approved Materials and Equipment.

Approvals of welding consumables and manufacturing processes were carried out for 30 Chinese makers, including shipyards, one Czech, one French, six Japanese, 14 Korean, two Dutch, three Spanish, two American, and eight Vietnamese companies.

By category, the totals for newly approved firms were:

1. In-water surveys of ships: 6
2. Thickness measurements on ships: 17
3. Surveys and maintenance of fire extinguishing equipment and systems: 12
4. Servicing of life saving appliances: 5
5. Tightness testing of hatches with ultrasonic equipment: 1
6. VDR performance tests: 4



ENEOS TOKYO
A 300,976 dwt oil carrier built by IHI Marine United Inc. for Nippon Oil Tanker Corporation.

Technical Services

The Society carried out NOx verification services for diesel engines (having power outputs exceeding 130kW and installed on ships constructed on or after the 1st of January 2000) and issued Statements of Compliance (SOCs). The number of SOC for Engine International Air Pollution Prevention was 1,696. The number of SOC for International Air Pollution Prevention was 136.

As of the end of 2004, the Society had completed Condition Assessment Program surveys for 48 vessels and had approved 67 Ballast Water Management plans.

Assessment and Registration of Quality Management Systems

In 2004, 14 suppliers were assessed and registered under ISO 14001, bringing the total number of suppliers that it assessed and registered under that standard to 67, including ship management companies and shipyards. For ISO 9000, 37 suppliers were assessed and registered, bringing the total number of suppliers assessed and registered under that standard to 358.

Audits and Registrations of Safety Management Systems

The Society now has over 400 qualified International Safety Management (ISM) Lead Auditors. In 2004, they assessed and granted Documents of Compliance (DOCs) to 32 companies, while the number of Safety Management Certificates (SMCs) issued to vessels by the Society was



NORD VISION
A 52,504 dwt bulk carrier built by Tsuneishi Heavy Industries (Cebu) Inc. for F.J. Lines Inc.



ISUZUGAWA
A 299,984 dwt oil carrier built by Universal Shipbuilding Corporation for Isuzugawa Shipping S.A.

702. These brought the total number of DOCs and SMCs issued by NK to 592 companies and 4,022 ships. So far, 55 countries have authorized ClassNK to carry out assessments and issue DOCs and SMCs on their behalves.

ISPS

SSP approvals and audits for ship security management systems for foreign-flagged vessels started in August 2003. Audits of Japanese vessels began in February 2004.

For foreign-flagged vessels, SSP applications began to increase from February 2004, and 76% of the total of SSP approvals were between March and June. Also, Ship Security System Audits were concentrated between March and June 2004 in Japan and from April to June overseas. The ISPS code came into effect on July 1 2004, with no major disruptions experienced. NK has received ISPS code authorizations from 41 countries. NK's ISPS Maritime Security Auditors now number over 200.

NK Quality Assessments

As part of the IACS QSCS Annual Audit program, annual audits were carried out at 10 Head Office locations and at three locations overseas based on the fifth issue of the IACS QSCS. Vertical Contract Audits were also carried out on the surveys of 10 ships. NK continued to be recognized as conforming to the IACS QSCS.

The first maintenance audit conducted in accordance with certification based on ISO 9001:2000 was carried out at six Head Office locations and three survey offices (from

SSP Approvals

Company location	Approved vessels
Japan	324
Australia	3
Canada	2
China	42
Cyprus	11
Germany	1
Greece	262
Hong Kong	108
Indonesia	18
Israel	18
Korea	7
Malaysia	5
Netherlands	5
Oman	1
Philippines	99
Saudi Arabia	3
Singapore	225
Spain	2
Switzerland	4
Taiwan	12
Thailand	66
Turkey	102
U.A.E.	3
U.K.	4
U.S.A.	18
Total	1,345

Vessel flag	Approved vessels
Japan	157
Bahamas	78
Belize	2
Cyprus	111
Georgia	5
Greece	23
Hong Kong	226
Kuwait	2
Lebanon	2
Malaysia	4
Malta	157
Marshall Islands	28
Myanmar	4
Panama	17
Philippines	87
St. Vincent & The Grenadines	43
Saudi Arabia	1
Singapore	254
Switzerland	4
Thailand	61
Turkey	52
Vanuatu	26
U.A.E.	1
Total	1,345

January to March 2004) and the second maintenance audit conducted in accordance with certification based on ISO 9001:2000 was carried out at eight Head Office locations and six survey offices (in July and August).

An audit by the Greek Government was carried out at the Piraeus office, while an audit by the Dutch Government was carried out at the Rotterdam office. Also, an additional audit for the first audit by Raad Voor Accreditatie was carried out at the Rotterdam office and Head Office and an assessment by the European Commission was carried out at each Head Office location and two survey offices.

An assessment by the Japanese Government was carried out at each Head Office location and for two vessel audits based on the ISPS Code. Another assessment by

the Japanese Government was carried out at each Head Office location, and a branch office, with two company audits and vessel surveys/audits based on the Ship Safety Law of Japan.

The Rules

Since the heart of a ship classification society's technical credibility is its rules, the Society constantly reviews and revises its many Rules, Regulations and Guidance. In addition to keeping the rules up to date with constantly changing statutory requirements, the Society also focuses on reviewing its rules to incorporate the results of its research and development activities.

The full list of the Rules and Guidance established and/or amended by the Society in 2004 includes:

1. Rules and Guidance for the Survey and Construction of Steel Ships

- 1) A part revision related to thickness measurements for bulk carriers (Part B, C)
- 2) A part revision related to postponement of planned machinery surveys (Part B)
- 3) A part revision related to change-over timing for the propeller shaft condition monitoring survey system (Part B)
- 4) A part revision related to propeller shaft surveys of mobile offshore drilling units (Part B)
- 5) A part revision related to approval tests for air pipe automatic closing devices (Part D)
- 6) A part revision related to onboard function tests of fixed fire extinguishing systems (Part B)
- 7) A part revision related to integrated cargo and ballast systems on tankers (Part D)
- 8) A part revision related to boiler deck coamings (Part D)
- 9) A part revision related to slip-on joints for steam lines on decks (Part D)

ISPS Vessel Audits

Company location	No. of companies	No. of vessels
Japan	229	1,709
Australia	1	3
Canada	3	7
China	18	52
Cyprus	3	14
Germany	1	8
Greece	61	296
Israel	2	23
Hong Kong	18	204
Indonesia	6	32
Korea	8	27
Lithuania	1	1
Malaysia	2	33
Netherlands	3	3
Norway	1	3
Oman	1	2
Pakistan	1	1
Philippines	13	122
Russian Federation	1	1
Saudi Arabia	3	5
Singapore	32	316
Spain	1	2
Switzerland	1	4
Taiwan	12	81
Thailand	4	73
Turkey	23	99
U.K.	2	33
U.S.A.	3	22
U.A.E.	1	3
Total	455	3,179

Vessel flag	Audited/registered vessels
Japan	147
Bahamas	69
Belize	2
Cyprus	107
Dominica	2
Georgia	5
Greece	21
Hong Kong	190
Kuwait	2
Lebanon	1
Liberia	82
Malaysia	4
Malta	136
Marshall Islands	24
Myanmar	4
Netherlands Antilles	3
Panama	1,910
Philippines	77
St. Vincent & the Grenadines	41
Singapore	215
Saudi Arabia	2
Switzerland	4
Thailand	58
Turkey	50
Vanuatu	23
Total	3,179

- 10) A part revision related to bow doors, inner doors, side shell doors and stern doors (Part C, CS)
- 11) A part revision related to non-destructive testing for crank shafts (Part K)
- 12) A part revision related to mechanical joints used in diesel engines (Part D)
- 13) A part revision related to a review of duplicative expressions in Rules for Automatic and Remote Control Systems (Part D)
- 14) A part revision related to navigation bridge visibility (Part B, W)
- 15) A part revision related to structural requirements of mooring and towing arrangements (Part B, C, CS)
- 16) A part revision related to operational requirements for water-tight doors (Part C, CS)
- 17) A part revision related to water-ingress alarms for existing bulk carriers (Part C)
- 18) A part revision related to the arrangement of water-ingress alarms (Part B, D)
- 19) A part revision related to stability computers (Part B, U)
- 20) A part revision related to the International Convention on Load Lines (Part A, C, CS, D, Q)
- 21) A part revision related to lower brackets of hold frames for existing bulk carriers (Part C)
- 22) A part revision related to permanent means of access (Part B, C, CS)
- 23) A part revision related to gross tonnage (Part A)
- 24) A part revision related to hull surveys for double side skin bulk carriers (Part B)
- 25) A part revision related to coaming height of ventilators for emergency generator rooms (Part C)
- 26) A part revision related to detailed requirements for fire protection and extinction (Part C, R)
- 27) A part revision related to the application of flame arresters (Part R)
- 28) A part revision related to specifications for aluminum alloys (Part K)
- 29) A part revision related to specimens for mechanical testing of materials (Part K)
- 30) A part revision related to non-destructive testing for steel plates with specified minimum through thickness properties (Part K)



BULK TWO
A 76,429 dwt bulk carrier built by Tsuneishi Corporation for Delphinium Shipping Corporation.

- 31) A part revision related to the chemical composition of forged steel for rudder stocks and pintles (Part K)
- 32) A part revision related to repair works on welding defects in hull structures (Part M)
- 33) A part revision related to freeboard decks of ships which are loading (Part A)
- 34) A part revision related to intact stability for towing vessels (Part U)

2. Guidance for the Audit and Registration of Safety Management Systems

A part revision related to procedures for additional audits at class transfer and follow-up audits

3. Rules and Guidance for Cargo Handling Appliances

A part revision related to the change-over to a survey system based on the ILO 152 convention

4. Rules for the Survey and Construction of Passenger Ships

- 1) A part revision related to bow doors, inner doors, side shell doors and stern doors
- 2) A part revision related to stability computers
- 3) A part revision related to the International Convention on Load Lines
- 4) A part revision related to submersible passenger craft



SUNNY BRIGHT
A 49,999 dwt LPG Carrier constructed by Mitsubishi Heavy Industries, Ltd., for Ocean Gas Transports S.A.

5. Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use

- 1) A part revision related to approval tests for air pipe automatic closing devices
- 2) A part revision related to type approval of non-ferrous materials for hull structures
- 3) A part revision related to structural mooring and towing arrangements
- 4) A part revision related to protection against corrosion for air pipe automatic closing devices
- 5) A part revision related to stability computers
- 6) A part revision related to application of flame arresters
- 7) A part revision related to specifications for aluminum alloys
- 8) A part revision related to timing for field assessment of manufacturers at renewal of approval
- 9) A part revision related to approval of ingots for forged steel
- 10) A part revision related to confirmation of weldability of steel plates for hull structure with high heat input

6. Rules and Guidance for Automatic and Remote Control Systems

A part revision related to duplicative expressions

7. Rules and Guidance for Marine Pollution Prevention Systems

- 1) A part revision related to new performance standards for equipment to prevent oil pollution
- 2) A part revision related to the phasing out of single hull tankers and condition assessment scheme
- 3) A part revision related to intact stability for oil tankers

8. High Speed Craft

A part revision related to the International Convention on Load Lines

Training

Training for Maritime Security Auditors followed on from last year. Training for Maritime Security Auditors was carried out in Japan (four times for over 50 people), at the Singapore office (four times), and at the Los Angeles office (one time), for total of nine times for around 100 people. In addition, a number of inspectors from outside NK participated in these training sessions, including from Japan's Ministry of Land, Infrastructure and Transport and from other government organizations, notably, SEACOM, CR, and the Hong Kong Marine Department.

Surveyor training was conducted for 121 newly appointed exclusive surveyors, including 23 non-Japanese surveyors. This training included diesel engine factory practice. Refresher training was also conducted at Head Office for some mid-level exclusive surveyors from overseas branch offices.

ISM Auditor Training was conducted for 18 domestic surveyors in September and October. To date, a total of almost 500 persons have undertaken this training. In addition, some inspectors from Japan's Ministry of Land, Infrastructure and Transport participated in this training.

On-the-job training for aged ship surveys for overseas exclusive surveyors was conducted by lecturer Mr. Hikasa, who was dispatched to the Shanghai office, where he carried out the training for about one month. This training was aimed at improving the survey capabilities of surveyors in aged ship inspections.



Training for surveyors from the Vietnam Register

Training for under construction classification registration surveys was conducted for local Shanghai office surveyors at HLD, EQD, SVD and at branch offices in Japan in response to increasing new ship construction in China.

Also, at the request of the Vietnam Register (a ship classification society), training for under construction classification registration surveys was conducted for about two months at Head Office and domestic branches for three of that society's surveyors.

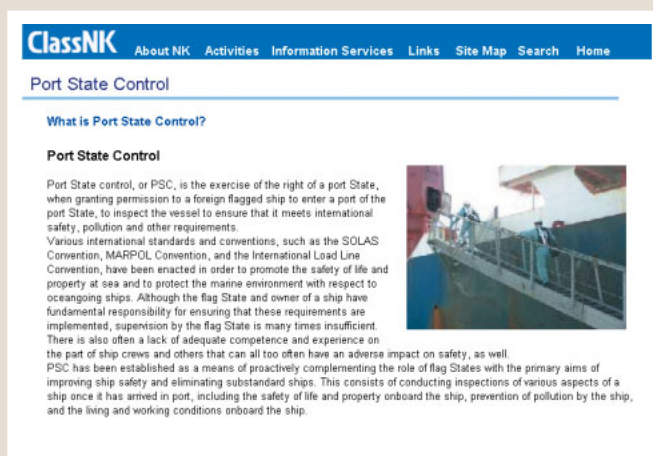
From May to July, at the request of the Japan International Cooperation Agency, training courses on Shipbuilding and Quality Management Systems and International

Maritime Conventions and Ship Safety Inspections were conducted for trainees from developing countries. In December, at the request of states signing the Tokyo Memorandum of Understanding, a lecture on MARPOL and SOLAS was given to PSC inspectors.

These special programs were in addition to regular training for newcomers, managers, general managers, and language courses.

NK Online

NK's online services are integral to providing the highest levels of customer service 24 hours a day, seven days a



Port State Control pages were added to the NK website



Training session for overseas-based surveyors

week. NK is continually enhancing its website and the NK SHIPS online information service.

In 2004, the PSC corner was added to the Information Services section of the ClassNK website. This new section was created in response to comments received in a survey of shipowners and ship managers carried out last year, where they expressed a desire for PSC-related information to be made available on the NK website. It contains a range of information and materials on PSC-related matters, such as an explanation of what PSC is, information on the various PSC campaigns, links to major MOU websites, ClassNK's annual reports on PSC, and other related documents and publications.

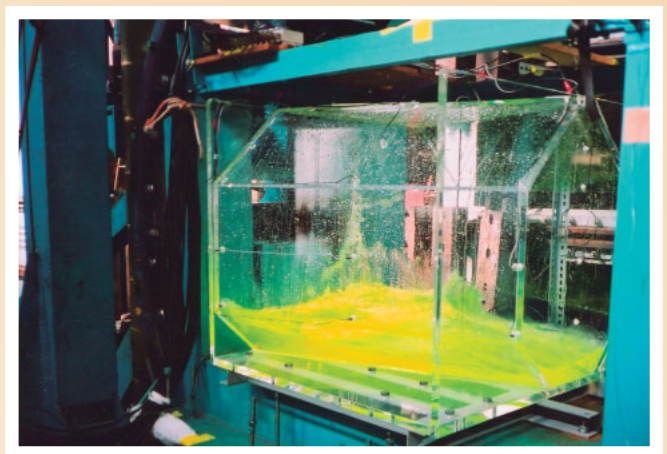
Research Projects

Title of Research	Outline of Research
Study on structural reliability of ships (First year of a three-year plan)	Utilizing the outcomes of fundamental studies on clarification of the uncertainties hidden in usual strength assessment procedures, develop a framework for structural strength assessment procedures based on structural reliability theory. Further, propose a method to objectively and rationally evaluate ship structural strength through a trial calculation using a pilot model.
Study on practical use of hull monitoring system (One-year extension of a three-year plan)	Onboard tests of the hull monitoring system (StressAlert) are being carried out continuously to appraise the practicability of the system and to accumulate actual data on hull responses and operation of a new large container ship. A fundamental scheme for safe operation of ships is proposed based on the results of these tests.
Study on inspections and maintenance for the assessment of aged ship hull integrity (Second year of a three-year plan)	A practical method for the assessment of structural strength is being investigated that consider structural degradation. In this assessment, objective procedures are adopted by utilizing design, service, and survey data.
Study on wave loads acting on ship structures (First year of a three-year plan: Third stage)	Numerical and experimental studies on wave loads acting on ship structures are being conducted to develop design loads that consider three-dimensional effects, non-linearity due to wave height, impact effects, hydro-elasticity, etc.
Research on reliability of systems of offshore structures (Final year of a two-year plan)	Overviewing the techniques and research developed in the course of realization of offshore structures, an estimation method for the reliability of offshore structures and ship structures is proposed. Marine casualties are also investigated from this viewpoint.
Study on method of assessment of ultimate strength for hull structures (Second year of a three-year plan)	By clarifying the ultimate strength of ship structures such as hull girders, primary members and local members, rational strength criterion will be proposed and reflected in the structural standards.
Study on preventive maintenance for marine engines (Second year of a three-year plan)	<ol style="list-style-type: none"> (1) Condition monitoring and diagnostic techniques for main bearing and engine vibrations are being measured. (2) To clarify the mechanism of explosions in exhaust pipes of main engines, fault tree analysis is being carried out
Investigation on lifetime assessment for marine machinery (First year of a two-year plan)	This study deals with the lifetime assessment of main boilers, main turbines, and other machinery installed on LNG carriers.
Studies of analytical methods for combustion characteristics of marine fuel oils and wear of lubricating surfaces of diesel engines (Last year of a three-year plan)	<ol style="list-style-type: none"> (1) Establish a diagnostic technique to determine adequate combustion of fuel oils from several viewpoints, including ignition delay and combustion periods. (2) Develop a diagnostic technique to determine degradation of lubricating oils for bearings of diesel engines.
Study on assessment of strength of main engine structures (First year of a three-year plan: Second stage)	<ol style="list-style-type: none"> (1) Ship deformation may cause failure of main bearings of large marine engines. To clarify this problem, structural analyses and measurements of the deformation are being carried out, while shaft alignment design is also being examined. (2) The mechanism of fractures in propulsion shafting coupling bolts is being investigated experimentally.

Title of Research	Outline of Research
Study on reliability-based evaluation of marine machinery and systems (First year of a two-year plan: Second stage)	The purposes of this study are to establish a safety assessment procedure for marine machinery and systems based on reliability methods and to improve the accountability and transparency of the classification rule-making process in applying this procedure.
Study on Residual Stresses in Materials for Marine Structures and Components (First year of a one-year plan)	It is generally known that fatigue fracture is one of the main causes of damage to structures and components, and residual stresses strongly influence fatigue fractures. In this study, the residual stresses originated in induction hardening of crankshafts are being investigated. The purpose of the study is to propose a simple evaluation method of the residual stresses.
Study on the strength of welded joints for ships (First year of a three-year plan: Second stage)	To reconsider the validity of the leg length of fillet welds specified in the Rules, the relationship between static strength and leg length is being investigated through a series of tests and finite element analyses taking corrosion effects into account. Adequate simplified equation between Charpy impact energy and fracture toughness (critical CTOD) of mild steel for ship hulls is also being investigated.
Investigation of inspection instruments for ship structures (Final year of a two-year plan)	Inspection instruments, for instance, UT sensors to measure real steel thickness of painted plate or corroded plate are being investigated. Remotely operated vehicle and inspection instruments that can be used in seawater to inspect hull deformation and to measure plate thickness from outside hulls are also being investigated.
Study on corrosion of ship structural members (Final year of a three-year plan)	To understand the strength characteristics of corroded members, a series of tests was conducted on actual corroded members. To provide basic data for the establishment of corrosion margins and permissible corrosion levels, simulation methods and strength evaluation methods considering local corrosion condition are being investigated.
Field tests on an actual ship	(1) Machinery: Deformation measurements on the double bottom of E/R (2) Hull: Stress measurements on a large container ship



The annual research seminar was very well attended



Sloshing experiments for LNG tanks



NK

AROUND THE WORLD

NK had an exceptionally busy 2004, with record new-building tonnage added and additional factors, such as the introduction of the ISPS code. A sampling of highlights or points of interest from branches in Japan and around the world follows.

Japan

In Nagoya, the *Oriental Queen*, a 53,194 dwt LPG carrier, was built at Universal Shipbuilding Corporation for Unique Shipping (H.K.) Limited. This was the first such vessel built in this shipyard for about 20 years, and is a newly designed, large-sized LPG carrier. Also built to NK class was the *Andromeda Leader*, a 21,443 dwt vehicle carrier, by Toyohashi Shipbuilding Co., Ltd., for Sarawak Shipholding S.A. This vessel has a Straight-Wing Vertical Axis Shipboard Wind Turbine, otherwise known as a VAWT, Generator System, which was developed in cooperation with Nippon Yusen Kaisha and NIPPI Corporation to reduce carbon dioxide emissions. Driven by a VAWT that is four meters in diameter and 4.5 meters high, this system can generate 30 kW at a wind velocity of 25 m/s.

Of special interest in Imabari, the *Toba* was built at the Saijo Shipyard of Imabari Shipbuilding Co., Ltd. This was their second 300,000 dwt-class VLCC.

In Sakaide, the *Poseidon Triumph* was built at Shin Kochijyuko Co., Ltd. It is a heavy cargo ship of 12,214 dwt built for Temm Maritime Co., Ltd., and is of interest as it has a 150-ton twin deck crane to carry Japanese bullet trains to



TOBA
A 299,980 dwt oil carrier built by Imabari Shipbuilding Co., Ltd., for Toba Shipholding S.A.

Taiwan. A similar vessel, the *Iyo*, a 19,946 dwt Ro-Ro cargo ship fitted with two 150-ton deck cranes, was built at Shin Kochijyuko for VIVIEN Co., Ltd.

In Yokohama, the final of six bulk carriers for A.M. Nomikos, including the *Azzura*, were constructed completely at IHI Marine United Inc., and delivered in November.

In Kobe, Mitsubishi Heavy Industries, Ltd., Kobe Shipyard & Machinery Works recently completed development of the first electronically controlled marine diesel engine (known as the UEC Eco-engine) for use onboard large sized ships (the "Eco" affixed to the name stands for Electronic Control, ECOlogy, Easy CONTROL, and ECONomy). Staff of the Kobe branch office attended measurement tests for approval in November, as well as carrying out NOx verification Services that month, and will attend



The first electronically controlled marine diesel engine, known as the UEC Eco-engine, developed at Mitsubishi Heavy Industries, Ltd., Kobe Shipyard & Machinery Works

Sea Trial Tests. The Kobe branch office also launched a series of "Last Friday Meetings" in May to share useful information with such stakeholders as shipowners and shipyards. So far, five such technical explanation meetings/social gatherings have been held.

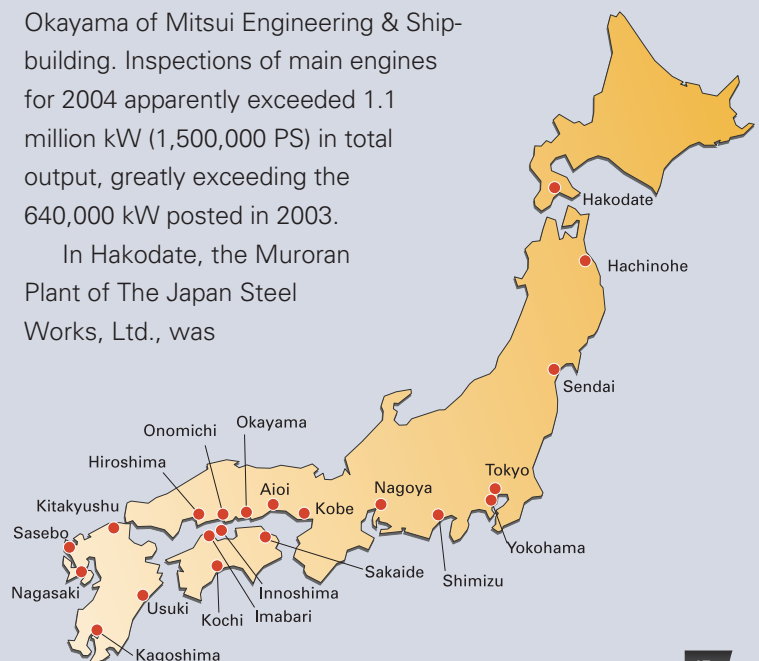
In January, the trial test of the first electronically controlled marine diesel engine was carried out at Hitachi Zosen Diesel & Engineering Co., Ltd., in Nagasaki. This type of engine was installed on an NK class vessel for the first time, and then it was then sent to Naikai Shipbuilding & Engineering Co., Ltd.



ORIENTAL QUEEN
A 82,000m³ LPG Carrier built by Universal Shipbuilding Corporation for Phoenix Navigation Corporation Limited

Reflecting the increasing amount of domestic new ship construction, inspection numbers have increased greatly for main diesel engines at the Tamano Works in Okayama of Mitsui Engineering & Shipbuilding. Inspections of main engines for 2004 apparently exceeded 1.1 million kW (1,500,000 PS) in total output, greatly exceeding the 640,000 kW posted in 2003.

In Hakodate, the Muroran Plant of The Japan Steel Works, Ltd., was





ANDROMEDA LEADER
A 21,443 dwt vehicle carrier built by Toyohashi Shipbuilding Co., Ltd., for ANZ National Bank Limited.

approved as a manufacturer of forgings, castings, plates and clad plates in accordance with the Rules for approval of manufacturers and service suppliers. The Muroran Works of Mitsubishi Steel Muroran Inc. was given approval of its manufacturing process.

Hiroshima's Nakatani Shipbuilding Co., Ltd., built its first NK-classed ship after an interval of four years, and now six more ships will be built to NK Class. The shipyard suffered financially owing to a lot of typhoons in the Hiroshima district last year.

In 2004, the Society decided to rebuild the Innoshima office. Completion is scheduled for mid-September 2005. In big local news, Naikaizosen Co., Ltd., and Nitizou IMC Co., Ltd., were to be merged from the 1st of January 2005.



IYO
A 19,946 dwt ro-ro cargo built by Shin Kochijyuko Co., Ltd., for Vivien Co., Ltd.

The Americas

The Buenos Aires office in Argentina conducted the survey of the newbuilding of the *M/V Maloja*, which was launched on the 1st of October 2004 and is expected to be delivered by the 30th of January 2005. Flagged in the Marshall Islands, the 27,000 dwt bulk carrier is the third sister ship in a series of five, contracted by Wilhelm Finance Inc. to the local shipyard Astilleros Rio Santiago. The office also conducted ISM Company Annual audits in Buenos Aires and Asuncion, Paraguay, and more than 25 initial audits on shipboard security management systems.

In Brazil, the Rio de Janeiro office approved one new radio installation service firm. Surveys other than regular

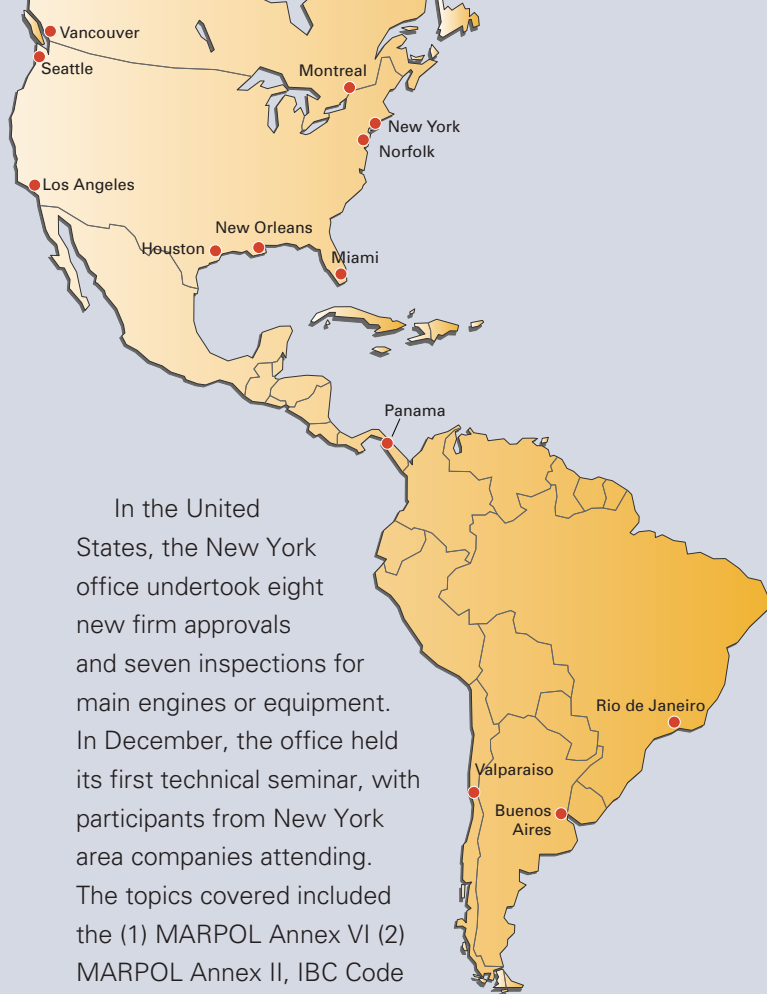


UTOPIA ACE
A 19,086 dwt vehicle carrier built by Mitsubishi Heavy Industries, Ltd., for Orchard Maritime (Panama) S.A. (This design was awarded Ship of the Year at the Lloyd's List Maritime Asia Awards)

class surveys and equipment inspections doubled, and technical consultations were up 13%.

In Canada, the Montreal office undertook the approval of stern tube bearings and water treatment plants by Thorneden Bearings in Toronto for high-speed ferries being built in Japan.

The Valparaiso office in Chile participated in the INLAC (Latinoamerican Institute for Quality Assurance) 2004 Congress, which held a workshop and fair on quality, entitled, For a World Agenda of Quality. The office also sponsored the 20th General Assembly of the Congress of the International Federation of Maritime Associations and Navy Leagues, held in the city of Vina del Mar, from the 4th to the 8th of October 2004.



In the United States, the New York office undertook eight new firm approvals and seven inspections for main engines or equipment. In December, the office held its first technical seminar, with participants from New York area companies attending. The topics covered included the (1) MARPOL Annex VI (2) MARPOL Annex II, IBC Code Amendment and PSC in the United States.

The Houston office undertook 10 certifications of equipment and conducted re-approval or periodical surveillance of three firms.

In Los Angeles appraisal surveys, including inspection of non-classed vessels on behalf of the Japanese Government rose 300%.

The New Orleans office approved Miami-based Dockside Marine Electronics as a radio inspection company. In Seattle the number of underwriter surveys and other appraisals was eight, compared with one in 2003.



UNIVERSAL GLORIA
A 62,716 dwt chip carrier built by Imabari Shipbuilding Co., Ltd., for Manatee Navigation S.A.

Asia and Oceania

In Sydney, Australia, 400 surveys were performed, including 56 PSC and 68 ISPS initial audits.

In Bangladesh, the Dhaka office approved M/s. Chittagong Dry Dock Ltd as a thickness measurement firm. The construction of 15 aluminum alloy harbor patrol boats commenced at Khulna Shipyard.

In Shanghai, China, two 55,000 dwt bulk carriers were built to NK class for COSCO Tianjin Ocean Shipping Company at Nantong COSCO KHI Ship Engineering Co., Ltd. (NACKS). The new plan approval section completed approvals for many China newbuild projects including for Bohai Shipyard, NACKS, Dayang Shipyard and Zhejiang



A shop trial for a main engine at Dalian Marine Diesel Works

Shipyard. Newbuilding surveys were also done for five main engines and 20 auxiliary engines, an increase of 100%.

The Beijing office completed certification of production methods for five companies producing welding consumables.

A shop trial of a 6S50MC-C type main engine (8,200kW at 110 rpm) was carried out at Dalian Marine Diesel Works (DMD). The engine is to be installed onboard a 31,000 gt bulk carrier which is currently under construction at the NanTong COSCO KHI Ship Engineering Co., Ltd. (NACKS) in China. This is the first main engine to be manufactured by DMD for use in a ship built to NK class.

In addition to regular survey business, the Hong Kong office was busy with a variety of other activities, including



included general cargo/lumber/container (89 ships), barges (99), bulk carriers (74), tugs (100), oil/chemical (125), and gas carriers (18).

The Jakarta office completed one plan approval and two certifications of production methods methods, PT. Gunawan Dian Jaya - Surabaya and a test of mills for PT. PAL-Surabaya. There were three certifications of equipment and an approval of one in-water survey firm.

There were eight industrial inspections, for:

- PT. Batam Expressindo Shipyard: Material plate grade A
- PT. Palma progress shipyard: Certification rudder stock, plate testing
- PT. Asia Foundry & Engineering: Tailshaft inspection
- PT. Nanindah Mutiara Shipyard: Material test
- PT. Gunawan Dianjaya Steel: Witnessing tests of mills
- PT. Karya Yasantara cakti: Inspections of approval welding and plates
- PT. Aalborg Industries: Inspections of boiler and heater exchanger
- PT. PAL Indonesia: Including welder certification

A presentation on ISPS (as a recognized security organization) was held for SEACOM in July. The 2004 technical seminar on the IMO/IACS update, PSC and the ISPS code was held in December.

In Korea, the Pusan office oversaw a number of new-building class entries for Hyundai Heavy Industries Co. Ltd., including one bulk carrier, two oil tankers, three container carriers, and for Samho Shipbuilding Co. Ltd., one chemical tanker, for a total of about 371,000 gt.

In India, the Mumbai office undertook type approval of the TWIDS water level detection and alarm system of Pune Techtrol Pvt, Ltd., in Pune, and completed radio firm approval for M.R. Enterprises in Mumbai. Auxiliary engine inspections (for Cummins India Limited) totaled 13, up from three in 2003. A technical seminar on three topics was presented in Mumbai in November. Mr. A.V. Pradhan, general manager of the NK Mumbai office, covered the first topic of recent machinery failures and counter-

a technical seminar on PrimeShip-Hull Guidelines for Tankers, Bulk Carriers and Container Ships in July for the Hong Kong Shipowners Association.

Indonesia was one of the busiest overseas areas. In Jakarta, 43 vessels were under construction to NK class, up 53% (15 delivered and 27 under construction) including one container carrier, one tanker, and two bulk carriers and many barges and tug boats. Surveys on existing vessels totaled 505 ships. The vessel categories surveyed



CEMTEX PIONEER
A 77,598 dwt bulk carrier built by China Shipbuilding Corporation for U-Ming Marine Transport (Singapore) Pte.Ltd.



VERRAZANO BRIDGE
A 65,038 dwt container carrier built by Hyundai Heavy Industries Co., Ltd.

measures. Dr. M.A. Rahim, manager of NK's London office, spoke on the second topic of IACS common structural rules and the third topic of PrimeShip and HullCare.

The Johor Bahru office in Malaysia, in addition to an increase in regular class surveys, undertook inspections for equipment and materials for 47 companies. It also completed a condition assessment program survey. In Kota Kinabalu, newbuildings completed totaled 40 units, mostly tugs and barges, which was an increase of 17.6% from 2003.

The Philippines was active. Tsuneishi Heavy Industries (Cebu), Inc., delivered three 52,300 dwt bulk carriers built to NK class, one less than in 2003. Regular surveys were down slightly. The Keppel Cebu Shipyard, Inc., was certified as a firm engaged in thickness measurements on ships.



Singapore started work on two newbuildings of 2600 TEU container carriers, at Jurong Shipyard Pte. Ltd., and class entry surveys on three existing ships were completed. Plan approvals were undertaken for 280 vessels and for 250 SSPs. The number of regular surveys was almost unchanged except, for ISPS. There were three technical seminars during the year.

In Taiwan, there were three newbuilding class surveys. Two were for the Cemtex Pioneer, a 77,598 dwt bulk carrier, and the Cemtex Wisdom, a 77,598 dwt bulk carrier. Both ships were built at CSBC Kaohsiung. The third was for the White Lotus VII, a pleasure boat built at President Marine Ltd.



PIONEER SUNSHINE
A 45,915 dwt other cargo built by Shin Kurushima Dockyard Co., Ltd., for Moon Rise Shipping Co., S.A.

The Bangkok office in Thailand saw a slight decrease in regular class surveys (including DOC and SMC work), but other surveys (of testing machinery and welding electrodes) increased 50%. The office held the 4th ClassNK Technical Seminar in December in collaboration with the Thai Shipowners Association. The 100 participants included shipowners, shipyards, shipping agencies, and government representatives. Presentations were given on three technical topics.

In Vietnam, the Haiphong office went from strength to strength, with five newbuildings completed under NK



PACIFIC GLORY
A 233,694 dwt ore carrier built by Imabari Shipbuilding Co., Ltd., for Fir Shipping S.A.

class. In January, March, and June, three 6,500 dwt cargo ships were delivered at Bach Dang Shipyard.

In December, Ha Long Shipyard in Quang Ninh delivered the *MV Tay Son*, a 12,500 dwt cargo ship, to Vietnam National Shipping Lines (Vinalines). This is the first of five 12,500 dwt cargo ships in a project between Vietnam Shipbuilding Industry Company (Vinashin) and Vinalines for 32 newbuildings from 2003 through 2005.



AJANG MEDINA
A 430 dwt oil spill recovery vessel built by Shin Yang Shipyard Sdn. Bhd. for Ajang Shipping Sdn. Bhd.

Also at Bach Dang Shipyard, the *Stella Cosmos*, a 9,000 dwt cargo ship, was delivered to owner Noma Kaiun KK (Japan). The latter has signed a contract with Bach Dang Shipyard for a second 9,000 dwt cargo ship, for which construction under NK class is expected to start in March 2005. The Haiphong office also engaged in classification surveys for two 13,000 dwt tankers, two 6,500 dwt cargo ships, and four 12,500 dwt cargo ships. The four 12,500 dwt cargo ships are scheduled for delivery in 2005.

In October 2004, Vinalines signed a contract with Bach Dang Shipyard for newbuilding of four 22,500 dwt bulk carriers to be classed with NK. In the same month, the shipyard signed a contract with Vinakita Naval Architec-



STELLA COSMOS
A 9,325 dwt general cargo built by Bach Dang Shipyard for Pana Star Line, S.A.

ture JVC Ltd. a joint venture between Vinashin and Kitada Company of Japan to design these 22,500 dwt bulk carriers.

The Haiphong office handled 200 regular ship survey applications. Work at Hyundai-Vinashin Shipyard was heavy owing to a slight increase in docking surveys. The Haiphong office also conducted an assessment of capacity for a 6,500 dwt newbuilding cargo ship at Sai Gon Shipbuilding Industry Company.

The first NK approval of a Vietnamese radio firm to be engaged in service on ships was given to Cao Minh Shipping Service Co. Ltd. Also, standardized designs for a cargo winch, topping winch, and guy winch were approved in December 2004 for the Shipbuilding Science and Technology Institute. In May, a technical presentation on bulk carriers was held in Hanoi, with 60 participants from shipyards and shipping companies attending.

The Ho Chi Minh office was opened in August with the goal of offering rapid service to clients in the south of Vietnam, as survey numbers in that area (including in Ho Chi Minh and Vung Tau) are always the highest among Vietnam's three main regions.



Europe

In Denmark, the Copenhagen office undertook approval of one ultrasonic thickness measurement firm. Regular class surveys were done on 51 ships, ISM/ISPA on 20 ships, and others (material & equipment) totaled 920.

In France, the Marseilles office was involved in three approvals of manufacturers, two approvals of service providers, one type approval, and two renewals of type approval. The total number of industrial inspections was up 6%, while the total number of material certificates issued increased 30%.

The Hamburg office in Germany did about 45 type approvals and issued about eight equipment certificates and 1,081 other certificates.

The Piraeus office in Greece completed class entries for two existing ships. It made 213 ISPS plan approvals and issued two certificates for equipment. SMCs decreased 30% although DOCs issued rose 40%, and 94 ISPS surveys were completed. An ISPS training course for company security officers was conducted, and a technical meeting for Greek shipowners was held. The office also supported the NK booth at Posidonia.



PACIFIC PARTNER
A 105,946 dwt oil carrier built by Hyundai Heavy Industries Co., Ltd., for Peninsula Transport S.A.



APL SPAIN
A 67,009 dwt container carrier built by Koyo Dockyard Co., Ltd., for Southern Route Maritime S.A.

In Italy the Genova office welcomed two new class entries, the *M.V. Curia*, a Swiss-flagged bulk carrier, managed by Reederei Zurich AG, and the *M.V. Angel*, a Bahamas-flagged bulk carrier, managed by Petrobulk Maritime Inc of Greece. D/AB SPA of Longarone, Italy, was awarded type approval for polyvinyl chloride foam. ABB Space S.p.A of Italy received type approval for circuit breakers. ABB Turbo Systems Ltd of Switzerland received mass production and manufacturer approval for its exhaust gas turbochargers, and Safra SPA of Italy gained approval for its welding products. JONIO SUB of Italy was approved as a diving company. Renewal of approval was



AZZURA
A 52,050 dwt bulk carrier built by IHI Marine United Inc. for Cello Inc.

given to ZAVAR Welding Technology and Supervising Enterprise Ltd., as a firm engaged in thickness measurement of ships, and Compagnia Generale Telemar, an Italian radio company.

Regular class surveys and other inspections were the same or increased slightly. Inspections on behalf of the Japanese Government were done for the turbochargers of ABB Turbo Systems and for the couplings of Geislinger GmbH of Austria. The Cooperative Association of Japan Shipbuilders was assisted during its visit to Fincantier in Genoa.

In The Netherlands, the Rotterdam office carried out one type approval on filaments for synthetic fiber ropes.



GAIA PEGASUS
A 229,186 dwt ore carrier built by Namura Shipbuilding Co., Ltd., for Elara Maritima S.A.

The Oslo office in Norway issued 558 certificates for material and equipment, a 25% increase over 2003.

In Poland, the Gdansk office was relocated from its shipyard premises to a Gdansk city location. It undertook the renewal of approval of manufacturing process for Celsa Huta Ostrowiec Sp. z o.o. for forging of carbon steel and low-alloy steels, and approval of a firm engaged in thickness measurement on ships was awarded to Stefship in Gdynia. Industrial inspections increased by 30%.

In Portugal, NK Lisbon activities relating to the number of surveys/audits of existing ships were slightly increased. Dry-dockings and repairs related to ship class SS and IS



TAGA
A 303,430 dwt oil carrier built by Universal Shipbuilding Corporation for Blue Tree Maritima S.A.

increased about 10%. One firm engaged in services for fire equipment was approved.

At the Constanza office in Romania, the number of regular class surveys was unchanged. One new radio company in Odessa, Ukraine, was authorized. Two companies underwent periodical surveys for approved makers of castings and forgings in Constantza, Romania. Also, Kvaerner IMBG in Bucharest was approved as a maker of castings and forgings.

In Spain, approvals and certifications completed for service supplier firms included those for Crame, SA, and Radiobuques, S.L. (radios), Astilleros de Santander (thick-



CAPE APRICOT
A 180,310 dwt bulk carrier built by Koyo Dockyard Co., Ltd., for Leo Ocean, S.A.

ness measurement), Castonix, SA, Forjas de Cantabria, S.L., and TUBACEX Tubos Inoxidables, SA (manufacturing processes), and Poyam Valves and BAC VALVES, S.A. (type approval).

In Turkey, the Istanbul office welcomed a number of vessels into NK class. These included two existing cargo ships, and one bulk carrier (actually a newbuilding re-sale). Newbuilding projects in Japan for YASA Holding S.A. totaled 10 ships, including two Aframax-size tankers of 110,000 dwt. A new Turkish Committee was established on the 10th of February 2004, with 17 members. Mr. Yalcin Sabanci was elected Chairman of the committee. A highly successful and fruitful technical seminar was held



GREEN POWER
A 89,999 L/T dwt bulk carrier built by Oshima Shipbuilding Co., Ltd., for Laurel Maritime Co.Ltd.

in September, with 92 people participating. A technical presentation for tanker owners in Turkey was also a great success. ISO 14001 was introduced to Turkish owners. Five companies have already applied and have been registered, while approvals of the applications of two companies are in progress. ISO 9001-2000 was also introduced to Turkish owners, and about 10 companies have registered.

In the United Kingdom, the London office welcomed three ships in service to NK class. "INVAR-IVOSEVIC" Ltd., was approved as a thickness measurement firm, and 39 appraisals were carried out. NK received authorization to undertake statutory surveys on U.K.-flagged vessels.



DUKHAN
 A 137,661m³ LNG Carrier built by Mitsui Engineering & Shipbuilding Co., Ltd., for Qatar LNG Transport Limited.

Middle East and Africa

NK participated in the LNG 14 exhibition, held in Doha in March 2004, and was supported by the NK Dubai office.

In Egypt, the Alexandria office welcomed several class entries including the *M/V El-Djazair*, the *M/V Jaref*, the *Tazerbo*, an LPG carrier, and the *Attahadd*, another LPG carrier. SMCs for these four ships were also issued by ClassNK.

In Kuwait, two radio inspection companies in Kuwait and one in Pakistan were reapproved.

In Cape Town South Africa, an item of interest was that one Arctic Pollution Prevention Certificate was issued.



MUSCAT LNG
 A 145,464m³ (at -163°C, 98.5% tank capacity) LNG Carrier built by Kawasaki Shipbuilding Corporation for Oasis LNG Carrier S.A.



Exclusive Surveyor Offices

Japan

Aioi
 Hachinohe
 Hakodate
 Hiroshima
 Imabari
 Innoshima
 Kagoshima
 Kitakyushu
 Kobe
 Kochi
 Nagasaki
 Nagoya
 Okayama
 Onomichi
 Sakaide
 Sasebo
 Sendai
 Shimizu
 Tokyo
 Usuki
 Yokohama

Asia, Oceania and the Middle East

Auckland
 Balikpapan
 Bangkok
 Batam
 Batangas
 Beijing
 Brisbane
 Cebu
 Chennai (Madras)
 Chittagong
 Dalian
 Dhaka
 Dubai
 Fremantle
 Guangzhou
 Haiphong
 Hong Kong
 Istanbul
 Jakarta
 Jeddah
 Johor Bahru
 Kaohsiung
 Koje
 Kota Kinabalu
 Kuala Lumpur
 Kuwait
 Manila
 Melbourne
 Miri
 Mumbai (Bombay)
 Pusan
 Qingdao
 Seoul
 Shanghai
 Singapore
 Surabaya
 Sydney
 Taipei
 Ulsan

Europe and Africa

Alexandria
 Antwerp
 Bilbao
 Cadiz
 Cape Town
 Constantza
 Copenhagen
 Durban
 Gdansk
 Genova
 Hamburg
 Las Palmas
 Lisbon
 London
 Marseilles
 Milford Haven
 Oslo
 Piraeus
 Rotterdam

North and South America

Buenos Aires
 Houston
 Los Angeles
 Miami
 Montreal
 New Orleans
 New York
 Norfolk
 Panama
 Rio de Janeiro
 Seattle
 Valparaiso
 Vancouver



Authorized



The year 2004 was a landmark for NK in terms of recognition and authorization by outside bodies.

NK has traditionally been the sole body entrusted by the Japanese Government to undertake surveys on its behalf. This was based on the Ship Safety Law of Japan which, along with other relevant laws, was recently revised as a part of steps taken to reform and liberalize this system. This is the first time in 70 years that Article 8 of this law has been revised, shifting from a ship classification society authorization system to a registration system. This revision accordingly gave rise to the need for the Society to register under this new system.

In order to be registered as a ship classification society and registered to issue certificates as a ship classification society (recognized organization) under the revised Ship Safety Law of Japan and to be registered as a ship classification society (recognized organization) under the Law Relating to the Prevention of Marine Pollution and Maritime Disaster, the Society submitted an application to the Ministry of Land, Infrastructure and Transport in July 2004. Moreover, the Society also submitted a subsequent application to the ministry in August for accreditation of

ClassNK's Rules and Regulations concerning its various business activities for each respective area under both and related laws.

On-site audits of the Society were subsequently carried out by the ministry during July, while inspections of actual ships were carried out in July and August based on the above applications. Happily, on the 30th of August 2004, the Society was formally registered as a recognized ship classification society under Japanese law, and the Society's rules and regulations covering its various activities were formally approved by the ministry, with said rules and regulations to come into effect from the 1st of September 2004.

This revision realizes the liberalization of the classification of Japanese-flagged vessels that NK had long sought. Importantly, it is expected to make it easier for the Society to obtain authorization from other developed countries who reasonably expect reciprocity, which Japan previously had not allowed.

Additionally, in June 2005 the Society was registered as a recognized classification society by the Japanese Government under the provisions of the International Ship and Port Facility Security Law of Japan. In addition, associated Rules prepared by the Society for approving SSPs and carrying out inspection activities concerned with ship and port security-related measures were formally approved based on this law.

Accordingly, from the 8th of June 2004, Japanese-flagged vessels (excluding passenger ships) of 500 gt or more engaged in international voyages classed with the Society that have had their ship security plans approved by the Society and that have satisfactorily undergone an inspection concerning the implementation of their ship security measures have been considered as having been approved by the Minister of Land, Infrastructure and Transport.

In addition, since 1 July 2004, all Japanese-flagged ships engaged in international voyages have been required to possess a ship security certificate issued by the Ministry of Land, Infrastructure and Transport in order to engage in international voyages. This includes all Japanese-flagged ships classed with the Society. The SSP of such a ship that has been approved by the Society must be attached to the application form and submitted to the Ministry of Land, Infrastructure and Transport (local transportation office etc.), which then issues the required ship security certificate.

Lastly, NK has received approval to conduct statutory survey work on U.K.-registered vessels. NK had been authorized on a case-by-case basis for several years by the Maritime and Coastguard Agency (MCA) to undertake statutory surveys on U.K. vessels in response to owners' requests. An official agreement was signed in Tokyo on the 2nd of December 2004 by MCA chief executive Capt. Stephen Bligh and NK Chairman and President Kenji Ogawa. Capt. Bligh said he was "delighted to welcome ClassNK as the United Kingdom's 7th recognized organization and to formally sign an agreement permitting ClassNK to undertake statutory survey work on behalf of the MCA using exclusive surveyors." Over the last four years, the MCA has worked closely with ClassNK in authorizing survey work on a case-by-case basis. During this period, MCA closely monitored ClassNK's performance and was entirely satisfied that NK met the high



standards required to maintain the United Kingdom's position as a quality fleet. Mr. Ogawa noted that, "This recognition also provides ClassNK with an opportunity to offer our customers an even wider range services by enabling us to establish or deepen relationships with owners of ships flying the U.K. flag. The increase in the quality of ships flying the U.K. flag in the ClassNK fleet will also encourage us to continue to improve our service quality."

The approval of NK to become the United Kingdom's seventh recognized classification society means that the number of flag state authorizations for NK has reached 98, including nine EU member authorizations.

NK in International Affairs

NK has always been an internationally oriented Society. In addition to more than 20 offices in Japan, the Society has over 70 offices in 40 countries overseas. One important aspect of the Society's international relations relates to its capacity to undertake statutory surveys on behalf of foreign Governments. The number of countries that have authorized ClassNK to, on their behalf, carry out surveys and issue certificates based on International Conventions grew to 98 as of December 2004 (newly authorized countries were the U.K., Tuvalu and Jamaica).

IMO Activities

Another important activity is the NK contribution to the International Maritime Organization (IMO). Either as a member of a Japanese Government delegation or a representative of IACS, NK participated in the following meetings:

- Sub-Committee on Fire Protection (FP)—48th session
- Sub-Committee on Ship Design and Equipment (DE)—47th session
- Sub-Committee on Flag State Implementation (FSI)—12th session
- Marine Environment Protection Committee (MEPC)—51st & 52nd sessions



The first meeting of the Turkish Committee

- Maritime Safety Committee (MSC)—78th & 79th sessions
- Sub-Committee on Stability and Load Lines and on Fishing Vessels Safety (SLF)—47th session

IACS Activities

Ever since IACS decided to form two project teams to develop IACS common structural rules for bulk carriers and tankers last year, work has proceeded actively on this task.

Work on the development of common structural rules for bulk carriers has been carried out by the Joint Bulker Project (JBP), which consists of seven ship classification societies of NK, BV, CCS, GL, KR, RINA, and RS, with NK playing a leading role. The JBP works to incorporate the technical expertise and experience of each society acquired in the course of its respective research and development activities. JBP held explanatory meetings to announce the above results officially in June 2004 in major maritime cities around the world (in the Asian region: Tokyo, Shanghai, Hong Kong, and Pusan; in the European and American regions: Rome, London, Athens, and New York).

The Society served as the chair of following regular IACS groups as well during 2004:

- The Working Party/Materials and Welding (WP/MW)
- Ad Hoc Group/Hull Damages (AHG/HD)
- The Correspondence Group/Mooring & Anchoring (CG/MA)

ClassNK also participated in the following meetings:

- Council: 3 times
- Quality Committee: 2 times
- General Policy Group: 2 times
- Working Party: 9 times
- Ad Hoc Group: 17 times
- Small Group: 4 times
- Joint Working Group with Industry: 7 times
- IACS Common Structural Rules: 15 times

Major topics addressed by the IACS meetings were:

- Safety of bulk carriers
- IMO matters
- ISO matters
- Common Structural Rules
- Goal-based Standards
- Inspections for Coating Condition for Ballast Tanks on Oil Tankers
- Corrosion Prevention Systems for Cargo Tanks on Oil Tankers
- Coating Standards for Ballast Tanks
- Recognized Security Organizations
- Action on Poorly Performing Flag States
- Recognized Security Organizations



The first meeting of the Singapore Committee

Overseas Committee Meetings held in 2004

The full list of NK Committee meetings held during 2004 is as follows:

	Date	Venue
The 1st Philippine Committee	15 January	Manila
The 13th Greek Committee	5 February	Piraeus
The 1st Turkish Committee	10 February	Istanbul
The 5th Taiwan Committee	13 April	Taipei
The 2nd Hong Kong Technical Committee	22 April	Hong Kong
The 9th China Technical Committee	22 April	Shanghai
The 15th Korea Committee	20 May	Jeju
The 14th Danish Technical Committee	22 June	Copenhagen
The 1st Singapore Committee	8 July	Singapore
The 2nd British Committee	1 October	London
The 4th Taiwan Technical Committee	7 October	Taipei
The 11th Korea Technical Committee	14 October	Pusan
The 30th Hong Kong Committee	20 October	Hong Kong
The 2nd Philippine Committee	5 November	Cebu
The 11th China Committee	9 November	Xia Men
The 11th Indian Committee	18 November	Mumbai
The 8th Singapore Technical Committee	22 November	Singapore
The 2nd Indonesia Committee	14 December	Jakarta
The 2nd Thai Committee	16 December	Bangkok

ADVISORY COUNCIL	Chang Yung-fa	Group Chairman	Evergreen Group
	Frank W. K. Tsao	Group Chairman	IMC Group of Companies
	Lua Cheng Eng	Chairman	Neptune Orient Lines Ltd.
	Sumate Tanthuwani	President	Regional Container Lines Group
	Kou Ming Koo	Chairman	Valles Steamship Company, Limited

HONG KONG COMMITTEE

Chairman	Andrew Y. Chen	Grand Seatrade Shipping Co. Ltd.
Vice Chairman	Xu Zunwu	COSCO (Hong Kong) Group Limited
Honorary Chairman	M. H. Liang	Island Navigation Corporation International Ltd.
Members	Robert Alexander Ho	Fairmont Shipping (H.K.) Ltd. and Affiliates
	Huang Shao Jie	Hong Kong Ming Wah Shipping Co., Ltd.
	Arthur Bowring	Hong Kong Shipowners Association
	Frank W. K. Tsao	IMC Group of Companies
	Steve G. Hsu	Oak Maritime (H.K.) Inc. Limited
	Kwai Sze Hoi	Ocean Longevity Shipping & Management Co., Ltd.
	C. C. Liu	Parakou Shipping Ltd.
	M. T. Yung	Patt Manfield & Co., Ltd.
	Peter Cheng, MBE	Peter Cheng Naval Architect & Marine Consultant Ltd.
	Raymond Pao	Regent Shipping Ltd.
	Li Hua	Sinotrans Shipping Limited
	Kenneth K.W. Lo	Teh-Hu Cargocean Management Co., Ltd.
	Edward S. C. Cheng	Unique Shipping (H.K.) Ltd.
	C.A.J. Vanderperre	Univan Ship Management Limited
	David C. C. Koo	Valles Steamship Company, Limited
Sabrina S. M. Chao	Wah Kwong Shipping Holdings Limited	
Gerry Buchanan	Wallem Shipmanagement Ltd.	

KOREA COMMITTEE

Chairman	Jong-Kew Park	KSS Line Ltd.
Members	Sung-Leep Jung	Daewoo Shipbuilding & Marine Engineering Co., Ltd.
	Jung-Hoon Kim	Hanjin Heavy Industries & Construction Co., Ltd.
	K. H. Yu	Hyundai Heavy Industries Co., Ltd.
	Yung-Won Hyun	Hyundai Merchant Marine Co., Ltd.
	Kil Seon Choi	Hyundai Mipo Dockyard Co., Ltd.
	Youn-Jae Lee	Hyundai Samho Heavy Industries Co., Ltd.
	Hak-Se Jang	Korea Line Corporation
	Jing-Wan Kim	Samsung Heavy Industries Co., Ltd.
	Jeong-Hwa Lee, Ph. D.	SK Shipping Co., Ltd.
	Jin-Won Chiang	STX Pan Ocean Co., Ltd.

GREEK COMMITTEE

Chairman	Michael D. Chandris	Chandris (Hellas) Inc.
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	Anna G. Dracopoulos	Empros Lines Shipping Company S.A.
	Prokopis N. Karnessis	European Navigation Inc.
	Michael E. Veniamis	Golden Union Shipping Co. S.A.
	Ghikas J. Goumas	J. G. Goumas Shipping Company S.A.
	Dimitris Z. Kritsas	Kritsas Shipping S.A.
	Panagiotis C. Laskaridis	Laskaridis Shipping Co., Ltd.
	Diamantis P. Diamantides	Marmaras Navigation Ltd.
	George S. Livanos	Sun Enterprises Ltd.
	Constantinos J. Martinos	Thenamaris Ships Management

	Charalambos N. Mylonas	Transmed Shipping Ltd.
	Panagiotis N. Tsakos	Tsakos Shipping & Trading S.A.

CHINA COMMITTEE

Chairman	Chen Hong Sheng	China Ocean Shipping Company
Members	Xu Zi Qiu	China Shipbuilding & Offshore Int'l Co., Ltd.
	Lu Yi Bin	China Shipping (Group) Company
	Zhang Xi Ping	China State Shipbuilding Corporation
	Han Cheng Min	COSCO Container Lines
	Ge En Hua	Hebei Ocean Shipping Co., Ltd.
	Yang Jian Ming	Jiangsu Ocean Shipping Co.
	Yan Ming Yi	Shanghai Shipping (Group) Company and China Shipping Development Co., Ltd., Tanker Company
	Wang Chunlin	Sinotrans Group

INDIAN COMMITTEE

Chairman	Arun Mehta	Varun Shipping Company Limited
Vice Chairman	R. L. Pai	Reliance Industries Limited
Members	S. K. Sood	Century Shipping
	Deepak L Chowgule	Chowgule Steamships Ltd.
	Ajoy Chatterjee	Directorate General of Shipping, Ministry of Shipping, Government of India
	Madhusudan P. Dhanuka	GEE Limited
	Atul J. Agarwal	Mercator Lines Limited
	H. Ansari	National Law University
	S. Govindrajan	Progressive Shipping Consultancy Services (PVT) Ltd.
	K. M. Sheth	The Great Eastern Shipping Co., Ltd.
	R. K. Mitra	The Shipping Corporation of India Ltd.

TAIWAN COMMITTEE

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	Jei-Yuan Chen	Chinese Petroleum Corp.
	Shang-Wen Liao	ET Internet Technology Corporation
	Huang Chin-san	Evergreen International Corp.
	Loh Yao-fon	Evergreen International Storage & Transport Corp.
	Joseph J. M. Jhu	First Steamship Co., Ltd.
	Huang Mei-Hsiung	Glory Navigation Co., Ltd.
	Harvey Chiu	Hsin Chien Marine Co., Ltd.
	Michael M. K. Hsiao	Mingtai Navigation Co., Ltd.
	Lan Juin Der	Shih Wei Navigation Co., Ltd.
	Mathias K. Y. Chen	Sincere Industrial Corp.
	Fred C. P. Tsai	Sincere Navigation Corp.
	J. T. Chwang	Ta-Ho Maritime Corp.
	I. Y. Chang	Taiwan Navigation Co., Ltd.
	Nobuyoshi Morimoto	TMT Co., Ltd.
	C. K. Ong	U-Ming Marine Transport Corp.
	C. C. Lin	Unison Marine Corp.
	Chao-Hon Chen	Wan Hai Lines Ltd.
	Lan Chun Sheng	Wisdom Marine Lines S.A.
	David C. H. Liu	Yang Ming Marine Transport Corp.

BRITISH COMMITTEE

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Members	Robert Houston	Anglo-Eastern Ship Management (UK) Ltd.
	Enys Dan	BP Shipping Limited
	Epaminondas G.E. Embiricos	Embiricos Shipbrokers Ltd.
	Philip D Atkinson	Graig Ship Management Limited
	Alan P Davey	Shell Shipping Technology
	F. M. Marchant MBE	The Peninsular and Oriental Steam Navigation Company
	Ray McNamara	V. Ships UK Ltd.
	Vivek Puri	Wallem Limited

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	Joeswanto Karijodimedjo	IPERINDO (Shipbuilding & Offshore Industries Association)
	Tatan Sundana	Ministry of Communications
	Sopardi Somantri	PT. Adnyana
	Andy A. Mallian	PT. Arpeni Pratama Ocean Line
	Kasim Arifin	PT. Bumi Perkasa Bahtera
	Djoko Mulyanto	PT. Djakarta Lloyd
	M. Affandi	PT. DKB Jakarta
	Hendrato	PT. Gesuri Lloyd
	H. Soenarto	PT. Gurita Lintas Samudra
	Eddy Pramono	PT. Humpuss Intermoda Transportasi Tbk
	Adwin H. Suryohadiprojo	PT. PAL Surabaya
	Dedeng Wahyu Edi	PT. PERTAMINA (PERSERO)
	A. L. Soebagio Windoe	PT. Samudra Indonesia Tbk.

THAI COMMITTEE

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	Bhumindr Harinsuit	Bhureemas Navee Co., Ltd.
	Wirat Chanasit	ItalThai Marine Ltd.
	Chanet Phenjati	Jutha Maritime Public Co., Ltd.
	Suraphon Meesathien	Nathalin Co., Ltd.
	Amares Phulsawat	Phulsawat Group
	Jaipal Mansukhani	Precious Shipping Public Co., Ltd. (Great Circle Shipping Co., Ltd.)
	Wittawat Svasti-Xuto	PTT Public Co., Ltd.
	Voravit Visitkitjakarn	Sang Thai Shipping Co., Ltd.
	Chanwit Anakkul	Thaioil Marine Company Ltd.
	Yodchai Ratanachiwakorn	Thoresen & Co., (Bangkok) Ltd.
	Teruo Kondo	Unithai Shipyard & Engineering Ltd.

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	Ko-Lin Toh	Keppel Philippines Marine, Inc.
	Michael G. Bernardino	Loadstar International Shipping, Inc.
	Doris Magsaysay Ho	Magsaysay Maritime Corporation
	Edgardo G. Lacson	MIS Maritime Corporation

Vicente T. Suazo, Jr.	Department of Transportation & Communications, Republic of the Philippines
Kenji Kawano	Tsuneishi Heavy Industries (Cebu), Inc.

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	Necdet Aksoy	Akmar Holding S.A
	Ali Umur	Aktif Shipping
	Sahin Kurutepe	Aygaz A.S.
	Esref Cerrahoglu	Cerrahgil A. S.
	Akin Falay	Cornships Management And Agency Inc.
	Serdar Akcali	Denak Ship Management & Agency
	Faruk Miras	Diler Shipping And Trading Inc.
	Suleyman Pasli	Ditas Tanker and Marine Operations
	Orhan Karademir	Geden Line
	Sadan Kaptanoglu	H.I. Kaptanoglu Shipping Group
	Suha Izmiriligil	Hasatmar Ship Management S.A.
	Bedri Ince	Ince Shipping And Trading Co. Inc.
	Murat Edip Karahasan	Karahasan Group of Shipping Companies
	Serif Ozdaglar	Nemtas A.S.
	Murat Dortbudak	Odin Shipmanagement

SINGAPORE COMMITTEE

Chairman	David T E Lim	Neptune Orient Lines Ltd.
Members	Tong Chong Heong	Keppel Fels Limited
	RADM(NS) Lui Tuck Yew	Maritime and Port Authority of Singapore
	Aloysius Seow F S	Ocean Tankers (Pte) Ltd.
	Teo Joo Kim	Pacific Carriers Limited
	Teo Cho Keng	Pacific International Lines Pte Ltd.
	K. K. Tan	Sembcorp

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Members	Truls W. L'orange	BIMCO
	Mogens Fynbo	Dampskibsselskabet Torm A/S
	Christian Breinholt	Danish Maritime Authority
	Valdemar Ehlers	DFDS A/S
	Flemming Schmidt-Andersen	Lauritzen Fleet Management
	Peter Tang-Jensen	Odense Steel Shipyard Ltd.
	Erik Moller	Quantum Tankers A/S

KOREA TECHNICAL COMMITTEE

Chairman	Eng. Sung-Won Kang	Pusan National University
Members	Sang-Woo Lee	Dae Sun Shipbuilding & Engineering Co., Ltd.
	Jae-Ug Bae	Daewoo Shipbuilding & Marine Engineering Co., Ltd.
	Kyu-Won Park	Hanjin Heavy Industries & Construction Co., Ltd.
	Sung-Nyun Kim	Hyundai Heavy Industries Co., Ltd.
	Hyun-Sang Shim	Hyundai Samho Heavy Industries Co., Ltd.
	Eng. Jae-Sung Choi	Korea Maritime University
	Chull-Yun Kim	Samsung Heavy Industries Co., Ltd.
	H. K. Leem	STX Shipbuilding Co., Ltd.

CHINA TECHNICAL COMMITTEE

Chairman	Lu Zhi Ping	Shanghai Merchant Ship Design & Research Institute
Members	Zhu Yue Chen	Bohai Shipbuilding Heavy Industry Co., Ltd.
	Feng Guo Ying	China Business Marine Corp. Ltd.
	Luan Fu Kai	China Ocean Shipping (Group) Company
	Wang Jin Xiang	China Ocean Shipping (Group) Company
	Zhang Yong Jian	China Ocean Shipping (Group) Company
	Zhao Zhan Jun	China Ship Design & Research Center Co., Ltd.
	Cao Zhi Teng	China Shipbuilding Trading Co., Ltd.
	Lin Zhi Shui	China Shipping (Group) Company
	Li Xue Qiang	China Shipping Container Lines Co., Ltd.
	Pu Li Fei	China Shipping International Trading Co., Ltd.
	Huang Pei Lin	COSCO Bulk Carrier Co., Ltd. (Tianjin Ocean Shipping Company)
	Zhang Ming Hua	COSCO Group COSCO Industry Company
	Qiu Xin Yao	COSCO Ship Management Co., Ltd.
	Yang Wei Zan	Dalian New Shipbuilding Heavy Industry Co., Ltd.
	Li Jun Bao	Dalian Ocean Shipping Company
	Zhang Zhen De	Dalian Shipyard Co., Ltd.
	Li Yi Wen	Guangzhou Maritime Transport (Group) Co., Ltd.
	Hong Ying	Guangzhou Ocean Shipping Company
	Ye Pei Hua	Guangzhou Shipyard International Co., Ltd.
	Lou Dan Ping	Hudong-Zhonghua Shipbuilding (Group) Co., Ltd.
	Yang Shi Ming	Jiangnan Shipyard (Group) Co., Ltd.
	Hu Ke Yi	Jiangnan Shipyard (Group) Co., Ltd.
	Yu Bao Jun	Marine Design & Research Institute of China
	Tokio Yamashita	Nantong COSCO KHI Ship Engineering Co., Ltd.
	Sun Wen Tian	Qingdao Ocean Shipping Company
	Lu Zhi Ping	Shanghai Merchant Ship Design & Research Institute
	Zhang Jia Long	Shanghai Ship & Shipping Research Institute, Ministry of Communications
	Xu Hui	Shanghai Shipping (Group) Company
	Zhang Ming Xian	Shanghai Shipyard
	Zhang Li Feng	Tianjin Xingang Shipyard

SINGAPORE TECHNICAL COMMITTEE

Chairman	Teh Kong Leong	Neptune Orient Lines Ltd.
Members	Robert Sumantri	Altus Shipping and Logistics Pte. Ltd.
	Liu De Tian	COSCO (Singapore) Pte Ltd.
	Arun K. Ahluwalia	IMC Shipping Co. Pte. Ltd.
	Seow Tan Hong	Jurong Shipyard Pte Ltd.
	Nelson Yeo	Keppel Shipyard Limited (A member of the Keppel Group)
	Wong Len Poh	Maritime & Port Authority of Singapore
	Hiroaki Kubo	MOL Shipmanagement Asia Pte Ltd.
	K. K. Kumar	NYK Shipmanagement Pte Ltd.
	Teh Eng Hua	Ocean Tankers (Pte) Ltd.
	Phua Cheng Tar	PACC Ship Managers Pte Ltd.
	Chia Che Kiang	Pacific International Lines Pte Ltd.
	Ng Sing Chan	Pan-United Shipyard Pte Ltd.
	Kenneth Kee	Petroships Pte Ltd.

Mok Kim Whang	Singapore Technologies Marine Ltd.
Tadic Tonci	Tanker Pacific Management (Singapore) Pte Ltd.
Douglas Robinson	V. Ships Asia Pte. Ltd.
Chung Yau Yu Vincent	World-Wide Shipping Managers Pte Ltd.

TAIWAN TECHNICAL COMMITTEE

Chairman	Huang Shiun-kwo	Evergreen Marine Corp. (Taiwan) Ltd.
Members	K. C. Lin	Cheng Lie Navigation Co., Ltd.
	Hsiung Lee	China Steel Express Corporation
	Shieh-Jye Chuu	Chinese Petroleum Corporation
	C. S. Chen	Deryoung Maritime Co., S.A.
	Michael L. Y. Pan	ET Internet Technology Corporation
	Kuo Wen-ben	Evergreen Marine Corp. (Taiwan) Ltd.
	Johnny J. Ho	First Steamship S.A.
	Anthony Lin	Formosa Plastics Marine Corporation
	Guo I-Lung	Glory Navigation Co., Ltd.
	K. J. Leu	Hsin Chien Marine Co., Ltd.
	Lee Ding-Hang	Kee Yeh Co., Ltd.
	C. K. Lin	Mingtai Navigation Co., Ltd.
	Y. Y. Ho	Shih Wei Navigation Co., Ltd.
	Tommy T. M. Li	Sincere Industrial Corp.
	Young Perng-Terng	Ta Tong Marine Co., Ltd.
	N. K. Chu	Ta-Ho Maritime Corporation
	C. C. Shih	Taiwan Navigation Co., Ltd.
	Lung-Wen Lee	U-Ming Marine Transport Corp.
	J. R. Kuo	Unison Marine Corp.
	Hawk Huang	Wan Hai Lines Ltd.

HONG KONG TECHNICAL COMMITTEE

Chairman	Peter Cheng	Peter Cheng Naval Architect & Marine Consultant Ltd.
Members	Y. Q. Huang	Associated Maritime Co. (HK) Limited
	Vishal Khurana	Chellaram Shipping (HK) Ltd.
	Yan Zhi Chong	China Shipping (HK) Marine Co., Ltd.
	Wang Yongfu	COSCO (HK) Shipping Co., Ltd.
	Arvind Sharma	Eurasia International (China) Ltd. Partnership
	Kishore S. Rajvanshy	Fleet Management Limited
	Lau Pong Sze	Gold Bridge Shipping Ltd.
	Y. H. Shum	Goldbeam International Limited
	K. H. Li	IMC Shipping Co., Pte Ltd.
	Jagmeet S. Makkar	KC Maritime Ltd.
	S. S. Tse	Lihai International Shipping Ltd.
	Vijayesh Dutta	New Asian Shipping Co., Ltd.
	James S. C. Tai	Orient Overseas Container Line Ltd.
	C. Kocherla	Pacific Basin Shipping Ltd.
	Kenneth Koo	Tai Chong Cheang Steamship Co. (HK) Ltd.
	Marcel Liedts	The Anglo-Eastern Group
	Chen Shizhou	Top Glory Shipping Co., Ltd.
	W. L. Hung	Wah Kwong Ship Management (HK) Ltd.

Authorizations Granted to ClassNK for Ships Other than Passenger Ships

Areas/Countries	LL	SOLAS					MARPOL 73/78		TM
		SC	SE	SR	SMC	ISPS	IOPP	NLS	
Algeria	*	*	*	*		*	*	*	*
Antigua and Barbuda	●	●	●	●	●		●	●	●
Argentina	*	*	*	*					
Aruba	*	*	*	*	*	*	*		
Australia	●	●	●	●			●	●	●
Bahamas	●	●	●	●	●	●	●	●	●
Bahrain	●	●	●	●		●	●	●	●
Bangladesh	●	●					●		●
Barbados	●	●	●	●	●	●	●	●	●
Belgium	●	●				*			
Belize	●	●	●	●	●	●	●	●	●
Bermuda	*	*							*
Bolivia	●	●	●	●	●		●	●	●
Brazil	●	●	●	●			●	●	●
Brunei	●	●	●	●	●		●	●	●
Cambodia	●	●	*	*	●		*	●	*
Canada	●								
Cape Verde	●	●	●	●	●		●	●	●
Cayman Islands	●	*	*	*			*	●	●
Chile	*	*	*	*			*		*
Cuba	*	*	*	*					
Cyprus	●	●	●	●	*	●	●	●	●
Denmark	●	●	●	●	●	●	●	●	●
Djibouti	●	●	●	●			●	●	●
Dominica	●	●	●	●	●	*	●	●	●
Dominican Republic	●	●	●	●			●	●	●
Ecuador	*	*	*	*			*	*	
Egypt	●	*	*	*	*	●	*		*
Equatorial Guinea	●	●	●	●	*	●	●	●	●
Fiji	*	*	*	*			*		*
Gambia	*	*	*	*			*		*
Georgia	●	●	●	●	●	●	●	●	●
Ghana	●	●	●	*			●		●
Greece	●	●	●	●	●	●	●	●	●
Honduras	●	●	●	●	●		●	●	●
Hong Kong	●	●	●	●	●	●	●	●	●
Iceland	●	●	●	●	●		●	●	*
India	*	*	*	*			*	*	
Indonesia	●	*	*	*			*	*	*
Iran	●	●	●	●			●	●	●
Iraq	*	*	*	*					
Ireland	●	●			●		●	●	
Isle of Man	●	●	*	*	*	*	*	*	●
Israel	●	●	*	*	*		*		●
Jamaica	●	●	●	●	●	●	●	●	●
Japan	●	●	●		●	*	*	*	
Jordan	●	●	●	●		●			
Kenya	●								
Kiribati	*	*	*	*		●	*		*

Abbreviations: ● Authority has been delegated
 * Authority has been delegated subject to some conditions
 LL International Load Line Certificate
 SC Cargo Ship Safety Construction Certificate
 SE Cargo Ship Safety Equipment Certificate

Areas/Countries	LL	SOLAS					MARPOL 73/78		TM
		SC	SE	SR	SMC	ISPS	IOPP	NLS	
Kuwait	●	●	*	*	*	●	●	●	●
Lebanon	●	*	*	*		*			
Liberia	●	●	●	●	●	●	●	●	●
Libya	●	●	●	●		●	●	*	*
Luxembourg	●	●	●	●	●	●	●	●	●
Madeira	●	●	●	●			●	●	●
Malaysia	*	*	*	*	*	●	*	*	*
Maldives	●	●	●	●	●		●		●
Malta	*	*	*	*	●	●	*	*	*
Marshall Islands	●	●	●	●	●	●	●	●	●
Mauritius	●	●	●	●	●	●	●	●	●
Mexico	*	*	*	*			*		*
Morocco	●	*	*	*	*		*	*	*
Mozambique	●								
Myanmar	●	●	●	●	●	●	●	●	●
Namibia	*	*	*	*			*		*
Netherlands	*	*	*	*	*	*	*	*	
Netherlands Antilles	*	*	*	*	*	*	*	*	
Oman	●	●	●	●					●
Pakistan	●	●			*		●	●	●
Panama	●	●	●	●	●	*	●	●	●
Papua New Guinea	●	●	●	●			●		●
Paraguay	*	*	*	*	*				*
Philippines	●	●	●	●	●	●	●	●	●
Portugal	*	*					*		
Qatar	*	*	*	*	*	●	*	*	*
Saudi Arabia	●	●	●	●	●	●	●	●	●
Seychelles	●	●	●	●	●	●	●	●	●
Singapore	●	●	●	●	●	●	●	●	●
Solomon Islands	●	●	●	●					●
Somalia	●								
South Africa	●	●					*	●	
Sri Lanka	●	●	●	●			●		●
St. Vincent & the Grenadines	●	●	●	●	●	*	●	●	●
Switzerland	●	●	●	●	*		●	●	●
Tanzania	●								
Thailand	*	*	*	*	*		*		*
Tonga	●	●	●	●			●	●	●
Tunisia	●	*					●		
Turkey	●	*	*	*	●	●	●	●	*
Tuvalu	●	●	●	●	●	●	●	●	●
U.A.E.	●	●	●	●	●	●	●		●
U.K.	*	*	*	*	*		*		*
Uganda	●								
Uruguay	*	*	*	*					
Vanuatu	●	●	●	●	●	●	●	●	●
Venezuela	*								
Vietnam	*	*	*	*	*		*	*	*
Yemen	●								

SR Cargo Ship Safety Radio Certificate

SMC Safety Management Certificate

IOPP International Oil Pollution Prevention Certificate

NLS International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk

TM International Tonnage Certificate (1969)

NK in Committee

Board of Directors

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Dr. H. Kobayashi	Professor Tokyo Institute of Technology	Dr. K. Yoshida	Professor Emeritus The University of Tokyo

Regional Contacts

Head office

- **Administration Center**
Nippon Kaiji Kyokai
4-7 Kioi-cho, Chiyoda-ku
Tokyo 102-8567, Japan
Tel: +81-3-3230-1201
Fax: +81-3-5226-2012
E-mail: bnd@classnk.or.jp
(Business Dept.)
www.classnk.or.jp

Asia and Oceania

- **Singapore Office**
Nippon Kaiji Kyokai
101 Cecil Street
#21-01 Tong Eng Building
Singapore, 069533
Tel: +65-6222-3133
Fax: +65-6225-5942
E-mail: sp@classnk.or.jp
- **Shanghai Office**
Nippon Kaiji Kyokai
Rm. 2306, International Trade Center,
2200 Yan-an West Road, Shanghai, 200335, China
Tel: +86-21-62703089
Fax: +86-21-62195699
Email: sc@classnk.or.jp

Middle East, and Black Sea

- **Piraeus Office**
Nippon Kaiji Kyokai
39-41 Akti Posidonos
Moschato 183 44
Piraeus, Greece
Tel: +30-210-9420020
Fax: +30-210-9420079
E-mail: pr@classnk.or.jp

Europe and Africa

- **London Office**
Nippon Kaiji Kyokai
6th Floor, Finsbury Circus House
12-15 Finsbury Circus
London, EC2M 7EB
United Kingdom
Tel: +44-20-7621-0963
Fax: +44-20-7626-0383
E-mail: ln@classnk.or.jp

The Americas

- **New York Office**
Nippon Kaiji Kyokai
One Parker Plaza, 11th Floor
400 Kelby Street
Fort Lee, N.J. 07024, U.S.A.
Tel: +1-201-944-8021
Fax: +1-201-944-8183
E-mail: ny@classnk.or.jp

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please contact:

Business Department
Tel: +81-3-5226-2040
Fax: +81-3-5226-2039
E-mail: bnd@classnk.or.jp

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NIPPON KAIJI KYOKAI

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