



# Bringing value to life.

Nippon Yusen Kabushiki Kaisha **2018**  
NYK Report



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 The following information is included in the digital version.

- Summary of CSR Activities in Fiscal 2017 and Outline of Next Year's Targets
- Environmental Initiative Reports/Environmental Data/Environmental Accounting
- Human Resources Data

## Evaluation from Society

### Socially Responsible Investment

Dow Jones Sustainability Indices  
15 years running



FTSE4Good Global Index  
16 years running



Morningstar, Inc.  
Socially Responsible Investment Index  
14 years running



MSCI Global Sustainability Indexes

MSCI 2017 Constituent MSCI Global Sustainability Indexes

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FTSE Blossom Japan Index  
2 years running



MSCI Japan ESG Select Leaders Index  
2 years running

MSCI 2017 Constituent MSCI Japan ESG Select Leaders Index

MSCI Japan Empowering Women Index  
2 years running

MSCI 2017 Constituent MSCI Japan Empowering Women Index (WIN)

### Environment, Health and Sanitation, and IR, etc.

Competitive IT Strategy Company  
2 years running



Health and Productivity Management (White 500)  
2 years running



Internet IR Commendation Award  
6 years running



ESI Best Green Shipping Line  
5 years running



RoSPA Award  
2 years running (NYK LNG SMUK)



- We have been first in the Toyo Keizai CSR Ranking's industry-specific category for 11 consecutive years.
- Asuka II cruise ship ranked the #1 "Cruise Ship of the Year" for 26 years running.



NYK has expressed support for the Ministry of the Environment's "Try to receive your parcel without redelivery requests!" campaign aimed at preventing repeated attempts at home delivery of parcels.

# WHY

Our purpose in society

## Bringing value to life.

# WHAT

Our aspirations over the next 10 years

- Contribute to the resolution of social and environmental issues through our business activities
- Act responsibly and respect the highest ethical and social standards
- Create new value through constant “staying half a step ahead” spirit
- Develop a well-balanced revenue structure

# HOW

Techniques/methods for executing our vision based on our corporate philosophy

## Staying Ahead 2022 with Digitalization and Green

Schematic Diagram of  
the New Medium-Term  
Management Plan



# Contributing to Industry and People’s Lives Along with the Changing Times

For over 130 years since its founding, the NYK Group has evolved alongside social and economic changes in Japan and around the world. In addition to transporting all kinds of cargo, the Group contributed to industrial development and the livelihoods of countless people as

the Group quickly met emerging needs amid those changes. While responding to the changing times, the Group has continued to draw upon the NYK Group Values of “integrity”, “innovation”, and “intensity” to provide abundant value around the world.

## From 1885 Charting a Course for Japan’s Shipping Industry to Reach Europe and North America

At a time when maritime shipping routes were practically monopolized by Western shipping companies, the Company was Japan’s first steamship company to commence long-distance liner services. Despite severe price competition, the Company helped open the doors to international trade for Japan’s textile industry and other burgeoning industries.



The Tosa Maru (left) was the Company’s first vessel on its shipping route to Europe



The Osakabo textile factory (photo courtesy of Toyobo Co. Ltd.)

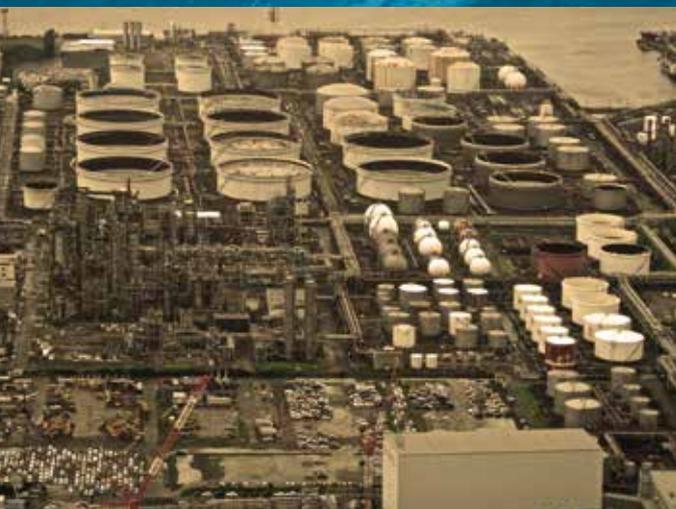
1970

1960

1885    1890    1900    1910    1920    1930    1940    1950

- The Company founded
- The Company commenced Japan’s first long-haul liner service

- The Company built its first crude oil tanker
- The Company built its first ore carrier



An oil refinery

## From 1950 Providing Marine Shipping Services That Help Drive Japan’s Post-War Revival and Rapid Economic Growth

Following the Second World War, demand grew rapidly for oil, iron ore, and other resources, particularly from heavy industry. To help import raw materials to Japan, the Company commissioned large specialized vessels for such commodities, greatly contributing to the country’s industrial development.



The Company’s first crude oil tanker, Tamba Maru

1980

1985

1990

## From 1985 Supporting the Supply Chains of Various Industries as a Comprehensive Global Logistics Enterprise

While its customers progressively globalized their supply chains, the Group was able to speedily and flexibly respond to customers' diversifying needs by expanding beyond maritime shipping as a comprehensive global logistics enterprise.



Zeus Leader (pure car and truck carrier)



Land transport services provided by semitrailers



A Boeing 747-8F jet operated by the Group

- The Group commenced comprehensive global logistics business handling maritime, land, and air transport services

From 2010

## Helping Develop an Energy Value Chain

Amid growing awareness of environmental concerns and ahead of the competitors, the Group began focusing on liquefied natural gas (LNG), hydrogen, and other energy sources that have less environmental burden. The Group joined offshore oil and gas development projects, which have been growing in number worldwide, while putting systems in place for broadly responding to energy projects from the upstream to downstream stages of the value chain.

2000



A Floating Production, Storage, and Offloading (FPSO) unit\*



Engie Zeebrugge LNG bunkering vessel

2010

2022

- The Company joined projects operating FPSO units\* off the coast of Brazil
- The Company built the world's first new LNG bunkering vessel

\* FPSO units are floating vessels that produce and store crude oil and gas from offshore oil and gas fields, and directly load it to tanker ships

# Responding to Diverse Shipping Needs Through a Broad Lineup of Maritime, Land, and Air Transport Services

## Flexibly Transforming the Business Portfolio to Meet the Needs of Customers

Logistics infrastructure is indispensable for industry and people’s livelihoods, and demand for logistics services has been on the rise along with economic globalization and the rapid growth of emerging countries. In response to such global trends and market shifts, the Group has strategically transformed its business portfolio. In addition to offering marine transport services by its world-class fleet, the Group responded to customers’ needs by developing businesses that provided “more than shipping”, including land transport by semitrailers, air transport by cargo aircraft, terminal and warehouse management, and a finished vehicle pre-delivery inspection service that also handles maintenance and the supply of parts. Looking ahead, the Group intends to continue responding to diverse needs that arise with the changing times.



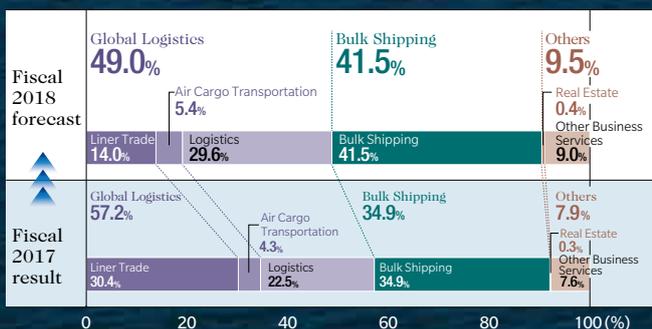
## Envisioning the Future of Shipping Based on Emerging Social and Environmental Needs

The Group is looking to develop its businesses beyond cargo transport by leveraging the advanced shipping expertise and know-how it has built up over many years, along with its global network and partnerships with various companies and organizations. Accordingly, the Group is pursuing various forward-looking initiatives, including the promotion of digitalization in shipping as a way to create new business opportunities, as well as the development of green businesses, such as the Group’s service that supplies and sells fuel to LNG-fueled vessels, which have a comparatively lower burden on the environment. Based on projections of emerging social and environmental trends, the Group intends to respond to the hopes and demands of all kinds of stakeholders around the world by creating new value for their communities through the Group’s business activities.

## Safely Transporting Goods and Energy Resources



## Change in the Proportion of Revenues by Business Segment



## Training and Effectively Utilizing Human Resources



### Reducing Environmental Impact

### Driving Innovation



### Engaging with Communities

# Exploring Opportunities for Continuous Growth Amid Calls for Better Risk Management

For the Group to continue growing, it will be vital to capitalize on opportunities for growth while also effectively managing risks based on an accurate understanding of trends and the Group's operating environment. The Group not only faces an increasingly volatile maritime shipping market but also other dramatic changes taking place around the world, such as growing

geopolitical risks and rapid advancements in digital technologies. In light of the political and economic trends confronting the international community, the Group's management examines the operating environment from a long-term perspective and formulates business strategies and measures aimed at maximizing opportunities and reducing risks.

## Mega-Trends

### Political and Economic Trends

- Geopolitical risks affecting global political affairs, including growing tensions in Northeast Asia and the Middle East
- Rise of trade protectionism
- Changes in international and regional economic conditions
- Increasing investible funds due to excess liquidity

### Social Trends and Environmental Issues

- Growing population in emerging and developing countries
- Widening income disparity and the North-South divide
- Climate change and ocean conservation problems
- Shift to a low-carbon and decarbonized society
- Workplace culture reforms in Japan

### Technological Innovations

- Advancements in AI and digital technologies
- 3D printers and changes in supply chains
- Blockchain platforms

## Major Opportunities

- Appearance of alternative supply areas
- Growing demand for alternative long-distance shipping services
- Rising demand for maritime shipping
- Need to restore supply chains
- Demand for high-quality shipping services
- Stricter evaluations of vessel quality and Shipmanagement
- Growing calls for safety and environmental measures
- Increasing need for digital technology development

## Major Risks

- Decreased demand for maritime shipping
- Blockades of shipping routes
- Rising market volatility
- Oversupply from excess tonnage
- Foreign exchange and bunker oil price fluctuations
- Increasing likelihood of maritime accidents
- Declining competitiveness due to technological obsolescence
- Mobility or loss of key personnel

## Improving the Group's Ability to Withstand Market Changes

The Group's management recognizes that the structure and organization of the Group's operations must be reformed in order to reduce its vulnerability to conditions in the maritime shipping market, which fluctuate dramatically due to a wide variety of factors. Accordingly, management is working to overhaul the structure of the dry bulk transport business to effectively limit the impact of downturns, more accurately predict market trends, and generate steady profits regardless of market changes.

Refer to pages 54 – 55 in the "Strategies in Each Business" section



## Promoting Digital Technologies

The Group utilizes the latest digital technologies together with the expertise of the Group's highly experienced ship crews to analyze vast amounts of data on ocean conditions and the Group fleet, one of the world's largest and most varied selections of operating vessels. Using open platforms in collaboration with other companies and organizations, the Group works to ensure that its vessels operate efficiently and safely, which includes preventing collisions, accidents, and equipment troubles, while applying a feed-improvements-forward concept to enhance all kinds of logistics capabilities and commercial shipping processes.

Refer to page 22 in the "Digitalization and Green Initiatives" section



## Preparation for New Environmental Regulations

Amid growing awareness of environmental concerns around the world, including climate change and threats to marine biodiversity, environmental regulations in the maritime shipping industry are becoming increasingly strict. In response, the Group not only plans to comply with such regulations but also intends to differentiate its services from competitors by leveraging leading-edge technologies and expertise accumulated at the Group's four R&D laboratories.

Refer to page 20 in the "Digitalization and Green Initiatives" section



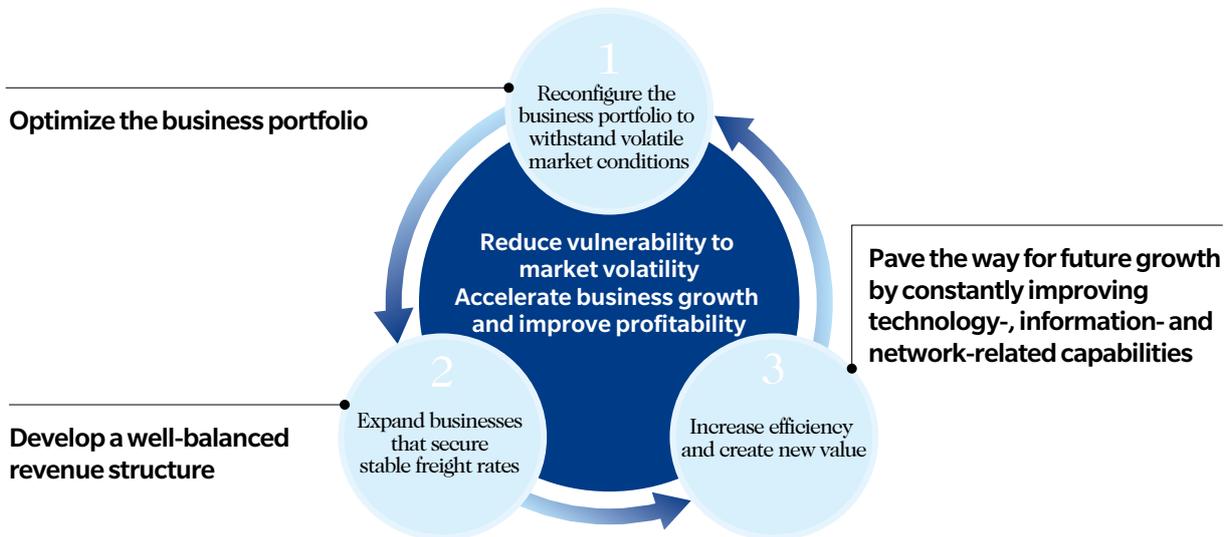
## Enhancing Enterprise Risk Management

Regularly examining how to effectively allocate capital while setting levels of risk appetite and risk tolerance are essential for enabling a company to grow sustainably. Therefore, the Group pays close attention to risk management while always responding to related requests and demands from stakeholders and the public, periodically confirming levels of risk, and conducting reviews of the Group's risk management as necessary.

Refer to page 68 in the "Corporate Governance" section



# Aiming for Continuous Growth under a New Medium-Term Management Plan



	Fiscal 2017 results	Medium-term management plan target by Fiscal 2022
Recurring profit	28 billion yen	70 – 100 billion yen
Return on equity (ROE)	3.8%	min 8.0%
Shareholder's equity ratio	27%	min 30%
Debt-to-equity ratio	1.78	Less than 1.5

## Materiality



## Governance

→p.68

The Group has established a new five-year medium-term management plan called Staying Ahead 2022 with Digitalization and Green. Under this plan, the Group intends to optimize its business portfolio in order to reduce its vulnerability to market volatility, and improve profitability by securing a stable-freight-rate business. At the same time, the Group plans to accelerate the adoption of Internet of Things (IoT) technologies and more quickly expand environmentally conscious businesses through “digitalization and green” initiatives. Guided by its basic philosophy of “Bringing value to life”, the Group is aiming to grow over the medium- to long-term and create new value for customers and people all over the world.

### Value from Transportation of Goods

- Delivery of goods vital to daily living
- Achievement of prosperity for people
- Provision of a stable supply of energy
- Support of a stable supply chain for economic growth



### Value from Global Business Development

- Creation of employment around the world
- Creating global logistics network especially in emerging and developing countries
- Revitalization of the global economy through transportation



Creating value

# Bringing value to life.

### Value from Responding to Environment and Safety

- Reduction of CO<sub>2</sub> emissions during transport
- Prevention of ocean/air pollution, preservation of the ecosystem
- Innovation for next-generation fueled vessels



**Message from the President**

Taking on the challenge of creating new value and staying ahead of our competitors with a focus on digital technologies and environmental initiatives



**Tadaaki Naito**

President, Representative Director  
President Corporate Officer

## Looking Back on Fiscal 2017 and the Previous Medium-Term Management Plan

### Results improved across the board after implementing an emergency plan for withstanding the market slump and preparing for the times ahead

Back in April 2014, we launched our previous five-year medium-term management plan, More than Shipping 2018 — Stage 2: Leveraged by Creative Solutions. The Group achieved its financial targets in the plan's first year, but conditions in the maritime shipping market grew progressively worse, culminating in a perfect storm of negative factors in fiscal 2016. Consequently, the Group posted about ¥200.0 billion in extraordinary losses associated with business restructuring expenses, and abandoned the financial targets of the medium-term management plan. In response to the dramatic market downturn, we initiated a group-wide emergency plan called Beat the Crisis, which was created to deal with the market conditions of the day and build a business foundation for a new stage of growth. Over about two years of that initiative up until the end of fiscal 2017, we succeeded in cutting costs and improving the Group's financial structure. All members of the Group worked hard together with a shared determination to get through those tough times.

As a result of those efforts and the recovery of the maritime shipping market, consolidated financial results in

fiscal 2017 improved substantially compared with the previous fiscal year. The Group posted ¥2,183.2 billion in revenues, ¥27.8 billion in operating income, ¥28.0 billion in recurring profit, and ¥20.1 billion in profit attributable to owners of parent. Moreover, after suspending dividend payments in fiscal 2016, NYK resumed payments in fiscal 2017 with a fiscal year-end dividend of ¥30 per share.

Although we abandoned the financial targets of the previous plan, its asset strategy and business differentiation strategy did not lose their relevance, so we steadily pushed ahead with those basic strategies. We decided to integrate the Group's container shipping business with those of two other Japanese companies, and made Yusen Logistics Co. Ltd. (YLK) into a wholly owned subsidiary. Through such initiatives, the Group made progress toward building a business foundation for the next stage of growth. When confronted with such a challenging business environment in recent years, I believe that the measures taken by the Group's management were the most appropriate and effective, so we will continue following the core of our basic strategies in order to make further improvements and progress.

#### Basic Strategies of the Previous Medium-Term Management Plan and Measures Taken under the Beat the Crisis Emergency Plan

##### Reorganized the business portfolio

- Integrated the container shipping business with those of two other companies
- Made YLK into a wholly owned subsidiary
- Sold off a partial stake in a North American terminal business, and sold a U.S. cruise ship business and refrigerated cargo transportation business
- Secured new projects with potential for stable growth in the LNG, offshore, and automotive logistics businesses

##### Shifted to an asset-light business model in highly volatile businesses

- Sold and scrapped surplus dry bulk carriers
- Reduced the number of containerships under long-term contracts and shortened chartering periods

##### Differentiated services beyond conventional cargo transport services

- Began supplying and selling LNG fuel
- Developed next-generation logistics solutions by utilizing IoT technologies
- Improved fuel efficiency and practiced yield management in the container shipping business

#### Financial Results from Fiscal 2014 to 2017

(Billions of yen)

	Previous medium-term management plan	
	FY2014	FY2016
Revenues	2,300	2,500
Operating income (loss)	70	100
Recurring profit (loss)	70	120
Profit (loss) attributable to owners of parent	35	80
Return on equity (ROE)	5%	9%
Dividend payout ratio	25%	25%

(Billions of yen)

Results			
FY2014	FY2015	FY2016	FY2017
2,401.8	2,272.3	1,923.9	2,183.2
66.2	49.0	(18.1)	27.8
84.0	60.1	1.0	28.0
47.6	18.2	(265.7)	20.1
6.2%	2.3%	(41.0%)	3.8%
24.9%	55.8%	—	25.1%

## New Medium-Term Management Plan Established in Response to the Operating Environment

We are determined to create new value and pursue innovative measures to stay ahead of our competitors amid a dramatically changing operating environment

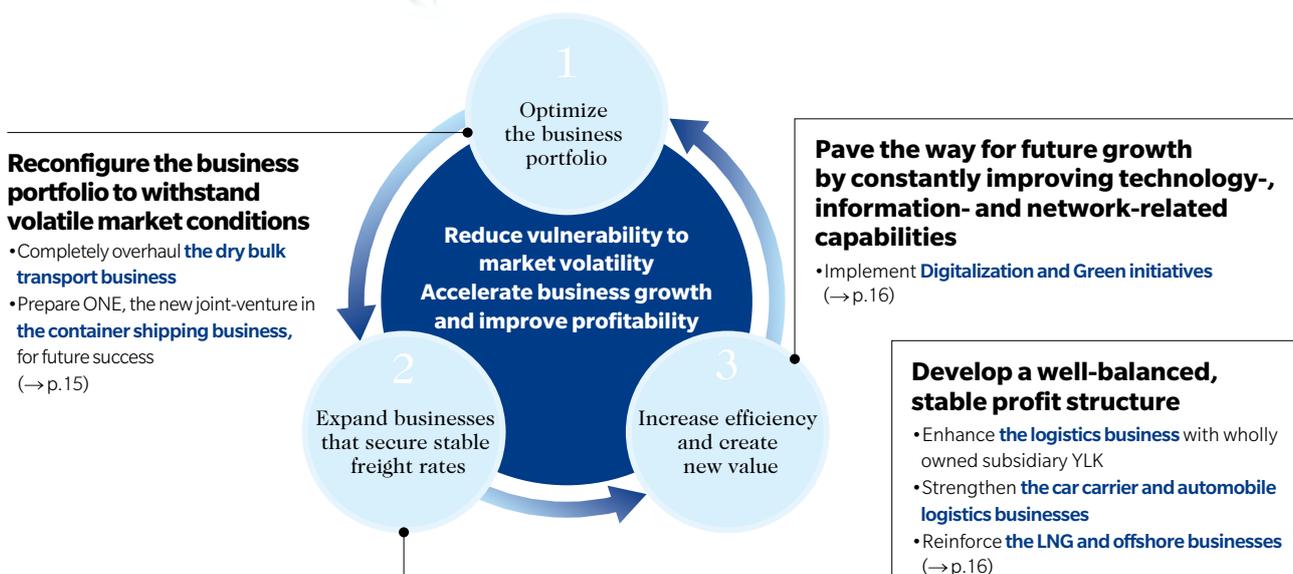
We created our new five-year medium-term management plan, which was announced in March 2018, with a view to effectively deal with the Group’s operating environment. Two external factors have a particularly large impact on the Group’s operations. The first is the volatility of the maritime shipping market. Although it is currently on a recovery path, speculative capital is being invested in the shipping industry due to excess liquidity in financial markets, and, consequently, oversupply of tonnage is a worrying possibility. Furthermore, currency exchange rates and bunker oil prices have been fluctuating dramatically over the past decade. For these and other reasons, the outlook for the maritime shipping market is very unclear. The second external factor is the political-economic environment, which has been changing in diverse ways. For example, trade protectionism is gaining ground, there is a movement toward local production for local consumption, and geopolitical risks are still causes of serious concern. Moreover, rapid advancements are being made with digital technologies, countries are shifting to

low-carbon economies, and environmental regulations are becoming stricter. To respond to all of these trends, we explored innovative ways for differentiating the Group’s businesses when formulating our new medium-term management plan.

We also redefined the NYK Group’s mission statement when deciding on the plan. That move was initiated by an outside director, who pointed out that the former statement’s focus on transporting cargo did not reflect the new businesses that we are developing, so it should be renewed along with the new plan.

Accordingly, we re-examined the Group’s core mission and fundamental goals, and created a new mission statement: “Bringing value to life”. It expresses the path that all of the Group’s businesses take, while also reflecting the original vision of the Company’s founder and our unwavering dedication regardless of the changing times and social trends. In line with this mission statement, we envisioned how the Group should be in 10 years’ time, and formulated four broad objectives for realizing that vision in

### Basic Strategies of Staying Ahead 2022 with Digitalization and Green



our new medium-term management plan, Staying Ahead 2022 with Digitalization and Green. The phrase “staying ahead” in the plan’s name expresses our determination to

take on future challenges and outperform our competitors through innovation with a ceaseless pioneering spirit.

### Basic Strategy 1: Optimize the Group’s Business Portfolio

## Completely overhauling the dry bulk transport business and container shipping business with the goal of improving profitability

While generally following the approach of our previous medium-term management plan, we have set three basic strategies in our new medium-term management plan based on considerations of the Group’s business environment, as I described above.

The first strategy is to optimize the Group’s business portfolio. That means overhauling the dry bulk transport business and container shipping business over the next five years in an effort to establish an optimally structured portfolio. We are determined to improve the profitability of the dry bulk transport business, and, therefore, will proceed with restructuring regardless of the pain involved. Stable earnings can be generated by optimizing fleet composition based on cargo contracts, so we will proceed with bold measures for achieving those arrangements.

Meanwhile, we integrated the container shipping business with those of Mitsui O.S.K. Lines Ltd. and Kawasaki Kisen Kaisha Ltd. with a view to improve efficiency and benefit from a larger scale of operations. Ocean Network Express Pte. Ltd. (hereafter, “ONE”) was jointly established as an operating company in Singapore,

and began offering services from April 2018. We are highly committed to ensuring that ONE will be able to steadily secure profits over the medium and long terms. Fortunately, other container shipping companies around the world have also been reorganizing their operations, so the number of market players has significantly decreased. Therefore, this market is expected to be stable for some time.

Despite encountering some problems when first commencing services, the new company has made very smooth progress on the whole. The other two parent companies have been excellent partners, enabling us to successfully establish ONE together while aiming for the same goals. Jeremy Nixon has been appointed as CEO of the new company. An outstanding individual who was in charge of container shipping operations in the NYK Group for many years, Mr. Nixon was highly evaluated by our two partner companies. Therefore, as a global company originating in Japan, ONE is expected to operate successfully under his skillful direction.

#### The NYK Group’s Business Environment 1

**Container shipping market**

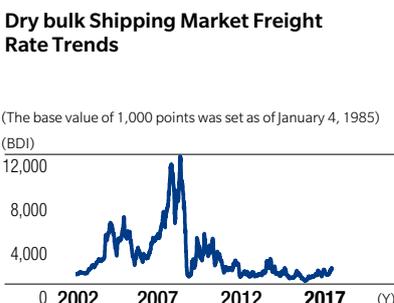
- Shipping traffic is gradually picking up
- Construction of large vessels continues to drive up oversupply



Source: In-house data compiled from the China (Export) Containerized Freight Index

**Dry bulk shipping market**

- Freight rates hit an all-time low in 2016
- Full-fledged market recovery is expected to take time



Source: In-house data compiled from the Baltic Freight Index

### Basic Strategy 2: Expand Businesses That Secure Stable Freight Rates

#### Aiming to increase earnings by proactively channeling resources into businesses that have growth potential

Our second strategy is to expand businesses that secure stable freight rates. By bolstering businesses that have potential for growth, we are aiming to boost their earnings. Among the Group's businesses that secure stable freight rates, the logistics, car carrier, and automobile logistics businesses have been targeted for further growth, while the LNG and offshore businesses have been designated as priority investment businesses.

In the logistics business, the Company and its wholly owned subsidiary YLK intend to strengthen their partnership and make effective use of each other's operational resources to generate synergies. In the car carrier and automobile logistics businesses, we are utilizing digital technologies to improve transport and cargo handling efficiency while proactively implementing environmental initiatives. A case in point is a "green" terminal in Belgium operated by International Car Operators N.V., another wholly owned subsidiary. At the terminal, the Group has installed LED lighting systems and solar panels, and will begin operating wind turbines in 2019 (see pages 21 and 53 for details). It is also applying geolocation technology to more efficiently store and track

the movements of automobiles onsite. Given its status as an industry-leading automobile terminal, we are promoting it as a model case for our initiatives around the world. Meanwhile, recognizing that demand for LNG and other renewable energy sources is projected to grow through to 2050, we plan to increase the Group's fleet of LNG carriers from about 70 vessels at present to around 100 by 2022. We also intend to increase the number of LNG fuel supply ships currently operating in Europe as well as the number of pure car and truck carriers that use LNG as fuel. Furthermore, the Group plans to make use of the know-how and professional networks of the LNG business in its offshore business and other new business areas.



LNG ship to ship bunkering from LNG Bunkering Vessel to pure car and truck carrier

### Basic Strategy 3: Implement Digitalization and Green Initiatives

#### Focusing on launching new green businesses and developing and applying digital technologies at the forefront of the industry

Finally, our third strategy is to implement the Digitalization and Green initiatives of our new medium-term management plan. Digitalization and environmental conservation are already major trends everywhere in the world. Through our Digitalization and Green initiatives, which are closely linked with the basic strategies I have discussed, we intend to provide new services and added value. We have aggressively promoted these initiatives

throughout the Group, and they are now recognized by all members as important for creating future opportunities and new value.

From early on, the Group has promoted the shift to digitalization ahead of the maritime shipping industry. The Group has been collecting data from vessel transport and sharing that data across marine and land operations, and developing various technologies for increasing the efficiency

#### The NYK Group's Business Environment 2

##### Technological progress

- Advances in digital technologies, including IoT, big data, and AI
- Changing needs of customers due to technological innovations
- Growing calls for greater efficiency and cost reductions

##### Environmental responsiveness

- Transition to a low-carbon society
- Increasingly strict environmental regulations
- Integration of ESG criteria in corporate value assessments

of vessel assignments and operations, as well as for designing and modifying ships. The Group has already accumulated a substantial amount of data, and now that the predictive power of analysis technology has improved through deep learning, we have begun using the data to help prevent accidents and equipment troubles. We believe that pursuing these innovations going forward will contribute to the development of manned autonomous surface ships.

Our Green initiatives are organized into three main categories: compliance with international environmental regulations, improving vessel efficiency and reducing their CO<sub>2</sub> emissions, and new business development. With respect to the first two categories, we are stepping up measures that have been ongoing for some time. Regarding the third category, we are looking to launch new green businesses. Demand will undoubtedly grow in the market for renewable energy, so I believe our green businesses must focus on renewable energy from hereon.

Along with solar and wind power, tidal power generation is a promising line of business. Going beyond the boundaries of cargo shipping, we are determined to quickly exploit such business opportunities going forward.

We understand that other shipping companies are also applying digital technologies and carrying out environmental initiatives, but in our case, the Group has four specialized group companies that can help drive our Digitalization and Green initiatives: the Monohakobi Technology Institute, the Group's main research and technical development center; Japan Marine Science Inc., a consulting service provider with expertise in maritime-related issues; NYK Business Systems Co. Ltd., a system planner and developer; and Symphony Creative Solutions Pte. Ltd., a startup company established in Singapore. With the combined expertise of these companies, the Group's technical development capabilities have a significant leading edge in the industry.



Development of high environmentally-friendly vessel using digital twin technology



Autonomous navigation research using ship handling simulator

**Increase Efficiency and Create New Value through Digitalization and Green Initiatives, Monitoring Progress Based on the Following Key Performance Indicators**

	Digitalization		Green
	Data analysis and development of applications	Progress in optimizing the entire supply chain	Green business
<b>Quantitative indicators</b>	<ul style="list-style-type: none"> <li>Amount of data collected from vessels</li> <li>Number of software applications developed</li> </ul>	<ul style="list-style-type: none"> <li>Amount of reduced CO<sub>2</sub> emissions per ton-mile in comparison with the fiscal 2015 level</li> </ul>	<ul style="list-style-type: none"> <li>Amount of power generation capacity of renewable energy projects in which the Group is directly or indirectly involved</li> </ul>
<b>Qualitative indicators</b>	<ul style="list-style-type: none"> <li>Progress in ensuring safe navigation, reducing vessel downtime, and preventing accidents</li> <li>Progress in achieving environmentally friendly and energy-saving shipping operations, including CO<sub>2</sub> emission reductions and compliance with IMO regulations</li> </ul>	<ul style="list-style-type: none"> <li>Progress in achieving set goals, processes, and deadlines for applying the following key technologies:                             <ol style="list-style-type: none"> <li>Digital twin</li> <li>Autonomous navigation</li> <li>Blockchain platforms</li> <li>Digital forwarding</li> <li>Supply chain monitoring tools</li> </ol> </li> </ul>	

### Priority Tasks for Increasing Corporate Value and Benefiting the Communities We Serve

## Continuing to give priority to safety, the environment and human resources as material issues that are integral to the Group's continuation and competitiveness

The Group is aiming to maximize earnings through its new medium-term management plan. At the same time, while working to raise corporate value, we are striving to bring value to communities around the world by helping them solve the problems they face and deal with environmental issues. To facilitate this approach of bringing value to both our business and to society, we have designated safety, the environment, and human resources as key material issues for the Group.

When discussing these material issues, I must mention an unforgettable oil spill that happened in Tokyo Bay in 1997. A large crude oil tanker operated by the Company ran aground in a shallow area of the bay, causing it to leak about 1,550 kiloliters of crude oil. The damage was so vast that the continuation of the Company was even called into question. That accident made us strongly aware of how important ensuring safety, protecting the environment, and training human resources are for the Group to continue conducting business. Since then, we have carried out a wide range of related initiatives and activities.

Beginning with safety, given that ships, aircraft, and semitrailers are in motion, we must always assume that accidents can happen. The Group has been working in earnest to ensure safety in a wide range of ways, including strictly enforcing its own NAV9000 safety standards in shipping operations. Among our measures for conservation the environment, in addition to setting targets for reducing CO<sub>2</sub> emissions in medium-term management plans, we have created environmental management committees group-wide, appointed

executives responsible for environmental management in four regions of the world, and held conferences several times a year to discuss and check the progress of initiatives for dealing with environmental issues in each region. With respect to human resources, we have been promoting diversity and hiring seafarers without regard to nationality, and in 2017 we appointed the first female ship captain in the Company's history. We are now training and hiring human resources to carry out the Digitalization and Green initiatives.

I believe that the Group's commitment to safety, the environment, and human resources over so many years has helped it build trust with stakeholders and be their partner of choice. We will continue focusing on these three key material issues with a view to build partnerships over the long term and stand out from our competitors.



Employees of NYK and YLK group companies participating in a training program called Global NYK/YLK Week

### Investment Plans and Corporate Governance

## Generating cash in-flow by liquidizing assets while cautiously and flexibly making capital investments

As financial targets under our medium-term management plan, we are aiming for recurring profit between the ¥70.0 to ¥100.0 billion range by fiscal 2022, along with return on equity of at least 8.0%, a minimum shareholders' equity ratio of 30.0%, and a debt-to-equity ratio of no more than 1.5. We will work to increase the return on equity by improving profitability, cutting costs, utilizing assets more efficiently, and maintaining the Company's bond credit ratings. Over the five years of the plan, operating cash flow

is forecast to total ¥570.0 billion on a cumulative basis, and of that amount, we plan to use ¥520.0 billion for capital investments in vessels as well as new equipment and facilities in the offshore business and environment-related projects. Since the market is still difficult to predict, our policy is to exercise caution when making investment decisions rather than pursuing bold initiatives. Although the total amount of capital investment is less than our previous medium-term management plan, we are giving

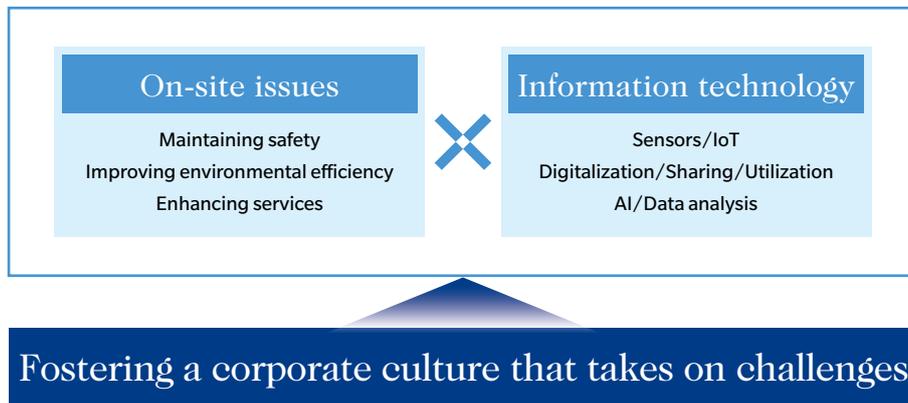




## Special Feature 1 Digitalization & Green

### Solving Various On-site Issues

The Group operates modes of transport such as vessels, aircrafts, and semitrailers, in addition to physical sites such as terminals, warehouses, and shipyards, as well as sales and shipmanagement businesses. Our “Creative Solutions” involve initiatives for solving the various issues faced by our sites by making use of digital technologies and analyzing collected data to create new value. In order to realize ideas more quickly, we have on-site employees that turn their ingenuity into actions, and our four labs (i.e., Monohakobi Technology Institute (MTI), Japan Marine Science Inc. (JMS), NYK Business Systems Co. Ltd., and startup Symphony Creative Solutions Pte. Ltd.) work together with each other and external partners to create solutions.



#### Focus: Cultivating Corporate Culture with Creative Solutions Workshops

Since 2015, we have been holding creative solutions workshops as a program for developing leaders that can drive innovation in the future, and more than 200 of our mid-career employees and young employees have participated in this program. The creative solutions workshops systematically educate our employees on identifying hands-on issues, realizing ingenious solutions, and utilizing methods for improving work, and thereby cultivate human resources that can turn their ingenuity into actions. By continuing this initiative, we aim to foster a corporate culture that takes on challenges and become a company that can continue to create differentiation that is a step ahead of the competition.



Creative solutions workshops

## Vessel Sites

“ Making Onboard Work More Efficient ”

### Adopting an Unmanned Machinery Space (UMS) Check System for Further Utilization of Engine Plant Data

An unmanned machinery space (UMS) check system enables the operation status of onboard machinery to be checked and recorded when conducting unmanned operation of an engine room at night. We introduced digital tablet entry for the approximately 2,000 items that were previously checked on paper, and this reduced crew work for identifying anomalies and allowed us to easily share data with other vessels. We are also promoting the development of a system to enable detected anomalies to be notified to shoreside personnel and thereby identify machinery trouble at an early stage.



Unmanned machinery space (UMS) check system

## Operation Management Sites

“ Understanding the Status of Vessels ”

### Utilizing SIMS + LiVE to Visualize Real-Time Vessel Operation Data

Our vessels are equipped with various sensors for steering and understanding the status of the engine plant. SIMS enables this data to be shared with shoreside personnel, and LiVE is a portal for data visualization. This data enables shoreside personnel in charge of vessel operation and shipmanagement to quickly understand the situation, and is utilized to identify optimal operation and trouble at an early stage. We are also conducting research and development into analyzing the data accumulated by SIMS.



LiVE (Latest Information for Vessel Efficiency) portal site

## Logistics/Terminal Sites

“ Centralized Management of Complicated Cargo Movements ”

### Developing a New System for Centralized Management to Achieve Route Optimization and Cutting-Edge Operations Such as Unmanned Gates and EDIs

Stringent storage and retrieval management is required for finished automobiles that are delivered to terminals by railway cars, transport vehicles, and vessels. At the ICO terminals in Belgium, we have achieved cutting-edge terminal operations by developing an integrated work management system that includes optimization of work plans and operations, more efficient office work using Electronic Data Interchange (EDI) with customers, unmanned gates, etc.



ICO unmanned gate system

## Construction Sites

“ Building Environmentally-Friendly Vessels ”

### Utilizing the Data Collected by Cutting-Edge Sensors to Design High-Efficiency Propellers

We have collaborated with MTI and Japan Marine United Corporation to develop sensors for measuring the status of vessel propeller operation in actual sea areas. The collected data was then analyzed and utilized to design a new high-efficiency propeller. The improved fuel efficiency of this propeller is expected to reduce CO<sub>2</sub> emissions by approximately 1.2%.



Testing a model propeller in a water tank (left) and observations of an actual vessel (right)

# Creating New Value with Open Collaboration

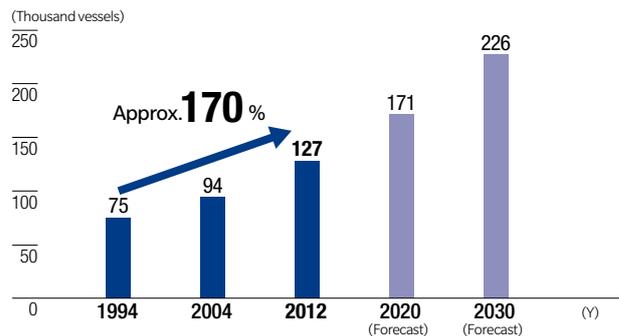
Advancements in information technology such as IoT, big data, and AI are called the fourth industrial revolution, and are expected to cause a revolution in all industries and society, and bring a shift toward a data-driven society. The Group shares the experience and data that we have accumulated over the past 130-plus years with various partners, and collaborates to accelerate digitalization and thereby work toward developing technologies from the user's perspective and create new value.

## Joint Research on Collision Risk Assessment and Autonomous Operation of Vessels

### Increased Risk of Collisions Due to Increasing Size and Number of Vessels

In recent years, the shipping industry has seen an increased number of vessels in operation around the world, and vessels are getting larger for transport efficiency. Due to congestion in strategic sea areas such as the Strait of Malacca to Singapore, the risk of collisions has been increasing. These circumstances have led to the need for greater technical skill and experience operating ultra-large vessels, and safely navigating through congested sea areas can place a heavy burden on crew. Furthermore, major accidents in congested sea areas are becoming a serious issue of concern for the entire industry due to the potential impact on human life, property, and the environment.

Number of Vessels Passing the Malacca Strait



Source: Created by NYK with data provided by the Nippon Foundation, 2012

### Digitizing Human Knowledge from Experience and Sensations for Utilization in Safe Navigation

In 2016, together with MTI and JMS, we launched a study on collision risk assessment and autonomous operation of vessels in collaboration with the Nippon Kaiji Kyokai (ClassNK) and three companies, i.e., Japan Radio Co. Ltd., Tokyo Keiki Inc., and Furuno Electric Co. Ltd. The goal of this study is to improve the safety of vessel navigation through efforts such as the development of tools to assist with lookouts and avoid collisions with other vessels. JMS's full-mission ship handling simulator is used to understand what occurs on large vessels navigated by experienced captains, and data is collected on how they behave when predicting and avoiding risks. This data is then analyzed to promote the development of a system that can provide decision-making support to inexperienced crew.

In recent years, discussions have started on formulating international rules for Maritime Autonomous Surface Ships (MASS), and the time is ripe for marine innovation. In order for Japan to take a leading role in this movement, the Ministry of Land, Infrastructure, Transport and Tourism launched a public appeal for businesses to assist in the research and development of advanced vessel technologies, and a number of our group research projects were sponsored. We aim to engage in research and development with internationally recognized manufacturers of navigation devices in Japan and work to make established technologies more practical in order to build a safe marine transportation environment.



Vessel collision evasion experiment using JMS's full-mission ship handling simulator (photo courtesy of The Japan Shipping Exchange Inc.)

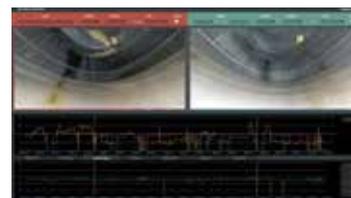


# Creating New Rules for Condition-based Maintenance of Onboard Machinery

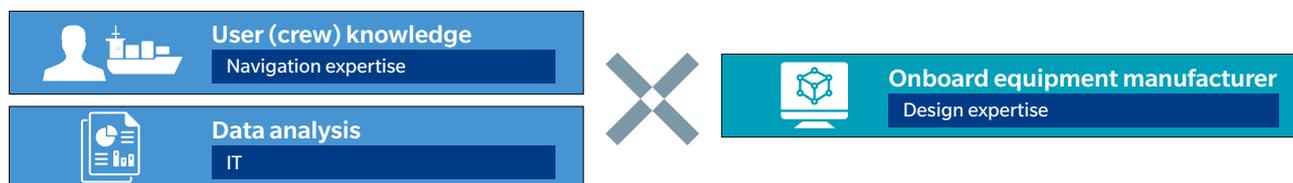
## Collaborating with Manufacturers to Achieve Innovations in Vessel Maintenance Management

The Group aims to optimize maintenance by developing tools from the user perspective for monitoring the condition of machinery — tools such as Kirari NINJA and Kirari MUSE. Vessels are obligated by classification societies to conduct inspections and checks of onboard machinery based on its time in operation. However, we perform safer and more efficient maintenance work on our vessels by confirming the condition of onboard equipment based on data obtained through Kirari NINJA, etc., together with the experience of our marine engineers. Combining such user experience and

knowledge with the expertise of onboard equipment manufacturers, we are working with classification societies to craft new rules that recognize the advantages of monitoring the signs of equipment deterioration through condition-based maintenance compared with conventional maintenance based on operation time.



Status diagnosis by Kirari NINJA



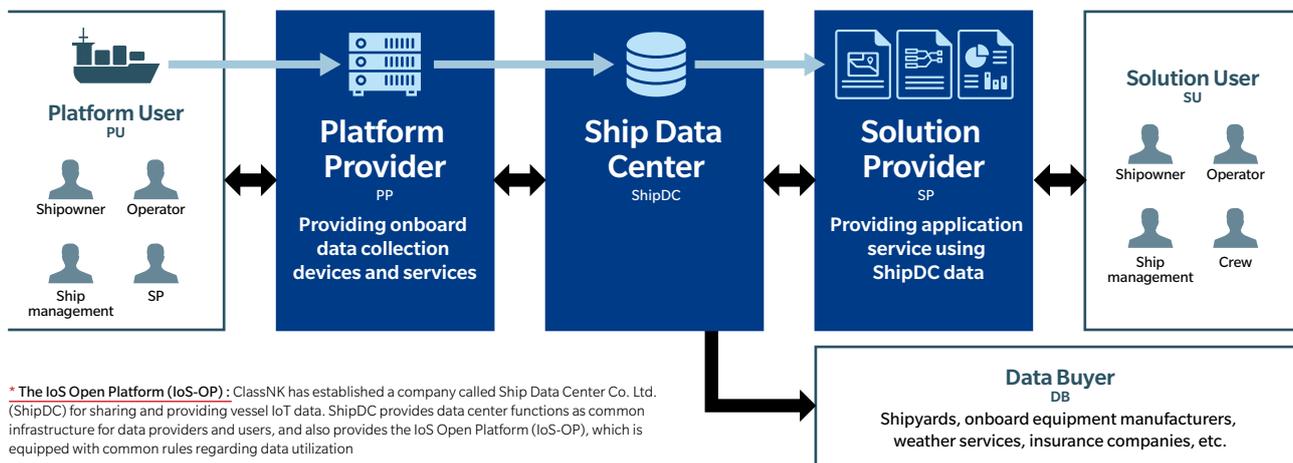
# Creating a Platform for Sharing and Utilizing Vessel IoT Data

## Participating in the Internet of Ships (IoS) Open Platform as a Core Member

The IoS Open Platform (IoS-OP)\*, which is being attempted for the first time ever, is important infrastructure for promoting data-driven innovation that shares and utilizes data between various maritime industry companies. This platform promotes innovation by sharing data provided by shipping companies with maritime related companies such as shipyards and vessel equipment manufacturers for utilization in various specialized fields. IoS-OP is run by a consortium comprising 46 organizations, including shipping companies, shipyards, onboard equipment manufacturers,

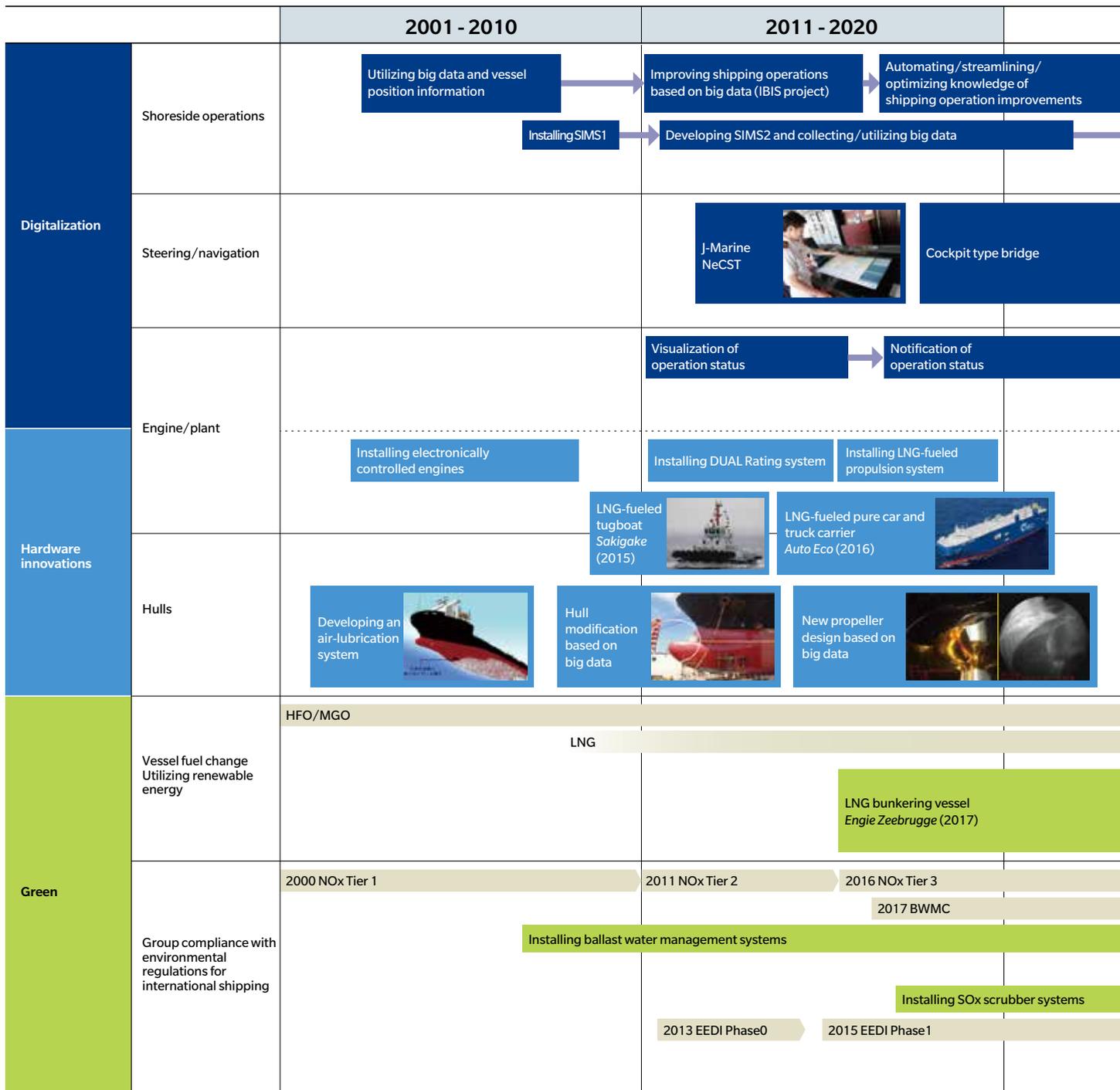
and IT companies, and is designed to maintain a high level of fairness, reliability, and independence between data providers and users.

The Group has promoted the construction of the platform as a core member of the consortium to ensure that IoS-OP has benefits for shipping companies. In the future, we will also cooperate with international classification societies to aim to achieve a global platform, while also leading innovation in all global maritime industries to improve our competitiveness.



\* The IoS Open Platform (IoS-OP) : ClassNK has established a company called Ship Data Center Co. Ltd. (ShipDC) for sharing and providing vessel IoT data. ShipDC provides data center functions as common infrastructure for data providers and users, and also provides the IoS Open Platform (IoS-OP), which is equipped with common rules regarding data utilization

# Formulating a Vessel Technology/Innovation Road Map



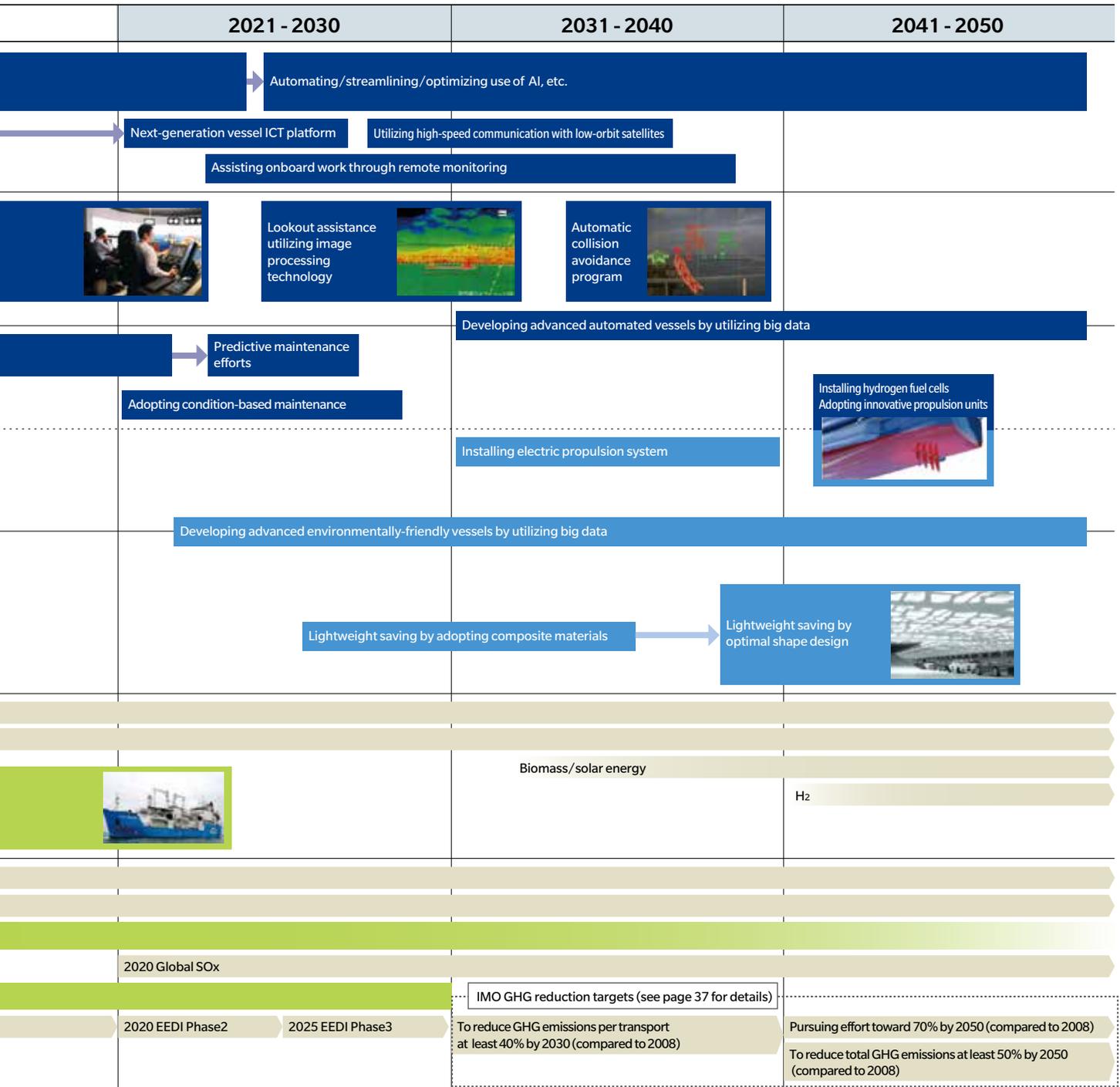
As part of the “Digitalization and Green” efforts in our new medium-term management plan, we have formulated a vessel technology and innovation road map that indicates our fields of research and time frame up to the year 2050. The Group announced its future concept ship, the *NYK Super Eco Ship 2030*, in 2009, and we have been progressing with research and development for its constituent technologies, but we have reviewed the road map due to more stringent environmental regulations and expanded fields of research due to rapid advancements in technological innovations. In order to continue

to provide new value to society and our customers, we will continue to conduct technical development that contributes to environmental and safe shipping operation from the perspectives of digitalization, hardware innovation, and green initiatives.



NYK Super Eco Ship 2030

■ = Environmental Regulations and Targets



NYK Group at a Glance

Moving Ahead with Our Management Plan

Toward Sustainable Growth (Material Issues)

Toward Sustainable Growth (Strategy by Business)

Corporate Governance

**Group Medium to Long-Term Environmental Targets (CO<sub>2</sub> Reduction Targets)**

Our new medium-term management plan defines medium- to long-term environmental targets. We plan to reduce CO<sub>2</sub> emissions from our vessels and produce a ripple effect down the supply chain.

	FY2030	FY2050
Vessels and ocean transportation	-30%	-50%
Ripple effect on the entire supply chain	-40%	-70%

\* CO<sub>2</sub> emission reduction per ton-kilometer compared with fiscal 2015

Our targets to meet the 2°C target of the Paris Agreement were verified as science-based by the international Science Based Target initiative (SBTi) in June 2018.

Our targets are oriented and compare favorably with the greenhouse gas (GHG) reduction targets for international shipping adopted by the IMO.





### Koji Sekimizu

Secretary-General Emeritus, IMO  
Special Advisor and Distinguished Professor,  
Kobe University

### Tomoyuki Koyama

Managing Corporate Officer and Captain  
NYK

## Special Feature 2 Dialogue

# Ensuring Safe and Dependable Maritime Shipping through Exhaustive and Ongoing Initiatives Extending beyond Compliance

For the maritime industry, safety is a top priority that must always be practiced. International rules concerning safe vessel operation and environmental conservation have been enacted to prevent accidents at sea and ensure the health of maritime traffic throughout the world. The United Nations specialized agency responsible for such maritime governance is the International Maritime Organization (IMO)<sup>\*</sup>. In this feature, Mr. Koji Sekimizu, former Secretary-General of the IMO, was invited to talk with Captain Tomoyuki Koyama, a managing corporate officer, about the Group's initiatives related to its material issues — i.e., safety, the environment, and human resources — and the future of maritime governance.

<sup>\*</sup> International Maritime Organization (IMO): Headquartered in London, U.K., the International Maritime Organization was established in 1958 for the purpose of facilitating international cooperation with respect to maritime issues, including the safe navigation of vessels and prevention of ocean pollution by ships. Since then, it has been adopting international treaties and standards concerning a wide range of issues, such as measures for dealing with maritime security and piracy; prevention of maritime accidents; safety standards for vessel structures; technical requirements related to handling cargoes; rules for discharging oil, toxic substances, and emissions from ships; and the adoption of regulations for improving energy efficiency and reducing GHG emissions from ships

### The History of Maritime Safety

#### Making Effective Use of International Rules with Safety Management at the Core of Operations

**Sekimizu:** The history of maritime shipping is also a history of accidents. A major turning point was the sinking of Titanic in 1912. In response to that tragic accident, in 1914 a group of countries adopted the International Convention for the Safety of Life at Sea, commonly known as SOLAS, which was the first of such international treaties. After that, new treaties dealing with safety were adopted as we learned lessons from many accidents, and they have become an important

international rules and standards for the whole world.

**Koyama:** At the Group, we have worked to heighten sensitivity to maritime rules as we have focused on how to quickly and properly respond to the rules. For example, we set up a Safety Promotion Committee in 1992 after the frequency of maritime accidents increased in the 1980s. That is when the IMO adopted the International Safety Management (ISM) Code<sup>\*</sup>. We thought that NYK as a ship operating company should take greater responsibility for safety, so we established the committee as a specialized organization before putting the code into practice. Safety management was being performed by seafarers in those days, but we decided to position safety management at

the center of the Company's management by having the president chair the committee from its inception.

**Sekimizu:** Undoubtedly, the enforcement of the ISM Code in 1998 was an important event in the history of the modern shipping industry. Before then, it was common understanding that the captain of individual ships must take the responsibility for the safe operation of vessels, so the responsibility of the management of shipping companies was unclear. The ISM Code made it very clear that the management of companies should also be responsible for the safety of ships that are owned or operated by them. Moreover, the IMO recognized the great importance of human factors in shipping operations, so it incorporated them in international rules through the Code.

Unfortunately, however, although the ISM Code has been enforced for about a quarter of a century, serious accidents at sea still occur. When I was appointed as Secretary-General of the IMO in 2012, a large cruise ship, Costa Concordia, ran aground in the Mediterranean Sea. If safety management based on the ISM Code had been properly implemented, accidents like that would not have happened.

Compliance with treaties is required internationally, so every ship in each country makes efforts to a certain degree, but safety cannot be ensured just by following rules in a perfunctory manner without any active commitment. It is important to make a wide range of efforts, so every shipping company must do more than merely complying with the Code by making very effective use of it.

\* **The International Safety Management Code** was introduced as a measure for enhancing the safety management of ships in order to prevent accidents at sea. It applies to all types of vessels that weigh over 500 gross tons sailing in international waters, and to the companies that operate such ships. Such companies must put in place a safety management system that complies with the Code, acquire applicable certification, and keep an issued valid Safety Management Certificate on board

## The NYK Group's Safety Measures and Human Resources Development

### Managing a Multinational Workforce and Training Loyal Seafarers

**Koyama:** As you said, the ISM Code is a framework, but how initiatives are carried out within that framework is the responsibility of each shipping company. The Group has set its own goals and created systems for that purpose, with a view to do whatever is necessary to transport cargo safely and provide high-quality shipping services to customers.

The ISM Code originally applied to our company-owned vessels, which accounted for only about half of our fleet at that time. Therefore, in order to create a system for ensuring the safety of all our operating vessels, we went



beyond the framework of the code by establishing our own original safety standards in 1998 called NAV9000 (see page 32 for details). We then introduced those safety standards to shipowners we charter vessels from, and shipmanagement companies to organize second-party audits of the ships and the management offices. Those audits are not one-way approach requiring improvement measures. Instead, we emphasize engaging in dialogue with our business partners, and try to have everyone understand the importance of safety management and environmental conservation. Our goal is to have owners and shipmanagement companies carry out highly effective initiatives that exceed the level of compliance.

NAV9000 not only conforms to international rules but also promotes our own best practices, such as strict safety standards for customers like major oil companies. Some of our business partners initially opposed the inspections because many items covering a wide range of issues are included. Nevertheless, by repeatedly engaging with them and continuing to explain the standards in earnest, we convinced them of the importance of the safety and environmental standards we aim for, and they eventually adopted the system.

**Sekimizu:** I think that is excellent. Another serious challenge for all maritime shipping companies in a process to comply with the ISM Code was related to how they would deal with diversifying labor forces and the globalization. Up until the mid-1970s, the vast majority of seafarers working on ships operated by Japanese companies were Japanese, but now more than 98% are foreign nationals. A multinational crew is like an international community on board a ship, and that makes it more difficult than before to raise the quality of operations and ensure that safety measures are properly carried out.

**Koyama:** We have been responding to that issue in various ways through trial and error. The Group's seafarers come from diverse backgrounds, so to share skills and know-how, the basic practices that have been ingrained among Japanese seafarers are explained in each language, and relevant information and diagrams are translated and included in manuals. Since there are limits to what can be

explained through manuals and other communication tools, we provide training for seafarers through a program called the NYK Maritime College (see page 43 for details) to make sure that the Company's policies and the importance given to safety are widely understood. Over 6,000 seafarers each year take classes in the program, which allows personnel of every nationality to receive the same education and training in various countries and regions. In an effort to educate and secure highly skilled seafarers, we took the lead in the industry with its establishment of the NYK-TDG Maritime Academy (see page 33 for details) in the Philippines in 2007. We have also been carrying out a variety of other initiatives, such as holding seafarer conventions and promoting our Near Miss 3000 program (see page 34 for details). By continuously implementing these activities, we have trained loyal and highly safety-conscious seafarers who, regardless of their nationality, identify strongly with NYK when working on board ships.

**Sekimizu:** The IMO has been addressing the issue of "the Human Element" since the 1990s, but it was not easy to attain the results we hoped for. NYK must have experienced some serious challenges along the way, but the fact that you reached a point of educating top-notch personnel responsible for safe shipping operations is highly commendable. Looking around the world today, no other maritime shipping companies have carried out efforts so persistently. I believe that NYK has been able to maintain a consistent level of safety of ships and firmly establish a corporate culture that places the safety at the highest position, because the Company pursued such commendable initiatives as the ones you described.

### Employee Safety Training Initiatives

#### Strengthening Safety Management with an Awareness of Dangers after Learning from an Accident in Tokyo Bay

**Koyama:** You spoke earlier of the cruise ship accident in the Mediterranean Sea, but we also experienced a major accident that we will never forget. On July 2, 1997, *Diamond Grace*, an oil tanker operated by the Company, scraped the edge of its starboard bottom in Tokyo Bay on a shoal commonly referred to as Naka-no-Se, causing a major oil spill of around 1,550 kiloliters. It made us keenly realize that causing such a large-scale accident will have a huge impact on society, and even threaten the survival of the Company. The number of employees who do not understand the situation we confronted at that time is increasing now that two decades has passed since the accident. Therefore, to help ensure that the lessons learned from the accident are not forgotten, we produced

a video that recreates the accident using computer graphics and includes interviews with personnel who actually experienced it. Since March 2018, we have been using the video as a training tool, made it available on the Company's website, and distributed it to vessel owners and shipmanagement companies.

**Sekimizu:** The maritime shipping industry has the vital role of transporting various types of cargoes and natural resources that are essential for people's everyday lives, but the industry is easily seen only in a poor light when just a single accident occurs. For that reason alone, all employees — right up to top management — must never forget the lessons of past accidents. It is absolutely essential to keep a highest sense of risk management with an understanding that an accident could happen, and continuously make genuine efforts to ensure safety. And, obviously, personnel who have practical experiences in maintaining safety must be given opportunities to play an active role in the over-all management of the company.

### Participating in the Creation of International Rules

#### Looking to Actively Contribute to the Future of Maritime Governance

**Koyama:** In your previous positions at the IMO and Japan's former Ministry of Transport, you were very involved in the creation of international rules over many years. In that sphere of maritime governance, due to Europe's historical dominance in shipping, European countries and companies have wielded the most influence. For that reason, in many cases it has been necessary for Japanese shipping companies like ours to modify safety measures to conform to new rules, and we have accepted that as a matter of course for a very long time. Now, however, Japanese shipping companies can take pride in having reached at least the same level of operational efficiency and safety assurance. Therefore, I think we should become more involved in rule-making in the future, and even create rules that have a distinctively



Japanese flavor.

**Sekimizu:** Yes, among the rules that have been successively created up to now, some have been so matter of course for Japanese shipping companies like NYK that there was no need to take any additional measures to enforce them. However, those rules are necessary for ensuring a level of safety for the international community.

Looking ahead, the process of rule-making will be closely tied with technological innovations aimed at making vessels safer at sea and more environmentally friendly. Japan's shipping industry should be able to play a leading role in international rule-making process, if it spearheads that kind of future technological development, takes the lead in the international maritime shipping industry, and operates globally.

**Koyama:** An example of one of the Company's technological innovations is our ship information management system, or SIMS (see page 21, 33, and 37 for details), a shipping performance system that we put into practical use ahead of the global shipping industry. SIMS allows us to monitor in real time detailed data during navigation, starting with data from engines and all kinds of equipment through to vessel speed and vibration, as well as weather information like wind speed and tidal currents. All the data can be shared between vessels and worksites on land. By compiling the data already collected and analyzing it as big data, it can be used for identifying problems, conserving fuel, and implementing other initiatives related to improving vessel safety and reducing environmental load.

In addition, the Group aspires to make manned autonomous ships a reality (see page 22 for details). Our research is focusing on that, but it is not premised on the idea of unmanned vessels or very small crews. Instead, the purpose of the R&D is to contribute to a higher level of safety by applying autonomous navigation technologies to prevent accidents caused by human elements and to reduce the workloads of crew members.

**Sekimizu:** In the future, we will need proactive initiatives that would utilize the Internet of Things (IoT) and big data to improve safety and reduce environmental load. I also think that the application of autonomous ship technologies would be useful for improving safety and reducing labor burdens. On the other hand, caution must be necessary when applying artificial intelligence (AI). Ships are operated in the natural environment that is not an artificially controlled area like roads or railways and navigation in such an area ensuring safety at sea is a highly complicated process, so we must carefully consider whether and the extent to which computers can be entrusted for the decision-making in navigation, and a legal framework that would allow such navigation must also be considered.

**Koyama:** Yes, and in line with what you said, when the

development of various technologies progresses, it is important that this debate is not led solely by manufacturers and engineers, but also includes the views of us users who are involved in operating ships.

**Sekimizu:** I agree with you that maritime transport companies with many years of practical experiences should be at the center of the debate. Manufacturers tend to be primarily interested in the possibilities of technology, but the issue is what tools are actually needed for safe shipping operations, and how such tools can be applied.

This debate will be very important when international rules concerning the automation of vessels are decided in the future. What international rules will be created and how maritime governance will be shaped in future would be a big issue for the shipping industry, including NYK. Therefore, I urge NYK to become actively involved in the decision-making process so that it can shape its own future. Recognizing that NYK has been successful in the past activities in various fields taking initiatives that would go beyond the simple compliance, I am confident that NYK would also make important contributions to future rule making for the international shipping industry.

**Koyama:** Thank you for sharing your views with us today. Along with our focus on making shipping operations safer and conservation of the environment, we will work hard to contribute to maritime governance while continuing to meet the expectations of our customers and other stakeholders. We would appreciate your advice and suggestions in the future, as well.

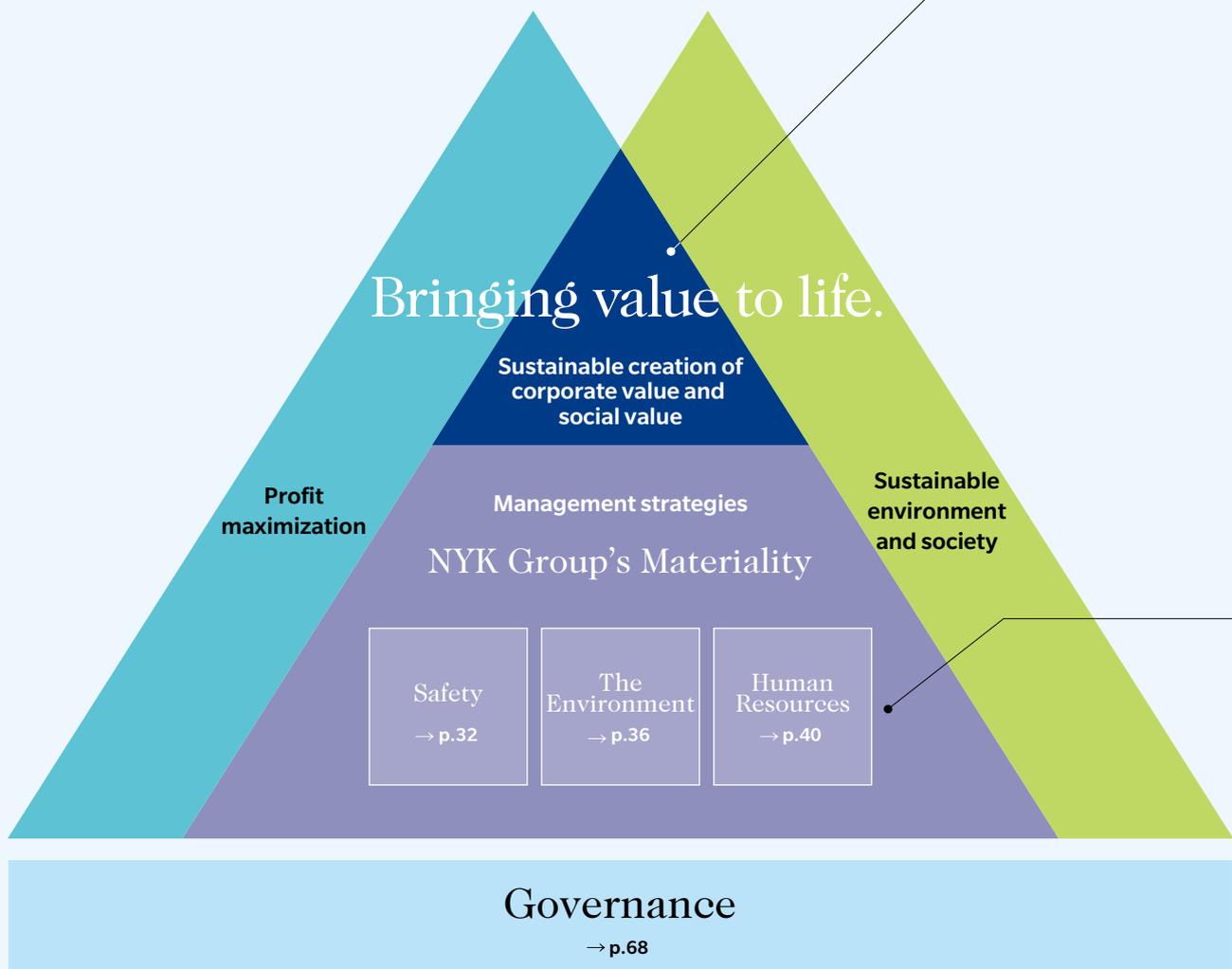
### NYK Group Research Results Presented in an IMO Workshop on Maritime Autonomous Surface Ships

Held in May 2018 in London, the 99th session of the IMO's Maritime Safety Committee began considering revisions to SOLAS and other international treaties in anticipation of the need to create a regulatory framework for operating Maritime Autonomous Surface Ships (MASS). During the event, an international workshop on MASS was led by Japan's Ministry of Land, Infrastructure, Transport and Tourism. As Japan's delegate at the workshop, a member of NYK Group company Monohakobi Technology Institute Co. Ltd. gave a presentation on the Group's contribution to MASS technology through efforts to digitalize shipping operations.



# Toward Sustainable Growth (Material Issues)

The NYK Group pursues the creation of social value and corporate value by ensuring and enhancing safety, the environment, and human resources, which are material issues, while also contributing to achieving the SDGs (Sustainable Development Goals).



In our new medium-term management plan, we have set strategies for the establishment of a stable profit structure, as well as the integration of ESG and management strategies. We have redefined and stated the Group's materiality in terms of safety, the environment, and human resources. To strengthen governance (G), which is the foundation of our business activities, we are taking measures such as improving management transparency, enhancing internal control, improving group governance, and improving awareness of compliance.

Furthermore, we are actively working to solve various social (S) and environmental (E) issues through our business activities and maximize our social value and corporate value. Based on our mission statement of "Bringing value to life", we are aiming to enhance our handling of materiality and striving to develop a sustainable society and environment so that we can contribute to the achievement of the SDGs in 2030.

## Setting SDGs That Are Particularly Relevant to Our Business Activities

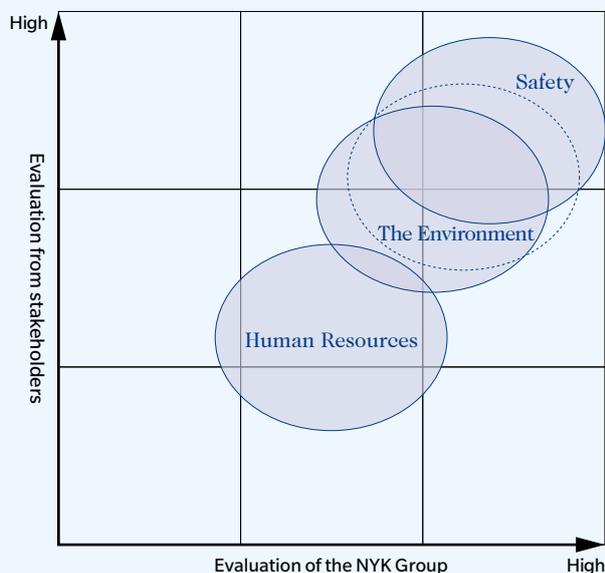
### SDGs especially relevant to our business activities



The Sustainable Development Goals (SDGs) were adopted at the United Nations Sustainable Development Summit held in September 2015. The SDGs require innovations from the private sector and can lead to new business opportunities.

In order to contribute to achieving the SDGs through our business activities, we set targets for six of the 17 goals that were particularly relevant to our business in fiscal 2017. To identify these goals, we conducted interviews with not only management but also young employees who have been with the company for 10 years or less. We will promote our activities related to these six goals to achieve the SDGs.

## Materiality of the NYK Group



In fiscal 2017, we identified the risks and issues of the Group based on reporting guidelines such as GRI and evaluation items from SRI indexes and research providers, such as DJSI, FTSE, MSCI, and Sustainalytics. The important issues were then reviewed from the perspective of the impact they have on stakeholders, and we reconfirmed that safety, the environment, and human resources were universal themes that will not change in the future.

Since the Group transports cargo by modes such as ships, planes, and trucks, safety initiatives to achieve accident-free operations are of utmost priority. Furthermore, dealing with environmental problems is essential for us as a Group that conducts business on a global level. Environmental concerns of stakeholders are increasing, and we understand that we must continue to work together to ensure safety and protect the environment. Furthermore, since human resources are the basis of our safety and environmental efforts, we also focus on securing and developing excellent human resources and improving productivity.

### Major Themes Included in the Three Material Issues

#### Safety

- Accidents (collisions, machinery, human) • Natural disasters
- War, terrorism, cyberattacks • Piracy • Maintaining vessel quality

#### The Environment

- Climate change/decarbonization • Ocean environment
- Response to global regulations • Improving fuel efficiency

#### Human Resources

- Securing and retaining human resources • Human resources development
- Reforming work styles • Health care management

# Initiatives for Safe Operation

Providing safe transport to certainly deliver customer cargo without delays and accidents is the most important mission of the Group. Based on our belief that safety underpins trust and that trust underpins business, we focus on ensuring safe transport regardless of the time and trouble it takes. The Group pursues safe operation from all aspects, such as maintaining a system that aims for zero accidents, implementing initiatives based on original safety standards, fostering human resources development, and preventing accidents before they occur by utilizing advanced technologies like ICT (information and communication technology).

## Learning from the *Diamond Grace* Oil Spill in Tokyo Bay History of Safety Promotion Activities at the Group

### Establishing Systems and Rules for Safe Transport

## 1997

#### Tanker Oil Spill at Naka-no-Se Shoal in Tokyo Bay

On July 2, 1997, the NYK tanker *Diamond Grace* ran aground along the west side of Naka-no-Se shoal in Tokyo Bay, damaging the ship's hull. Some of the crude oil the tanker was carrying leaked into the bay, but thanks to the cooperation of various parties, including the Japan Coast Guard, most of the leaked oil was recovered within two days of the accident. However, this event had the potential of becoming a major environmental pollution disaster.

Afterward, we used this accident as an opportunity to review our systems for safe operation, and adopted an original unified safety standard. From the following year, we also started conducting an internal Remember Naka-no-Se safety campaign for two months starting every July. On the 20th anniversary of the accident, we produced a video containing a CG reenactment of the accident to raise awareness of safety among our Group employees.



*Diamond Grace* surrounded by an oil fence (photo courtesy of Jiji Press Photo Ltd.)

## 2001

**Established Safety and Environmental Management Committee (SEMC)**  
We established a new committee that included oversight of environmental measures added to the tasks of the Safety Promotion Committee established in 1992.

## 1998

#### Introduced Original NAV9000 Unified Safety Standard

NAV9000, formulated for the purpose of safe operation and environmental protection, is an original, unique safety standard based on the ISO9001/14001 international standards. NAV9000 includes approximately 1,500 items covering knowledge accumulated by the Group, requirements from our customers, and lessons from past accidents, among others. Since being introduced in 1998, the content has been reviewed in response to revisions made to treaties and rules, as well as requirements from major players in the oil industry. Audits based on NAV9000 are performed on all of the approximately 750 vessels in operation, including chartered vessels and the vessels we own. Every year we conduct audits of approximately 300 vessels, more than 30 shipowners, and a number of shipmanagement companies, during which we encourage safety awareness and promote an understanding of the standard through dialogs with partners.



#### NAV9000 Track Record





Safety education



Risk mitigation measures using ICT

## Human Resources Education and ICT Utilization to Achieve Zero Accidents

### 2007

#### Opened the NYK-TDG Maritime Academy (NTMA) in the Philippines

We opened NTMA in the Philippines, one of the world's leading sources of seafarers, for the purpose of developing human resources for safe operation. At NTMA, students can benefit from the Group's know-how to establish a basic level of knowledge and skill, while also learning from NYK seafarers through lectures on seafaring skills and environmental and safety policies.

Students at NTMA obtain their seafarer licenses after undergoing training aboard NYK's cadet training ships\* and regular ships, and then work in the Group as navigation officers and engineers. The 10th anniversary of the opening of the academy was marked in 2017. Over the past decade, the total number of graduates has exceeded 700, with some attaining senior positions in the fleet.

\* Cadets are students undergoing trainings to become officers

\* Cadet training ships are general commercial vessels equipped with educational facilities (each with 20 cadet rooms, classrooms, instructor rooms, etc.)



NTMA's 10th anniversary ceremony

### 2003

Established the concept of the NYK Maritime College (NMC) (see page 43 for details)

### 2009

Started a vessel operations meister program to improve the ability of land operators

### 2008

#### Started Operation of Ship Information Management System (SIMS)

The Group strives to provide safe transport by utilizing big data from navigation equipment, vessel engines, and other items. SIMS is a core system developed by the Group to enable the sharing of data between vessels and land operators and vessel managers.

IoT technology installed on vessels enables operation data to be shared and visualized in real time between vessels and land personnel, and this data is then used to identify optimal economic operations. The SIMS data is also analyzed for early detection of onboard device trouble.



SIMS meter

### 2015

Installed the "i.Master" digital nautical chart system for comprehensively understanding the status and course of vessels

Developed "Kirari NINJA" (patent pending) combustion chamber inspection tool for preventing engine accidents (see page 23 for details)

Adopted "Honesty" to simplify work for measuring the tank liquid surface

Adopted digital M0 check system (see page 21 for details)

### 2017

Co-developed J-Marine NeCST, a navigation support tool (see page 35 for details)

### 2018

Produced training video to promote safety awareness

Developed "Kirari MUSE" status diagnosis tool to analyze the operation sounds of engine plant devices (see page 23 for details)

## Various Awareness-Raising Activities for Improving Safety Awareness

### Focusing on minimizing the risk of accidents caused by human elements

Steadily continuing safety activities and education/training does not completely prevent accidents caused by human elements. That is why we work to identify factors that may cause accidents and trouble, and promote various initiatives to prevent them before they occur.



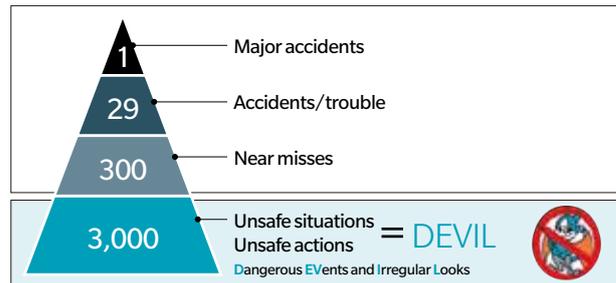
- Current issues
- Standardizing the safety awareness level of diverse and multinational seafarers
  - Analyzing human elements
  - Promoting awareness of and sharing information on near misses and unsafe actions/situations

## Near Miss 3000 Activities and DEVIL Hunting!

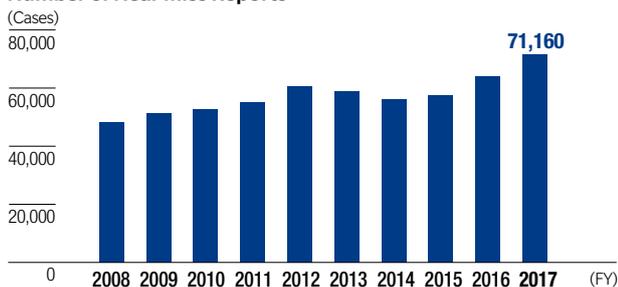
Near Miss 3000 activities have been implemented since fiscal 2005 based on Heinrich's Law\* to identify and quickly eliminate all near misses and unsafe actions/situations that could possibly cause an accident. These unsafe actions/situations are called "DEVILs" (Dangerous EVents and Irregular Looks), and initiatives for identifying DEVILs — called "DEVIL Hunting!" — are promoted on vessels operated by the Group.

\* Heinrich's Law states that behind one major accident lies 29 minor accidents, 300 near misses

### Activities Based on Heinrich's Law



### Number of Near Miss Reports



### Examples of Near Miss Reports/Improvements

#### Before

Helmet straps of crews on deck were loose.

#### After

Work was interrupted, crews were instructed to wear their helmets correctly, and information was disseminated to all crew during onboard health and safety meetings.

## Seamanship Calendar

As part of our awareness-raising activities for our crews, since 2009 we have been creating and distributing three types of seamanship calendars (deck, engine, and general). Each combines illustrations with simple keywords related to safe operation and accident prevention.

This is an effective and well-received tool for raising crew awareness.



## J-Marine NeCST, a Navigation Support Tool

**Optimizes navigation plans, makes route planning more efficient, and enables swift support in case of emergency**

J-Marine NeCST is a navigation support tool jointly developed by the company and MTI Co. Ltd. in cooperation with Japan Radio Co. Ltd. The same device was installed at the head office of the company in 2018 to create an environment that enables vessel navigation information to be shared from offices.



- Current issues**
- Difficulties for entering navigation data onto electronic chart
  - No efficient procedure for sharing information with other vessels and land
  - Making timely status reports to offices in case of onboard emergencies (i.e. fires, collisions)

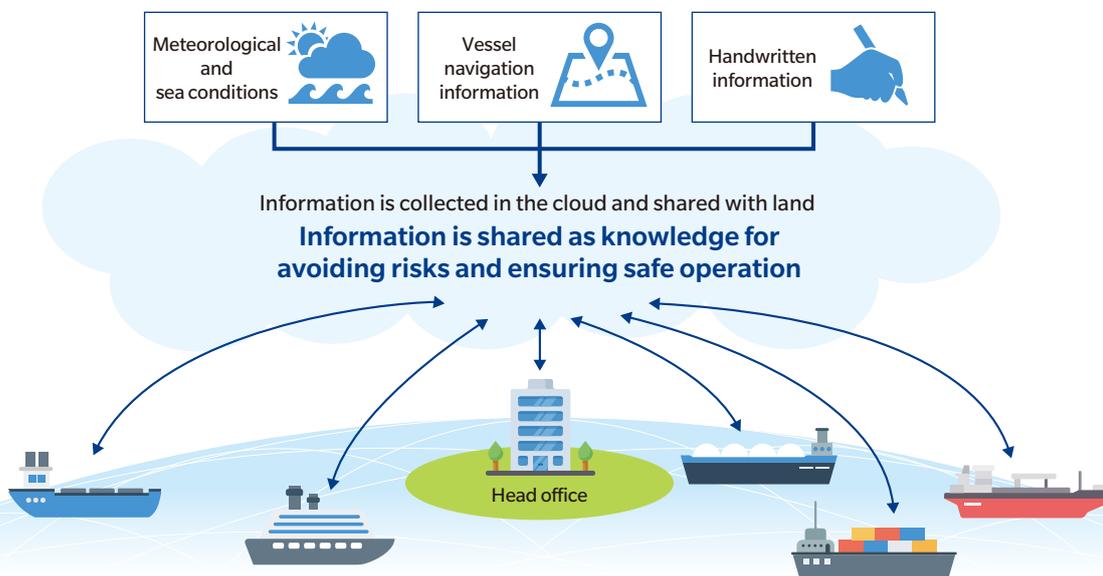
J-Marine NeCST is a device for assisting and optimizing navigation planning that integrates our knowledge on vessel operation with the technical ability of a manufacturer. In addition to being compatible with a conventional mouse and keyboard, J-Marine NeCST lets users write information by hand. Valuable navigation information can be digitized to achieve swift and accurate sharing of information with other vessels and land.

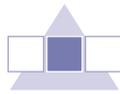
In January 2018, this device was trialed at the company's Crisis Management Center (CMC) at the head office in Tokyo. Being able to retrieve vessel operation data at offices in a timely manner enabled us to achieve swift crisis support and a high-quality of safety management. In March, we conducted a

drill linking a vessel with our office based on the scenario of a fire occurring on our cruise ship *Asuka II*. We connected the ship with J-Marine NeCST at the CMC via the internet and utilized the screen synchronization function to share an emergency checklist and fire control diagram, while also enabling communication using the chat function.

Previously when a fire occurred on a ship, it was necessary to report the vessel status to the office by phone, fax, and email, while prioritizing firefighting activities. Utilizing J-Marine NeCST enabled the vessel to concentrate on firefighting while enabling office personnel to quickly understand the status of the firefighting activities and provide accurate advice if required.

### System for Sharing Information





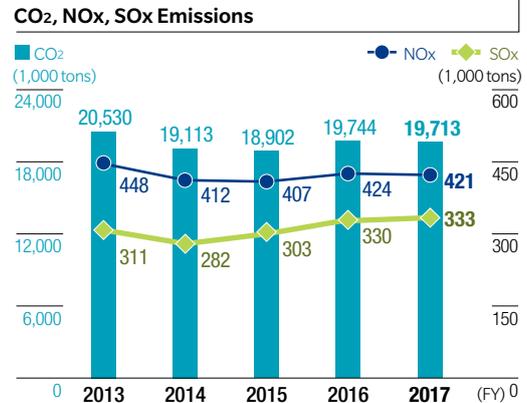
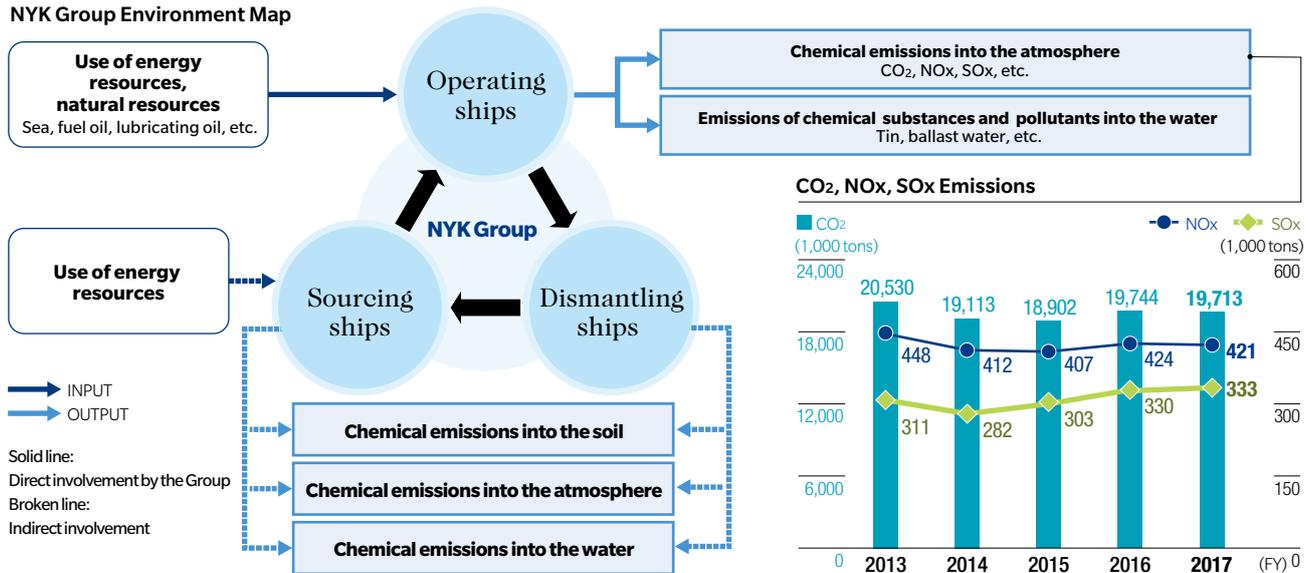
# Proactive Environmental Conservation

With the increased global awareness of environmental concerns such as climate change and marine life/biodiversity conservation, environmental regulations related to ocean vessels are becoming more stringent. The Group identifies curbing global warming, preventing air pollution, and conserving the marine environment as issues that we must tackle, and we are promoting both hard and soft environmental measures.

## Three Issues We Must Tackle



### NYK Group Environment Map



### Timeline: Environmental Regulations

IMO GHG<sup>\*1</sup> reduction targets (see page 37 for details)

- 40% improvement in fuel efficiency by 2030 (compared to 2008)**
- 70% improvement in fuel efficiency by 2050 (compared to 2008)**
- 50% decrease with efforts in GHG emissions by 2050 (compared to 2008)**

	Treaties/rules	Target area	2016	2017	2018	2019	2020	2021
CO <sub>2</sub>	SEEMP <sup>*2</sup>	General seas	Applicable to all vessels					
	DCS <sup>*3</sup>	General seas	Scheduled to go into effect on January 1, 2019					
SO <sub>x</sub>		General seas	Use fuel with sulphur content of 3.5% or less			Use fuel with sulphur content of 0.5% or less		
	ECA <sup>*4</sup>		Use fuel with sulphur content of 0.1% or less (the coasts of the U.S. and Canada, the Caribbean Sea, the North Sea, and the Baltic Sea)					
NO <sub>x</sub>		General seas	Tier II regulations					
		ECA	Tier III regulations (the coasts of the U.S. and Canada, the Caribbean Sea)			(Adding the North Sea and the Baltic Sea)		
Biodiversity	Ballast Water Management Convention	General seas	Effective September 8, 2017					
	Hong Kong Convention (Ship Recycling Convention)	General seas	Adopted in 2009; will be applicable to all vessels upon entering into effect					

\*1 GHG stands for greenhouse gases, which include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>), etc.

\*2 The Ship Energy Efficiency Management Plan (SEEMP) is an operational plan for improving energy efficiency on a voyage-specific basis

\*3 A data collection system is used by shipping companies to report to the International Maritime Organization (IMO) on fuel consumption, voyage distances, and voyage times for all vessels of 5,000 gross tonnage or above operating internationally. A similar system (EU-MRV) was adopted in the EU from January 1, 2018, ahead of the IMO

\*4 Emission Control Areas (ECAs) are ocean areas in which restrictions on air pollutants are in effect

# Efforts for Curbing Global Warming

## Safe, Energy-efficient Operations through Vessel IoT

The Group is currently working to ensure safe, energy-efficient operations by utilizing big data from vessel voyages underway, engine information, and other items. To gather big data for analysis, the Group uses SIMS (see pages 21, 24, and 33 for details), which has been installed on 195 vessels as of June 2018.

The Group has promoted the development of analysis tools for vessel performance and a portal site for monitoring the data collected by SIMS. The data is also utilized in the Group's IBIS Project for determining optimal economic operations and formulating detailed navigation plans based on analysis results that combine vessel performance models and weather statistics.



Viewer (on the vessel)

Viewer (on land)

## Reducing CO<sub>2</sub> Emissions by Modifying Vessel Hulls

We carried out hull modifications of our in-service containerships to promote energy-saving vessel operations. Actual marine data showed these improvements to reduce CO<sub>2</sub> emissions by 23%, which exceeded our estimate and has been certified by Nippon Kaiji Kyokai. With energy-saving vessel operations becoming the norm and vessels tending to travel at speeds slower than expected at the time of construction, we have been promoting various initiatives since summer 2014 to reduce CO<sub>2</sub> emissions by modifying our in-service vessels to travel at slower speeds and improve propulsive performance, such as modifying our vessels' bulbous bows<sup>\*1</sup> and fitting MT-FAST<sup>\*2</sup> devices to hulls.

<sup>\*1</sup> A bulbous bow is bulb-shaped protrusion attached below the waterline of a vessel, reducing wave resistance when the vessel moves forward (see photos below)

<sup>\*2</sup> MT-FAST is an energy-saving device that uses multiple wings attached to the front of the propeller to recover energy lost due to the swirling flow of the propeller rotation



Before modification

After modification

## Improving the Fuel Efficiency of LNG Vessel Propulsion Engines

The main engines of general merchant vessels are usually fuel-efficient diesel engines, but on LNG vessels, conventional steam turbines and reheat steam turbines, etc. are used to process boil-off gas<sup>\*</sup>. In recent years, increased focus on clean energy due to environmental regulations, etc. has seen increased numbers of vessels adopting dual fuel diesel electric (DFDE) propulsion, which can flexibly use both heavy oil and liquefied natural gas (LNG). The Group has adopted DFDE propulsion on nine LNG vessels (as of July 2018).

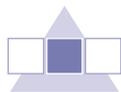
Furthermore, STaGE (Steam Turbine and Gas Engine) and gas-fired diesel engines have developed even better fuel performance than DFDE propulsion. In new vessels commissioned in June 2018, NYK has adopted a hybrid two-axis propulsion STaGE that combines a high-efficiency reheat steam-type marine turbine and a dual fuel diesel engine capable of operating on both gas and oil. We will continue to work toward standardization of even more fuel-efficient latest dual fuel diesel engines in our new vessels.

<sup>\*</sup> Boil-off gas is natural gas that gasifies due to temperature rises during navigation

### Formulating IMO-led GHG Reduction Targets in the Shipping Industry

In December 2015, the Paris Agreement adopted targets for limiting average global warming to within 2°C (or 1.5°C with further efforts) of pre-industrial revolution levels and limiting GHG emissions to effectively zero during the second half of the 21st century. The international shipping industry, led by the International Maritime Organization (IMO), has adopted global common fuel efficiency regulations ahead of other sectors, and promotes the reduction of GHG emissions. In

April 2018, the world's first GHG reduction strategy, which strives to achieve zero GHG emissions in the global sector as early as possible within this century, was adopted by the IMO Marine Environment Protection Committee (MEPC72). Targets include (1) a 40% improvement in fuel efficiency by 2030 and a 70% improvement with efforts in fuel efficiency by 2050 and (2) a 50% decrease with efforts in GHG emissions by 2050 over the entire international shipping industry (compared to 2008).



## Efforts for Preventing Air Pollution

### Efforts for Next-Generation LNG Fuel

Switching the fuel used in our vessels to LNG is expected to reduce CO<sub>2</sub> emissions by approximately 30%, NO<sub>x</sub> emissions by approximately 80%, and SO<sub>x</sub> emissions by 100% compared to heavy oil. The Group focuses on LNG as a next-generation fuel and has been promoting research and technical development into fuel conversion since 2011 (see pages 24 and 25 for details). We have accumulated knowledge on developing engines that use LNG as their fuel source, and are constructing LNG-fueled vessels that incorporate this technology. In August 2015, we commissioned *Sakigake*, the first LNG-fueled tugboat in Japan, and in fiscal 2016 we commissioned the first two LNG-fueled pure car and truck carriers in the world. The Group will continue to promote the construction of LNG-fueled vessels for their expected reduction in environmental impact.

On the other hand, expanding LNG-fueled vessels brings up the challenge of supplying LNG to those ships. The Group also strives to popularize and develop LNG-fueled vessels from the supply side via initiatives such as participating in a feasibility study for an LNG bunkering hub development plan at the port of Yokohama, investigating the commercialization of LNG fuel supply in the Chubu region of Japan, and developing an LNG fuel sales business.

### Complying with SO<sub>x</sub> Regulations

The amount of SO<sub>x</sub> emitted by vessels is regulated by the IMO's International Convention for the Prevention of Pollution from Ships (MARPOL), and limits on sulphur included in fuel oil will become more stringent from 2020.

To comply with these regulations, the Group considers the optimal of three options for each vessel: converting to LNG fuel, using oil that complies with the regulations (low-sulphur oil), or

installing an SO<sub>x</sub> scrubber (system for desulphurizing exhaust gas). In 2017, we also decided to install SO<sub>x</sub> scrubbers on two dry bulk carriers, a first in the Japanese shipping industry.

### Using Cutting-edge Technologies for Stricter NO<sub>x</sub> Regulations

The Group has promoted the installation of digitally controlled engines that can reduce NO<sub>x</sub> emissions by optimizing fuel efficiency. Due to stricter NO<sub>x</sub> regulations, we are promoting further reductions in NO<sub>x</sub> emissions through LNG-fueled engines, as well as fitting vessels with exhaust gas recirculation (EGR) systems or selective catalytic reduction (SCR) units.

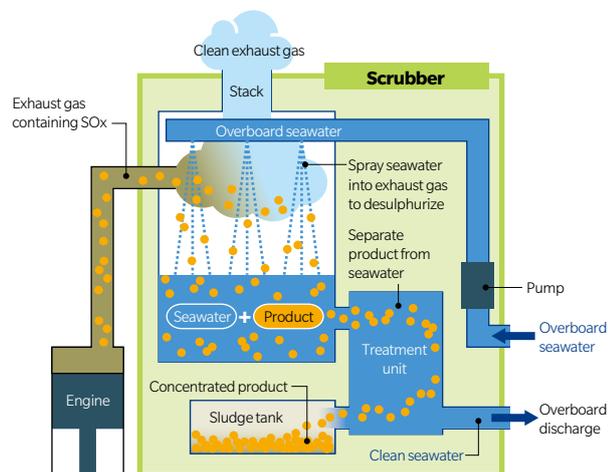
### Using Onshore Power While in Port

The California Air Resources Board (U.S.) requires all containerships, cruise ships, and refrigerated cargo ships in berths at ports in the state of California to stop their onboard generators and connect to a shoreside power supply. Group vessels that stop at ports subject to these regulations are equipped with alternative maritime power (AMP)<sup>\*1</sup> units that can connect to shoreside power supplies. We will continue to increase the rate of shoreside power received to reduce CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sup>\*2</sup> emissions from our vessels and prevent air pollution.

<sup>\*1</sup> **Alternative maritime power (AMP)** is a method for supplying shoreside electrical power to berthed vessels so that they can turn off onboard generators, thereby minimizing air pollutant emission

<sup>\*2</sup> **Particulate matter (PM)** is a harmful substance said to affect health adversely and cause conditions such as respiratory diseases

#### How a Scrubber Works



A containership receiving electricity from shore



An AMP container unit

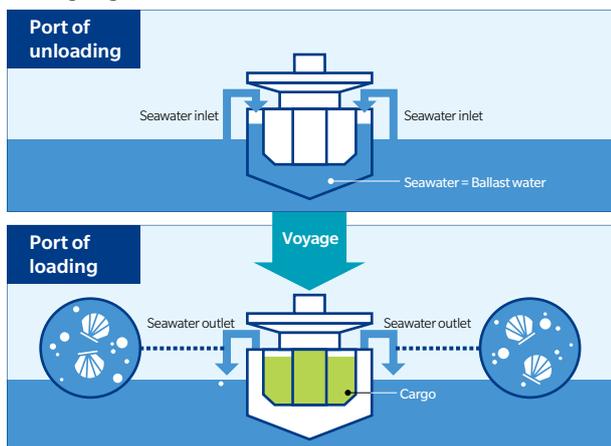
# Contributing to Marine Environment Conservation

## Promoting the Installation of Ballast Water Management Systems (BWMS)

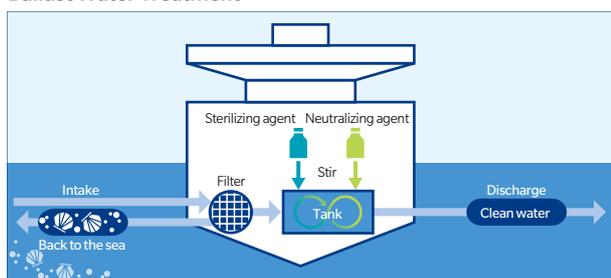
To prevent the cross-boundary movement of aquatic organisms affecting the marine environment, the IMO adopted the International Convention for the Control and Management of Ship's Ballast Water and Management in 2004, and the convention went into effect in September 2017.

Anticipating the enforcement of the Convention, the Group began in 2010 installing BWMS that have obtained type approval from the Ministry of Land, Infrastructure, Transport and Tourism, and as of March 2018 installation had been completed on 82 vessels. We will continue to systematically install these systems on vessels that we own and operate.

### Moving Organisms with Ballast Water



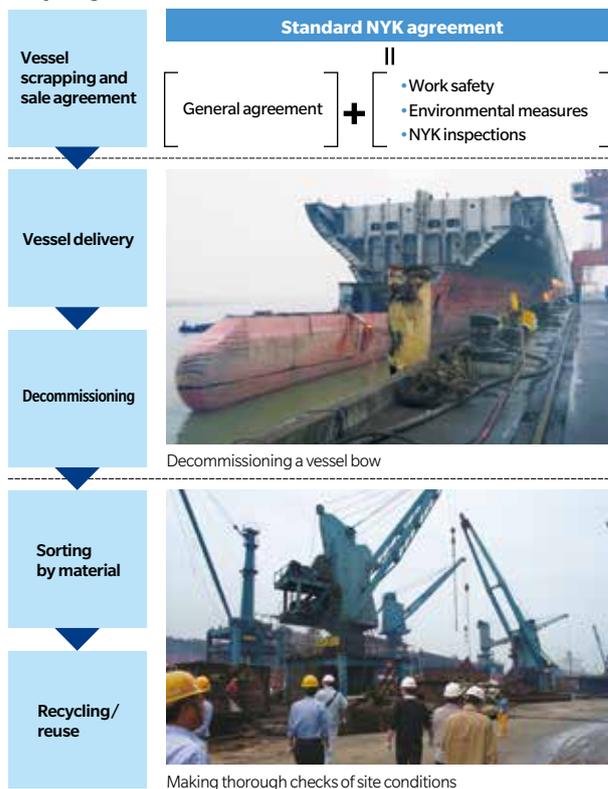
### Ballast Water Treatment



## Environmentally Friendly Ship Scrapping (Ship Recycling)

To prevent industrial accidents and environmental pollution that can occur during ship-decommissioning procedures, the IMO adopted a ship-recycling convention in 2009. In consideration of the IMO guidelines, we have formulated a scrapping policy that emphasizes securing safe, stable scrapping locations and conducting environmentally friendly vessel scrapping, and we select scrapping yards that consider workplace health and safety in addition to environmental conservation.

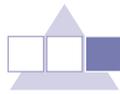
### Recycling Process



## Issuing Green Bonds

In May 2018, NYK issued the world's first green bonds in the shipping industry (10.0 billion yen over five years). Green bonds are bonds whose procurement funds can only be used in businesses that improve the environment. In our business, this corresponds to LNG-fueled vessels, LNG bunkering vessels, and the installation of ballast water management systems, SOx scrubber systems, etc. In the

future, our company website and NYK reports will contain information on the allocation of funds and positive environmental impacts. The issuance of these green bonds will enable us to further accelerate our environmental efforts and actively contribute to solving environmental issues including climate change.



# Utilizing/Strengthening Human Capital

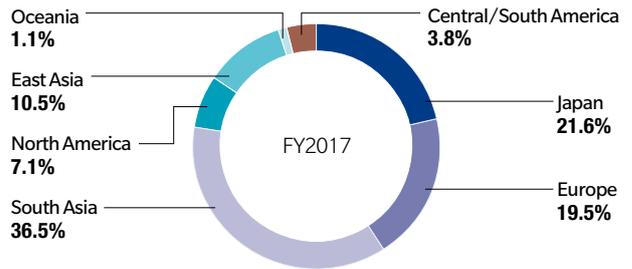
In order for a company to enhance its competitiveness and continue to grow in the medium- to long-term, it is essential to develop human capital. The Group promotes initiatives such as workstyle reforms and health management to create a workplace environment that enables every employee to make full use of their abilities and to work on their tasks with a sense of satisfaction. We also provide original training programs to support employee development.

## Characteristics of Human Capital at the Group

With the global business expansion of the Group, our human resources continue to diversify, with more than 70% of our approximately 37,000 employees now working overseas. Moreover, our fleets are crewed by multinational seafarers (see page 45 for details). Office workers and seafarers hone their skills in various fields and work together to improve corporate value.

Various data is included in "Human Resources Data" on page 10.

Ratio of NYK Group Employees by Region (consolidated)



## History of Strengthening Human Capital

: Workstyle Reform : Health Management : Training and Educational System

### Office Workers

- 1953** Established in-house clinic (now the NYK Group Health Care Center)
- 1984** Introduced MBA study abroad program (started dispatching in 1985)
- 2001** Inaugurated the Office-Hours Management Committee
- 2002** Started Global NYK Week\* training program
- 2003** Integrated the HR departments for office workers and seafarers
- 2004** Established the NYK Business College
- 2006** Started the Vacation Promotion Committee
- 2008** Established the Work-Life Balance Promotion Committee, integrating the Office-Hours Management Committee and Vacation Promotion Committee
- 2015** Started the creative solutions workshops program for cultivating innovation promotion leaders (see page 20 for details)
- 2015** The Human Resources Group and NYK Health Insurance Society collaborated to start the Promotion of Physical & Mental Enrichment of Yusen Group Employees (POPEYE) project to promote health management
- 2015** Started the OLIVE workstyle reform project

### Seafarers

- 1896** Assigned Gosaburo Shimazu, NYK's first Japanese captain, to *Hiroshima Maru* operating to Bombay (present-day Mumbai, India)
- 1920** NYK's approximately 1,400 seafarers in all positions — i.e., captains, chief engineers, chief radio operators, pursers, etc. — are all Japanese
- 1976** Started manning vessels with mixed crews comprising Japanese and foreign seafarers
- 2003** Adopted NYK Maritime College concept
- 2006** Started in-house seafarer-training program for Japanese graduates of non-maritime colleges/universities, a first for a Japanese shipping company
- 2007** Established the NYK-TDG Maritime Academy (NTMA) in the Philippines (see page 33 for details)
- 2016** Established the Promotion of Physical and Mental Enrichment of Yusen Group Employees & Seafarers (POPEYES) project to promote seafarer health management
- 2017** Started the M-OLIVE seafarer workstyle reform project

\* An annual training program held at our headquarters in Tokyo for selected managers from group companies around the world. Since 2012, this program has been conducted with Yusen Logistics Co. Ltd. A training program for senior management has also been conducted since 2013

## Messages from Director



### Promoting Efforts and Initiatives to Improve the Value of the Group by Increasing Job Satisfaction

#### Yoshiyuki Yoshida

Director, Senior Managing Corporate Officer  
Chief Executive of General Affairs Headquarters

The business of the Group is constantly subject to volatile market conditions and social changes. Many companies desire human resources that can turn changes into opportunities and actively and boldly accept new challenges, and we believe such human resources to be true “generalists”. We believe that generalists that have the ability to contribute to various fields without being biased toward specific fields or specialties are management personnel that have the flexibility to humbly learn from others and grow by themselves. In order for our employees to become true generalists, they experience various positions through job rotations in the 10 years after entering the company. They concurrently gain project management ability through training and creative solutions workshops (see page 20 for details) to become human resources that can create new value.

Furthermore, in order to enable our employees to feel work satisfaction and fulfillment in their daily lives, we are strongly aware of work-life integration, promote workstyle reforms and diverse workstyles, and also implement measures such as health management. We periodically review KPIs for measures such as reducing overtime hours and improving the rate of male employees taking short-term paternity leave, and strive to always make improvements for the better. In the future, I hope we can share successful examples with group companies both in Japan and overseas, and thereby achieve growth for the entire Group.

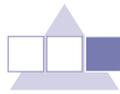
In order to become a strong organization that can flexibly handle changes, we must secure diversity and have a system that enables that diversity to be effectively utilized. In 1983, we started activities for promoting the empowerment of women in order to develop the abilities of female employees, expand their fields of work, and improve their treatment. In 2001, we eliminated the distinction between career-track or general duty positions to achieve a unified personnel system. We have also established various systems that exceed legal requirements for maternity leave and childcare leave in order to eliminate the barriers preventing women from continuing work. In 2002, we established a child care center at our headquarters to provide an environment that enables our female employees to continue working after childbirth, and we have also continued to implement detailed initiatives to care for our employees, such as allowing female

employees to take their children with them when they are stationed overseas. Our company believes that work overseas is an important experience for fostering diversity and inclusion, and also leads to personal growth. That is why we set targets for employees working overseas to encourage our female employees, but we will also investigate other effective measures, while taking into account the life events specific to females and also recent evolutions in the IT environment.

Our company has had a high rate of female managers from an early stage, and also has female directors. We realize that accepting fresh opinions from a wide variety of perspectives can strengthen the organization and be of benefit when discussing management issues. We will continue to promote diversity and inclusion to increase the unity of the Group, respect diversity, and enable every one of our group employees to work with motivation and satisfaction, in order to improve the value of the Group.

#### History of Promoting Women in the Workforce

- 1983: Started onboard training system for female employees
- 1984: First five female deputy managers
- 1987: Adopted morning sickness leave system (Name changed to “maternity leave” in 1997)
- 1992: Adopted childcare leave system
- 1996: First female employee stationed overseas
- 1997: Started hiring female employees for career-track positions
- 2001: Unified the personnel system (eliminated distinction as either career-track or general duty position)
- 2002: Established the Yusen Childcare (in-house nursery room) in Marunouchi, Tokyo
- 2004: Started hiring female navigation officers and engineers
- 2008: Adopted spouse transfer leave system
- 2009: Appointed first female corporate officer
- 2014: Started Project W to promote female empowerment First working mother stationed overseas
- 2017: First female captain



## Major Initiatives for Strengthening Human Capital



### Promoting Workstyle Reforms

**Office Workers** We promote workstyle reforms and started the OLIVE (Outdate Long-standing work practice and Increase Vitality of Employees) project in July 2015 for the purpose of establishing a workplace environment that allows all employees to play active roles and flexibly work with enthusiasm without rigid constraints on working hours.

We review our workstyles to make efficient use of time and recognize the importance of work-life integration, which aims for a fulfilling balance of both work and life, and expect that this will lead to the creation of innovations and new value, as well as improved competitiveness. Measures to achieve this include fostering early morning work, promoting the use of a flex-time system, allowing early departures from work, reducing and shortening meetings, monitoring daily work hours, as well as trialing work at home and encouraging male employees to take short-term paternity leave. These measures are disseminated throughout the company by the Human Resources Group and NYK Labor Union, and the effects are being seen in reduced overtime and meeting hours, etc. (see page 45 for details).

Furthermore, to make work more efficient and allow information to be shared more smoothly within the entire Group, from August 2015 we have been promoting the adoption of new groupware, office365, which will become a new common work infrastructure. The adoption of this groupware has now been completed for the 27,000 group employee users working at offices in 41 countries over the world, and has led to reduced travel time through Skype conferences and lively communication both in Japan and overseas.

#### Effect of Reviewing Meetings

	FY2016	FY2017
Time per meeting	57 minutes	39 minutes
Participants per meeting	6.5 participants	4.0 participants
Meeting participants per day	1,200 participants	1,095 participants
Participants per meeting hour	6.9 participants	6.1 participants

**Seafarers** To promote workstyle reforms for our seafarers working on board, we have expanded the OLIVE project adopted for office workers by starting the M-OLIVE (OLIVE Project for Mariners) project in August 2017. This project aims to eliminate the **3Ms**\* in onboard work, promote the creation of workplace environments that enable smooth

on-duty, off-duty switchovers, and improve seafarer health.

\* 3Ms

**Muda:** Non-value adding activities

**Mura:** Unevenness in production or work activities

**Muri:** Excessive burdens



### Health Management Promotion Project

**Office Workers** Based on the idea that promoting employee health and preventing disease leads to improved productivity and profitability and increases corporate value as a result, the Human Resources Group and NYK Health Insurance Society collaborated in April 2015 to start the POPEYE (Promotion of Physical & Mental Enrichment of Yusen Group Employees) project to promote health management. This project sets a target of 100% for employee health checks and creates a database for health check results to promote the prevention of disease and disease progression. We also hold various events to further raise employee awareness on health promotion and disease prevention such as talks by doctors and advice by sports instructors.

Furthermore, we perform an annual stress check via the Internet once a year in order to support the mental well-being of our employees. We also provide a consultation service for mental health issues, and the NYK Group Health Care Center has a full-time occupational health physician and psychiatrists to enable employees and workplace managers to receive advice. An external consultation service contracted by the NYK Health Insurance Society also allows employees and their families to consult specialists 24-hours a day, 365 days a year.

In recognition of our efforts, we have been certified as a White 500 company for excellent health and productivity management two years in a row.

**Seafarers** Since seafarers work onboard a vessel for three to 10 months at a time, they are subject to a unique work environment that involves isolation (long-term isolation from land), dangers (such as maritime accidents), and living and working in the same place (cohabiting on a vessel), and international treaties and acts apply (such as the Mariners Act in Japan). We started the POPEYES (Promotion of Physical & Mental Enrichment of Yusen Group Employees and Seafarers) project for seafarers in December 2016 based on the idea that promoting the health of seafarers not only leads to improved productivity and motivation but also directly leads to safe operation. In the first fiscal year, this project set a body mass index (BMI) target of 25 or less for all seafarers and distributed printed materials recommending that seafarers at sea review their diet and habits, get adequate exercise, and enhance their resistance to stress.

Furthermore, to raise employee awareness and prevent industrial hazards caused by onboard accidents, we created videos that include examples of past accidents, and distributed

them to seafarers on vessels, shipmanagement companies, and vessel owners. In addition, more than 500 of our seafarers receive practical training on dangers annually at a training facility we operate next to the NYK-TDG Maritime Academy (NTMA) in the Philippines. In fact, we constructed an equivalent facility in India in 2018, and we will continue to promote measures to ensure the health and safety of our seafarers.



## Training Systems/Programs

**Office Workers** The Group has a continually evolving NYK Business College (NBC) training system to develop the next generation of global business leaders. NBC enables employees not only to enhance basic abilities through tier-based trainings but also to learn general business skills such as legal, financial, and problem-solving skills, in addition to languages. Employees can also enhance their expertise in shipping, such as vessel operation management and hull structures, as well as

### NYK Business College (Main Programs)

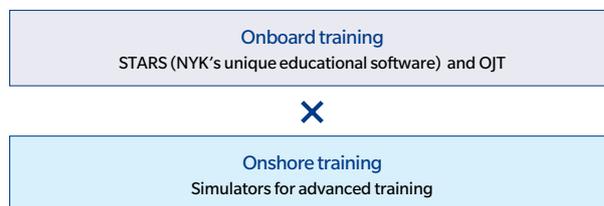


knowledge required for corporate management, such as investment and management strategy. We provide a wide range of programs for cultivating human resources that will become leaders with a high degree of specialization as well as wide perspective (see page 45 for details).

**Seafarers** Securing excellent seafarers is essential to safe vessel operation. Ultra-large vessels and vessels that require advanced technologies require operation knowledge and technical ability that can respond to various conditions.

The Group has original unified standards defining the knowledge and ability required for onboard duty at each position, from third officers and third engineers to captains and chief engineers. And the Group's seafarers learn a wide range of specialized knowledge and advanced technologies required for safe operation in each position through the NYK Maritime College training system. A combination of original education software (STARS), onboard OJT, and onshore training using cutting-edge devices such as simulators enables our seafarers to efficiently improve their skills. More than 6,000 seafarers receive training at our major training facilities in Singapore and the Philippines each year (see page 45 for details).

### NYK Maritime College



An educational training program, rooted in the NYK Unified Requirements, for efficiently enhancing technical skills

### Overseas LL.M. Study

Message from Chisato Kasahara, who studied at the University of Washington from October 2017 to June 2018

I used the short-term study abroad system offered by the legal department to take an LL.M. course at the University of Washington in order to learn about common law required for my work, such as examining contracts and resolving disputes. An LL.M. is an approximately nine-month Master of Laws course offered to foreign students that have already obtained a Bachelor of Laws degree outside the United States, and I joined students with various legal backgrounds, including lawyers and judges from around the world.

In addition to the study of general law, the LL.M. at the University of Washington teaches about intellectual property rights, patent law, and taxation law, and offers a total of seven courses, which several students from Japan attend each year.

Despite having studied law in Japan for some time, it is quite difficult to learn about a completely different legal system. In addition to preparation for classes and exams, I had to work on a large number of assignments every day, while carrying around a huge casebook. I found that my fellow students enjoyed discussion, and our classes saw an active exchange of opinions. I received encouragement from the efforts made by the students from other countries and was helped out by interacting with other Japanese students that I would not have had a chance to meet in Japan, and this enabled me to enjoy my stay to the fullest up until the last moment.



Rate of Improvement in CO<sub>2</sub> Emissions (Fiscal 2017)  
(Compared to Fiscal 2010)

14.3%



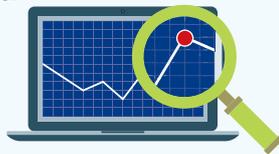
Number of Patents  
(Current as of the end of Fiscal 2017)

150



Number of Anomalies in Vessel Machinery Indicated by SIMS  
(Fiscal 2017)

125

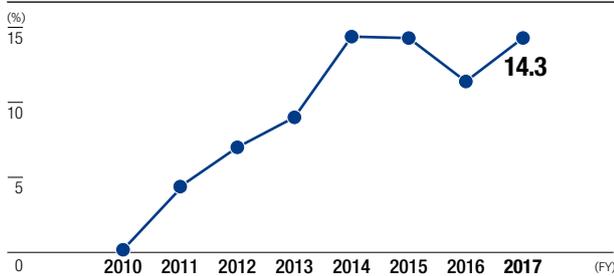


Overtime Exceeding Legal Working Hours per Month  
(Fiscal 2017)

18.7 hours

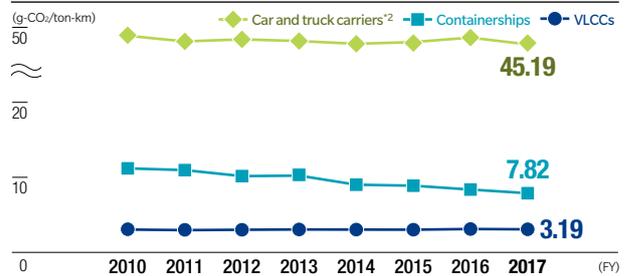


Improvement Rate of CO<sub>2</sub> Emissions Based on Fiscal 2010 Values



We manage the CO<sub>2</sub> emissions improvement rate of each of our vessel types and strive to identify optimal operation and reduce CO<sub>2</sub> emissions. Our rate of improvement for all vessel types in fiscal 2017 was 14.3% compared to fiscal 2010, or a 2.9 point improvement compared to fiscal 2016.

CO<sub>2</sub> Emissions According to Environmental Management Indicator (EMI)<sup>\*1</sup>

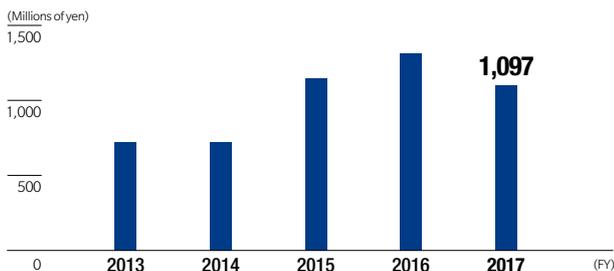


Our environmental management indicator (EMI) complies with IMO guidelines, and we have been managing the CO<sub>2</sub> emissions from our fleet per ton-kilometer by each vessel type since 2006. Reduced values indicate improvement of emissions.

<sup>\*1</sup> The environmental management indicator (EMI) is calculated as the environmental impact (CO<sub>2</sub> emissions) divided by the value added by the business (mass of cargo in tons x transport distance in kilometers)

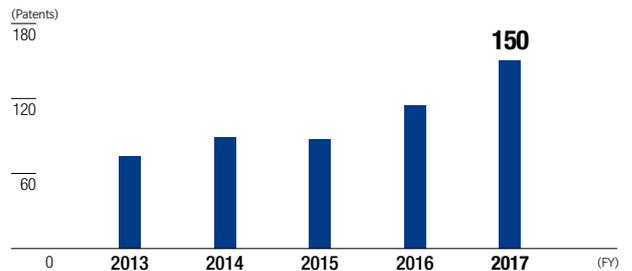
<sup>\*2</sup> The index is larger for car and truck carriers because the weight to capacity ratio is smaller

R&D Expenses



In addition to actively pursuing technical development to contribute to safe operation and environmental conservation, the Group is also conducting research into advanced technologies related to condition-based maintenance of onboard machinery and manned autonomous ships.

Number of Patents



We have obtained patents in the fields of safe operation and environmental conservation, including optimal efficiency operation utilizing big data such as the navigation/machinery information of fleets in operation (IBIS-TWO) and the MT-FAST hull attachment that saves energy to achieve high fuel savings.

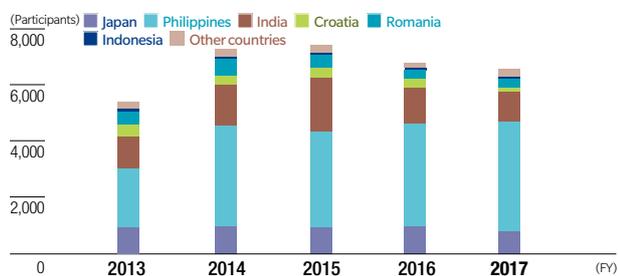
<sup>\*</sup> Numbers of patents indicate the current number at the end of each fiscal year

### Trends in Downtime



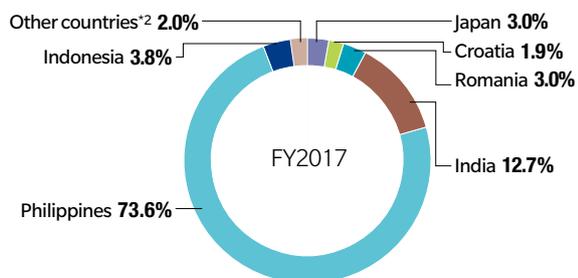
The amount of time that operation of our vessels stops due to accidents or other trouble (downtime) is used as an KPI for safe operation. All our employees, both onshore and offshore, work together toward the target of eliminating downtime.

### Number of NYK Maritime College Seafarers Participants (by nationality)



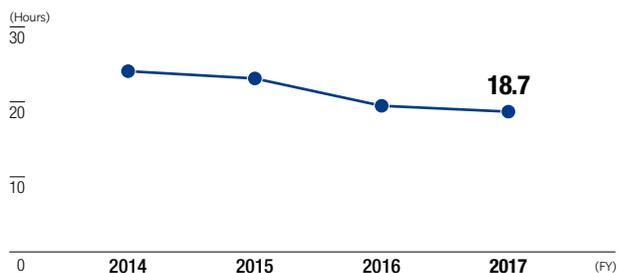
The NYK Maritime College is a system that provides a globally uniform training program regardless of the nationality and training location of seafarers to effectively improve the skills of our seafarers.

### Percentage of Seafarers by Nationality\*1



\*1 Percentage of seafarers at NYK Ship management (officers and crew members)  
 \*2 China, Vietnam, Russia, Myanmar, Nigeria, Angola, Panama, Singapore

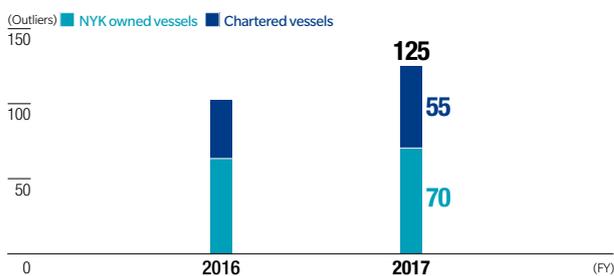
### Trends in Monthly Overtime Exceeding Legal Working Hours



To manage the progress of the OLIVE project for workstyle reforms, we monitor and internally share data on the trends in monthly overtime exceeding legal working hours.

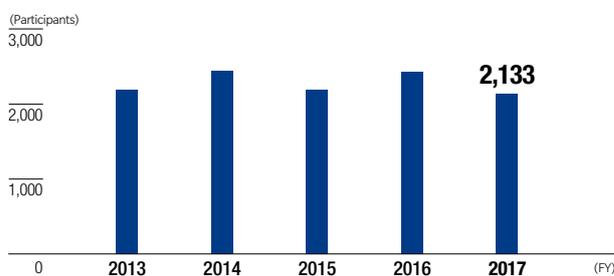
\* Employees working at the NYK headquarters

### Number of Anomalies in Vessel Machinery Indicated by SIMS



We have started analysis of anomalies in vessel machinery indicated by SIMS to detect events that may lead to mechanical troubles, fuel leaks, fires, etc.

### Number of NYK Business College Participants (Including group employees)



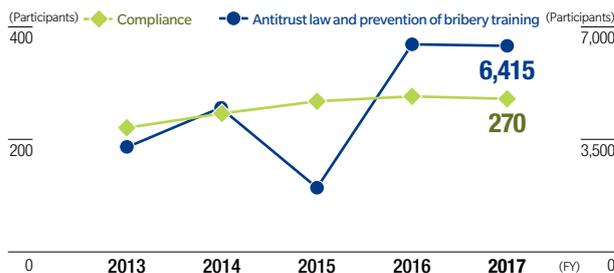
The NYK Business College training system, established for the purpose of enhancing the total ability of group employees, comprises more than 60 kinds of training programs.

### Number of Females in Management (Including group companies)



\* Errors in the numbers of directors for fiscal 2015 and fiscal 2016 included in the 2017 NYK Report have been corrected

### Number of Participants in Compliance, Antitrust Law, and Prevention of Bribery Training



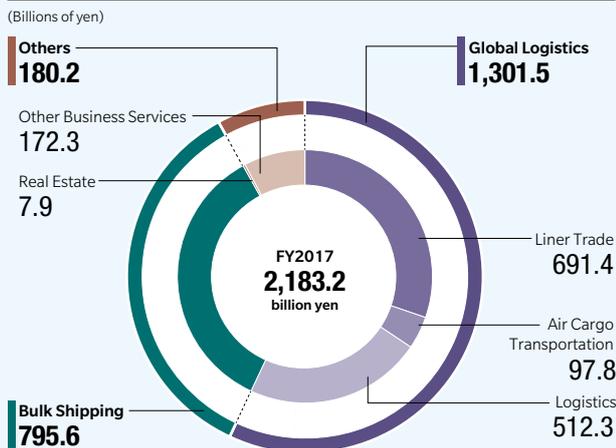
\* The number of participants for compliance training indicates only those at the headquarters  
 \* The number of times that antitrust law training was conducted in fiscal 2015 decreased because the trainers for overseas group companies (in the Asia region) were switched from NYK legal staff to locally employed lawyers in fiscal 2016, and fiscal 2015 was used to prepare for that transition. Training for the prevention of bribery was started from fiscal 2015

# Toward Sustainable Growth (Strategy by Business)

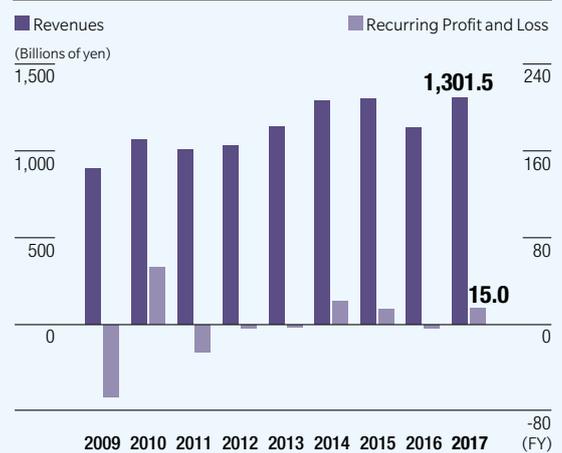
We promote growth strategies for each business and division based on our new medium-term management plan. Here we review a summary of the performance in fiscal 2017 for each business, and the chief executives of each division talk about their understanding of the current business environment and corresponding strategies and measures to implement.

## At a Glance

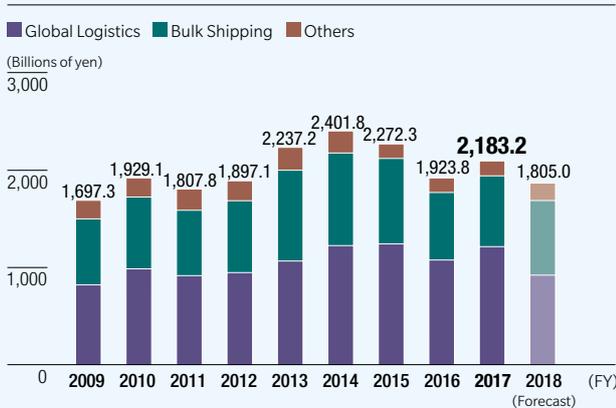
### Revenues by Business Segment



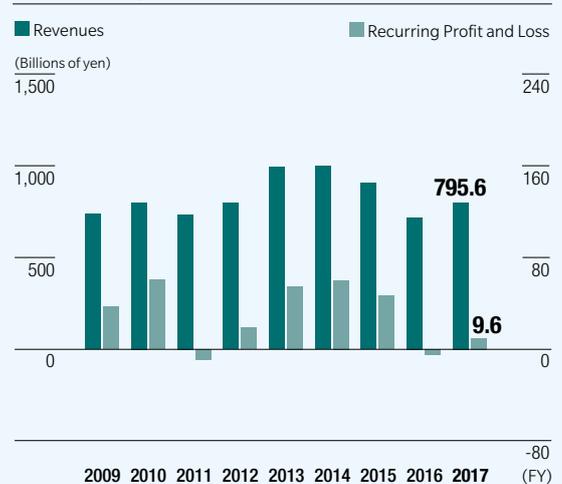
### Global Logistics



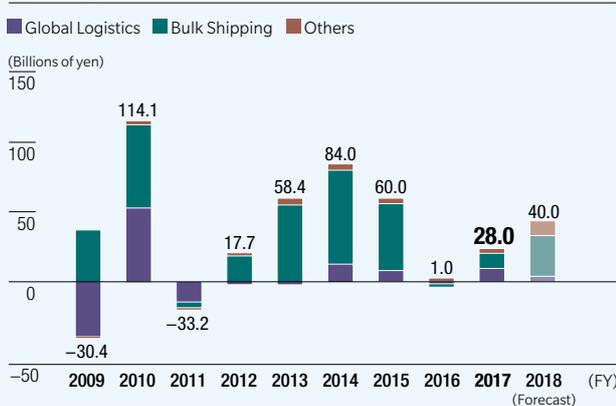
### Revenues



### Bulk Shipping



### Recurring Profit and Loss



## Summary by Business

### Global Logistics

#### Liner Trade

With robust cargo movement overall, we increased our profitability and market resilience by implementing various measures, such as optimizing vessel assignments while also making our services more efficient. Handling volume at our container terminals both inside and outside Japan increased, and the liner trade business greatly improved overall, enabling us to post a profit with increased revenues compared to the previous fiscal year. Cargo movement is expected to remain robust, and our new integrated company that started operation in April 2018 will strive to improve profitability.

#### Air Cargo Transportation

Robust demand for cargo shipments created a good market throughout the entire year, and freight rates rose. Cargo volume also increased thanks to more efficient operations by utilizing code sharing, etc. Although income decreased on a year-on-year basis due to the absence of substantial one-off foreign exchange gains posted in the previous fiscal year, our actual performance greatly improved.

#### Logistics

Gross profit improved for our air freight forwarding business. On the other hand, it took time for gross profit to improve for our ocean freight forwarding business because procurement cost rose despite an increase in cargo handling volume. Our logistics business slowed down due to a slump in the handling volume of inland transportation and rising labor costs in the United States. Although shipping traffic remained robust throughout the year for our coastal transportation business, revenue increased but profit down overall for the logistics business on a year-on-year basis. We will strive to improve our income in fiscal 2018 by increasing cargo handling volume and reforming the structure of unprofitable businesses, etc.

### Bulk Shipping

#### Car Transportation Division

The automobile transport market was slow to recover amid persistently low crude oil prices and a declining volume of automobile shipments to emerging and resource-rich countries. Nevertheless, automobile shipments to North America, Europe, and Asia are robust, and the volume of finished automobile shipments exceeded that of the previous fiscal year. The volume of automobile shipments for fiscal 2018 is expected to be equal to this fiscal year. In the automobile logistics business, our established operations such as in China, India, and Europe remain mostly steady. Meanwhile, we proceeded to proactively develop environmentally friendly “green” terminals around the world (see page 53 for details).

#### Dry Bulk Division

In the dry bulk shipping market, although excess tonnage still exists, cargo volumes of iron ore, coal, and grains have been increasing, and the market condition continues to trend toward recovery. Under these circumstances, we strove to secure long-term shipping contracts while also reducing costs by promoting efficient operations. We also worked on improving our earnings by optimizing vessel allocation and combining cargoes. The market condition is also expected to continue gradual recovery in fiscal 2018.

#### Liquid Division

The market for VLCCs\*1 worsened because the supply of new vessels exceeded demand. The market for petroleum product tankers/LPG vessels also slumped due to increased supply resulting from the commissioning of new vessels. The market for tankers in fiscal 2018 is forecast to recover in the second half of the year, which is the demand season. We will secure favorable conditions in long-term contracts and steady earnings from our fleet of LNG tankers, and we will start to transport shale gas from the United States in fiscal 2018. Our offshore business saw steady sales of FPSOs\*2 and our performance is expected to remain strong.

\*1 Very Large Crude-oil Carriers \*2 Floating Production, Storage, and Offloading units (see page 5 for details)

### Others

#### Real Estate

In the Real Estate segment, income decreased on a year-on-year basis due to the absence of a one-off gain from the sales of trust beneficiary rights in the previous fiscal year, but the performance remained stable throughout the fiscal year.

#### Other Business Services

In the cruise business, despite a slump in attracting passengers before and after Japan’s consecutive holidays in May, total cruise sales inside and outside Japan remained robust from summer. Furthermore, our bunker oil sales business recovered, leading to an increase in income compared to the previous fiscal year, based on the strength of chemical product sales and marine technology services at oil storage sites, in addition to electrical/machinery services.

# Global Logistics



**Hiroki Harada** Managing Corporate Officer  
Chief Executive of Global Logistic Services Headquarters

## Profile

Joined the company in 1983. His 18 years of experience in the liner trade business and worldwide network of connections built up in his 10 years of work overseas in London and Brussels are his major assets. In his work, he interacts with people that hold diverse values, and strives to carefully listen to the opinions of the other party before having discussions. Upon assuming the position of managing Global Logistics, he says that "First of all, I want to polish the strengths of each operating company and then pursue the synergy that results".

## Liner Trade

### Business Environment

- With business alliances being formed on a global scale, companies involved in the container shipping business worldwide have been consolidated into seven or eight companies
- Although the trade volume is steadily recovering, the excess-supply is expected to continue for a while due to construction of large vessels

### Basic Strategy Based on the New Medium-Term Management Plan

- Create new value and improve business efficiency by integrating the best practices of the three Japanese shipping companies
- Achieve the effect of integrating the annual 110 billion yen of the container business and attain stable income

### Strengths of the NYK Group

- One of the biggest ventures in the world with almost 1.5 million TEUs due to the integration of the three Japanese shipping companies
- Wide-range network that connects over 90 countries over the world
- Safe and optimal economic operations utilizing cutting-edge information technology and navigation technology

### Strategies/Measures

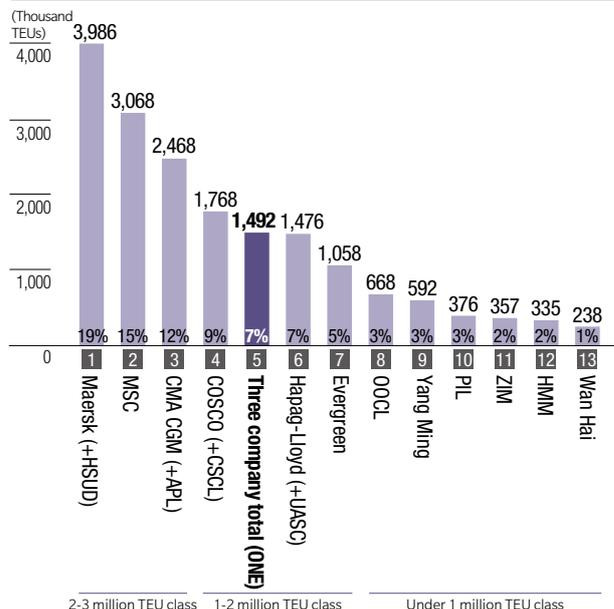
- Smooth start of the ONE business
- Quickly achieving the effect of integration

The business environment surrounding container shipping has changed dramatically in the past few years, and with business alliances being formed on a global scale, major companies involved in container shipping have been consolidated into seven or eight companies from 20. Even with the commoditization of the container shipping business, there was room for us to exert our competitiveness, but in order to rank amongst the world's best, we would need to increase the scale of our operations. That is why three Japanese shipping companies decided to establish Ocean Network Express Pte. Ltd. (ONE). I believe that this is a revolutionary initiative as it involves integration of the ancestral businesses of each company.

ONE has its head office in Singapore and started operations in April 2018. With the fifth largest fleet in the world (1.49 million TEUs), the company will work toward enhancing its competitiveness by utilizing the technologies and expertise of the three companies to make services and container terminal management more efficient. The container shipping business is the infrastructure that

supports the world economy and society, and as such is irreplaceable. We will continue to strive to achieve stable business growth to play our role as part of this infrastructure.

### Container Shipping Capacity as of December 2017



# Ocean Network Express Pte. Ltd. Message from Managing Director



**Yasuki Iwai**  
Managing Director  
Product & Network

## Scale and Complexity of the Container Shipping Business

The container shipping business is an extremely complex and deep business. At the start of business in 2018, ONE was already in charge of providing services for carrying more than 1.5 million containers on as many as 230 vessels to more than 100 countries over the world, and it is no simple task to manage the efficient operations of as many as 10,000 employees stationed over the world.

Even now, major players in Europe and Asia are competing to achieve optimal solutions for this huge and complex business, and ONE clearly has its own style of competing. We focus on our eight core values above all else when conducting our business management in order to maximize the sincerity, creativity, and passion of ONE employees while integrating and evolving the various best practices built up over the history of the three Japanese shipping companies.

## Aiming to Be No. 1 in the Industry

Our aim is not simply to achieve integration and expand the scale of our business. Our aim is to become the number one player in the industry. All of our employees

will work together to implement concrete measures to achieve this in a lean and agile manner.

As one of our best practices for organizational management, we created a system called ONE-FORCE. When an issue is identified, the human resources required for solving it gather together from across the organization, diverse experts also participate from outside the company, and everyone works together to think of an innovative solution and execute it swiftly. This is one method that will enable us to survive increasingly severe international competitions and become No. 1.

While proceeding with business integration, we worked on such integrated management systems and earnestly promoted the concrete launch of ONE-FORCE. Such new corporate culture born on-site at ONE has its roots in the empowered excellent staff, as well as superb teamwork.

We must work together on achieving goals with true meaning, identifying clear goals and the routes leading to them, and creating innovative solutions using the latest technologies. When this leads to concrete results, ONE will truly become as one and be able to generate a far greater power than ever before. Here, we do not give importance to which country or company our employees have come from.

In the first fiscal year of integration, continuing to integrate and stabilize our inherited business will be an important challenge, but at the same time, every single one of our employees will do their utmost to achieve real results in the unified management systems and implement a wide variety of concrete strategies for the future.

### Eight Core Values

- Lean & Agile** ..... Break through conventions to make efficient ideas into reality.
- Best Practice** ..... Continuing to improve ourselves with the knowledge cultivated by the three shipping companies and delivering the best services.
- Quality** ..... Pursuing the best quality that always exceeds customer expectations.
- Innovation** ..... Delivering services that contribute to the customer's business through self-innovation and creativity.
- Teamwork** ..... Recognizing individual diversity and building a team that can cooperate to create new value.
- Challenge** ..... Making full use of individual strengths and to challenge incessantly without the fear of making mistakes.
- Reliability** ..... Delivering professional, stable and sustainable services.
- Customer Satisfaction** ..... Continuously exceeding expectations by focusing on customers needs.

# Air Cargo Transportation

## Business Environment

- Demand for airfreight is expanding thanks to the growth in the e-commerce market, etc.

## Basic Strategy Based on the New Medium-Term Management Plan

- Constructing and maintaining a production system that enables full utilization of the 11 aircraft we operate

## Strengths of the NYK Group

- As the only dedicated international airfreight company in Japan, we have a network based in Narita that connects a total of 15 cities in Asia, the United States, and Europe
- We have 15 dedicated Boeing 747 jumbo cargo aircraft capable of handling oversized freight, and we operate 11 of these

## Strategies/Measures

- Enhancing operation/service systems for handling increased demand
- Effectively utilizing cargo space and achieving flexible service via enhancing strategic alliances

The airfreight market continues to be robust in China and other Asian countries including Japan. With strong demand for semiconductor-related items, etc., and the expansion of the e-commerce market, cargo aircraft have come to be utilized for transporting a wide range of products and materials, and demand for airfreight is expected to continue rising in the future.

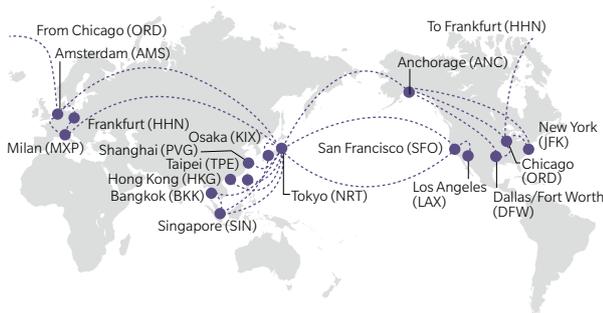
Nippon Cargo Airlines Co. Ltd. (NCA) has become the only company operating Boeing 747 (B747) jumbo jets in Japan. Maintaining a production system is essential for achieving safe and stable operation. However, in contrast with the shipping business, it is not easy to develop human

resources, since the maintenance and crew licenses that are required differ according to the model of aircraft involved. Therefore, we are now working on building a system for linking and cooperating with other operating companies in order to fully utilize our aircraft.

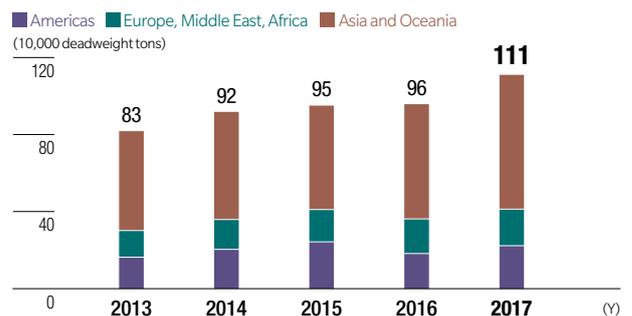
On the other hand, in addition to being able to efficiently transport large cargo over long distances, large B747 aircraft has the advantage of being able to carry cargo of a size that cannot be handled with medium-sized aircraft. With demand for airfreight expected to continue to increase, we will aim to maximize profit, expand **BSAs\***, and work on increasing the ratio of cargo. Furthermore, we will enhance our strategic partnerships with All Nippon Airways Co. Ltd. and Singapore Airlines Cargo to effectively utilize cargo space by code-sharing and focus on providing flexible service through smooth transshipments, etc.

\* BSA (Block Space Agreement) refers to an agreement for selling a space for a certain period to avoid the risk of cargo space being empty due to reservation cancellations, reduced weight, etc.

## NCA Service Network



## Changes in Annual Ex-Japan Air Freight Volumes by Destination Region



Source: Compiled by NYK Line based on JAJA results

# Logistics

## Business Environment

- Demand for global logistics continuing to expand
- Need for one-stop services expanding

## Basic Strategy Based on the New Medium-Term Management Plan

- Pursue Group synergy with Yusen Logistics Co. Ltd., which was made a fully-owned subsidiary
- Promote the growth of a stable-freight-rate business with logistics positioned as a core business of the Group

## Strengths of the NYK Group

- A portfolio that balances regions and business
- Rich human resources with a wide range of experience and knowledge regarding global logistics

## Strategies/Measures

- Improving in-Group collaboration such as automobile logistics
- Enhancing our sales ability, technical development ability, and financial power by effectively utilizing groupwide management resources

In February 2018, Yusen Logistics Co. Ltd. (YLK) was made a fully-owned subsidiary to expand our logistics business with stable-freight-rates, while aiming to pursue enhanced sales and group synergy by utilizing groupwide management resources.

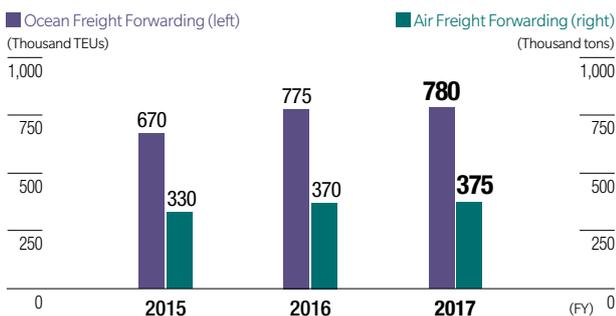
The advantage of YLK is the fact that it has a good balance in both business portfolio and regional segmentation. Another strength it has is its global network of human resources with rich experience and knowledge regarding global logistics, which can be utilized to identify customer needs and turn them into business.

The business of YLK includes forwarding for ocean and air cargo, which is a non-asset type of network business, and contract logistics via warehouses, trucks, etc. around the

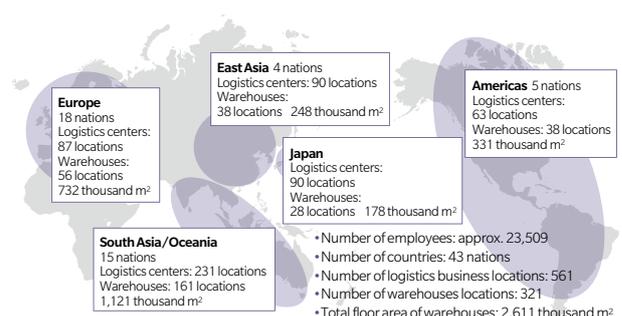
world. The business situation has been severe in the past few years, due to growth in freight handling volume reaching a plateau and high procurement costs impacting the former, and the impact of unstable foreign subsidiary performance impacting the latter. In order to improve our profitability in these businesses, we will not only increase the amount of freight that we handle, but also secure profit margin and enhance purchasing power by matching the procurement timing of freight and space, as well as work on structural reforms of unprofitable businesses. We will also promote the activities of the nine committees launched when YLK became a fully owned subsidiary to pursue group synergy and achieve quick performance recovery. Furthermore, we will support the completion of the “TRANSFORM 2025” medium- to long-term management plan of YLK.

Although global logistics demand is expected to steadily increase overall, there are likely to be industry and regional differences. The Group will accurately identify demand in growing industries and emerging markets and utilize YLK’s mobility based on YLK’s non-asset based logistics to expand business and grow logistics into a core business of the Group.

## Cargo Volume in Ocean Forwarding and Air Forwarding



## Logistics Center Locations (As of September 2017)



# Bulk Shipping Business

## Car Transportation Division



**Takaya Soga** Managing Corporate Officer  
Chief Executive of Automotive Transportation Headquarters

### Profile

Joined the Company in 1984. Has spent more than 13 of his 34 career years in Singapore, London, Bangkok, etc. Gained unique overseas experiences such as maintaining the safety of local employees at work and at home during periods of unrest. In addition to his career in Japan and overseas in the liner trade business, was also in charge of starting the cruise business for five years. Says that he learned “the fun and difficulty of opening up a new business through trial and error” due to there being a lack of experienced people at the Company. After returning from Bangkok in 2010, started working at the Car Transportation Division.

### Business Environment

- Industry structure changing due to CASE (Connected, Autonomous, Shared, Electric)
- Demand for an advanced logistics service that responds to changes in the automobile supply chain is increasing
- Demand for transporting finished automobiles to the emerging markets where automobiles are expected to become prevalent, such as Africa

### Basic Strategy Based on the New Medium-Term Management Plan

- Achieve more efficient finished automobile logistics in anticipation of structural changes to the automobile industry and the motorized society
- More efficient transportation/cargo handling and proactive environmental conservation via digitalization

### Strengths of the NYK Group

- The world’s largest fleet and a global shipping network
- 39 automobile logistics sites over the world that provide high added-value services, terminals, and inland transportation
- Maintaining excellent transportation technology and pursuing high quality services
- Collaboration with Yusen Logistics Co. Ltd. (YLK) for the global expansion of auto parts logistics

### Strategies/Measures

- Provide complete multimodal finished automobile logistics
- Utilize digital technologies to improve efficiency both offshore and inland
- Differentiate from competitors with green support over the entire supply chain

The automobile industry is facing the kind of turning point that comes only once in a century, as exemplified by the acronym “CASE”, which stands for Connected, Autonomous, Shared, and Electric. The development in these four fields may dramatically change not only the functionality and structure of automobiles, but also their usage methods and sales channels.

These changes to the motorized society will have various impacts on the finished automobile logistics business of the Group. For example, since electric vehicles with large capacity batteries are heavier than gasoline vehicles of the same class, the floor strength of car carriers and the load limit

of overland semitrailer trucks will have to be increased. Although the popularization of autonomous vehicles may decrease stevedoring work and result in labor savings, vessel and terminal layouts will probably also need to be reviewed. Moreover, if the popularization of car sharing leads to the need to transport automobiles between sites and the electrification of vehicles, we will need to provide updates for software and digital programs and repairs for fuel cells when providing added value services such as PDI (Pre Delivery Inspection) for finished automobiles. Furthermore, online automobile sales will surely lead to the need for individual vehicle information to be provided in a timely and highly precise manner so that the customer can see the current status and position of the customized ordered vehicle after it has left the manufacturing plant.

The Group plans to identify the changes to the motorized society and customer needs in advance and make full use of our resources in order to provide an advanced finished automobile logistics service.

The Group runs terminals and inland logistics facilities that provide high added value services such as PDI in 39

locations over the world, as well as the largest fleet in the world and a high level of transportation quality supported by organizations and human resources with a wide range of experience. Our Group company YLK is expanding auto parts logistics globally, and we believe that YLK can provide efficient and diverse logistics solutions from upstream to downstream via cross-site utilization and enhanced collaboration.

Furthermore, we promote advancement, efficiency, and cost reduction for finished automobile logistics via “digitalization”, as indicated in our medium-term management plan, in order to further increase the comprehensive ability and competitiveness of the Group. More specifically, we analyze data accumulated in a SIMS that enables vessel operation data to be understood in real time, and utilize that data to improve operational efficiency and plan optimal medium-term vessel deployment plans. We also accumulate and analyze inland transport data such as vehicle operation status and driving routes to review transportation plans and promote the calculation of optimal routes, etc.

This logistics efficiency and rationalization contributes to lead time shortening and cost reduction, while also limiting our environmental impact by reducing CO<sub>2</sub> emissions. In terms of hardware, we have commissioned two medium-sized pure car and truck carriers in Europe that use

environmentally friendly LNG as their main fuel source, in a world first. We will utilize the knowledge and experience gained with these vessels to investigate how we can use large-sized LNG-fueled pure car and truck carriers on long-distance routes in the near future.

Furthermore, we operate our car carrier terminals in an environmentally friendly manner, by installing solar panels for power generation, adopting LED lighting at harbors, and promoting 100% recycling of the water used to wash vehicles. At the major European terminal of ICO (International Car Operators N.V.) in Belgium, we are installing wind power generators that are scheduled to start operation in 2019. Our policy is to roll out “green” terminal initiatives such as these to other regions to promote reduced environmental impact in the entire supply chain and allow us to differentiate from our competitors.

The Group takes pride in our status as the No. 1 provider of finished automobile logistics services that connect land and sea. We will further increase our on-site technical ability for logistics, cultivate specialist engineers and operators, etc. that can meet various needs, and focus on improving our environmental consciousness and work environment in order to strive for sustainable growth together with the automobile industry and regional society.

**Global Car Transport Fleet Ranking** (As of December 31, 2017)

Ranking	Operator	Vessels	Share (%)	Capacity (Cars)	Share (%)
1	NYK Line	110	15.9%	654,000	16.2%
2	Mitsui O.S.K. Lines	87	12.5%	516,000	12.8%
3	“K” Line	77	11.1%	453,000	11.2%
4	EUKOR	71	10.2%	476,000	11.8%
5	WWL	60	8.6%	402,000	10.0%
5	GRIM	60	8.6%	265,000	6.6%
7	GLOVIS	52	7.5%	346,000	8.6%
8	HAL	48	6.9%	314,000	7.8%
9	SCC	14	2.0%	80,000	2.0%
10	ECL	12	1.7%	50,000	1.2%
11	Toyofuji Shipping Co., Ltd.	10	1.4%	51,000	1.3%
11	NEPTUNE	10	1.4%	37,000	0.9%

Source: Created by NYK based on Hesnes Shipping As “The Car Carrier Market 2017”  
 Note: This table includes only vessels with a capacity of 2,000 cars or more

**NYK Group Automobile Logistics-service area** (As of April 2018)



## Dry Bulk Division



**Koichi Uragami** Managing Corporate Officer  
Chief Executive of Dry Bulk Division

### Profile

Joined the Company in 1984. In addition to the Dry Bulk Division, also experienced a wide range of positions in the Corporate Planning and Human Resources Divisions. From the early 2000s, was in charge of developing overseas markets for dry bulk, and obtained large-scale projects mainly from Asia. After that, started a regional dry bulk company in Belgium from scratch. Reflects on this time by saying “The things the company could do expanded as new employees joined, and I was happy to see my workmates increasing”. He also says that what is important in business is “Realizing that customer needs do change, and creating a system that enables us to try over and over again even if we fail”.

### Business Environment

- The gap in supply and demand for cargo and vessels improved overall in fiscal 2017, and the market conditions recovered for all vessel types and sizes
- Cargo movement growth will remain robust
- The improved market conditions may lead to increased orders for new vessel construction, and this could produce another imbalance in supply and demand

### Basic Strategy Based on the New Medium-Term Management Plan

- Build a bulk shipping business that is highly resilient to market conditions to ensure stable earnings
- Reduce costs by achieving efficient vessel allocation and operation through the use of advanced ICT and our own unique technologies and knowledge
- Enhance customer partnerships with proposal-based sales

### Strengths of the NYK Group

- Flexible and efficient vessel allocation utilizing our global network of offices and world-class dry bulk fleet
- Long-term partnerships with customers based on relationships of mutual trust
- On-site proposals and high-quality transport utilizing our sophisticated maritime culture and expertise

### Strategies/Measures

- Thoroughly managing market exposure by creating vessel portfolios that match transport contract duration
- Improving profitability by utilizing sales lead information collected by our global network
- Enhancing market forecast analyses and further improving our fleet allocation
- Further identifying customer needs and proactively promoting business activities in new fields

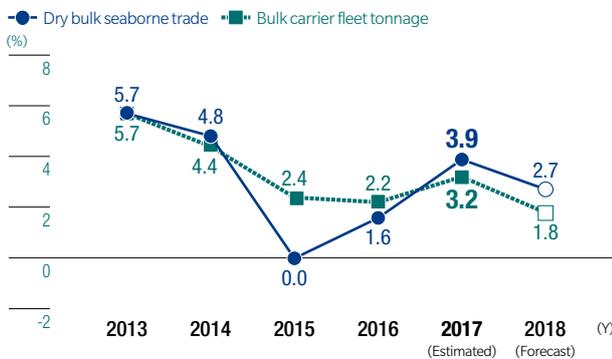
After the shipping bubble burst in the late 2000s, the market for dry bulkers continued a long-term slump, but in fiscal 2017 the gap in supply and demand improved due to increased cargo movement such as iron ore for China, while fleet growth was limited to about 2%, and this spurred market recovery for all vessel types and sizes. Cargo movement is expected to remain robust, but there is the risk of new vessel construction orders causing another imbalance in supply and demand in several years due to the influx of new tonnage, and the situation will therefore remain unpredictable. In this business environment, the NYK Group will fundamentally

review its Dry Bulk Division in order to implement reforms aiming to establish a business structure that is resilient to market changes.

The Dry Bulk Division provides the Group with a major source of income by transporting cargo on dedicated vessels under long-term contracts with customers such as steel, paper, and electric industry that procure resources in large quantities on a stable basis. We will aim to provide services that better suit the needs of our customers by bringing together our advanced navigational and operational ability, along with our sophisticated maritime culture and expertise, and promoting more efficient usage of big data. On the other hand, since our customers' ways of thinking about resource procurement are changing, we also need the flexibility to be agile to respond to such changes. This is another reason that we need to focus on the balance between cargo and vessels and transform our fleet configuration, despite the hardships that may be involved.

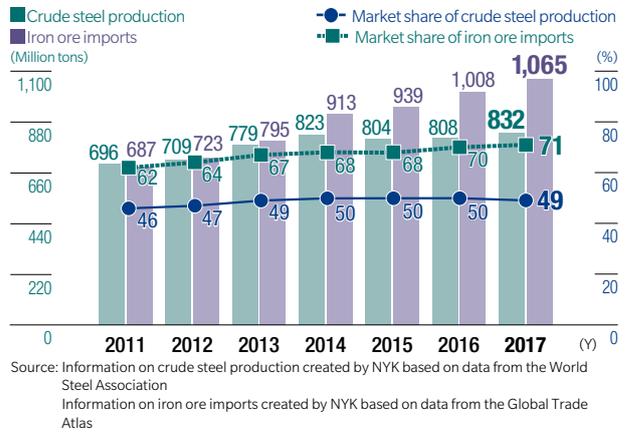
We will also enhance our ability to respond to changing market conditions to ensure a stable income. The Trumper Group inaugurated in April 2018 is in charge of promoting

### Increase in Seaborne Trade and Fleet Tonnage



Source: Created by NYK based on Clarkson Dry Bulk Trade Outlook (February, 2018)

### China's Crude Steel Production, Iron Ore Imports, and Global Market Share



Source: Information on crude steel production created by NYK based on data from the World Steel Association  
Information on iron ore imports created by NYK based on data from the Global Trade Atlas

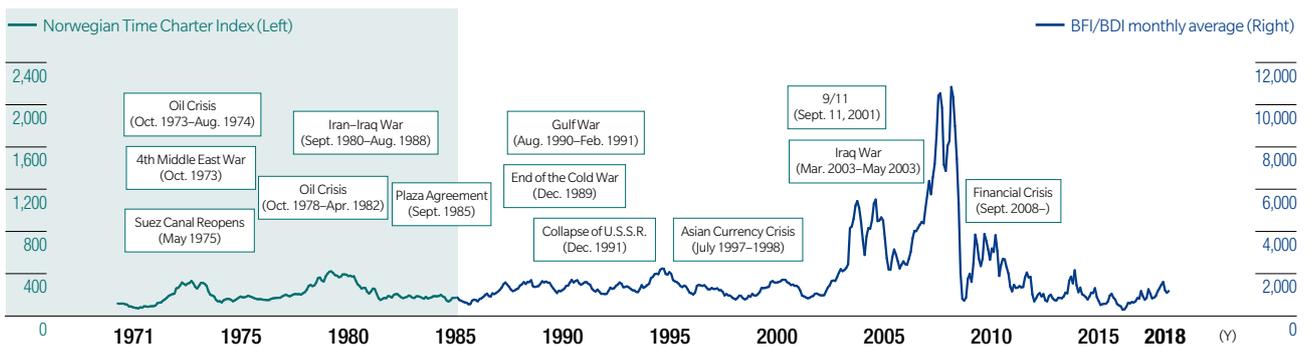
this ability for larger vessels. Its mission is to thoroughly manage fleet market exposure and increase income in a fluctuating market via various efforts. The Group has become able to shorten the period of ballast voyages, etc., by quantitatively analyzing cargo information around the world via our global sales network and striving to perform allocation and matching for vessel procurement. Furthermore, with the advancement of market forecasts and optimization of vessel operations, there is an increasing possibility that this will become a new revenue stream for our dry bulk business.

As a matter of fact, the strategy of adapting ourselves to market changes to increase income came from a suggestion made by young employees who were enjoying being involved in such work on a daily basis. Team leaders, group leaders, and executives subsequently got together for discussions to get the strategy worked out and come up with a realistic system. Although the group certainly has some challenging targets, we have high expectations for achieving results.

There are also good signs of the situation taking a turn

for the better from a totally different perspective. Since the dry bulk business has relatively lower barriers to entry, there has been an inflow of speculative funds, and the entry of a large number of players has led to commoditization. However, in recent times there has been a movement toward cargo owners starting to select shipping companies that have a certain level of transport quality due to increasing awareness about safe operation and environmental conservation. As a result, this is leading to a situation where the operation and vessel management ability of the Group are becoming points of differentiation from our competitors. In actuality, we have been making efforts to respond to the various requests being received from a large number of cargo owners and believe that this will lead to the formation of new shipping contracts in the future. This will enhance stable, long-term partnerships, be reflected in shipping prices and the market as the fair outcome of promoting safe vessel operations, and ultimately lead to the healthy development of the dry bulk market.

### Dry Bulk Market Trends



Jan. 1971–Dec. 1984 Norwegian Time Charter Index (1971 = 100)  
Jan. 1985–Oct. 1999 Baltic Freight Index (Jan. 4, 1985 = 1,000) Nov. 1999–Baltic Dry Index

## Liquid Division



**Akira Kono** Managing Corporate Officer  
Chief Executive of Energy Division

### Profile

Joined the Company in 1984. Worked at the Liner Division, the Car Carrier Division, and the Corporate Planning Division, before transferring to the Liquid Division in 2006. From this time, he was involved in the energy transportation business, such as the LNG business. From his time at the Liner Division and the Car Carrier Division, he has concentrated on customer sales channels and focused his efforts on increasing the added-value of our services based on an overview of the entire value chain. At the Corporate Planning Division, he was in charge of fleet development, investment management, shipmanagement, etc. to meet trends in demand. These experiences have greatly contributed to improved competitiveness in the energy transportation business.

### Business Environment

- Global energy demand will continue to expand, particularly in emerging regions
- In developed countries, although growth in demand for petroleum is slowing down due to a shift to renewable energy, demand for LNG is increasing
- Oil field and gas field development is shifting from shoreside to offshore

### Basic Strategy Based on the New Medium-Term Management Plan

- When expanding business in the upstream to downstream of the energy value chain, enhance links with major petroleum and resource companies to rapidly identify changes to global energy trends
- Enhance support for increasing demand for LNG in emerging countries
- Further promote the LNG supply/sales business for LNG-fueled vessels ahead of other global players
- Focus investment on new fields of business where we can utilize our Group's technical ability
- Link with companies that have strengths in various fields to achieve services with high added-value

### Strengths of the NYK Group

- Comprehensive ability regarding energy transportation (diverse human resources with sophisticated maritime expertise and rich experience in sales, operations, and technologies)
- Advanced technologies and knowledge accumulated regarding things such as fuel supply and the operation of LNG-fueled vessels
- The financial constitution essential for resource development projects and deep knowledge regarding safety management and legal affairs

The Liquid Division is in charge of transporting energy resources such as crude oil and LNG, in addition to petroleum products. Since this involves transporting hazardous materials, the division puts safety first and strives to expand cost-competitive services and thereby increase stable income. The division owns 187 vessels including very large crude-oil carriers (VLCCs), product tankers for transporting petroleum products (MR/LR), chemical tankers, LPG vessels, LNG vessels, FPSOs (see page 5 for details), etc., making us one of the largest energy tanker shipping companies in the world.

The International Energy Agency's (IEA) long-term energy-demand outlook\* forecasts that energy demand in the year 2040 will increase by 30% compared to 2014 levels due to global economic growth and population increases. The shift to renewable energy is gaining traction due to the rising concern over climate change, particularly in developed countries, but since it will take time for a complete transition,

demand for clean energy such as LNG is expected to expand in the meantime.

The Group widely contributes to the entire energy value chain—upstream and downstream—and we are strengthening our relationships with the energy industry. With our upstream development project, we promote business expansion in accordance with our strengths, such as offshore transport and operation technologies, as a partner that is needed by our customers. We are also seeking expansion in the LNG supply/sales business for LNG-fueled vessels ahead of other global players, as well as handling increased demand for LNG in emerging countries. We will continue to enter partnerships with companies that have excellent technologies and knowledge in each field to pursue business with high added-value.

\* The intermediate "New Policies Scenario", which supposes that the policies promised by national governments will be achieved, of the three scenarios indicated in the IEA's World Energy Outlook 2017

## Tanker Business

### Strategies/Measures

- Entering medium- to long-term transportation contracts according to customer needs to ensure stable income
- For petroleum product vessels, building a system that enables the fleet size to be flexibly adjusted in order to quickly respond to variations in demand

We operate the eighth largest number of VLCCs in the world, and have a 30% share of transportation in Japan. Our income structure is stable thanks to our vessels being allocated based on long-term contracts with major petroleum companies both inside and outside Japan. In order to secure these long-term contracts into the future, we will maintain and strengthen relationships with our customers. Medium- to long-term contracts for LPG tankers and chemical tankers are also expected to provide stable income. In particular, demand for LPG is expected to grow as a relatively clean fossil energy, and we will aim to expand our numbers of contracted vessels.

On the other hand, although the product tanker business is susceptible to market conditions, we plan to focus on market trends and flexibly adjust our fleet size. We also plan to produce stable income in combination with demand for transporting new cargo such as vegetable oil.

## LNG Business

### Strategies/Measures

- Actively promoting value chain strategy to secure stable long-term transport contracts
- Adopting an in-house fleet management system to achieve safe operation and rapidly respond to technical innovations for LNG vessels

Since entering the LNG transport business in 1983, the Group has provided a stable service for transporting LNG for the electricity and gas industries in Japan, and in recent years we have been expanding our transport business to emerging countries in Asia. We currently own 71 LNG vessels, including those partially owned through joint ventures, which accounts for about 10% of the world's LNG fleet, or about 6% of the world's capacity, making NYK amongst the largest in the world. Forty-one of these 71 vessels have ship management services provided by an NYK Group company, services that include quality management, technology management, and manning management to achieve safe operation and a competitive transport service. We also adopt cutting edge devices according to innovations in LNG vessel technology to promote the development of LNG vessels with excellent safety and environmental friendliness ahead of other players in the industry.

Furthermore, we actively promote a value chain strategy that involves ownership of upstream LNG interests and participation in the midstream liquefaction business. In addition to the transportation service we provide, we participate in the upstream/midstream processes for a shale gas liquefaction project in North America and an LNG production project in Australia, where we have obtained commercial rights. We are also considering to participate in businesses for LNG projects planned in Africa, Canada, the Middle East, Oceania, etc.

## Offshore Business

### Strategies/Measures

- Strengthening partnerships with resource companies and engineering companies around the world and considering to participate in new projects
- Focusing on investment in fields where we can leverage our technical ability

In regard to crude oil and natural gas, development of offshore oil and gas fields is expected to intensify, along with shale gas, etc.

Since 2008, NYK has been actively involved in the offshore business, where we have expanded into businesses such as drillships for offshore oil fields, Floating Production, Storage, and Offloading (FPSO) units, and shuttle tankers for shuttling crude oil between offshore and shoreside facilities. Together with a Norwegian partner, we have established a shuttle tanker company called Knutsen NYK Offshore Tankers AS (KNOT) that currently operates 29 vessels. This company is part of the world's two largest industry players, and increased transportation demand is expected due to the development of new offshore oil fields.

Furthermore, we are also considering to utilize our experience and knowledge of shipmanagement and hazardous-material handling, which has been cultivated in the energy transport business, to enter the market for floating liquefied natural gas (FLNG) units and downstream floating LNG storage and regasification units (FSRU). And due to our preparations for entering the Engineering, Procurement, and Construction (EPC) business, we are fully capable of participating in the FSRU industry.

## Fuel Supply/Sales Business

### Strategies/Measures

- Enhancing sales in the supply/sales business for LNG-fueled vessel
- Promoting the provision of LNG supply infrastructure

As a result of increasingly stringent environmental regulations, the Group is considering the adoption of scrubbers (exhaust gas cleaning equipment) and use of low-sulfur fuel oil, while also utilizing our experience gained in our long years in the LNG transport business to develop vessels that use LNG as fuel. After launching a tugboat that became the first LNG-fueled vessel in Japan in 2015, we commissioned two LNG-fueled car and truck carriers in European waters in 2016 in advance of environmental regulations, which were a world first. We have also linked with partners inside and outside Japan to participate in the LNG fuel sales business. And in Belgium in 2017, we started service of the world's first newly constructed LNG bunkering vessel. The Group will continue to link with national governments, industries, and partners to promote the provision of LNG supply infrastructure.

With regard to hydrogen, which is expected to become used for next-generation energy, we have established the Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) together with Japanese engineering companies and trading companies, and are working on research and development for the technologies required to stabilize and transport hydrogen as a material.

## Energy Value Chain



# Others



**Eiichi Takahashi** Director, Senior Managing Corporate Officer  
Chief Financial Officer  
Chief Executive of Management Planning Headquarters

## Profile

Joined the Company in 1982. After experiencing sales and trade planning in the Liner Division for six years, moved to the Accounting Division, where he was involved in accounting and finance at the head office, a subsidiary in the United States, and Nippon Cargo Airlines Co. Ltd. Although it is natural for accounting and finance functions to be implemented properly, it is only when unforeseen circumstances arise that their true value comes into play. He stresses, "Rather than conducting work as if it is a routine, it is important to always think about the background, objective, and flow that lies before and after".

## Real Estate Business

### Strategies/Measures

- Promoting more effective utilization of real property assets as a business that can expect a stable income in Japanese yen
- Considering also renovating, rebuilding, and redeveloping existing facilities in the medium- to long-term

The NYK Group effectively utilizes the real estate owned/ managed by NYK and group companies to develop a business that can expect a stable income in Japanese yen, such as by renting out office buildings.

We are also reviewing the real estate we own. Pressing issues to consider include how to effectively utilize the real estate around the Yokohama Yusen Building, which is being used as the NYK Maritime Museum, and how to create corporate value via measures for improving the potential profitability of the 40-year-old Marunouchi Yusen Building, which is thought to be the most promising in the future.



Marunouchi Yusen Building

## Other Business Services

### Strategies/Measures

- Utilizing the excellent brand power of the *Asuka II* cruise ship to provide high-quality services
- In addition to the core work at NYK Trading Corporation, focusing on developing products that will help solve environmental issues

The NYK Group includes various types of group companies born from the shipping business, which utilize their unique technical ability to expand dealings with companies outside the Group. We will continue to aim to improve the corporate value of the entire NYK Group while also pursuing cooperation and fostering a sense of unity among group companies.

The *Asuka II* cruise ship operated by NYK Cruises Co. Ltd. is the largest cruise ship in Japan and its high-quality service is widely lauded by its customers. In the 2017 Cruise Ship of the Year survey conducted by the Japanese magazine CRUISE, readers voted *Asuka II* tops overall and in the Japanese vessel category, marking the 26th straight year that *Asuka II* or its predecessor had received this honor. We aim to utilize the outstanding brand power of *Asuka II* while focusing on providing more comfortable and appealing cruises for further expansion and penetration of the cruise culture in Japan.

Furthermore, NYK Trading Corporation, which mostly sells products and fuel for vessels, will be offering various services for the energy business (mainly petroleum related) and the mechatronics business (such as marine equipment). In recent years, the company has promoted businesses that contribute to reducing our environmental impact, such as solar power generation and the development and sales of the ULTY boiler combustion optimizing system.



*Asuka II* cruise ship

# Green Business Initiatives



## Toshi Nakamura

General Manager, Tramp Co-ordination Group

**In its new medium-term management plan, the NYK Group identified the creation of new value in the environmental field to be an important management theme. We asked the leader of the new Green Business Team established in April 2018 about the status of current progress and future outlook.**

### — What Was the Background Behind Establishing the Green Business Team?

Above all, **the team was established along with global upward trend of CO<sub>2</sub> reduction and decarbonization.** According to the International Energy Agency (IEA), investment in renewable energy has doubled in the past six years, and it is forecast that renewable energy will account for 40% of global electricity generation in 2040. Various types of renewable energy sources are appearing, such as solar, wind, geothermal, tidal, and biomass, as well as technologies that complement them and combine with existing power sources. Furthermore, the situation is rapidly changing due to environmental regulations and international affairs.

I believe that this current situation corresponds to the **“Cambrian era of energy”**. The Cambrian era saw an explosion in biodiversity and natural selection. This is also occurring in the world of energy right now, and there are great possibilities despite the uncertainties.

For example, it may become possible to conduct international distribution of liquefied hydrogen created via electrolysis using the electricity generated by windmills in South America. Or if small-scale distributed renewable energy becomes possible, then surely regional distribution will also follow.

We have various strengths, such as marine knowledge, a global distribution network, a wide-ranging customer base and business portfolio, and human resources that are well-versed in on-site operations, and these strengths enable us to support global energy transportation. The background behind and aim of our team is to calmly determine the future of this Cambrian

era, and **collaborate with partners that have these resources and expertise to create new value.**

### — What Are the Roles of the Green Business Team?

**First, functions as a think tank.** Currently, the team is starting to implement the PDCA cycle on the knowledge accumulated from the various departments involved in research, sales, technology, corporate planning, and technical engineering, as well as from our group company MTI. Our team plays a central role and reads the changes in society and the market. In the future, I believe we can enhance this function by implementing concrete projects.

**Second, our team functions as a sales & marketing team for new business development.** By integrating our strengths with the knowledge and assessment ability of our partners, we will be able to develop new businesses based on flexible ideas that are not restricted by existing business models.

**Our third and final function is to pursue synergy.** When going after renewable energy projects, we will offer one-stop solutions to sell our existing businesses such as shipping and harbor consulting. I also hope that we will be able to accumulate information regarding renewable energy within the Group and bestow it with a wider point of view.

### — What Fields Would You Like to Focus on in the Future?

First of all, **I would say offshore wind power generation.** There are no rules regarding exclusive use when developing normal coastal areas in Japan, and much effort is being put into establishing laws for expanding the adoption of offshore wind power generation. This is an opportunity to utilize our marine knowledge, and we are proceeding with preparations to participate.

Next is biomass. Since biomass enables us to utilize existing power generation and harbor facilities, **we believe that business opportunities exist for complementing fossil fuels with biomass**, as well as CCR (CO<sub>2</sub> capture and reuse).

Finally, we have hydrogen. **We aim to contribute to the supply chain from the production to the sales of hydrogen**, and have established the Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) together with other companies.

As a company based in Japan, **it is our mission to think about the future of Japan and provide energy solutions that take the characteristics of the region into account.** I believe that many of our young employees are concerned about sustainability and are interested in developing new businesses. I hope that we can work together with such young and motivated employees to create new business models that are sustainable not only for us but also for Japan and the earth itself.

## 10-year Summary

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
<b>Results of Operation:</b>						
Revenues	¥2,429,972	¥1,697,342	¥1,929,169	¥1,807,819	¥1,897,101	¥2,237,239
Costs and expenses	2,054,595	1,520,932	1,622,045	1,661,112	1,704,591	1,991,043
Selling, general and administrative expenses	230,463	194,504	184,777	170,831	175,075	201,200
Operating profit (loss)	144,914	(18,094)	122,346	(24,124)	17,434	44,995
Recurring profit (loss)	140,814	(30,445)	114,165	(33,238)	17,736	58,424
Profit (loss) attributable to owners of parent	56,151	(17,447)	78,535	(72,820)	18,896	33,049
Capital expenditures	417,555	237,969	278,570	309,288	302,326	248,230
Depreciation and amortization	100,124	98,019	100,198	100,857	97,522	105,956

### Financial Position at Year-end:

Total assets	2,071,270	2,207,163	2,126,812	2,122,234	2,430,138	2,551,236
Interest-bearing debt	1,077,956	1,081,870	981,972	1,067,125	1,292,191	1,241,963
Shareholders' equity	544,121	661,232	684,627	579,342	650,490	720,270

### Cash Flows:

Operating activities	150,474	62,105	174,585	29,837	93,951	136,522
Investing activities	(170,253)	(43,706)	(162,781)	(139,402)	(135,566)	6,409
Financing activities	29,571	137,396	(100,161)	72,159	177,966	(95,485)

### Per Share Data:

Basic net income (loss)	457.30	(127.13)	462.73	(429.19)	111.40	194.85
Equity	4,431.63	3,894.58	4,034.60	3,415.35	3,834.95	4,246.65
Cash dividends applicable to the year	150.0	40.0	110.0	40.0	40.0	50.0
Dividend payout ratio	32.8%	-	23.8%	-	35.9%	25.7%

### Managing Indicators:

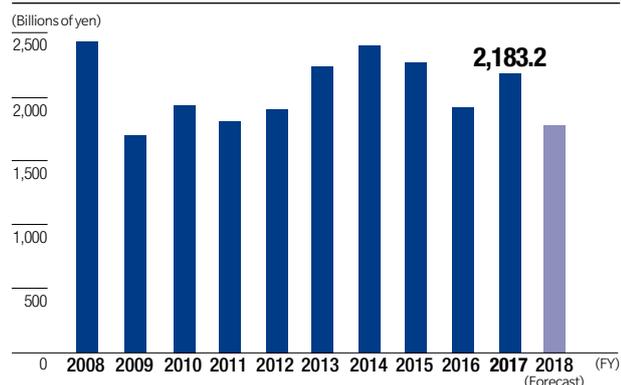
Return on equity (ROE)	9.5%	(2.9%)	11.7%	(11.5%)	3.1%	4.8%
Return on assets (ROA)	2.6%	(0.8%)	3.6%	(3.4%)	0.8%	1.3%
Return on invested capital	5.9%	(0.4%)	4.6%	(0.6%)	1.1%	2.3%
Debt-to-equity ratio (DER) (Times)	1.98	1.64	1.43	1.84	1.99	1.72
Shareholders' equity ratio	26.3%	30.0%	32.2%	27.3%	26.8%	28.2%

\* Dividend payout ratio has not been indicated when net income has been negative

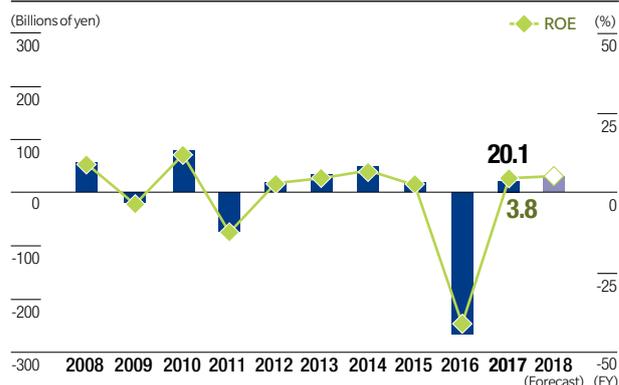
\* On October 1, 2017, the Company conducted a 1-for-10 reverse stock split. The dividends per share on this page take into consideration the effect of this reverse stock split

\* The forecast figures of FY2018 are as of 27th April, 2018

### Revenues



### Profit (Loss) Attributable to Owners of Parent/ROE

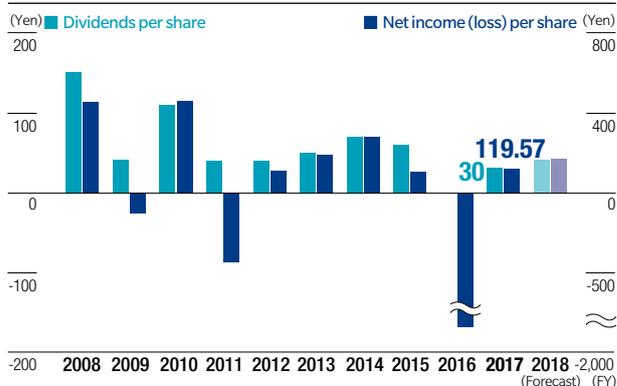


FY2014	FY2015	FY2016	FY2017	FY2018 (Forecast)
(Millions of yen)				
¥2,401,820	¥2,272,315	¥1,923,881	¥2,183,201	¥1,805,000
2,127,207	2,009,547	1,736,723	1,952,401	-
208,419	213,802	205,236	202,974	-
66,192	48,964	(18,078)	27,824	37,000
84,010	60,058	1,039	28,016	40,000
47,591	18,238	(265,744)	20,167	29,000
199,343	115,791	155,993	200,443	-
101,045	103,347	92,004	87,839	83,400
(Millions of yen)				
2,569,828	2,244,772	2,044,183	2,071,972	-
1,098,357	940,576	945,391	983,432	980,000
810,311	773,678	522,471	551,887	570,000
(Millions of yen)				
136,448	142,857	27,924	89,090	90,000
26,755	(46,895)	(144,612)	(137,994)	(90,000)
(199,007)	(160,260)	1,952	17,587	-
(yen)				
280.60	107.54	(1,572.35)	119.57	171.94
4,777.86	4,562.10	3,097.96	3,272.21	-
70.0	60.0	-	30.0	40.0
24.9%	55.8%	-	25.1%	23.3%
(%)				
6.2%	2.3%	(41.0%)	3.8%	5.2%
1.9%	0.8%	(12.4%)	1.0%	-
3.1%	2.6%	0.6%	1.7%	-
1.36	1.22	1.81	1.78	1.72
31.5%	34.5%	25.6%	26.6%	28.0%

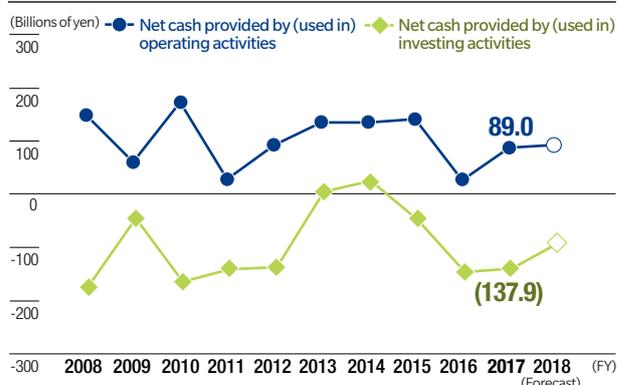
### Shareholders' Equity/Shareholders' Equity Ratio



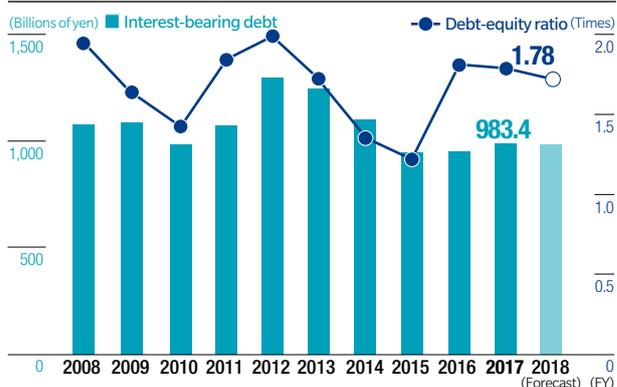
### Dividends per Share/Net Income (Loss) per Share



### Cash Flows



### Interest-Bearing Debt and Debt-Equity Ratio (Gross)



### Ratings

(As of June 30, 2018)

Rating Company	Type of Rating	Rating
Japan Credit Rating Agency Ltd. (JCR)	Long-term Issuer Rating (Outlook)	A (Negative)
	Bond Rating	A
Rating and Investment Information Inc. (R&I)	Issuer Rating (Outlook)	BBB+ (Stable)
	Long-term	BBB+
	Short-term	a-2
Moody's	Issuer Rating (Outlook)	Baa3 (Negative)

## 10-year Summary

### By Segment

	FY2008	FY2009	FY2010	FY2011
<b>Revenues:</b>				
Liner Trade	¥ 595,371	¥ 378,085	¥ 462,163	¥ 418,744
Terminal and Harbor Transport	132,009	110,279	122,419	140,089
Air Cargo Transportation	79,432	62,579	87,234	82,612
Logistics	448,139	341,782	390,929	365,191
Bulk Shipping	1,087,086	733,471	796,430	730,854
Real Estate	11,715	12,154	11,458	10,849
Cruises	44,200	35,155	35,877	32,471
Other Business Services	207,883	155,981	163,535	184,577
Elimination and corporate	(175,867)	(132,148)	(140,878)	(157,571)
Consolidated total	2,429,972	1,697,342	1,929,169	1,807,819
<b>Recurring Profit(Loss):</b>				
Liner Trade	(25,855)	(55,445)	30,248	(44,757)
Terminal and Harbor Transport	5,134	2,926	6,699	7,748
Air Cargo Transportation	(18,817)	(15,182)	7,817	3,384
Logistics	5,174	1,554	7,750	9,266
Bulk Shipping	168,986	36,604	60,414	(7,786)
Real Estate	4,395	4,909	4,368	3,902
Cruises	1,104	(4,093)	(2,688)	(5,823)
Other Business Services	682	(1,732)	(459)	811
Elimination and corporate	9	13	15	15
Consolidated total	140,814	(30,445)	114,165	(33,238)
<b>Assets:</b>				
Liner Trade	298,419	275,877	259,367	261,554
Terminal and Harbor Transport	131,854	135,983	138,134	158,466
Air Cargo Transportation	71,429	64,329	59,992	69,766
Logistics	197,618	208,477	215,219	205,224
Bulk Shipping	1,245,395	1,237,619	1,302,705	1,295,649
Real Estate	51,214	56,790	53,842	54,596
Cruises	39,768	33,214	27,397	28,117
Other Business Services	492,524	507,599	507,564	457,568
Elimination and corporate	(456,955)	(312,727)	(437,410)	(408,711)
Consolidated total	2,071,270	2,207,163	2,126,812	2,122,234
<b>Depreciation and Amortization:</b>				
Liner Trade	11,005	8,452	9,535	11,471
Terminal and Harbor Transport	5,737	4,676	4,785	4,776
Air Cargo Transportation	1,824	688	740	787
Logistics	7,285	6,563	6,139	6,214
Bulk Shipping	69,380	73,353	74,958	73,710
Real Estate	1,123	1,027	831	924
Cruises	1,787	1,796	1,843	1,860
Other Business Services	2,015	1,472	1,375	1,122
Elimination and corporate	(35)	(11)	(13)	(10)
Consolidated total	100,124	98,019	100,198	100,857

\* Since FY2013, "Terminal and Harbor Transport" has been included in "Liner Trade". In addition, some consolidated subsidiaries have been moved from "Liner Trade" to "Bulk Shipping"

\* Since FY2015, "Cruises" has been included in "Other Business Services"

\* Figures before changes in business category have not been restated

\* The forecast figures of FY2018 are as of 27th April, 2018

(Millions of yen)

FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018 (Forecast)
¥ 441,863	¥ 617,494	¥ 696,352	¥ 706,366	¥ 585,904	¥ 691,433	¥ 264,000
140,804	-	-	-	-	-	-
77,864	88,854	99,110	91,101	81,919	97,826	101,000
366,829	431,567	486,919	496,509	461,361	512,332	558,000
795,587	988,489	995,851	902,291	717,729	795,606	782,000
10,423	9,946	9,504	9,781	9,439	7,941	8,000
35,042	45,270	49,802	-	-	-	-
173,635	192,767	170,607	147,015	146,614	172,300	170,000
(144,950)	(137,150)	(106,327)	(80,751)	(79,087)	(94,238)	(78,000)
1,897,101	2,237,239	2,401,820	2,272,315	1,923,881	2,183,201	1,805,000
(9,433)	(782)	9,807	(321)	(12,716)	10,874	1,500
6,952	-	-	-	-	-	-
(4,862)	(7,371)	699	1,585	2,631	1,811	1,500
4,773	6,534	10,794	11,869	7,650	2,382	6,500
18,623	54,884	60,082	46,595	(4,168)	9,643	33,000
3,940	3,824	3,257	3,379	12,079	2,659	2,500
(3,744)	717	2,117	-	-	-	-
1,475	672	(596)	(53)	(1,496)	3,167	1,000
11	(55)	(2,153)	(2,997)	(2,940)	(2,522)	(6,000)
17,736	58,424	84,010	60,058	1,039	28,016	40,000
280,701	452,479	499,804	419,247	401,983	405,431	-
166,070	-	-	-	-	-	-
90,311	78,845	56,221	47,597	53,004	77,362	-
217,455	237,998	274,382	250,303	255,189	277,948	-
1,412,501	1,502,207	1,501,200	1,338,549	1,269,346	1,256,137	-
57,372	53,841	56,835	63,542	56,266	58,887	-
28,659	33,786	44,273	-	-	-	-
607,828	552,979	414,123	251,326	209,981	195,306	-
(430,536)	(360,902)	(277,012)	(125,795)	(201,587)	(199,100)	-
2,430,364	2,551,236	2,569,828	2,244,772	2,044,183	2,071,972	-
12,607	16,858	17,660	20,173	17,646	13,770	-
4,789	-	-	-	-	-	-
2,320	2,247	2,595	2,160	2,360	2,825	-
6,376	7,327	8,043	8,202	7,175	8,355	-
67,388	75,469	68,688	68,942	61,223	59,404	-
909	917	1,090	1,118	1,056	1,259	-
2,044	2,114	1,800	-	-	-	-
1,094	1,030	1,387	2,916	2,543	2,244	-
(8)	(9)	(220)	(166)	(1)	(19)	-
97,522	105,956	101,045	103,347	92,004	87,839	-

NYK Group at a Glance

Moving Ahead with Our Management Plan

Toward Sustainable Growth (Material Issues)

Toward Sustainable Growth (Strategy by Business)

Corporate Governance

## Directors, Audit and Supervisory Board Members, and Corporate Officers

(Current as of June 20, 2018, number of shares held\* as of April 30, 2018)

\* The company consolidated 10 shares into one share on October 1, 2017.



### Yasumi Kudo

**Chairman, Representative Director  
Chairman Corporate Officer**  
Number of shares held: 16,816  
Attendance at Board of Directors' meetings: 15/15  
1975 Joined the Company  
1998 General Manager of Semi-Liner Group  
2002 Corporate Officer  
2004 Managing Director and Corporate Officer  
2006 Representative Director,  
Senior Managing Corporate Officer  
2008 Representative Director,  
Executive Vice-president Corporate Officer  
2009 President, Representative Director,  
President Corporate Officer  
2015 Chairman, Representative Director,  
Chairman Corporate Officer



### Tadaaki Naito

**President, Representative Director  
President Corporate Officer**  
Number of shares held: 12,713  
Attendance at Board of Directors' meetings: 15/15  
1978 Joined the Company  
2004 General Manager of Petroleum Group  
2005 Corporate Officer  
2007 Managing Corporate Officer  
2008 Director, Managing Corporate Officer  
2009 Representative Director  
Senior Managing Corporate Officer  
2013 Representative Director,  
Executive Vice-president Corporate Officer  
2015 President, Representative Director,  
President Corporate Officer



### Hitoshi Nagasawa

**Representative Director,  
Executive Vice-president Corporate Officer  
Chairman of Tramp Shipping Strategy Committee  
Oversees the Energy Division and Dry Bulk Division**  
Number of shares held: 11,147  
Attendance at Board of Directors' meetings: 14/15  
1980 Joined the Company  
2004 General Manager of LNG Group  
2007 Corporate Officer  
2009 Managing Corporate Officer  
2011 Director, Managing Corporate Officer  
2013 Representative Director,  
Senior Managing Corporate Officer  
2018 Representative Director,  
Executive Vice-president Corporate Officer



### Koichi Chikaraishi

**Representative Director  
Senior Managing Corporate Officer  
Customer Relations Officer  
Oversees Automotive Transportation  
Headquarters**  
Number of shares held: 9,169  
Attendance at Board of Directors' meetings: 15/15  
1980 Joined the Company  
2003 General Manager of Petroleum Product and  
LPG Group  
2009 Corporate Officer  
2012 Director, Managing Corporate Officer  
2013 Representative Director,  
Senior Managing Corporate Officer



### Yoshiyuki Yoshida

**Director, Senior Managing Corporate Officer  
Chief Compliance Officer  
Chief Executive of General Affairs Headquarters**  
Number of shares held: 8,555  
Attendance at Board of Directors' meetings: 15/15  
1981 Joined the Company  
2005 General Manager of Tramp Co-ordination Group  
2011 Corporate Officer  
2015 Director, Managing Corporate Officer  
2018 Director, Senior Managing Corporate Officer



### Eiichi Takahashi

**Director, Senior Managing Corporate Officer  
Chief Financial Officer  
Chief Executive of Management  
Planning Headquarters**  
Number of shares held: 4,773  
Attendance at Board of Directors' meetings: 15/15  
1982 Joined the Company  
2010 General Manager of Accounting Group  
2012 Corporate Officer  
2016 Director, Managing Corporate Officer  
2018 Director, Senior Managing Corporate Officer

## Audit and Supervisory Board Members



### Yoko Wasaki

Number of shares held: 7,072  
Attendance at Board of Directors' meetings: 14/15  
1978 Joined the Company  
2015 Audit and Supervisory Board Member (full-time)



### Hiroshi Hiramatsu

Number of shares held: 7,449  
Attendance at Board of Directors' meetings: 12/12  
1978 Joined the Company  
2017 Audit and Supervisory Board Member (full-time)

\* Attendance by Hiroshi Hiramatsu at meetings of the Board of Directors is indicated from June 21, 2017, the date he assumed his position

## Senior Managing Corporate Officer

Hidetoshi Maruyama

## Managing Corporate Officers

Hitoshi Oshika  
Tomoyuki Koyama  
Akira Kono  
Hiroki Harada  
Noriko Miyamoto  
Takaya Soga  
Koichi Uragami

## Corporate Officers

Svein Steimler  
Kobune Goto  
Shohei Yamamoto  
Yutaka Higurashi  
Tomoo Kitayama  
Nobuhiro Kashima  
Toru Kamiyama  
Hemant Pathania  
Masashi Suda  
Shinya Hitomi  
Taizo Yoshida  
Akihiro Yoshida  
Kotaro Seki  
Lee Cheek Poh

## Outside Directors and Outside Audit and Supervisory Board Members



### Yukio Okamoto

#### Independent Outside Director

Number of shares held: 11,864  
 Attendance at Board of Directors' meetings: 15/15  
 1968 Joined Japan's Ministry of Foreign Affairs  
 1991 Resigned from the ministry  
 1991 President of Okamoto Associates, Inc. (current position)  
 1996 Special Adviser to the prime minister  
 1998 Resigned from the position  
 2001 Special Adviser to the cabinet secretariat  
 2003 Resigned from the position; Special Adviser to the prime minister  
 2004 Resigned from the position  
 2008 Outside Director of NYK  
 2017 Chief Outside Director of NYK (part-time)

#### Reason for Selection

To advise regarding management and contribute to the appropriate oversight of the execution of business, mainly from the perspective of an expert knowledgeable about international affairs.



### Toshio Mita

#### Independent Outside Audit and Supervisory Board Member

Number of shares held: 4,352  
 Attendance at Board of Directors' meetings: 14/15  
 1969 Joined Chubu Electric Power Co., Inc.  
 2003 Director and General Manager of the Tokyo office of the company  
 2005 Director and Managing Executive Officer, General Manager of Customer Service Division of the company  
 2006 President and Director of the company  
 2007 President and Director (Executive Officer) of the company  
 2010 Chairman of the company  
 2015 Honorary Advisor to the company (current position)  
 Outside Audit and Supervisory Board Member of NYK (part-time)

#### Reason for Selection

To contribute to appropriate oversight, mainly from the perspective of a person having a broad range of knowledge cultivated through abundant experience in corporate management, etc.



### Yoshihiro Katayama

#### Independent Outside Director

Number of shares held: 3,774  
 Attendance at Board of Directors' meetings: 15/15  
 1974 Joined Japan's Ministry of Home Affairs  
 1998 Resigned from the ministry  
 1999 Governor of Tottori Prefecture  
 2007 Completed term as governor; Professor at Keio University  
 2010 Minister for Internal Affairs and Communications  
 2011 Resigned from the ministry  
 2016 Outside Director of NYK (part-time)  
 2017 Retired from position as Professor at Keio University  
 2017 Professor at the Graduate School of Public Management, Waseda University (current position)

#### Reason for Selection

To advise on management and contribute to the appropriate oversight of the execution of business, mainly from the perspective of a person having abundant experience in government, politics, and academia.



### Hirohide Yamaguchi

#### Independent Outside Audit and Supervisory Board Member

Number of shares held: 980  
 Attendance at Board of Directors' meetings: 13/15  
 1974 Joined Bank of Japan  
 2006 Executive Director of Bank of Japan  
 2008 Deputy Governor of Bank of Japan  
 2013 Retired from the bank  
 2013 Chairman of the Advisory Board of Nikko Research Center, Inc. (current position)  
 2016 Outside Audit and Supervisory Board Member of NYK (part-time)

#### Reason for Selection

To contribute to appropriate oversight, mainly from the perspective of an expert having knowledge cultivated through abundant experience in finance and economics.



### Hiroko Kuniya

#### Independent Outside Director

Number of shares held: 1,108  
 Attendance at Board of Directors' meetings: 12/12  
 1981 Announcer and writer for English-language broadcasts of NHK General TV's "Seven O'clock News"; Researcher of "NHK Special" (NHK = Nippon Hoso Kyokai (Japan Broadcasting Corporation))  
 1987 Newscaster of NHK satellite broadcasting's "World News"  
 1993 Newscaster of NHK General TV's "Today's Close-Up"  
 2016 Trustee of Tokyo University of the Arts (part-time; current position)  
 2017 Outside Director of NYK (part-time)

#### Reason for Selection

To advise on management and contribute to the appropriate oversight of the execution of business, mainly from the perspective of a woman having a broad range of knowledge about international affairs, society, etc.

### Independence Criteria for Recommendation of Candidates for Outside Directors and Outside Audit and Supervisory Board Members

1. NYK appoints individuals who have extensive experience as corporate managers or who have advanced insight regarding international affairs and social and economic trends and seeks to ensure appropriate decision-making and transparency through diverse perspectives and to strengthen oversight functions.
2. NYK gives consideration to impartiality and appoints individuals for whom there is no concern over potential conflicts of interest with general shareholders.

### Transaction Relationships, Conflicts of Interest

The NYK Group had no conflicts of interest with the three outside directors and the two outside audit and supervisory board members.

\* Attendance by Hiroko Kuniya at meetings of the Board of Directors is indicated from June 21, 2017, the date she assumed her position

## Expertise and Experience of Directors (current as of June 20, 2018)

	Age	Number of Years As Director		Expertise and Experience															
				Academia / Education	Business Ethics	Business Head / Administration	Corporate Governance	Environment / Safety	Investment	Financial Expertise / Literacy	Government / Public Policy	Foreign Affairs / Geopolitics	Business Assignment Overseas	Marketing / Sales	Risk Management	Legal / Marine Insurance	Media / Corporate Social Responsibility	Talent Management	Technology / Systems
<b>Yasumi Kudo</b> Chairman, Representative Director, Chairman Corporate Officer	65	14			●	●	●	●	●				UAE	●	●			●	
<b>Tadaaki Naito</b> President, Representative Director, President Corporate Officer	62	10			●	●	●	●	●	●			Germany	●	●			●	●
<b>Hitoshi Nagasawa</b> Representative Director, Executive Vice-president Corporate Officer	60	7			●	●	●	●	●				UK	●	●			●	
<b>Koichi Chikaraishi</b> Representative Director, Senior Managing Corporate Officer	61	6			●	●	●	●	●				US	●	●				
<b>Yoshiyuki Yoshida</b> Director, Senior Managing Corporate Officer	61	3			●		●		●				Indonesia	●	●	●		●	
<b>Eiichi Takahashi</b> Director, Senior Managing Corporate Officer	59	2			●		●		●	●			US	●				●	
<b>Yukio Okamoto</b> Independent Outside Director	72	10		●	●		●						●	●	*		●		●
<b>Yoshihiro Katayama</b> Independent Outside Director	66	2		●	●		●						●				●		●
<b>Hiroko Kuniya</b> Independent Outside Director	61	1		●	●		●	●					US		●			●	

\* Worked as a diplomat in the United States, Europe, and the Middle East

We asked our independent outside directors to speak about improving the corporate value of the NYK in the medium- to long-term and evaluating the effectiveness of the Board of Directors.



**Yukio  
Okamoto**

Independent Outside  
Director  
Chief Outside Director

Although it goes without saying, the management policies of the Company are decided based on the ideas and knowledge obtained by management at NYK, but the significance of outside directors is that they can expand the experience and judgment that the decisions are based upon.

**I strive to expand the base that management uses to perform decision-making, including long-term economic trends inside and outside Japan, forecasts on the international geopolitical situation, and long-term predictions for technology, in order to contribute to all the fields that cover the corporate value of the Company.** More specifically, I express my opinions on the basic policy, governance, and human resource policies of the Company at various meetings and social gatherings, in addition to the Board of Directors' meetings. I feel that management follows up on these many proposals, or at least seriously considers them.

The Board of Directors' meetings are lively, and I believe that outside directors are receiving adequate explanations and materials and are participating in a meaningful manner. I see the remarkable speed of changes occurring in management environments around the world. How the Board of Directors handles these changes is of critical importance. With this feeling of tension in the background, I believe that feedback, etc. on what is said at the Board of Directors' meeting is certainly leading things in a positive direction.



**Yoshihiro  
Katayama**

Independent  
Outside Director

This is my third year since being appointed an outside director. At first, I was not entirely certain about things, such as whether the points brought up at the Board of Directors' meetings and the debate that followed were being adequately conveyed inside the Company. However, looking back on this past year, having corporate officers other than directors attending the Board of Directors' meetings has enabled me to have increased opportunities to exchange opinions, and this has furthered my understanding.

For many years, I was involved in managing large organizations at central government and prefectural government, where I accumulated experience mobilizing organization members. **I believe that the knowledge and know-how I learned there can be utilized in many situations, such as corporate governance, sharing the mission of the organization, raising employee morale, and cultivating a sense of determination.** I try to honestly convey my opinions and other things I have noticed with such an external point of view.

For example, I remember feeling that something was a bit wrong with "safe and dependable monohakobi (transport)" being included in the Basic Philosophy of the NYK Group Mission Statement, since the fields of business that the Company operates in are changing and the business environment is fluid. After I pointed this out, thorough investigation was conducted inside the Company, and at the Board of Directors' meeting on March 29 it was decided that the Basic Philosophy should be revised. I hope that I can continue to contribute to the value creation of the Group based on this new Basic Philosophy.



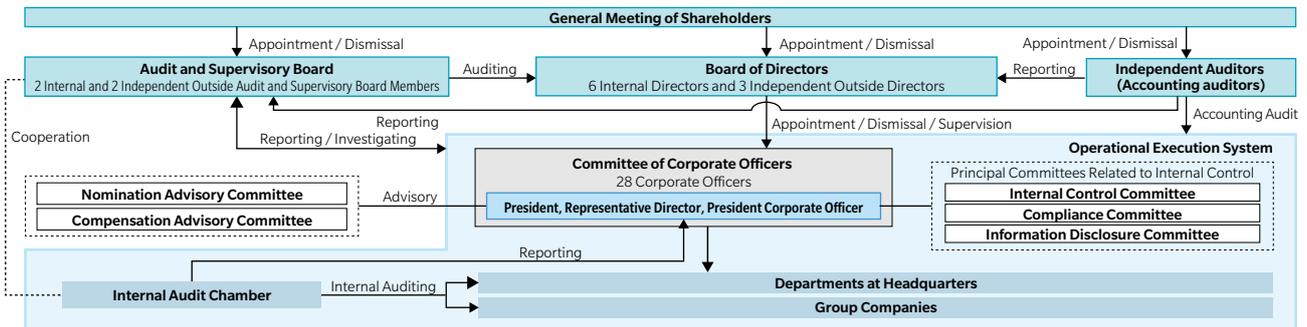
**Hiroko  
Kuniya**

Independent  
Outside Director

For many years I have been covering the issue of the importance of diversity, especially increasing the participation of women in management positions. Through studies on invisible barriers that exists inside organizations and learning about concrete initiatives of promoting women participation taken by leading corporations, **I believe I can contribute to improving the corporate value of the Company.** During my first year as outside director, I have repeatedly spoken that promoting diversity is important for raising the competitiveness of the Company. I have questioned "Why can't the ratio of female management be improved?" and stated that "Diverse organizations are better equipped to innovate" and "Having diverse human resources in charge of decision making is important from the perspective of risk management". I believe that has enhanced the awareness that promoting diversity is important to the members of the board.

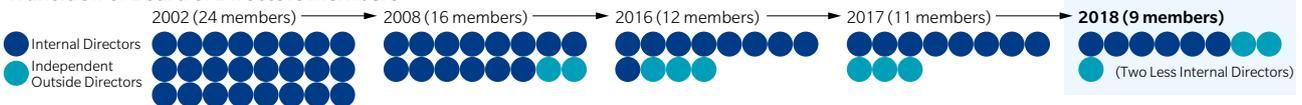
Furthermore, with the expansion in ESG (Environment, Social and Governance) investment, a movement toward evaluating a company's invisible value in addition to balance sheets is accelerating. One gauge of this are efforts to implement the Sustainable Development Goals (SDGs). SDGs are medium- to long-term goals targeted for the year 2030. **I have tried to raise awareness so that the business of the Company can continue to be sustainable, contribute to society, and stay in line with global environment movements.** I cannot say that there is thorough understanding of SDGs in the Company. I hope that I can continue to contribute to deepening discussions and promoting understanding in the Company so that environmental, societal, and economic issues are seen in a comprehensive manner and connected with the core business of the Company.

**NYK's Corporate Governance Organization Chart** (As of June 20, 2018)

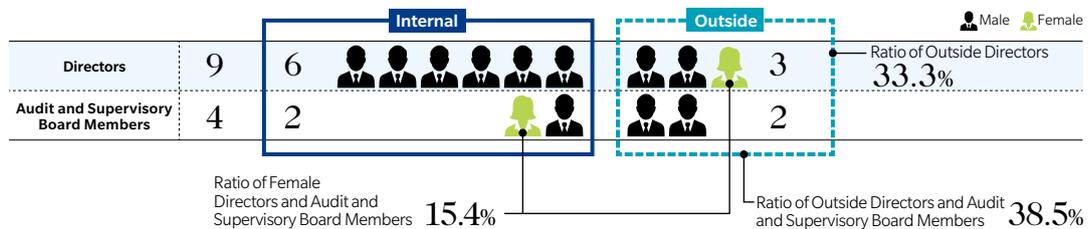


WEB Corporate Governance Guidelines [https://www.nyk.com/english/csr/gvn/guideline/pdf/gvn\\_report\\_01.pdf](https://www.nyk.com/english/csr/gvn/guideline/pdf/gvn_report_01.pdf)

**Transition of Board of Directors Members**



**Breakdown of Directors and Audit and Supervisory Board Members in 2018**



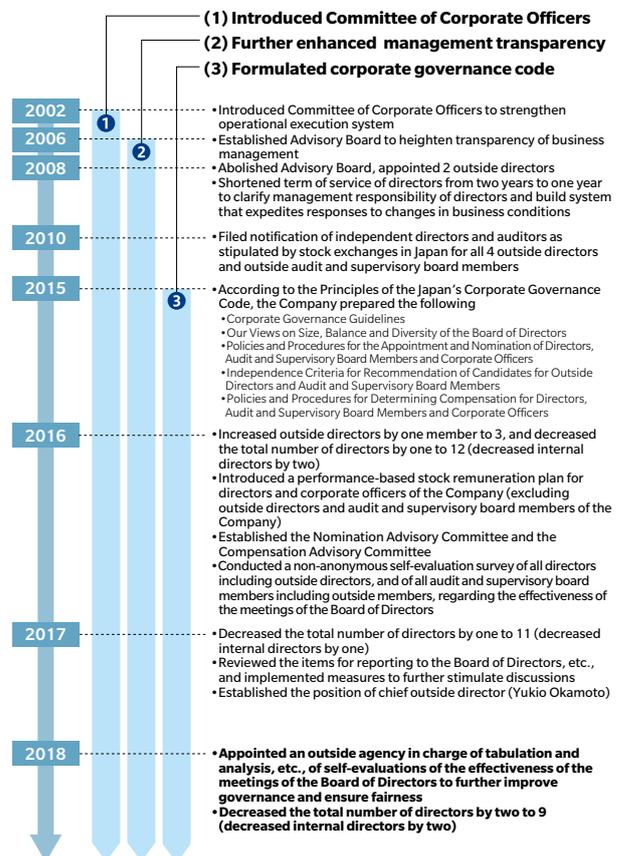
**Board of Directors and Operational Execution System**

With the need to promptly and appropriately respond to the dramatically changing business environment, we require further enhancement of decision-making and supervision provided by our Board of Directors. In order to further deepen substantial discussions with the diversity and expertise of the Board of Directors ensured, we have appointed 9 directors, with three of those being outside directors that meet the independence criteria. This is based on the idea that it is appropriate for our Board of Directors to comprise an adequate number of internal directors that are well versed in the business of the Group, which is mainly global shipping and logistics operations, and a certain number of independent outside directors that have a high level of specialized knowledge to contribute to corporate management and further enhance the supervision function of the Board of Directors.

Not only do we give preliminary explanations on proposals to independent outside directors, but we also share sufficient information and opinions at informal gatherings to ensure that we can have substantial discussions about proposals at the meetings of the Board of Directors and secure the time required for deliberation.

Furthermore, the Company has adopted a Committee of Corporate Officers. The Committee of Corporate Officers comprises 28 members, including those that are also on the Board of Directors, and executes operations under the supervision and resolutions of the Board of Directors, such as performing quick decision-making within the scope of delegated authority and prior discussions on resolutions made by the Board of Directors, etc.

**History of Enhancing Governance**



## Establishment of the Nomination Advisory Committee and the Compensation Advisory Committee

In order to further enhance corporate governance and ensure the transparency of the Board of Directors functions, the Company has established a Nomination Advisory Committee and Compensation Advisory Committee comprising a majority of outside directors. Based on consultations with the president, these committees discuss important items and give advice regarding the appointment/dismissal and compensation of directors and corporate officers, as well as consult with the Board of Directors about relevant proposals.

When meetings of these committees are held, the president consults with the chairman and each outside director individually to improve the functionality of the committees by ensuring the adequate exchange of opinions, etc.

### Composition of Each Committee (Fiscal 2017)

	Attendance of Nomination Advisory Committee	Attendance of Compensation Advisory Committee
Yasumi Kudo, Chairman(Committee Chairman)	2/2	2/2
Tadaaki Naito, President	2/2	2/2
Yukio Okamoto, Director (Chief Outside/Independent Director)	2/2	2/2
Yoshihiro Katayama, Director (Outside/Independent Director)	2/2	2/2
Hiroko Kuniya, Director (Outside/Independent Director)	2/2	2/2

\* Outside directors account for a majority

## Remuneration for Directors and Corporate Officers

### Introduction of a performance-based stock remuneration plan

#### <Purpose>

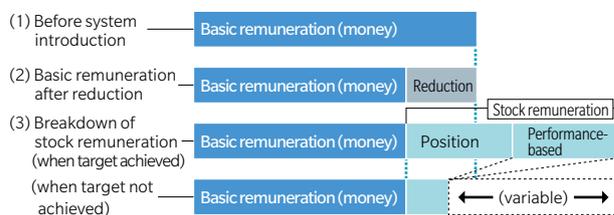
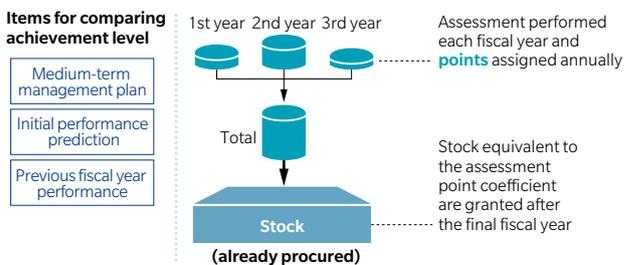
The Company adopted a performance-based stock remuneration plan for directors and corporate officers that conduct business operations. The purpose of this plan is to raise the willingness to contribute to the sustainable and medium- to long-term growth of the Company and share the interests of shareholders. The plan spans three consecutive fiscal years (fiscal years 2016 to 2018), and if extended will continue for an additional three consecutive fiscal years thereafter.

#### <Calculation method>

Granting the Company stock after the final fiscal year according to the achievement of performance targets

#### <Points>

- Points are assigned based on an assessment and evaluation conducted each fiscal year
- The number of points assigned is calculated according to a prescribed formula (evaluation standards include consolidated revenues, consolidated operating profit, consolidated recurring profit, consolidated net profit, EBITDA, ROE)



\* The ratio of basic remuneration to stock remuneration is 5:5 for the president and chairman and approximately 6:4 for other executive directors  
\* The variation in stock remuneration is 0 to 150%

### Total Amount of Directors' Remuneration (Fiscal 2017)

Category	Number of persons remunerated	Fixed remuneration		Performance-based remuneration		Total (yearly) amount (Millions of yen)
		Basic remuneration amount (Millions of yen)	Bonus (Millions of yen)	Bonus (Millions of yen)	Stock remuneration (Millions of yen)	
Directors [Outside Directors]	13 [4]	465 [57]	-	-	228 [-]	693 [57]
Audit and Supervisory Board Members [Outside Audit and Supervisory Board Members]	5 [2]	105 [27]	-	-	- [-]	105 [27]
<b>Total [Outside Directors and Outside Audit and Supervisory Board Members]</b>	<b>18 [6]</b>	<b>571 [85]</b>	<b>-</b>	<b>-</b>	<b>228 [-]</b>	<b>799 [85]</b>

1. The amount of remuneration paid to directors includes the amount paid to two directors who retired during fiscal 2017
2. The amount of remuneration paid to audit and supervisory board members includes the amount paid to one audit and supervisory board member who retired during fiscal 2017
3. The monthly remuneration of directors is paid according to their position within the limit of total monthly remuneration decided upon by the resolution at the General Meeting of Shareholders. Bonuses for directors are not paid every year as they are proposed at the General Meeting of Shareholders upon consideration of performance, etc., but are paid according to position within the limit of bonus remuneration decided by the resolution at the General Meeting of Shareholders
4. For the seven consecutive terms from fiscal 2011 to the current term, no bonus payments have been made to directors
5. The stock remuneration amount is the provision for stock payment during this fiscal year based on the performance-based stock remuneration plan introduced by resolution at the 129th General Meeting of Shareholders and the amount to pay to directors that have retired

## Training for Directors, Audit and Supervisory Board Members, and Corporate Officers

In order to achieve the medium- to long-term vision of the Group and improve sustainable corporate value, we provide opportunities for inside and outside directors, audit and supervisory board members, and corporate officers to participate in in-house training and external courses to maintain the effectiveness of the Board of Directors, deepen understanding of legal compliance such as fair trade, and improve governance functions.

We provide practical training, including timely lectures on the latest trends, as well as education for gaining knowledge on themes such as the Companies Act, internal control, risk management, compliance, crisis management, business analysis, and financial strategy. The status of this training is also reported to the Board of Directors to verify its effect.

### Training Menu

- Duties and responsibilities of directors (based on the Companies Act)
- Internal control/compliance
- Media correspondence, etc.

## Process of Evaluation of the Effectiveness of the Meetings of the Board of Directors

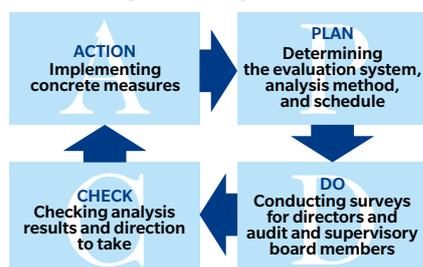
In order to improve the effectiveness of the meeting of the Board of Directors, since fiscal 2015 we have been conducting non-anonymous self-evaluation surveys regarding the effectiveness of the previous fiscal year's Board of Directors meetings to discuss directions to take and problems of the Board of Directors and enhance governance. Based on the results of these surveys, we implemented the below measures to improve effectiveness.

### Concrete Measures Implemented

- (1) Reviewing discussion criteria, including the provision of items for reporting
- (2) Delegating authority to the Committee of Corporate Officers
- (3) Investigating how to conduct effective discussion at the Board of Directors meetings
- (4) Giving preliminary explanations on important projects to outside directors
- (5) Sharing information and exchanging opinions at informal gatherings of directors, audit and supervisory board members, and corporate officers

In fiscal 2017, we appointed and cooperated with a specialist outside agency to ensure greater fairness and objectivity in our effectiveness evaluation process.

### Process for Conducting Non-Anonymous Self-Evaluation Surveys



## Policy for Holding Strategic Shareholdings

The Board of Directors is given periodic reports on the results of verification of the purpose and significance of strategic shareholding. We have been engaged in verifying the purpose and significance of strategic shareholding since fiscal 2008. As of this time, the Company has sold more than 50% (acquisition price ratio) of the shares held for strategic purposes compared to fiscal 2008. Current strategic shareholding consists of the stock of important customers related to long-term contracts, etc., which contribute to the stability of the Group's performance and has been judged to be appropriate as a measure to maintain and strengthen relationships with those customers, etc.

In addition, when exercising voting rights for strategic shareholdings, the Company decides to vote for or against proposals after confirming whether it will result in damage to the value of the relevant company, as well as whether it will contribute to improvement of the Group's corporate value, and the degree of such contribution.

We plan to actively promote the selling of strategic shares and verify the objective and significance of those shareholdings in order to ensure effective utilization of assets and improve capital efficiency.

## Auditing System

NYK is a company with a Board of Directors and an Audit and Supervisory Board. The Audit and Supervisory Board comprises 4 members including two outside members, of which at least one has suitable knowledge of finance and accounting. The members meet the Code of Audit and Supervisory Board Member Auditing Standards defined by the Audit and Supervisory Board, attend important meetings such as Board of Directors meetings, and conduct hearings with directors and corporate officers, among others, regarding their execution of duties, etc. to perform auditing from an independent and objective perspective.

Furthermore, audit and supervisory board members hold a monthly board meeting to share auditing results and other information, have meetings with the Internal Audit Chamber on a regular basis, and convene meetings with the independent auditor (accounting auditors), thereby strengthening communication between all three audit-related groups. We have also established the Audit and Supervisory Board Office, consisting of 3 full-time staff members, which supports audit and supervisory board members in the effective execution of their auditing duties.

### Members of the Audit and Supervisory Board and Board Meeting Attendance

	Name	Attendance
Internal	Yoko Wasaki	16/16
	Hiroshi Hiramatsu	11/11
Outside	Toshio Mita	16/16
	Hirohide Yamaguchi	16/16

\* Attendance by Hiroshi Hiramatsu at meetings of audit and supervisory board members is indicated from June 21, 2017, the date he assumed his position

The Internal Audit Chamber conducts internal audits of the Company and Japanese group companies based on internal audit rules approved by the Board of Directors.

Internal audits for overseas group companies are performed by internal auditors that belong to four overseas offices (Americas, Europe, Southeast Asia, and East Asia) based on the policies and guidance of the Internal Audit Chamber.

**Internal Audits Conducted in Fiscal 2017**



**Independent Audits (Accounting Audits)**

The certified public accountants who audit the Company's consolidated and non-consolidated financial statements are Toshiyuki Ono, Yuji Takei, and Tomoya Noda, all of whom are with the accounting firm Deloitte Touche Tohmatsu LLC and have been auditing the Company's accounts for less than seven consecutive years. These accountants are assisted by 20 certified public accountants and 35 others. Audits are undertaken in accordance with standards generally accepted as fair and appropriate.

Furthermore, we generally appoint accounting firms that belong to the same network (Deloitte Touche Tohmatsu Limited.) as our certified public accountants for major overseas consolidated subsidiaries that receive a financial statement audit and internal control audit.

**Independent Auditor Remuneration**

Classification	Fiscal 2016		Fiscal 2017	
	Remuneration paid for audit certification activities (Millions of yen)	Remuneration paid for non-audit activities (Millions of yen)	Remuneration paid for audit certification activities (Millions of yen)	Remuneration paid for non-audit activities (Millions of yen)
The Company	145	4	168	6
Consolidated Subsidiaries	144	0	132	0
<b>Total</b>	<b>289</b>	<b>4</b>	<b>300</b>	<b>7</b>

**Internal Control System**

We have established an Internal Control Committee chaired by the president to complement the Board of Directors. This committee checks the status of internal control from the perspective of methods for achieving the four goals of financial report reliability, legal compliance, work effectiveness/efficiency, and conservation of assets, and implements corrective measures to ensure that the relevant department strives to perform appropriate and effective internal control operations when a problem is found.

Furthermore, we annually review and redefine the basic policy for the provision of an internal control system at Board of Directors' meetings.

**Enhancing Group Governance to Aim for Further Increased Corporate Value**



**Eiichi Takahashi**  
 Director, Senior Managing Corporate Officer  
 Chief Executive of Management Planning Headquarters

With the expansion of ESG investing, there has been a movement to enhance corporate governance to create medium- to long-term value. In order to increase the corporate value of the entire Group, we have established systems for improving capital efficiency and building universal group governance. In regard to group governance, we are promoting the development and integration of group company standards from the perspective of the three elements of appointment/dismissal, remuneration, and auditing. For Japanese group companies, we promote transparency and unification of the process for appointing/dismissing directors and deciding remuneration of each director. We also dispatch one auditor of each company from a dedicated department of the Company to maintain a system for supervising the operational execution of directors and ensure that the judgment criteria for this supervision is homogenous. We also aim to establish and strengthen our governance system of overseas group companies through three regional group management companies.

Fiscal 2017 saw a major change, which was Yusen Logistics Co. Ltd. becoming a fully owned subsidiary. The Group has group companies involved in various lines of business. I hope that we can maintain an environment for achieving further growth at each company, strengthening communication and collaboration between group companies, and pursuing the creation of synergy. It is necessary for us to organize the roles of each company and establish a group structure that has a more efficient and robust foundation. I therefore hope that we can work together with the various group companies to increase the corporate value of the entire group.

## Compliance Initiatives

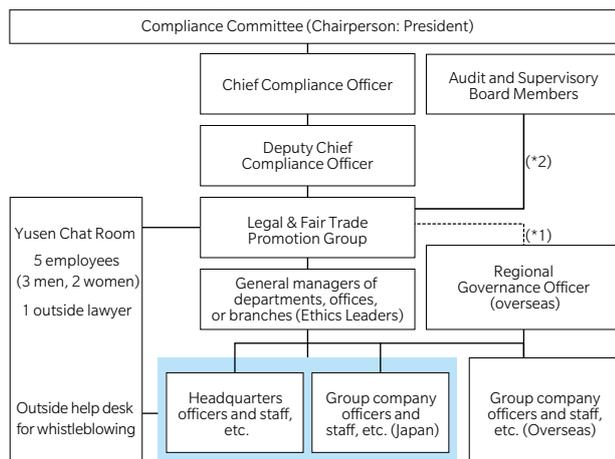
The Company has established the Compliance Committee, which convenes twice yearly to discuss and decide items regarding major policies and the maintenance of a system for promoting and enhancing compliance.

Also, we have set September as the NYK Group's compliance-strengthening month and conduct comprehensive compliance checkup activities during this period as an opportunity for staff members\* to review their own behavior and work processes.

Furthermore, we make efficient use of the helplines established in Japan and overseas in accordance with local circumstances. The Yusen Chat Room system, one of the help lines in Japan, is composed of six personnel, including an outside lawyer, who receive whistleblower reports and provide consultation on a wide range of compliance-related matters. The system covers the Company and approximately 60 group companies.

\* Staff members including employees, secondees from other companies, and temporary staff

### The NYK Group's Compliance System



\*1 For significant matters

\*2 Reports to a full-time audit and supervisory board member periodically and as required

### Training for Enhanced Compliance

The Group strives to improve awareness regarding compliance, antitrust laws, and the prohibition of bribery, among others, through group training and e-learning.

Training Program in Fiscal 2017	Number of sessions	Number of participants
Training on compliance*1	9	270
Training on antitrust law and the prohibition of bribery, etc.*2	377	6,415
e-learning (Japanese/English/Chinese)	1	7,737

\*1 Since fiscal 2002, we have held 367 training sessions, and a total of 10,007 people have participated (Since fiscal 2016, we have data only on participants in training programs held at the headquarters)

\*2 Conducted 10 times in Japan and once a year for each overseas region, for group companies both inside and outside Japan (33 countries and 127 companies). Total 32,319 participants since 2009

\* Transition of participants for \*1 and \*2 indicated in ESG data (see page 45 for details)

## Complying with Antitrust Laws

In the shipping industry, which is subject to the principle of the freedom of shipping (free navigation in international waters and innocent passage in territorial waters), anyone is free to enter or leave the market, which means that it is easy for competition to intensify. In order to reduce the negative aspects caused by this, such as interruptions to the stable shipping network and loss of competitiveness in the shipping/industry of emerging countries, the industry has historically been exempted from the scope of antitrust laws under certain conditions.

With these legal protections diminishing in recent times, it has become common for shipping companies to cooperate through vessel sharing agreements and slot exchanges in order to fulfill our responsibility as infrastructure, maintain and improve diverse navigation networks, and manage the frequencies of port stops, and the industry naturally involves many opportunities for making contact with competitor companies.

Since September 2012, the Group has been subject to investigation by overseas authorities for allegedly violating antitrust laws regarding the shipping of automobiles and other cargoes. The Company and some overseas group companies are also subject to a class action damage compensation suit in the U.S. and other regions.

We offer all of our stakeholders a sincere apology for all the concerns that we have caused.

We previously implemented various measures such as a declaration by the president regarding thorough compliance with antitrust law, the building and operation of a control network spanning the entire Group inside Japan and overseas, internal awareness building and education through training and manuals on antitrust law, and rules on contact with other companies in the same industry, but we need to sincerely accept the fact that this situation occurred and promote the building and operation of a new system for ensuring compliance with antitrust law in order to raise the awareness of each employee and corporate officer within the Group.

### Measures for Preventing Reoccurrence (Continued from 2013)

- Holding meetings of the Executive Committee Overseeing Thorough Antitrust and Anti-bribery Law Compliance (twice a year)  
This committee is chaired by the president, and meetings are attended by corporate officers, general managers of departments, outside directors, outside auditors and supervisory board members, and outside lawyers (held in September (attended by 111 members) and March (attended by 107 members) in fiscal 2017)
- Formulating guidelines and conducting risk assessments of all the operational departments including group companies in Japan and overseas
- Reviewing new investment projects by in-house lawyers, etc.
- Obtaining written oaths regarding antitrust laws and competition law compliance
- Adopting an application system for each officer and employee at the headquarters to participate in industry gatherings

## Thorough Prohibition of Bribery

In January 2014, we further developed our basic policy and guidelines on the prohibition of bribery and rigorously informed the group employees and officers in Japan and overseas about them, in response to the Unfair Competition Prevention Act (crime of bribing foreign public officials) in Japan, the Foreign Corrupt Practices Act in the U.S., and the Bribery Act 2010 in the U.K.

Furthermore, in April 2016 we established a due diligence system for preventing the bribery of overseas public officials, and when we are considering new businesses in high risk countries, our legal department conducts a screening of candidate partners and dealers to ensure that there are no problems regarding bribery, as well as providing advice and checks for including anti-bribery conditions when creating agreements.

### Legal Consultation System

When considering new investment and the launch of new businesses, our legal department implements risk management via screening and due diligence in order to conduct checks regarding antitrust laws, bribery, and economic sanctions.

## Taxation Compliance

Based on the recognition that we have a social responsibility to fairly and appropriately pay taxes, we strive to improve taxation compliance. In recent years, tax evasion that takes advantage of the differences between the corporate business activities and national tax regulations and international taxation rules has come to be seen as a problem. International taxation frameworks such as the OECD's Base Erosion and Profit Shifting (BEPS) project are essential for securing the transparency of taxation, and we are promoting implementation.

## Risk Management System

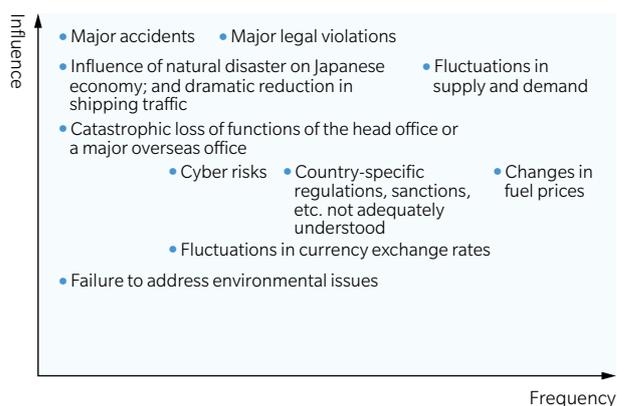
The business and performance of the Group is subject to the influence of technological innovations, natural disasters, social factors such as safety and security, environmental regulations, and the economic and political situation in countries over the world. We quantitatively and qualitatively evaluate risks by having the various business divisions that are the most well-versed in the nature of the business to perform comprehensive self-assessments that include risk appetite and tolerance, based on a risk management policy and risk management rules.

### Enterprise risk management (ERM)

Departments are in charge of risk management for business risks. Management departments and internal committees for each risk category monitor the status of risk management across the organization to perform a risk evaluation for the entire company. An inspection of the Internal Audit Chamber is also performed in order to manage risks more appropriately.

Meetings of the Risk Management Committee are held twice a year to enable chief executives of each department to report on the status of managing critical risks that can affect our company management to all board member including outside directors, and evaluate the status of management. The committee also investigates improvement related to group-wide risk management methods and new countermeasures. In fiscal 2017, we implemented a new approach for the top-down addition of group-wide risks to the group business environment in addition to the risks identified by each department.

### Risk Map



Critical risks that can significantly affect group-wide business management include operational risks such as major accidents involving vessels or aircraft; country risk; natural disasters and other external factors; and compliance risk such as antitrust law violations.

**• Established**

September 29, 1885

**• Paid-in Capital**

¥144,319,833,730

**• Employees**

**Consolidated:** 37,820 (NYK and consolidated subsidiaries)  
**Nonconsolidated\*:** 1,710 (1,118 office workers (excluding seafarers);  
 279 seafarers currently working at the office; 313 seafarers)

\* The nonconsolidated number of employees includes employees currently assigned to domestic and overseas group companies

**• Headquarters**

3-2, Marunouchi 2-chome  
 Chiyoda-ku, Tokyo 100-0005, Japan  
**Telephone:** +81-3-3284-5151  
**Website:** <https://www.nyk.com/english/>

**• Common Stock**

**Number of authorized shares:** 298,355,000 shares  
**Number of issued and outstanding shares:** 169,576,705 shares  
 (excluding treasury stock: 478,393)

**• Stock Exchange Listings**

First Section of the Tokyo Stock Exchange and the Nagoya Stock Exchange

**• Share Registrar and Special Management of Accounts**

Mitsubishi UFJ Trust and Banking Corporation

**Contact Information:**

Mitsubishi UFJ Trust and Banking Corporation  
 Corporate Agency Division  
 1-1 Nikkocho, Fuchu city, Tokyo 183-0044  
 Toll-free: 0120-232-711

**• Method of Public Notice**

The Company's public notices are available through electronic distribution.

**Website:** <https://www.nyk.com/koukoku/>

However, in the event that electronic distribution is impossible, due to an accident or other unavoidable circumstances, the Company's public notices will appear in the Nihon Keizai Shimbun published in Tokyo, Japan.

**• American Depositary Receipts (ADR)**

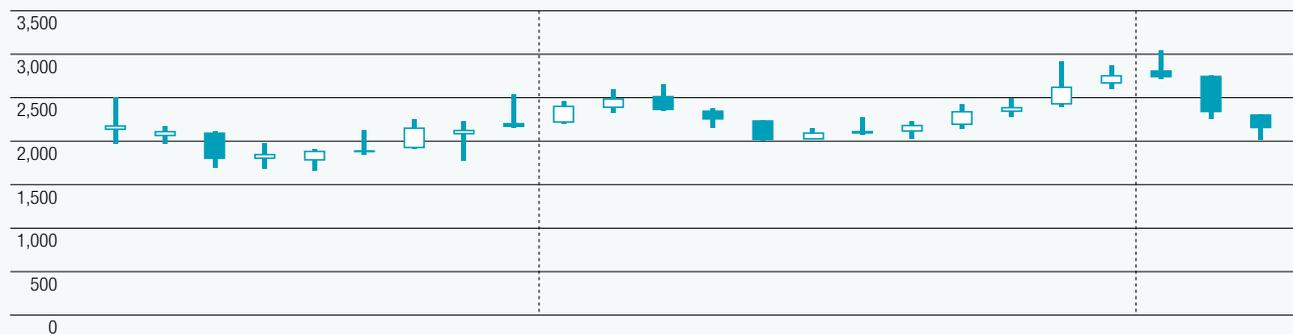
**Symbol:** NPNYY  
**CUSIP:** 654633304  
**Exchange:** OTC  
**Ratio (ADR: shares of common stock):** 5:1  
**Depository:**  
 BNY Mellon Shareowner Services, P.O. BOX 30170  
 College Station, TX 77842-3170  
**Toll-free:**  
 (Within the U.S.) 888-BNY-ADRS (888-269-2377)  
 (From overseas) 1-201-680-6825  
**Website:** <http://www.mybnymdr.com>

**Stock Price Range and Trading Volume**

\* On October 1, 2017, NYK conducted a 1-for-10 reverse stock split. The amounts in the below graph take into consideration the effect of this reverse stock split

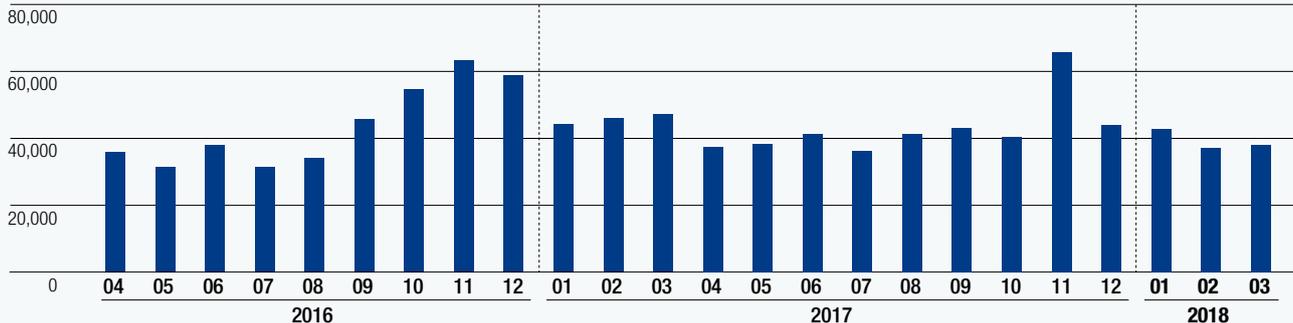
**Stock Price**

(Yen)

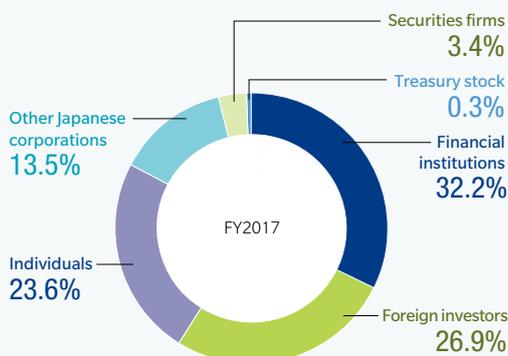


**Trading Volume**

(Shares)



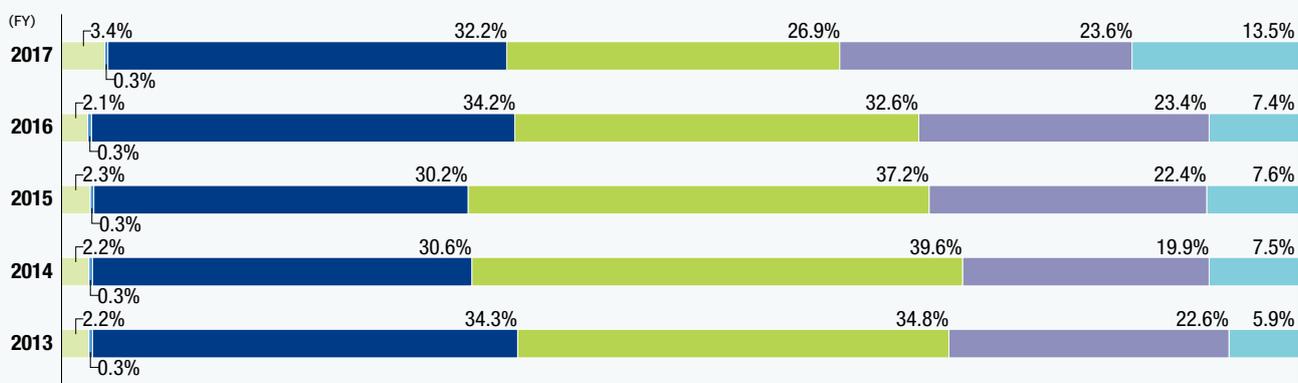
## Shareholder Composition



## Principal Shareholders (As of March 31, 2018)

Name	Number of shares held
Japan Trustee Services Bank, Ltd. (Trust Account)	10,755,000
The Master Trust Bank of Japan, Ltd. (Trust Account)	10,443,900
Office Support Corporation	7,487,500
Mitsubishi Heavy Industries, Ltd.	4,103,831
Japan Trustee Services Bank, Ltd. (Trust Account 9)	3,690,200
Meiji Yasuda Life Insurance Company	3,447,326
Reno, Inc.	3,040,200
Japan Trustee Services Bank, Ltd. (Trust Account 5)	3,026,500
Tokio Marine and Nichido Fire Insurance Co. Ltd.	2,894,578
STATE STREET BANK WEST CLIENT - TREATY 505234	2,685,944

## Shareholder Composition



## Editorial Policy for NYK Report

The NYK Report is an integrated report that combines financial information, such as business results, reviews of operations, and future strategies, with general nonfinancial information about corporate social responsibility (CSR) activities and other initiatives. This report aims to further understanding among as many stakeholders as possible that the NYK Group not only pursues earnings but also tackles a wide range of issues relating to the environment, social, and governance (ESG) to contribute to the realization of a sustainable society. Further, please use this report in conjunction with the NYK Group's website, which includes information that is more comprehensive and detailed.

Website	
<b>General business activities</b>	<a href="https://www.nyk.com/english/">https://www.nyk.com/english/</a>
<b>Financial information</b>	Website section: Investor Relations <a href="https://www.nyk.com/english/ir/">https://www.nyk.com/english/ir/</a>
<b>Nonfinancial information</b>	Website section: CSR <a href="https://www.nyk.com/english/csr/">https://www.nyk.com/english/csr/</a>
<b>NYK Report (Booklet, Data Sheets, and Financial Results)</b>	
Fiscal Statements	Fact Book I, II
Business report	Corporate Governance Code related documents

### Cautionary Statement with Regard to Forward-Looking Statements

Some statements made in this report are forward-looking statements, which are based on information currently available and involve certain risks and uncertainties that could cause actual results to differ materially from those projected. Please be advised against undue reliance on such forward-looking statements. NYK undertakes no obligation to publish revised forward-looking statements to reflect events, circumstances, or unanticipated events after the present juncture.

## Scope of Report

- **Reporting period:** April 2017 to March 2018 (In some cases, information from April 2018 and beyond is included)
- **Coverage:** The activities of NYK and consolidated group companies in Japan and overseas are included. Scope is indicated when there are differences in the major companies involved in specific activity areas.
- **Date of issue:** August 2018 (previous: August 2017; next: August 2019)

## Audience

This report has been prepared for all parties who have an interest in the activities of the NYK Group, including customers, shareholders, investors, business partners, employees, local communities, NPOs/NGOs, students, certification bodies, researchers, and those responsible for CSR at other companies.

## Guidelines for Disclosure about the Environment, Social, and Governance

- International Integrated Reporting Framework Version 1.0 by the International Integrated Reporting Council (IIRC)
- Environmental Reporting Guidelines 2012, by the Ministry of the Environment, Japan
- Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation by the Ministry of Economy, Trade and Industry
- GRI Standards, global standards for sustainability reporting produced by the Global Reporting Initiative (GRI)
- ISO 26000

[WEB](#) [CSR > NYK Report > GRI Guidelines / ISO26000](#)



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Chiyoda-ku, Tokyo 100-0005, Japan  
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Website: <https://www.nyk.com/english/>



# Bringing value to life.

Nippon Yusen Kabushiki Kaisha  
NYK Report **2018** Data book



# Summary of CSR Activities in Fiscal 2017 and Outline of Next Year's Targets 1

For fiscal 2017, we have summarized our CSR activities in accordance with the Group's materiality — i.e., safety, the environment, and human resources — in addition to governance.

	Initiatives	Fiscal 2017 targets	Achievement/progress of fiscal 2017	Achievement rate	Fiscal 2018 targets
<b>Safety</b> 	Reduction of fleet accidents (Ensuring safety)	1) Eliminate major accidents 2) Reduce fleet downtime (10 hours/year/vessel) 3) Conduct emergency preparedness and response	1-1) Conduct NAV9000 audits (shipmanagement companies and ships) → Audited 287 vessels / 30 companies, 956 corrective action requests 1-2) Reviewed the NAV9000 quality standard for safe operation and support to ensure compliance with ISO9001:2015 (completed in August) 1-3) Near Miss 3000 activities (increased companies to be covered) → 44 target companies and 71,160 reports 1-4) Hold various safety promotion meetings and safety seminars → Held SEMC <sup>*1</sup> (May), fleet safety promotion meetings (twice in July), a Global SEMC <sup>*1</sup> meeting (August), and meetings among the president, captains, and chief engineers (in August and November and March 2018) 1-5) Distribute safety information → total of 49 documents 1-6) Conduct safety campaigns → visited 475 vessels / 856 participants 1-7) Developed method for preventing engine plant accidents by utilizing big data → Shared with relevant parties and conducted external forums (Sea Japan, Japan Bari-Ship, etc.) 2) Continue activities to minimize fleet downtime → (overall) 23.9 hours/vessel (of this 3.5 hours/vessel for engine trouble) 3-1) Conduct emergency response drills and reviews → 7 times 3-2) Conduct media response drill and reviews → conducted drill (December) and employee e-learning (November)		1) Eliminate major accidents 2) Reduce fleet downtime (10 hours/year/vessel) 3) Conduct emergency preparedness and response
	Safety activities with vessel owners and customers	1) Visit vessel owners and conduct seminars for vessel owners 2) Conduct LNG conferences 3) Formulate safety guidelines with customers, shipping companies, and classification societies	1) Called for cooperation in blackout recovery tests for chartered vessels, held safety seminars, and shared information and exchanged opinions with vessel owners 2) Shared information with relevant outside parties, such as terminals, shipmanagement companies, customers, etc. (June, 14 participants) 3) Formulated safety guidelines for areas not covered by IMO, etc. together with maritime industry members such as customers, shipping companies, and classification societies (participated in committee twice a year)		1) Visit vessel owners and conduct seminars for vessel owners 2) Conduct LNG conferences 3) Formulate safety guidelines with customers, shipping companies, and classification societies
	Prevention of accidents, investigation of causes, and gathering information	1) Review safety standards at our terminals operating in Japan (across all terminals through a safety committee system) 2) Raise the on-site capabilities by cross-patrols conducted between terminals in Japan	1) Inaugurated a working group comprising the Harbor Group, three terminals operated by NYK, and Asahi Unyu Kaisha Ltd. (prime contractor at Nagoya Port) to review safety standards and create a system to ensure operational safety 2) Conducted mutual safety patrols among terminals in Japan from January 2018 (i.e., patrols at each terminal patrolled other terminals)		1) Adopt and implement an internal audit system. Evaluate whether work is conducted according to safety standards (all terminals scheduled to be audited by 2020) 2) Continue to raise on-site capabilities through mutual safety cross-patrols conducted among terminals in Japan
	Ensuring thorough safety management at shipyards and ship equipment manufacturers	Ensure safety management based on safety standards at each company	<ul style="list-style-type: none"> <li>Reviewed safety standards at meetings held by a supervisory office (five locations)</li> <li>Conducted monthly safety patrols with shipyards and shared results in monthly reports</li> <li>Requested investigation of cause and formulation of measures for preventing reoccurrence when an accident occurs</li> </ul>		Ensure thorough safety management based on safety standards at each company
	Preparation for disasters	1) Update the groupwide business continuity plan (BCP) 2) Conduct disaster drill and BCP training to raise the effectiveness of disaster-prevention plans and business continuity plans	1) Revised BCP documents in June (established disaster reporting system at our major facilities located in areas other than Southern Tokyo and made a list of important facilities, etc.) 2) Conducted disaster drill (twice) and BCP training (three times) Conducted emergency contact training utilizing IT tools for all employees		1) Update the groupwide business continuity plan (BCP) 2) Implement BCP training and disaster-preparedness drill to increase the effectiveness of disaster prevention plans and business continuity plans
<b>The Environment</b> 	Promotion of environmental activities	1) Maintain and expand the Group multisite environmental certification 2) Continually improve EMS <sup>*2</sup> manual 3) Acquire ISO 14001:2015 certification 4) Share information throughout the Group and with concerned parties	1) Maintain appropriate activities for each region and business sector and expand certification according to customer requirements → 55 companies and 146 sites 2) Formulate 2015 version of EMS manual → formulated on May 31, partially revised on January 25, 2018 3) Lead preparations for examining migration of overseas / domestic multisite → Conducted internal audit of related sites (October to November), external audit of related sites (December to March 2018), and prepared for final migration review on May 18, 2018 4-1) Held Safety & Environmental Management Committee (SEMC <sup>*1</sup> ) meeting (May) 4-2) Held the Group Environmental Management Conference (November)		1) Maintain the Group multisite environmental certification and enhance governance at sites 2) Continually improve EMS <sup>*2</sup> manual 3) Transition to ISO 14001:2015 4) Hold Safety & Environmental Management Committee meeting 5) Hold the Group Environmental Management Conference
	Formulation of and adherence to shipping industry and the Company standards	Contribute to formulation of international rules for realization of sustainable societies through industry-wide effort	Actively contribute to formulation of international rules → participated in boards (industry group boards and IMO MEPC)		Contribute to formulation of international rules for realization of sustainable societies through industrywide effort
	Prevention of global warming	1) Set CO <sub>2</sub> emission reduction rates using environmental management indices (EMIs) "Establish environmental management benchmark: Improve fuel efficiency by 15% from fiscal 2010 levels by fiscal 2018" 2) Determine total CO <sub>2</sub> emissions for the Group	1) Implement fuel-saving initiatives and collect data for calculating environmental management indices (improvement rate, target number of vessels, and main engine average load rate) from vessels → Target number of vessels: 487; improvement rate of 14.3% compared to fiscal 2010 (including overseas group companies); main engine average load rate: 49.2% 2) Use environmental performance data tabulation system (Eco Track) → 244 offices in Japan (47 companies) and 149 offices overseas		1) Establish environmental management benchmark (CO <sub>2</sub> emission reduction rate): Improve fuel efficiency by 30% from fiscal 2015 levels by fiscal 2030 2) Determine total CO <sub>2</sub> emissions for the Group
	Prevention of air pollution	Reduce NOx and SOx emissions	<ul style="list-style-type: none"> <li>Cooperate with California Speed Reduction Program → compliance rate at Long Beach: 98% (40 miles)</li> <li>Use shoreside power supply for moored vessels (increased vessels supporting AMP container units) → 41 vessels with AMP container units</li> <li>Fit NOx/SOx emission reduction devices → adopted water emulsion devices for four newly constructed vessels</li> </ul>		Reduce NOx and SOx emissions
	Marine environment conservation Adoption of environmentally-friendly technologies, etc.	1) Advance installation of ballast water management systems 2) Scrap ships in an environment-friendly manner 3) Advance installation of our Total Bilge System	1) Expand installation → increased by 11 vessels for a total of 82 vessels 2) Adhere to 'NYK Standards' on ship recycling → 0 vessels decommissioned 3) Actively install on new ships → complied with standards for all vessels (six)		1) Advance installation of ballast water management systems 2) Scrap ships in an environment-friendly manner 3) Advance installation of our Total Bilge System
	Efforts for saving resources, saving energy, reducing waste, and recycling, etc.	Reduce usage of paper, water, and electricity at headquarters office by 0.1% relative to fiscal 2012-2014	Perform periodic measurements and internal information-sharing to ensure thorough office energy savings → Average rate from fiscal 2012 to 2014 was -20.9% for paper, +1.8% for water, and +2.3% for electricity		Reduce the water/paper consumption at the headquarters office and CO <sub>2</sub> (electricity/steam) emissions by 0.5% compared to fiscal 2017

\*1 SEMC: Safety & Environmental Management Committee  
\*2 EMS: Environmental Management System

[Self-evaluation standard] Achieved:  Almost Achieved:  Partially Achieved: 

## Summary of CSR Activities in Fiscal 2017 and Outline of Next Year's Targets 2

	Initiatives	Fiscal 2017 targets	Achievement/progress of fiscal 2017	Achievement rate	Fiscal 2018 targets
 <b>The Environment</b>	Stimulation of interest in environmental conservation activities	1) Conduct environmental training 2) Conduct environmental e-learning programs 3) Share information with group employees	1) Conduct environmental training and workshops → conducted training for new employees and CSR training 2) Create environmental e-learning content and improve the number of participants (participation rate) → participation rate of 96.6% between November and January 2018 3) Report environmental articles in internal newsletter and conduct environmental conservation campaigns → continued to post environmental articles and held environmental <i>senryu</i> competition in Japan, in addition to photo contests (June to September)		1) Conduct environmental training 2) Conduct environmental e-learning programs 3) Conduct in-house environmental publicity activities
	Disclosure of environmental information	1) Issue NYK Report 2) Respond to external survey on the environment 3) Provide up-to-date environmental information through website 4) Disclose CO <sub>2</sub> emissions information	1) Review, update, and release content → Japanese version released in July and English version released in August 2) Actively participate in external surveys and present the environmental activities of the Group → 24 surveys 3) Review and update the included items → updated twice (August and January 2018) 4) Update the data for the CO <sub>2</sub> e-calculator, participate in the CCWG <sup>1</sup> of the U.S. NPO BSR, perform data evaluations for scopes 1, 2, and 3, and obtained data assurance for scopes 1, 2, and 3		1) Issue NYK Report 2) Respond to external survey on the environment 3) Provide up-to-date environmental information through website 4) Disclose CO <sub>2</sub> emissions information
 <b>Human Resources</b>	Workstyle reforms	1) Establish an environment and cultivate a workplace atmosphere that enable diverse human resources to play an active role 2) Reduce working hours and promote a work-life balance by fostering awareness of improving efficiency and productivity 3) Promote measures to improve employee health	1) Conducted Ikuboss seminars for managers, Ikuboss seminars for directors from 2017, mother/father seminars, interviews before maternity leave and before and after returning to work, and assisted employees with time limitations on how and when they can work 2) Expanded work-at-home trials to managers, implemented go-home-early days for parents and children, proposed defining a premium day for going home early, changed the rules for taking summer and winter vacation, reviewed work styles by changing core work times, etc., and raised employee awareness on improved labor productivity 3) Certified as a White 500 company for excellent health and productivity management two years in a row Arranged for trainers to provide personal advice, held a charity run around Tokyo's Imperial Palace, and ensured thorough implementation of health checks		1) Establish an environment and cultivate a workplace atmosphere that enable diverse human resources to play an active role 2) Reduce working hours and promote a work-life balance, establish an environment and improve efficiency and productivity via workstyle reforms and IT utilization, etc. 3) Promote measures to improve employee health
	Human resources development in Japan and overseas	Implement a variety of training and human resources exchange programs in Japan and overseas based on the HR philosophy <sup>2</sup> to enable the group employees to fully utilize their abilities in a broad range of business areas	<ul style="list-style-type: none"> <li>Implemented NYK Business College training for enhancing the total ability of group employees (more than 60 courses)</li> <li>Started operation of the Expert 2017 seafarer cultivation scheme</li> <li>Implemented Global NYK/YLK Week 2017 (October)</li> </ul>		Implement a variety of training and human resources exchange programs in Japan and overseas based on the HR philosophy <sup>2</sup> to enable Group employees to fully utilize their abilities in a broad range of business areas
	Seafarer training	1) Conduct review of NYK Maritime College (NMC) 2) Educate seafarers and transfer knowledge in LNG projects	1) Conducted NMC reviews to improve vessel safety and the quality of training according to various needs. Further enhanced the knowledge and navigation skills of group seafarers through education and training at NMC 2) Steadily promoted education of Angolan and Nigerian seafarers through basic education at educational facilities and practical onboard experience to teach everything from the basics of vessel navigation to the operation of LNG vessels		1) Effectively and efficiently implement NMC Continue to conduct training with relevant parties and review the content of training to make NMC more effective 2) Educate seafarers and transfer knowledge of LNG projects
 <b>Governance</b>	Human rights due diligence, Human rights awareness	Recognizing human rights issues as risks: 1) Identify the current degree of risk and latent risks, etc. Work to recognize human rights issues involving the company's business environment 2) Build company awareness on human rights issues (training, publicity, dealing with harassment, and enhancing measures for early detection)	1) Participated in the Stakeholder Engagement Program held by CRT Japan to identify major human rights issues in each industry, check our efforts for handling the identified issues, and published these on our website 2) Conducted human rights awareness building during our new employee training and new manager training, shared information during Human Rights Week on the theme of business and human rights and eliminating harassment, and distributed to all new employees "human rights passports" that summarize the Universal Declaration of Human Rights		1) Human rights due diligence/ impact assessment Understand, identify, and check NYK efforts regarding human rights issues via the Global Compact Promotion Committee, in addition to HR surveys and e-learning (CSR) for all Group companies 2) Human rights awareness Conduct human rights training and publicity activities during Human Rights Week
	Comprehensive compliance inspections	1) Transmit CCO messages, then institute surveys and other measures (headquarters) 2) Conduct overall inspections (Japanese group companies)	1) Transmitted a message from the CCO stating that "Dialog and discussion lead to improved awareness of compliance and self-cleansing", conducted a survey on compliance awareness (1,871 respondents, 96% response rate), and administered an anonymous survey to identify employee opinions and concerns 2) Conducted overall inspections according to the business field and scope of each company (at 38 of 40 Japanese group companies)		1) Transmit CCO messages, then institute surveys and other measures (headquarters) 2) Conduct overall inspections (Japanese group companies)
	Antitrust law risk assessment	1) Implement reviews and antitrust law risk assessments (yearly) 2) Hold meetings of the Executive Committee Overseeing Thorough Antitrust and Anti-bribery Law Compliance	1) Executed risk assessments and periodic inspections of target departments and group companies 2) Held meetings of the Executive Committee Overseeing Thorough Antitrust and Anti-bribery Law Compliance (September and March 2018)		1) Conduct surveys, interviews, risk evaluations, and periodic inspections after risk assessment regarding antitrust law compliance at group companies in Japan and overseas as well as the various departments at the headquarters 2) Hold meetings of the Executive Committee Overseeing Thorough Antitrust and Anti-bribery Law Compliance
	Information system security measures	1) Improve measures to counter viruses and hacking, etc., with the PDCA cycle and prevent internal information leaks 2) Improve the security awareness of group employees 3) Roll out ISMS-based security standards to group companies 4) Adopt new groupware	1) Continual implementation 2) Implement e-learning and suspicious e-mail training, and disseminate information through bulletin boards to increase awareness 3) Individually handling group companies 4) Adoption complete at major group companies. Continue activities for adoption at all 100% owned subsidiaries		1) Improve measures to counter viruses and hacking, etc., with the PDCA cycle and prevent internal information leaks 2) Improve the security awareness of group employees 3) Roll out ISMS-based security standards to group companies 4) Adopt new groupware
	Dialogue with investors	1) Actively promote communication from the president and management, such as directors, at biannual small meetings with institutional investors and financial results briefings conducted four times a year, as well as the IR Division contacting investors 2) Visit people in charge of the exercise of voting rights at institutional investors to explain our governance system, etc., and engage in dialogue	1) Financial results briefings conducted four times a year: Total 651 participants (excluding our directors, corporate officers, and employees) Small meetings with the president (twice in May and December): Total 23 companies participated 2) Visit people in charge of the exercise of voting rights at institutional investors in Japan and overseas (total 17 companies and 48 participants)		1) Actively promote communication from the president and management such as directors at biannual small meetings with institutional investors and financial results briefings conducted four times a year, as well as contacting investors via IR Division 2) Visit people in charge of the exercise of voting rights at institutional investors to explain our governance system, etc., and engage in dialogue
	Ensuring thorough SCM (fuel supplier evaluations)	Employees in charge evaluate all suppliers that we deal with and reflect the results in future purchasing activities (Evaluation items include quality, delivery, price, support for trouble, the provision of information, etc.)	Purchasing agreements are being made upon multifaceted evaluations of suppliers in terms of price, service, and performance at the time of agreement and updated every three or six months We will continue to consider new evaluation methods and reflect them in systematic purchasing activities		Employees in charge evaluate all suppliers that we deal with and reflect the results in future purchasing activities (Evaluation items include quality, delivery, price, support for trouble, the provision of information, etc.)

<sup>1</sup> CCWG: Clean Cargo Working Group

<sup>2</sup> HR philosophy: Continually develop diverse talent at all group companies across global fields

[Self-evaluation standard] Achieved:  Almost Achieved:  Partially Achieved: 

# Promotion of Group Environmental Management

## The NYK Group's Environmental Management Vision and Three Strategies (Formulated March 2005)

To contribute to the global environment and the creation of sustainable societies by managing environmental risks and arriving at an optimal balance between environment and economy

- Strategy 1 Reducing greenhouse gas emissions
- Strategy 2 Promoting social contribution through activities to conserve the global environment
- Strategy 3 Strengthening group environmental management

### Scope of the NYK Group's Environmental Management System

- Ⓞ Worldwide transportation of goods by sea on a fleet of owned and chartered ships and feeder vessels, and on land by rail and truck and through the use of warehouse operations
- Ⓞ Cruise ship business
- Ⓞ Container terminal business
- Ⓞ Ship-management business
- Ⓞ Offshore business
- Ⓞ Airfreight business
- Ⓞ Ocean & air forwarding and contract logistics business
- Ⓞ Other businesses associated with the NYK Group

### The NYK Group's Environmental Green Policy

- Ⓞ We, the NYK Group, adopt responsible practices with due regard to the environmental impacts of our corporate activities. We set and continually review objectives and targets for achieving our goal to protect our entire global environment and biodiversity.
- Ⓞ We seek not only to comply with safety and environmental regulations but also to implement in-house standards to improve our environmental performance and prevent pollution.
- Ⓞ We commit ourselves to the safe operation of all our services via sea, land, and air, as well as operations at sea, terminals and warehouses.
- Ⓞ We seek to reduce environmental loads by efficiently using resources, saving energy, reducing waste, encouraging material recycling, and particularly by minimizing emissions of greenhouse gases, ozone-depleting substances, and toxic matter.
- Ⓞ We endeavor to minimize environmental loads and adopt environmentally friendly technologies when ordering and purchasing necessary resources, such as vessels and aircraft, for transportation services and cargo operations.
- Ⓞ We endeavor to use education programs to raise environmental awareness among our employees and to ensure that they recognize the essence of this Green Policy by actively addressing environmental concerns.
- Ⓞ We make wide-ranging social contributions in close partnership with local communities by disclosing environmental information and supporting environmental conservation initiatives.

President  
Constituted on September 1, 2001  
Amended on April 1, 2017

## Global Environmental Management System

Under the Group's common environmental policy, 88 operating sites around the world and approximately 750 vessels (including chartered vessels<sup>\*1</sup>) have obtained ISO 14001 environmental certification<sup>\*2</sup>. The aggregate revenue of the 37 companies that have obtained this certification account for roughly 80% of the Group's total sales, making the Group's unique global system for certification a powerful business driver. Several Group companies<sup>\*3</sup> in Japan have also received Green Management certification<sup>\*4</sup>.

<sup>\*1</sup> Chartered vessels are ships leased from shipowners along with their fixtures and crew in a state capable of safe operation

<sup>\*2</sup> ISO 14001 environmental certification is the collective term for the international standard for environmental management systems issued by the International Organization for Standardization

<sup>\*3</sup> Group companies with Green Management certification were, as of June 1, 2018, Nippon Container Yuso Co. Ltd., Yusen Koun Co. Ltd., UNI-X Corporation, Asahi Unyu Kaisha Ltd., Kaiyo Kogyo Corporation, Yokohama Kyoritsu Warehouse Co. Ltd., Yusen Logitec Co. Ltd. (Narita Transport Section), and Hokuyo Kaiun Co. Ltd.

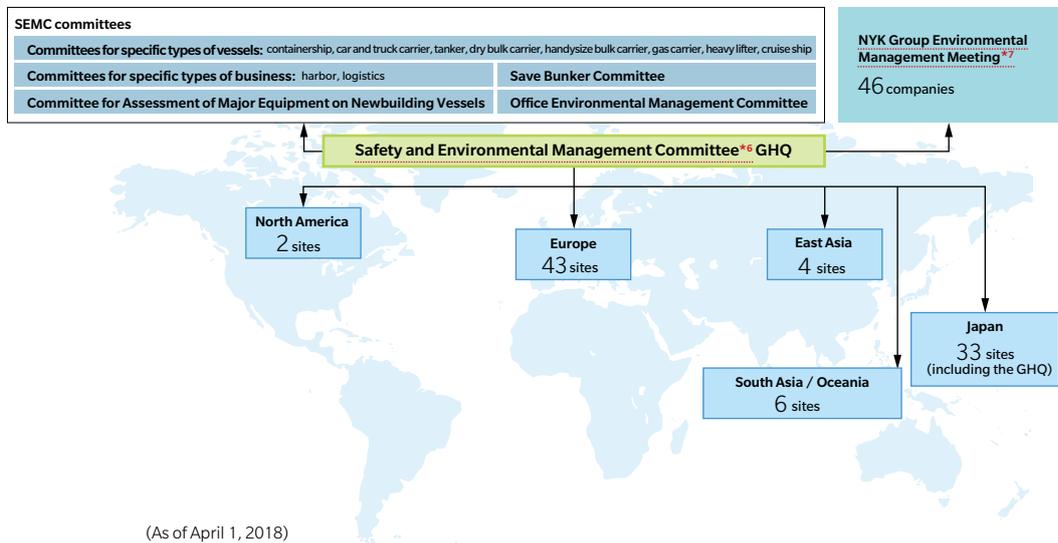
<sup>\*4</sup> Green Management certification is awarded by the Foundation for Promoting Personal Mobility and Ecological Transportation to transportation operator companies that carry out initiatives above minimum standards set in its Green Management Promotion Manual, such as promoting ecologically conscious driving and using low-emission vehicles

<sup>\*5</sup> Multisite system enables blanket certification for all a company's operating bases

<sup>\*6</sup> The Safety and Environmental Management Committee (SEMC) formulates group-wide environmental activity guidelines and conducts annual reviews of environmental management systems, with the president serving as chairman. The committee includes subcommittees that are responsible for specific vessel types, businesses, and projects. The Group's four overseas regions also have similar committees

<sup>\*7</sup> The NYK Group Environmental Management Meeting first commenced in 2006 and is held annually to provide a forum for main group companies in Japan to share information about their environmental initiatives, and to give special commendations to companies that have made outstanding efforts

## Global Promotion of Environmental Activities and Multisite System<sup>\*5</sup>



# Highlights of Fiscal 2017 Environmental Activities

● Activities by the Group ■ Outside awards/selection

## April 2017

- Conducted internal environmental training on the theme of the Group's environmental initiatives (held semiannually)
- Started LNG fuel supply/sales business in Belgium
- Planted trees for Earth Day (April 22) in New Jersey, United States

## May

- Held Safety and Environmental Management Committee (SEMC) meeting
- Held IBIS TWO joint committee meeting for four types of vessels

## June

- Held environmental conservation campaigns for group companies in Japan and overseas (environmental photo and slogan competitions, and environmental *senryu* (short humorous or ironical *haiku*) competition in Japan)
- Participated in outdoor environmental training to celebrate World Environment Day (June 5) in Brazil
- Received grand prize category awards at the 18th Logistics Environment Award (Asahi Unyu Kaisha Ltd., UNI-X Corporation, and Yusen Koun Co. Ltd.)
- Awarded the Best Green Shipping Line for 2016, the fifth consecutive year from France's HAROPA port authorities
- Included in the FTSE4 Good Index for 15th straight year

## July

- Supported Kishu Minabe Sea Turtle Research Project (since 2016)
- Received Ship of the Year 2016 award in the large cargo ship category, recognizing NYK *Blue Jay's* world's first energy-saving technology

## August

- Conducted a crisis-response drill based on the scenario of a serious accident
- Participated in the Uchimizu project in Marunouchi, Tokyo reusing rainwater to keep the ground cool
- Performed beach cleaning in Qingdao, China
- Planted trees in Thailand

## September

- Decided to deploy a binary cycle power generation system on a newly constructed vessel (expected to reduce vessel CO<sub>2</sub> emissions by 2.3% or more)
- Cleaned forests as part of the Clean Up the World Campaign in Poland
- Included in the Dow Jones Sustainability Indices (DJSI) for 15th year in a row

## October

- ULTY, a boiler combustion-control optimization system developed by NYK Trading Corporation, received an award at the 45th Sasaki Prize
- Conducted internal audit for ISO14001 (until January 2018)
- Conducted internal environmental training on the theme of the Group's environmental initiatives (held semiannually)
- Concluded a memorandum of understanding to provide LNG bunkering services to four shuttle tankers operated by Norway-based oil and gas company Equinor (scheduled to start from 2020)
- Started production of solid fuel based on waste material (RPF: Refuse Paper & Plastic Fuel) (Honma Corporation)
- Received a score of A- in the CDP's climate change 2017 program

## November

- Held the 11th Group Environmental Management Conference
- Held IBIS TWO joint committee meeting for four types of vessels
- Conducted e-learning on environmental themes (until January 2018)
- Held practical workshops on the theme of SDGs with the support of Fairtrade Label Japan, a nonprofit organization
- Performed beach cleaning in Dalian, China

## December

- External audit of ISO14001 performed by LRQA (until May 2018)
- Selected for the Ministry of Land, Infrastructure, Transport and Tourism's "energy-saving" rating scheme for Japan's coastal ships (for *Sakigake* LNG-fueled tugboat and *Hidaka* Ro-Ro cargo ship (Kinkai Yusen Kaisha Ltd.))

## January 2018

- Decided to install a wind-power generator at a completed automobile terminal in Belgium (ICO) as part of our efforts to promote the global expansion of green terminals (scheduled to start operation from fiscal 2019) (see pages 53 and 59 of the NYK Report)

## February

- Performed beach cleaning in Manzanillo, Mexico

## March

- Announced medium- to long-term environmental targets in the new medium-term management plan (see page 25 of the NYK Report)
- Committed the medium- to long-term environmental targets to SBTi (certified in June 2018) (see page 25 of the NYK Report)
- Developed a high-efficiency propeller utilizing actual sea data in collaboration with the Monohakobi Technology Institute and Japan Marine United Corporation (see page 21 of the NYK Report)
- Received MLIT approval of LNG-fueled bulk carrier R&D plan in the ministry's effort to support the introduction of cutting-edge vessels

## Environmental Data

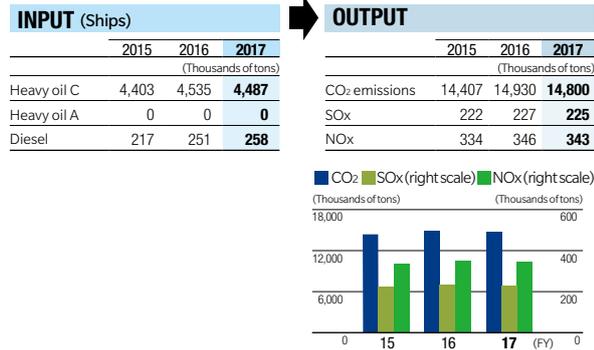
### NYK Group GHG Emission Rates for Fiscal 2017

Item	Emissions rate
Scope 1	Ships, aircraft, semitrailers, etc. 94.4%
Scope 2	Offices 0.3%
Scope 3	Vessel construction, commuting/business trips 5.3%
Total	100.0%

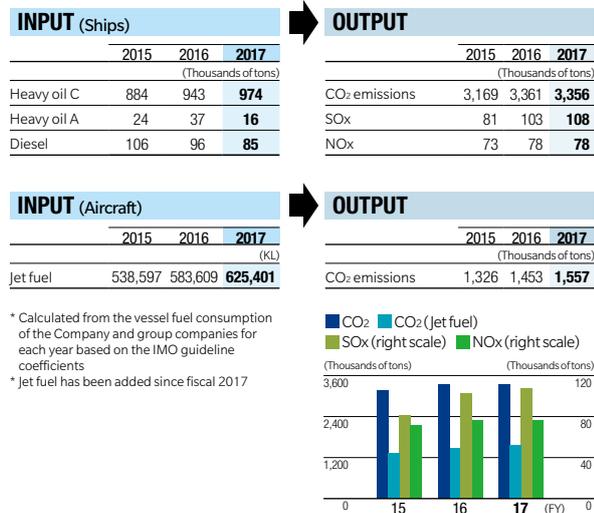
\* GHG emission data for Scope 1, 2, and 3 has been verified by a third party organization. Assurance statement (<https://www.nyk.com/english/csr/envi/manage/disclosure.html>)

### Ships/Aircraft

#### NYK



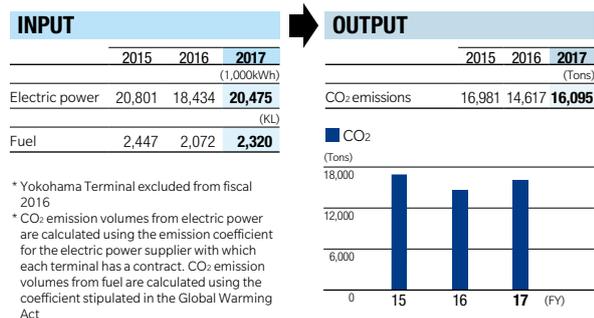
#### Japan and Overseas group companies



\* Calculated from the vessel fuel consumption of the Company and group companies for each year based on the IMO guideline coefficients

\* Jet fuel has been added since fiscal 2017

### NYK-Operated Container Terminals in Japan

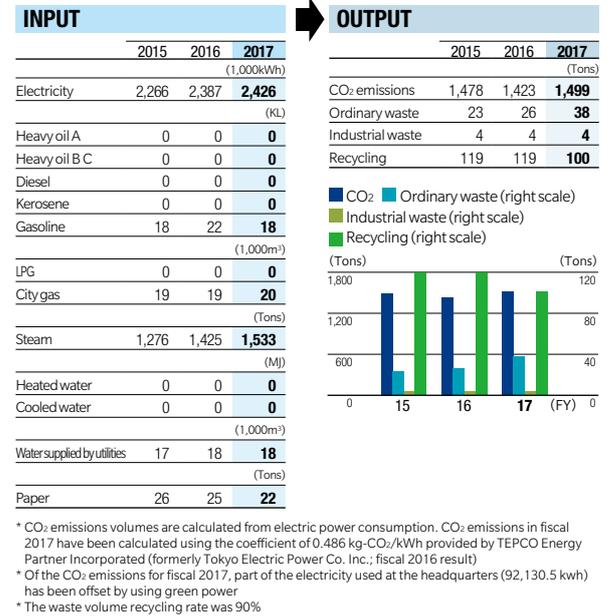


\* Yokohama Terminal excluded from fiscal 2016

\* CO<sub>2</sub> emission volumes from electric power are calculated using the emission coefficient for the electric power supplier with which each terminal has a contract. CO<sub>2</sub> emission volumes from fuel are calculated using the coefficient stipulated in the Global Warming Act

### Offices Input indicates resources and energies we have used.

#### NYK Headquarters

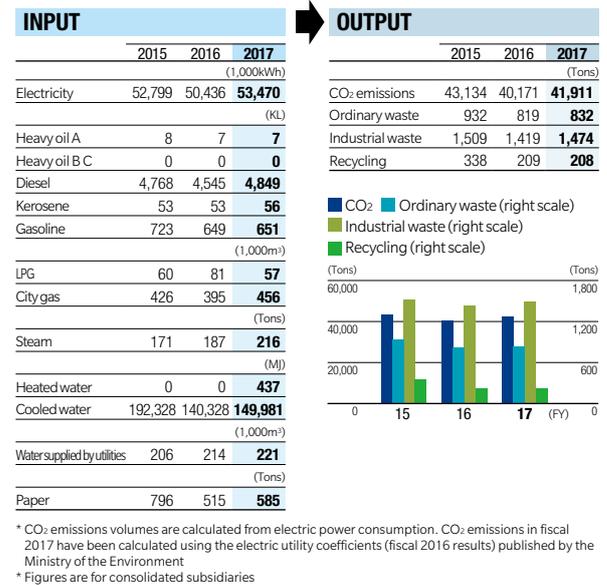


\* CO<sub>2</sub> emissions volumes are calculated from electric power consumption. CO<sub>2</sub> emissions in fiscal 2017 have been calculated using the coefficient of 0.486 kg-CO<sub>2</sub>/kWh provided by TEPCO Energy Partner Incorporated (formerly Tokyo Electric Power Co. Inc.; fiscal 2016 result)

\* Of the CO<sub>2</sub> emissions for fiscal 2017, part of the electricity used at the headquarters (92,130.5 kWh) has been offset by using green power

\* The waste volume recycling rate was 90%

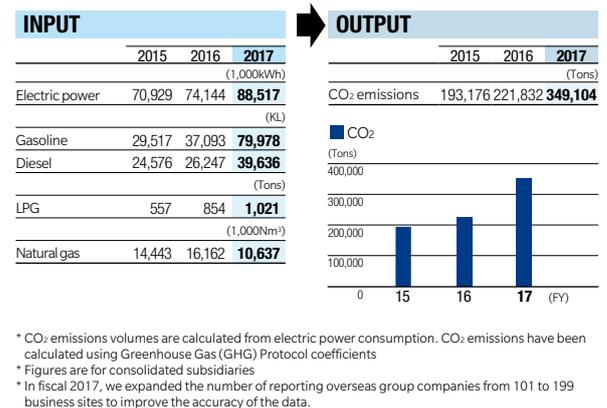
#### Group companies in Japan



\* CO<sub>2</sub> emissions volumes are calculated from electric power consumption. CO<sub>2</sub> emissions in fiscal 2017 have been calculated using the electric utility coefficients (fiscal 2016 results) published by the Ministry of the Environment

\* Figures are for consolidated subsidiaries

#### Overseas group companies



\* CO<sub>2</sub> emissions volumes are calculated from electric power consumption. CO<sub>2</sub> emissions have been calculated using Greenhouse Gas (GHG) Protocol coefficients

\* Figures are for consolidated subsidiaries

\* In fiscal 2017, we expanded the number of reporting overseas group companies from 101 to 199 business sites to improve the accuracy of the data.

## Environmental Accounting

The basic concept behind our environmental accounting is to correctly capture the expenses required for the protection of the environment and repeatedly review our findings so that we can engage in appropriate environmental conservation as a part of our business activities.

### Fiscal 2017 Overview

In fiscal 2017, we focused on initiatives for conserving the marine environment and curbing global warming, such as adopting low-friction, antifouling paint for ship hulls, removing surface roughness through bilge blasting, and retrofitting existing vessels with SOx scrubbers. As a result, environmental conservation costs increased. Promotion of fuel consumption reductions also increased the environmental conservation effect compared to the previous year.

### Comparison of All Costs and Results Related to Environmental Activities

	FY2016		FY2017	
	Environmental protection cost	Year-on-year savings	Environmental protection cost	Year-on-year savings
Prevention of global warming and air pollution, conservation of marine environments, conservation of resources, and deployment of environmental technologies	2,309	3,068	2,911	3,400

(Millions of yen)

### NYK's In-house Classifications

Environmental policies	Objectives	Items	Environmental protection cost
(Millions of yen)			
1. Continual improvement	Maintenance of environment management systems	Construction, operation, ISO certification (including personnel costs)	87
2. Complying with laws and regulations	Restorative work in response to environmental degradation	Restorative work in response to marine pollution, etc.	0
3. Ensuring safe operations	Reducing accidents and trouble	NAV9000 and other safety promotion activities (including personnel costs)	197
4. Prevention of global warming and air pollution, protecting ocean environments, saving natural resources	Preventing global warming and air pollution	Use of fuel additives to improve combustion; activities to reduce ship fuel consumption; propeller polishing, etc.	650
	Preventing marine pollution	Use of corrosion-resistant steel in VLCC cargo tanks, etc.	0
	Conservation of natural resources	Environmentally conscious purchases*	0
5. Use of environment friendly technologies	Preventing global warming and air pollution	Installation of electronically controlled engines, installation of exhaust gas economizers and other energy-saving devices, low-sulfur fuel measures, etc.	1,091
	Preventing destruction of the ozone layer	Ship air-conditioners, refrigerators / freezers, etc.	0
	Preventing marine pollution	Ballast water management systems and the NYK bilge treatment system, etc.	296
	R&D expenses	Smart fleet operations, Technology to reduce the CO <sub>2</sub> and NOx emissions of large main engines in vessels	582
6. Environment education	Raising environmental awareness and promoting our Green Policy	Environmental e-learning, environmental protection campaigns, etc.	1
7. Community activities to promote environmental awareness	Environmental information disclosures, social contributions, etc.	Expenses for NYK Report, sponsorship of environmental organizations, etc.	7
<b>Total</b>			<b>2,911</b>

\* The Company uses FSCR-certified paper, but the price difference is not substantial and is thus recorded as zero

### Classification According to the Environmental Accounting Guidelines of the Ministry of the Environment

Environmental protection cost

Classification	Investment	Expenses
(Millions of yen)		
(1) Cost within NYK business activities:		
a. Pollution prevention cost	561	60
b. Global environmental protection cost	441	975
c. Recycling cost	0	0
(2) Upstream and downstream cost	0	0
(3) Management activity cost:		
a. Operation and maintenance of environmental management systems	0	284
b. Environmental information disclosure, environmental advertising	0	4
c. Environmental education and training	0	1
d. Expenses for environmental improvement	0	0
(4) R&D cost:		
Environmental-burden reduction	0	582
(5) Social contribution activities cost:		
Social contribution activities	0	3
(6) Environmental damage response cost	0	0
<b>Total</b>	<b>1,002</b>	<b>1,909</b>

Calculation methodology:

- The period is from April 1, 2017, to March 31, 2018 (The calculation period for activities to reduce ship fuel consumption is from January 1, 2017, to December 31, 2017.)
- The scope is primarily business activities associated with NYK's headquarters and branch offices. NYK-operated terminals, fleet, and ancillary activities in Japan (Expenses to maintain ISO 14001 certification are included for certified group companies in North America, Europe, South Asia, and East Asia.)
- The Ministry of the Environment's fiscal 2005 Environmental Accounting Guidelines were used
- Investment amount refers to cost for depreciable environment-related facilities acquired during the term
- Expenses include maintenance and management of facilities for the purpose of environmental protection and associated personnel costs, but do not include depreciation
- Cost calculations do not include costs to comply with legal requirements and the like and cover only voluntary environmental protection activities
- Results are noted only to the extent that impact can be quantified

## Human Resources Data

### NYK Group (Including NYK headquarters)

Number of employees of consolidated companies (long-term employees, employees on contracts for over six months)

#### Employee Demographics

		FY2015	FY2016	FY2017
<b>Total number of employees (a)</b>		<b>34,276</b>	<b>35,935</b>	<b>37,820</b>
<b>By region</b>				
	Japan	8,204	8,336	8,156
	Europe	5,423	5,686	7,390
	South Asia	12,213	13,093	13,788
	North America	2,760	2,779	2,667
	East Asia	3,876	4,103	3,975
	Oceania	385	479	420
	Central and South America	1,415	1,459	1,424
<b>Number of employees promoted to director by region*1</b>				
	Japan	276	295	283
	Female	2	3	6
	Europe	55	62	66
	Female	4	5	7
	South Asia	86	86	92
	Female	9	7	12
	North America	33	29	30
	Female	5	2	1
	East Asia	39	38	38
	Female	3	3	4
	Oceania	11	9	6
	Female	0	2	2
	Central and South America	8	6	5
	Female	0	2	2

\*1 National staff hired locally. Excludes employees seconded from headquarters and other organizations

#### Employee Diversity

		FY2015	FY2016	FY2017
<b>Number of non-Japanese seafarers</b>	Total (b)	<b>21,171</b>	<b>19,281</b>	<b>19,081</b>
	Vessels under group management	9,071	7,533	7,179
	Chartered vessels	12,100	11,748	11,902
<b>Ratio of female employees (%)</b>		<b>34.9*1</b>	<b>34.9</b>	<b>35.2</b>
<b>Ratio of female managers (%)*2</b>		<b>21.5</b>	<b>21.7</b>	<b>23.4</b>

\*1 An error in the fiscal 2015 values included in the NYK Report 2017 has been corrected

\*2 Managers or higher

			FY2015	FY2016	FY2017
<b>Ratio of management by region and gender (%)*1</b>					
	Japan	Male	91.1	90.6	89.9
		Female	8.9	9.4	10.1
	Europe	Male	79.7	78.6	69.5
		Female	20.3	21.4	30.5
	South Asia	Male	69.9	70.3	67.6
		Female	30.1	29.7	32.4
	North America	Male	70.1	68.9	67.4
		Female	29.9	31.1	32.6
	East Asia	Male	69.5	68.1	67.0
		Female	30.5	31.9	33.0
	Oceania	Male	82.8	83.5	85.9
		Female	17.2	16.5	14.1
	Central and South America	Male	75.0	78.9	79.4
		Female	25.0	21.1	20.6
<b>By gender</b>	Male		22,673	23,753	24,864
	Female		11,603	12,182	12,956
<b>By job type</b>	Office workers*2		33,068	34,708	36,630
	Seafarers*3		1,208	1,227	1,190
<b>New hires</b>	Total		6,185	6,473	6,263
	Male		4,234	4,267	4,070
	Female		1,951	2,206	2,193

\*1 National staff that are managers or higher. Includes employees seconded from headquarters and other organizations

\*2 Includes navigation officers and engineers\* at the office, and employees seconded from group companies

\*3 Excludes seafarers hired outside Japan

\* Navigation officers and engineers either hold a seafaring license or are in the process of acquiring one at a maritime college

#### Number of Group Employees (including non-Japanese seafarers)

	FY2015	FY2016	FY2017
<b>Total (a + b)</b>	<b>55,447</b>	<b>55,216</b>	<b>56,901</b>

### NYK Headquarters

#### Employees Demographics

		FY2015	FY2016	FY2017	
<b>Total number of employees</b>		<b>1,674</b>	<b>1,697</b>	<b>1,710</b>	
<b>By gender</b>					
	Male	1,356	1,374	1,388	
	Female	318	323	322	
<b>Long-term employees</b>	Office workers (Excludes navigation officers and engineers at the office)	751	756	763	
		267	268	268	
	Seafarers currently working at the office (navigation officers and engineers at the office)	255	261	272	
		5	6	7	
	Seafarers	296	298	294	
		9	11	11	
<b>Fixed-term employees</b>	Office workers	48	51	51	
		37	38	36	
	Seafarers	6	8	8	
		0	0	0	
<b>Long-term employees and fixed term employees</b>	Office workers (Excludes navigation officers and engineers at the office)	1,103	1,113	1,118	
	Seafarers currently working at the office (navigation officers and engineers at the office)	260	267	279	
	Seafarers	311	317	313	
<b>Average age (years old)</b>	Office workers (Excludes navigation officers and engineers at the office)	41.1	40.8	40.8	
	Seafarers (Includes navigation officers and engineers at the office)	38.2	37.9	38.1	
<b>Age range*1</b>	Office workers (Excludes navigation officers and engineers at the office)				
		Under 30	195	212	217
		30-49	567	555	537
		50 and older	256	257	277
	Seafarers (Includes navigation officers and engineers at the office)				
		Under 30	146	147	147
		30-49	349	363	357
		50 and older	70	66	80
<b>New hires*2</b>	Total	66	77	65	
	Office workers (Excludes navigation officers and engineers at the office)	33	38	33	
		8	8	5	
	Seafarers (Includes navigation officers and engineers at the office)	24	28	25	
		1	3	2	
<b>Rate of turnover within 3 years after hire (%)</b>	Office workers (Excludes navigation officers and engineers at the office)	0.9	1.6	0.1	
	Seafarers (Includes navigation officers and engineers at the office)	3.1	2.6	4.8	
<b>Ratio of retirement for personal reasons (%)</b>		0.9	0.8	1.1	
<b>Turnover rate at NYK (%)</b>		4.0	3.8	3.1	

\*1 Excludes fixed-term employees

\*2 Includes new graduates and mid-career hires

Employee Diversity		FY2015	FY2016	FY2017
Ratio of female employees (%)	Office workers (Includes navigation officers and engineers at the office)	21.3	21.2	21.0
	Seafarers	3.0	3.6	3.6
Ratio of female managers*1 (%)	Office workers (Includes navigation officers and engineers at the office)	15.2	15.1	16.0
	Seafarers	0.0	0.0	0.0
Employment ratio of people with disabilities (%)		2.5	2.5	2.4

\*1 Office workers include employees at manager or higher. Seafarers include captains and chief engineers. The calculation method has been changed for both types (female managers divided by the total number of managers)

Occupational Health and Safety		FY2015	FY2016	FY2017
Number of occupational accidents*1	Total	7	4	7
	Office workers (Includes navigation officers and engineers at the office)	4	2	1
	Seafarers	3	2	6
Number of work-related deaths	Total	0	0	0
	Office workers (Includes navigation officers and engineers at the office)	0	0	0
	Seafarers	0	1	0
Number of lost days caused by occupational accidents	Total	242	77	42
	Office workers (Includes navigation officers and engineers at the office)	182	0	0
	Seafarers	60	77	42

\*1 Excludes commuting accidents

Employee Support System		FY2015	FY2016	FY2017
Average number of days of paid leave taken*1		14.1	16.8	17.0
Number of employees who took maternity leave*2		9	16	16
Number of employees who used parental leave program*2	Total	24	35	40
	Male	6	15	16
	Female	18	20	24
Ratio of employees who returned to work after taking parental leave (%)	(Number of employees who left the Company: 1)	90.0	100.0	100.0
Retention rate of employees who used parental leave program (%)		100.0	100.0	100.0
Number of employees who used shortened working hours program*2	Total	22	16	14
	Male	0	0	0
	Female	22	16	14
Number of working mothers*3		51	52	54
Number of employees who used family-care leave program*2	Total	1	1	0
	Male	1	1	0
	Female	0	0	0
Ratio of employees who returned to work after taking family-care leave (%)		NA	NA	100.0
Retention rate of employees who used family-care leave program (%)		NA	NA	100.0

\*1 Excludes seafarers and employees currently seconded to other companies / Includes paid summer holidays

\*2 Total number of users, excluding those who left the Company

\*3 Mothers with children in compulsory education or younger / Excludes mothers on maternity or parental leave

Education		FY2015	FY2016	FY2017
Average number of days participating in training programs	Company average	-	13.5	11.7
	Office workers*1 (Includes navigation officers and engineers at the office)	6.8	6.6	5.8
	Seafarers	34.4	39.5	34.6
Average expenditure on education and training programs (yen)	Company average	-	298,470	267,037
	Office workers*2 (Includes navigation officers and engineers at the office)	181,410	184,962	144,940
	Seafarers	614,410	719,175	743,068

\*1 Excludes workers trained outside the Company

\*2 Programs for office workers trained inside or outside the Company



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