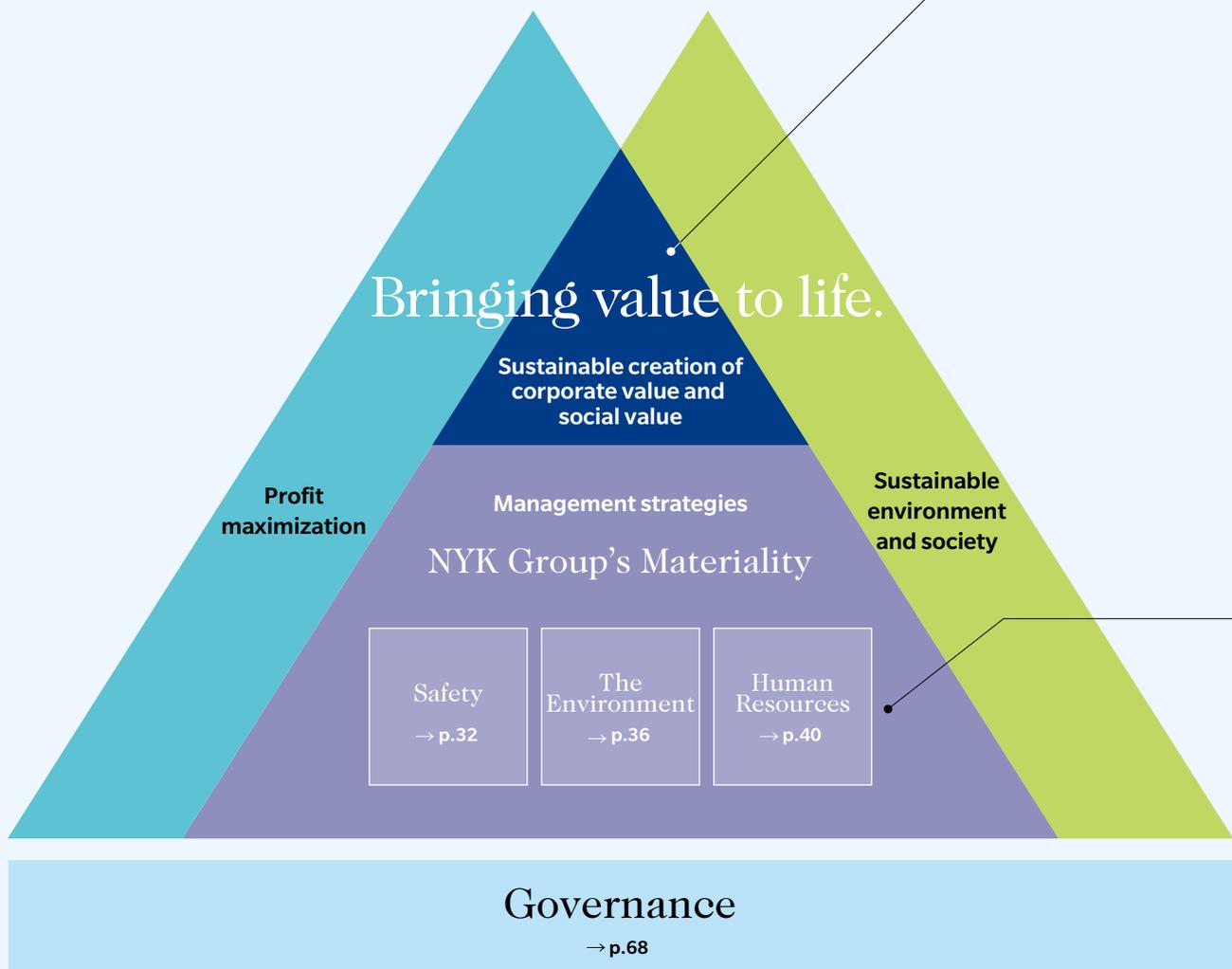


Toward Sustainable Growth (Material Issues)

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

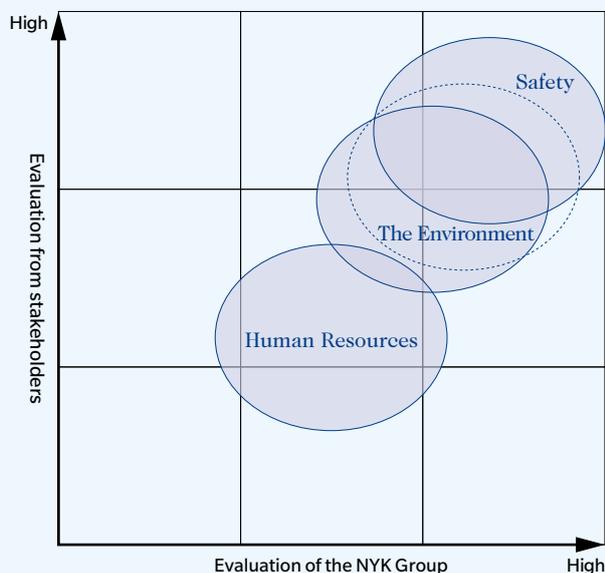
SDGs especially relevant to our business activities



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.



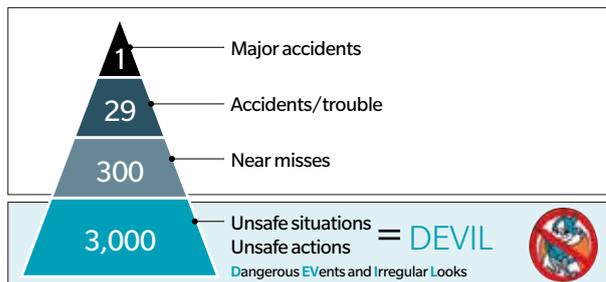
- Current issues
- Standardizing the safety awareness level of diverse and multinational seafarers
 - Analyzing human elements
 - Promoting awareness of and sharing information on near misses and unsafe actions/situations

Near Miss 3000 Activities and DEVIL Hunting!

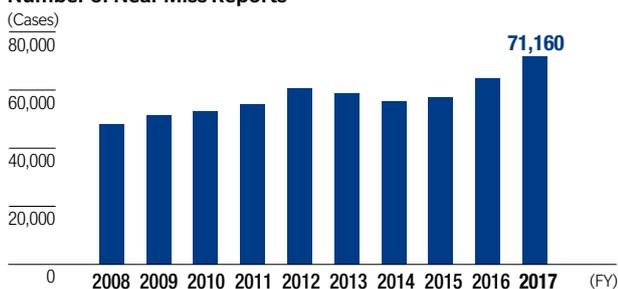
Near Miss 3000 activities have been implemented since fiscal 2005 based on Heinrich's Law* to identify and quickly eliminate all near misses and unsafe actions/situations that could possibly cause an accident. These unsafe actions/situations are called "DEVILs" (Dangerous EVents and Irregular Looks), 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)

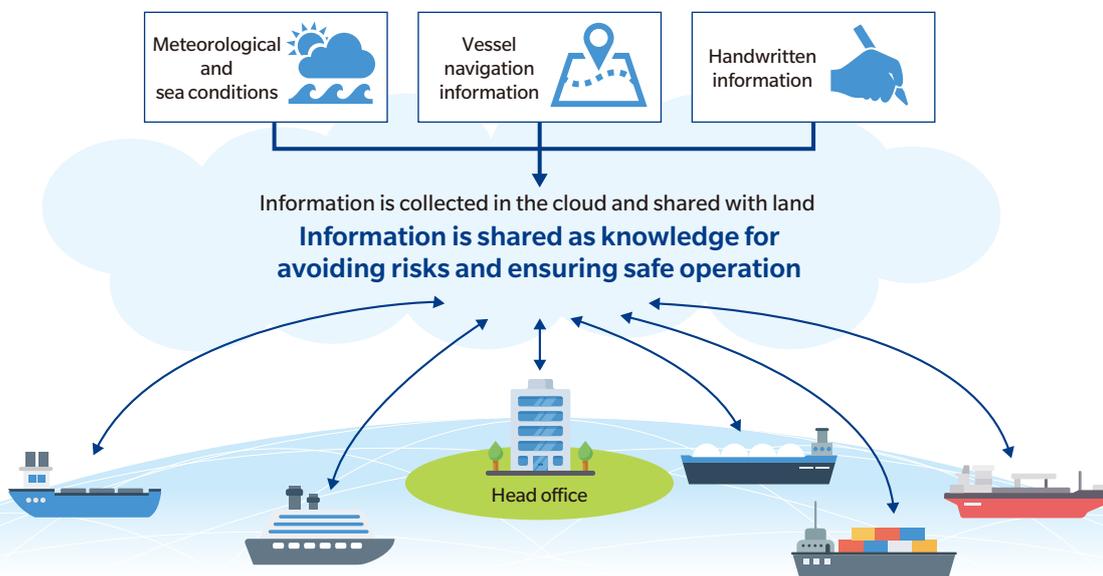
J-Marine NeCST is a device for assisting and optimizing navigation planning that integrates our knowledge on vessel operation with the technical ability of a manufacturer. In addition to being compatible with a conventional mouse and keyboard, J-Marine NeCST lets users write information by hand. Valuable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

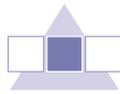
In January 2018, this device was trialed at the company's Crisis Management Center (CMC) at the head office in Tokyo. Being able to retrieve vessel operation data at offices in a timely manner enabled us to achieve swift crisis support and a high-quality of safety management. In March, we conducted a

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





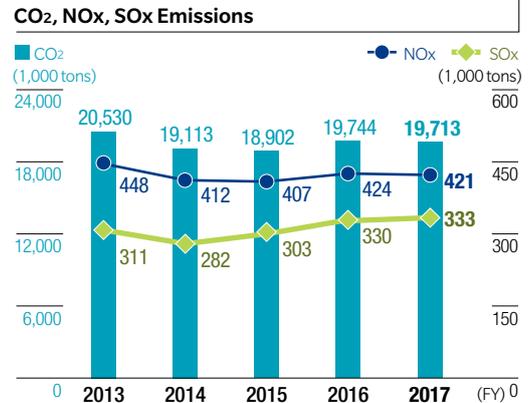
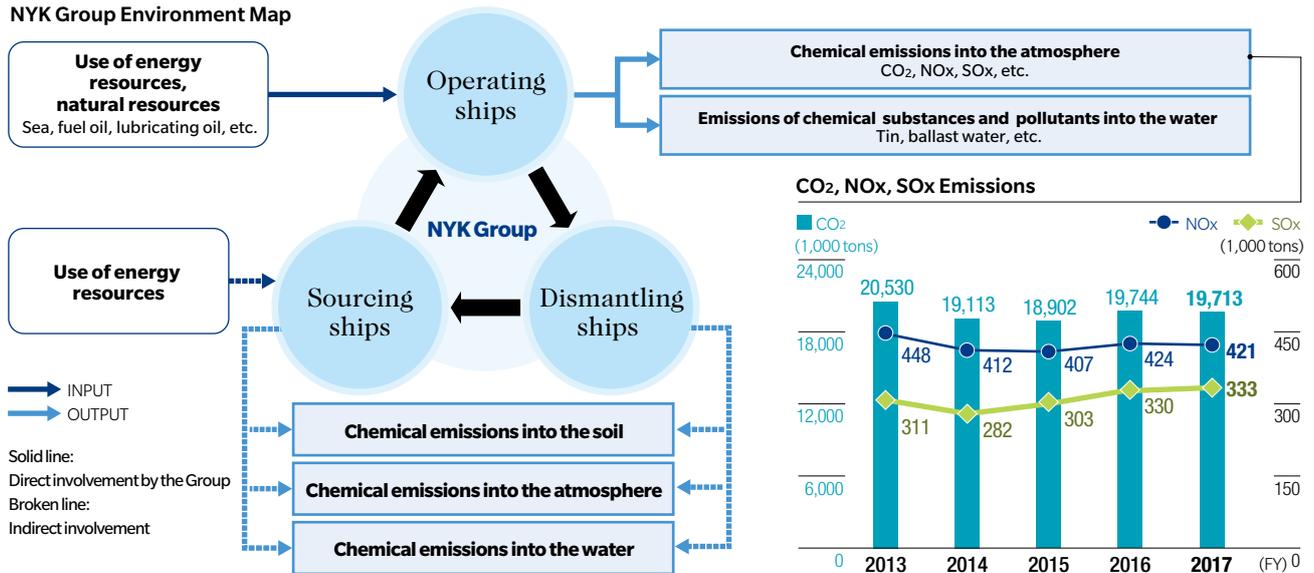
Proactive Environmental Conservation

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^{*1} 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
CO₂	SEEMP ^{*2}	General seas	Applicable to all vessels					
	DCS ^{*3}	General seas	Scheduled to go into effect on January 1, 2019					
SO_x		General seas	Use fuel with sulphur content of 3.5% or less			Use fuel with sulphur content of 0.5% or less		
	ECA ^{*4}		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_x		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 (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆), 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 CO₂ 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 CO₂ 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 CO₂ emissions by modifying our in-service vessels to travel at slower speeds and improve propulsive performance, such as modifying our vessels' bulbous bows^{*1} and fitting MT-FAST^{*2} devices to hulls.

^{*1} 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)

^{*2} **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^{*}. 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.

^{*} **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 CO₂ emissions by approximately 30%, NO_x emissions by approximately 80%, and SO_x 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_x Regulations

The amount of SO_x 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_x scrubber (system for desulphurizing exhaust gas). In 2017, we also decided to install SO_x scrubbers on two dry bulk carriers, a first in the Japanese shipping industry.

Using Cutting-edge Technologies for Stricter NO_x Regulations

The Group has promoted the installation of digitally controlled engines that can reduce NO_x emissions by optimizing fuel efficiency. Due to stricter NO_x regulations, we are promoting further reductions in NO_x emissions through LNG-fueled engines, as well as fitting vessels with exhaust gas recirculation (EGR) systems or selective catalytic reduction (SCR) units.

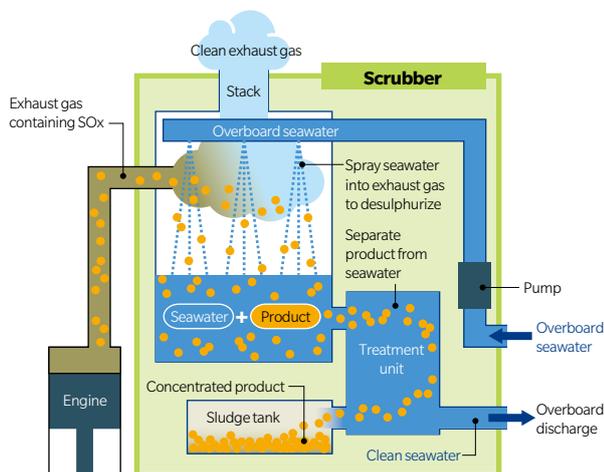
Using Onshore Power While in Port

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)^{*1} units that can connect to shoreside power supplies. We will continue to increase the rate of shoreside power received to reduce CO₂, NO_x, SO_x, and PM^{*2} emissions from our vessels and prevent air pollution.

^{*1} **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

^{*2} **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

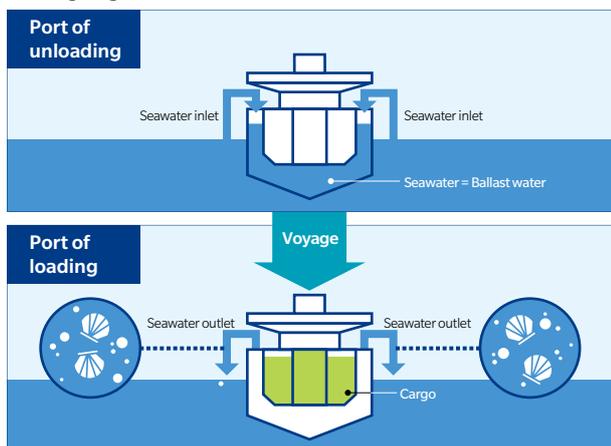
Contributing to Marine Environment Conservation

Promoting the Installation of Ballast Water Management Systems (BWMS)

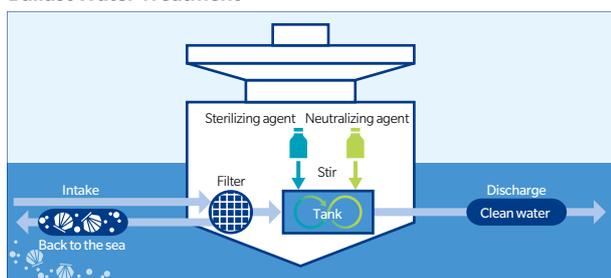
To prevent the cross-boundary movement of aquatic organisms affecting the marine environment, the IMO adopted the International Convention for the Control and Management of Ship's Ballast Water and Management in 2004, and the convention went into effect in September 2017.

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



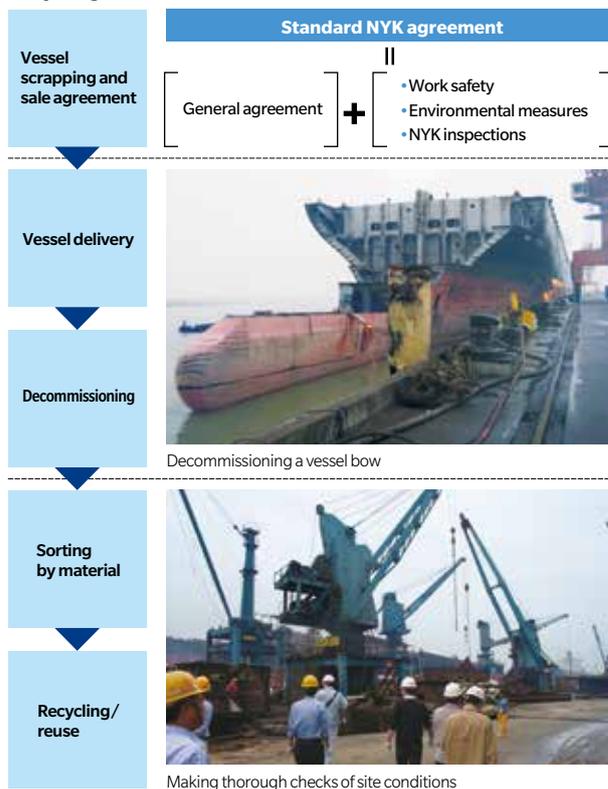
Ballast Water Treatment



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.

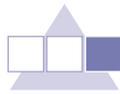
Recycling Process



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

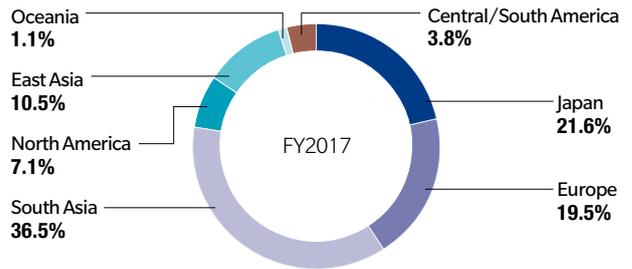
In order for a company to enhance its competitiveness and continue to grow in the medium- to long-term, it is essential to develop human capital. The Group promotes initiatives such as workstyle reforms and health management to create a workplace environment that enables every employee to make full use 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.

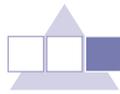
In order to become a strong organization that can flexibly handle changes, we must secure diversity and have a system that enables that diversity to be effectively utilized. In 1983, we started activities for promoting the empowerment of women in order to develop the abilities of female employees, expand 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)

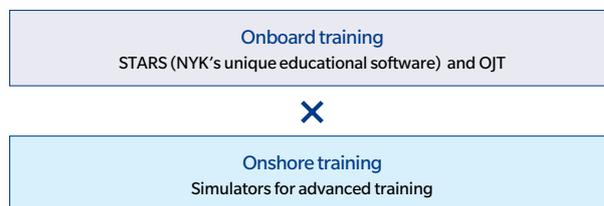


knowledge required for corporate management, such as investment and management strategy. We provide a wide range of programs for cultivating human resources that will become leaders with a high degree of specialization as well as wide perspective (see page 45 for details).

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 CO₂ Emissions (Fiscal 2017)
(Compared to Fiscal 2010)

14.3%



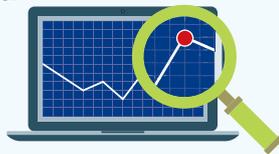
Number of Patents
(Current as of the end of Fiscal 2017)

150



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

125

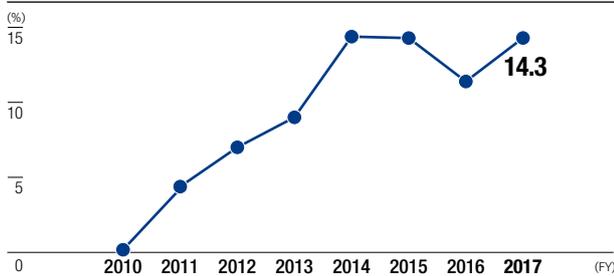


Overtime Exceeding Legal Working Hours per Month
(Fiscal 2017)

18.7 hours

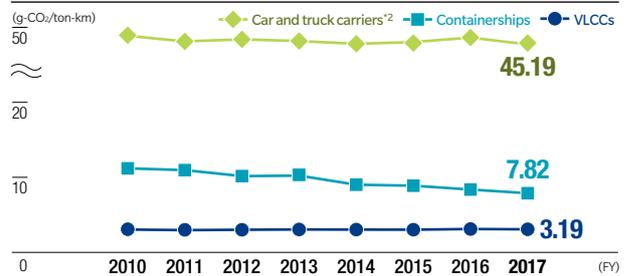


Improvement Rate of CO₂ Emissions Based on Fiscal 2010 Values



We manage the CO₂ emissions improvement rate of each of our vessel types and strive to identify optimal operation and reduce CO₂ 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.

CO₂ Emissions According to Environmental Management Indicator (EMI)^{*1}

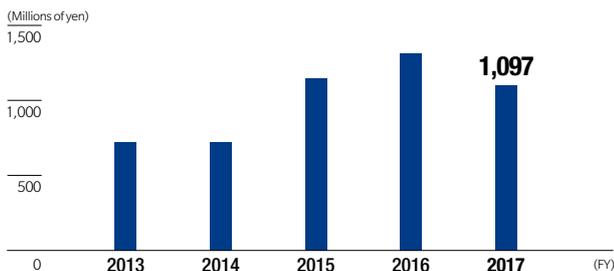


Our environmental management indicator (EMI) complies with IMO guidelines, and we have been managing the CO₂ emissions from our fleet per ton-kilometer by each vessel type since 2006. Reduced values indicate improvement of emissions.

^{*1} The environmental management indicator (EMI) is calculated as the environmental impact (CO₂ emissions) divided by the value added by the business (mass of cargo in tons x transport distance in kilometers)

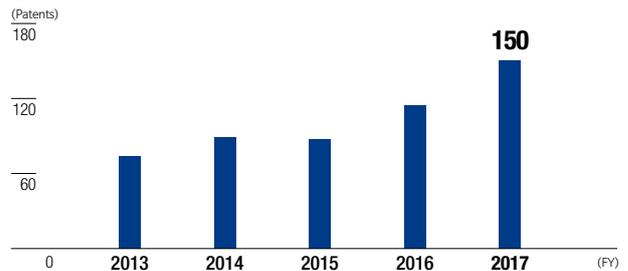
^{*2} The index is larger for car and truck carriers because the weight to capacity ratio is smaller

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.

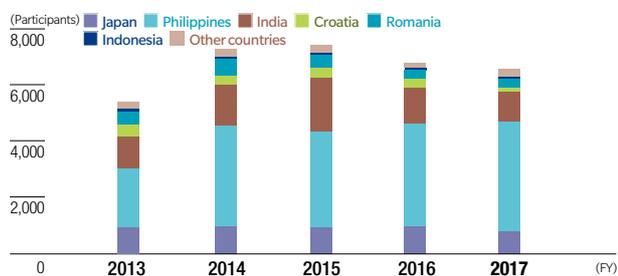
^{*} Numbers of patents indicate the current number at the end of each fiscal year

Trends in Downtime



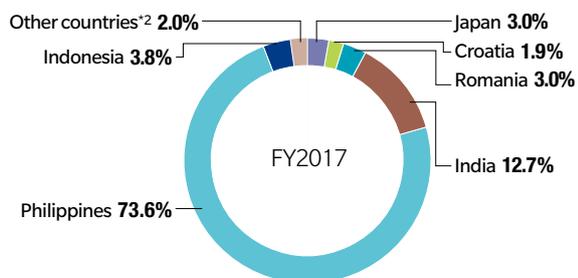
The amount of time that operation of our vessels stops due to accidents or other trouble (downtime) is used as an KPI for safe operation. All our employees, both onshore and offshore, work together toward the target of eliminating downtime.

Number of NYK Maritime College Seafarers Participants (by nationality)



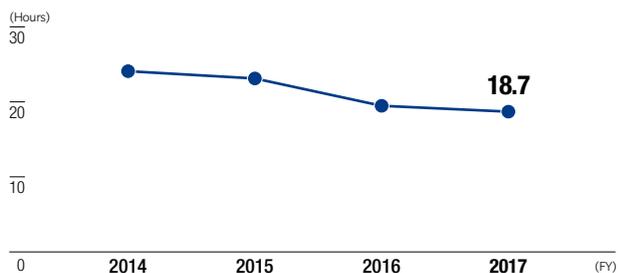
The NYK Maritime College is a system that provides a globally uniform training program regardless of the nationality and training location of seafarers to effectively improve the skills of our seafarers.

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

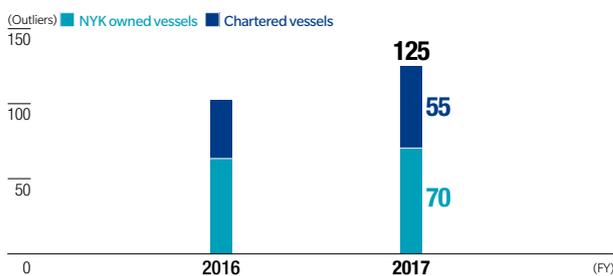
Trends in Monthly Overtime Exceeding Legal Working Hours



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.

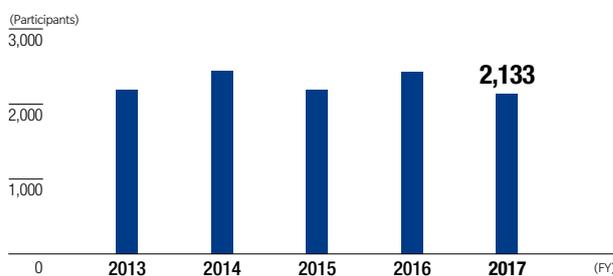
* Employees working at the NYK headquarters

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)



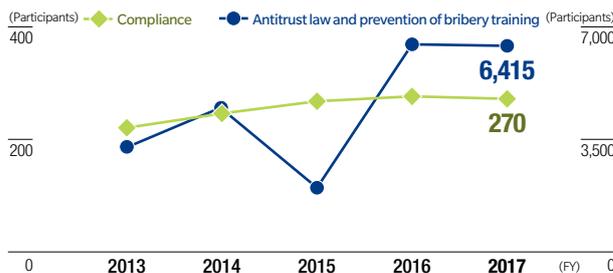
The NYK Business College training system, established for the purpose of enhancing the total ability of group employees, comprises more than 60 kinds of training programs.

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