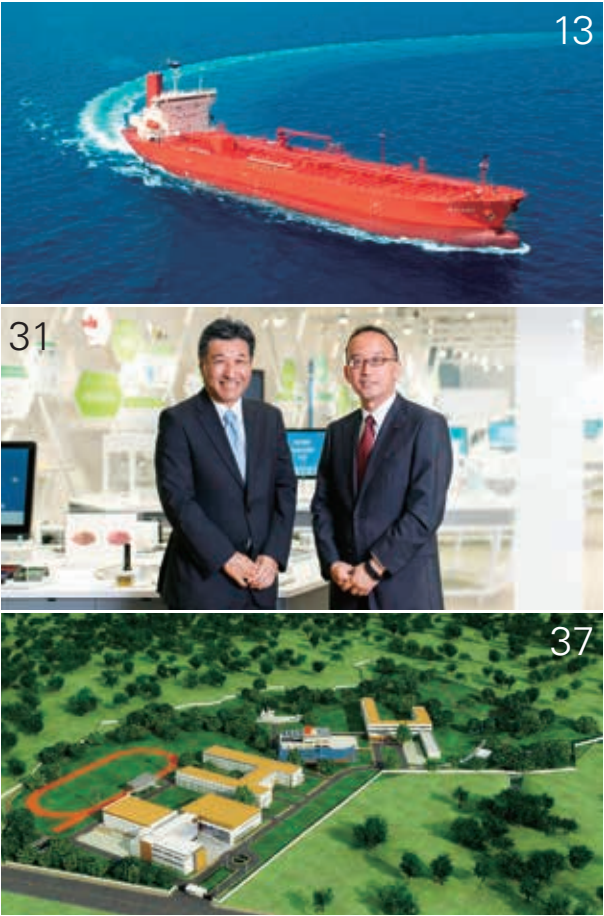


MOL Group

Safety, Environmental and Social Report **2016** **One MOL, One Goal**

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Editorial Policy
To emphasize MOL Group's worldwide leadership in safe operation, it has changed the name of the report's title to Safety, Environmental and Social Report. The report provides a detailed explanation of the actions taken on those issues and data on the results based on the five critical issues that MOL identified, as well as background information on the role of ocean shipping and the challenges it faces. The Annual Report and the Safety, Environmental and Social Report have different contents. While the former mainly targets shareholders and other investors, the latter is for customers and other stakeholders. Please refer to QR codes or URLs for related topics in the Annual Report.

Period
FY2015 (April 1, 2015 to March 31, 2016). (Some information is from outside the report period and as such will be denoted with asterisks and footnotes.)
Scope
In principle, all MOL Group companies that do business in Japan and overseas. (Activities and data that are limited in scope are reported with asterisks and footnotes.)
* The MOL Group
Mitsui O.S.K. Lines, Ltd., 362 consolidated subsidiaries, 76 equity method affiliates and other affiliated companies.
* "The company" in this report refers to Mitsui O.S.K. Lines, Ltd. (MOL).
Reference Guidelines
• Environmental Report Guidelines 2012, Japanese Ministry of the Environment
• Environmental Accounting Guidelines 2005, Japanese Ministry of the Environment
• GRI (Global Reporting Initiative) (GRI Guidelines Version 4)
Issue Date
July 2016 (Previous issue: July 2015; Next issue: July 2017 (scheduled))

Face up to Social Issues, Expand Business while Reducing Stress on Society and the Environment



Mitsui O.S.K. Ltd.
President & CEO
Junichiro Ikeda

The MOL Group's Role and Responsibility in Society

Contribute to Worldwide Economic Growth by Adding Value through Ocean Shipping

The MOL Group, with international shipping at its core, has helped people around the world enjoy more prosperous lives and promoted the growth of local industries by transporting the products and commodities essential to daily life. Our company serves as a lifeline to the world economy and global society. In the future, worldwide population growth and economic development in emerging nations will fuel new demand for transport. Thus, with a greater role as the arteries of global commerce, more responsibilities will be required for international shipping services. Our group's Corporate Principles clearly state that it contributes to global economic growth and development, anticipating the needs of our customers and the challenges of this new era as a multi-modal transport group. We believe that our group's social responsibility, and indeed our raison d'être, is to embody those principles. With management focused on this principle, our group continues to create new values through leadership of the international shipping industry and sustainable growth in step with society based on the understanding that corporate activities themselves are corporate social responsibilities.

Responding to Global Risks and Social Issues

Face up to Social Issues

Worldwide economic growth, a more borderless society, climate change, depletion of various resources, human rights issues, poverty and economic inequality, and political instability — all of these combine to create complex, interconnected global risks. More frequent natural disasters are compounded by these risks. Economic and social ills also give rise to piracy, which threatens the safe operation of the merchant fleet, the key principle of the MOL Group's business. Clearly, our group cannot ignore these issues. Generally, such social issues are considered as obstructions for corporate activities. However, instead, we believe that addressing social issues is the corporate responsibility and the absolute minimum requirement for corporations to stay in business.

Cooperate with Stakeholders and Solve Social Issues

In September 2015, the United Nations General Assembly adopted Sustainable Development Goals (SDGs) toward 2030, and in December of the same year, the new framework convention on climate change (the Paris Agreement) was adopted at COP21. The international community is demanding a cooperation for a sustainable society. We must pay particular attention to human rights related issue more than ever before. The MOL Group is the first shipping group to participate in the UN-backed Global Compact, and since then has supported and practiced its universal principles. The MOL Group must also strive to address the issues raised in the Modern Slavery Act 2015 enacted by the U.K. We will take a proactive stance to lead the growth of a sustainable society in cooperation not only within our group, but among our stakeholders, including suppliers, as well.

MOL Group's Key Priorities

Identify 5 Key Priorities to Ensure Sustainable Ocean Shipping

Corporate initiatives on social and environmental issues have a greater impact on business and corporate value every year. The MOL Group, which has established a global business network centering on international shipping, has a great variety of stakeholders all over the world. Naturally, we recognize the importance of doing business while firmly grasping how our activities affect society. Our group has identified five issues — “safe operation,” “environmental conservation,” “governance,” “compliance,” and “human resources development” — as key priorities to ensure the sustainability of the ocean shipping industry and promotes corporate activities related to those issues. “Safe operation” is the highest priority among all these issues, a lapse in safety that causes a marine incident has the greatest impact on society and the environment, as well as a significant impact on earnings.

Safe Operation

Forge Ahead to Become the World Leader in Safe Operation through Enhancement of BBS

In July 2015, a fire broke out aboard the ferry *Sunflower Daisetsu* off Tomakomai, Hokkaido. Tragically, this incident took the life of one of our crewmembers, a fact that far overshadows the inconvenience to our customers or the impact on our business results. 70% to 80% of marine incidents are caused by human error, so we are working to enhance Behavior Based Safety (BBS), a concept we introduced in fiscal 2014, to eliminate dangerous behaviors. In addition, safety is not the mission for officers and mariners at sea alone — all executives and employees including land-based personnel need to pay attention to “safety” and “security” first. We think this is the first step in creating a corporate culture that can promise our customers the

level of security they demand. Year 2016 marks the 10th year since four serious marine incidents occurred in 2006. We must once again take the importance of safe operation to heart, and set our sights on achieving the “Four Zeroes” (Zero serious marine accidents, Zero oil pollution, Zero fatal accidents, and Zero serious cargo damage).

Environmental Conservation

Setting a Course toward More Aggressive Environmental Management

Ocean shipping is regarded as an environment-friendly means of mass transport from the standpoints of energy efficiency and prevention of air pollution. On the other hand, as an industry it generates massive amounts of CO2 through vessel exhaust emissions. In other words, even as our industry contributes to worldwide economic growth by efficiently transporting commodities and products, it has a significant negative impact on the environment. Thinking about how continued worldwide economic growth will drive new demand for shipping, it is indispensable that we continue our efforts to reduce that impact. We consider initiatives on the environment as business opportunities, and as a strategy that gives us a competitive advantage. We will take the helm and set a course toward truly reducing our impact on the environment by promoting aggressive environmental management.

Governance, Compliance

Etch the Importance of Ethical Conduct into Our Brains

If corporations are to achieve sustainable growth, I believe that compliance, among all management issues, must be the first priority. We accepted our responsibility for violating the Japanese Antimonopoly Act in 2014, and since then we continued to take a comprehensive approach to ensuring that we never repeat such an offense. All executives and employees must etch the importance of compliance into their brains until not violating rules becomes second nature, as if corporate governance runs through their veins. Ethical conduct must become deeply rooted as our group's corporate culture, I practice it myself with tenacious determination continue to urge all group executives and employees to do the same. In addition, we worked to improve our corporate governance through the creation of Nomination Advisory Committee and Remuneration Advisory Committee to gain greater trust from our stakeholders. Other approaches to enhanced corporate government include formulating a method to assess the overall effectiveness of the Board of Directors.

Human Resources Development

MOL Group Success Depends on People

Since people build long-term trust relationship with society and customers, the human factor is the driving force behind our group's growth, and the source of value creation and added value. Since I became president & CEO, I have emphasized creating a workplace where all employees can maximize personal and professional development. Thanks to various measures including diversity and work life balance, and promoting the adoption of “MOL CHART,” which was introduced in April 2015 to express the MOL Group's common values. I have seen steady progress in reforming our organizational climate and building awareness of our social responsibilities. I want to continually create opportunities to think about MOL CHART until it nourishes employees, body and soul, so they can put the MOL CHART values into practice in day-to-day business operations. I look forward continually nurturing personnel who fully recognize their social responsibilities and can create common value with society.

Toward Further Growth of the MOL Group

Make More Advanced Use of IT and Other Technologies

I think the key to growth in the ocean shipping industry is get closer to our goals of safe operation and environmental friendliness through more advanced use of the Internet of Things (IoT), Information and Communication Technology (ICT) such as big data, and other technologies. So we established the IT Strategy Committee and the Technology, Innovation and Environment Committee to focus on those two themes. I personally take part in both committees in a proactive manner and carry on discussions about our ideal for the MOL Group. We will work swiftly to flesh out these strategies to push the further growth of the MOL Group.

Challenge Innovative Changes with the Spirit of “One MOL, One Goal”

The MOL Group has been tossed up and down by myriad raging waves, but has overcome each wave with creativity, ingenuity, and the unified efforts of the entire company, and it has grown to become one of the world's largest multi-modal ocean shipping groups. In the current era, when it is so difficult for companies to differentiate themselves, and when we face so many social issues that must be addressed on a global scale, we cannot sit back and rely on past methods and successful experiences. Our challenge is to realize “an excellent and resilient MOL Group.” Now, with the spirit of “One MOL, One Goal,” we will strive to deepen and expand our trusting relationships with customers and drive innovative changes to create a bright new future.



A Multimodal Ocean Shipping Group Holding One of the World's Largest, Most Diversified Business Portfolios

The business of the MOL Group centers on international ocean shipping, and supports people's livelihood and industries around the world through the transport of resources, energy, raw materials, finished products, and other goods. Playing an indispensable role in the sustainable growth of the world economy, the MOL Group meets the needs of the times while carefully addressing environmental issues and social needs in its business activities.



Business summary by segment



Financial section



MOL Group



Japan/overseas networks

MOL Group Fleet Scale
883 vessels
(As of March 2016)

Bulkships



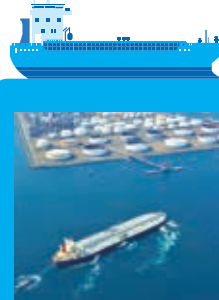
Dry Bulk

Dry bulkers transport large quantities of ore, grain, wood chip, cement, fertilizer, and salt, as bulk cargoes without any kind of packaging. The MOL Group is enhancing its competitiveness to ensure that we can reliably meet customers' cargo transport needs, while significantly downsizing its fleet.



Coal Carriers

The Coal Carrier Division develops businesses with power companies in Japan, mainly under mid- and long-term contracts. As a result of the recent restructuring of MOL's business divisions, the Coal Carrier Division is now part of the Energy Transport Business Unit, the new organization that meets diversified customer needs along with MOL Coastal Shipping, Ltd., which operates bulkship in service in Japan.



Tankers

The very large crude oil carriers (VLCCs) that transport crude oil, the product tankers that carry petroleum products, the chemical tankers that carry liquid chemical products, the LPG tankers that carry liquefied petroleum gas, and so on, are all part of our tanker fleet, which is one of the largest in the world. The MOL Group serves as a global lifeline to keep the world moving.



LNG Carriers

Liquefied natural gas (LNG) is drawing considerable attention as a clean energy source, and demand has been increasing all over the world. With one of the world's leading LNG carrier fleets, the MOL Group ensures the safe transport of this vital commodity based on advanced technology and expertise built up over decades of successful operation.



Offshore Business

Taking advantage of the experience accumulated in energy transport with LNG carriers and tankers, the MOL Group is also proactively engaged in offshore business projects including FPSOs and FSRUs for offshore production and storage of crude oil and natural gas, areas where we anticipate strong future growth.

* Photo courtesy: MODEC, Inc.

Containerships/Terminal Business



Car Carriers

Ever since MOL launched the first pure car carrier in Japan, the MOL Group has set the pace in operation of pure car carriers, which can efficiently transport all kinds of vehicles, from passenger cars to construction machinery. We meet the needs of automakers whose production centers and markets now span the entire world, with safe, reliable transport services.



The MOL Group containerships ply a worldwide network of routes, transporting a wide array of products and general goods such as electric appliances, automobile parts and components, clothes, furniture, and food.

In addition, we are proactively developing our terminal business, which is part of the container transport value chain, as a tool to diversify our services.

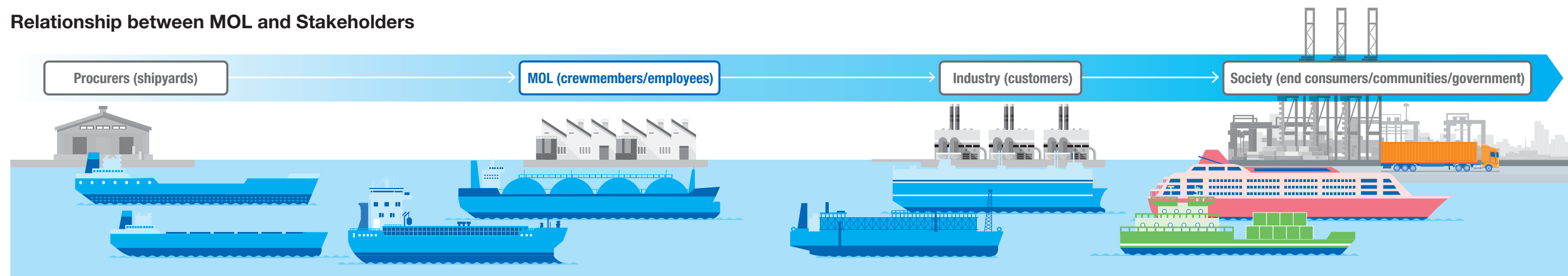


Domestically, the MOL Group contributes to the reduction of CO₂ emissions in Japan's overall logistics industry, not only by supporting livelihoods and industries, but also by taking a proactive stance in meeting the needs of the "Modal Shift," promotes the use of transport modes that offer a reduced environmental impact, through Japan's largest network of car ferry and coastal services.



Cruise ships, tugboats, land transport, warehousing, and maritime consulting are just a few of the ocean-shipping related business fields the MOL Group is engaged in. Still other MOL businesses include travel, marine/civil engineering, office building leasing, property management, finance, trading, insurance, IT systems and telecommunications, staffing, and supporting a national program to build an emergency oil stockpile. Our group has developed a wide variety of associated businesses that support our group-wide comprehensive strength, centering on ocean shipping.

Relationship between MOL and Stakeholders



Aiming to Become a Company that Grows Sustainably in Harmony with Society

MOL's basic stance toward corporate social responsibility (CSR) is expressed in the MOL Group Corporate Principles. To put the principles into concrete form, the MOL Group meets global transport demand through its daily business activities. We strive to become a company that grows sustainably in harmony with society by moving forward on CSR initiatives to strengthen the business base. In April 2015, to ensure our sustainable growth, we introduced "MOL CHART," expressing the core values embraced by all MOL Group employees.

MOL Group Corporate Principles

- As a multi-modal transport group, we will:
- actively contribute to global economic growth and development, anticipating the needs of our customers and the challenges of this new era
 - strive to maximize corporate value through creativity, operating efficiency and promotion of ethical and transparent management
 - nurture and protect the natural environment by maintaining the highest standards of operational safety and navigation

Long-term Vision

To develop the MOL Group into an excellent and resilient organization that leads the world shipping industry

"MOL CHART," expressing the core values embraced by all MOL Group employees.

Challenge
Innovate through insight

Honesty
Do the right thing

Accountability
Commit to acting with a sense of ownership

Reliability
Gain the trust of customers

Teamwork
Build a strong team

The introduction of MOL CHART is aimed at achieving the company's long-term vision — To make the MOL Group an excellent and resilient organization that leads the world shipping industry — and enhance its corporate value by strengthening and concentrating its comprehensive group-wide efforts.

Objectives and Organizational Structure of CSR Initiatives

The MOL Group has a wide variety of stakeholders around the world, since it does business on a global scale, centered on its core business of ocean shipping. CSR focuses on conducting business management that appropriately takes into account laws and regulations, social ethics, safety and environmental issues, human rights, and other considerations. We believe we can develop our business sustainably, in step with society, benefiting all or stakeholders and earning their support and trust. In addition, the MOL Group Corporate Principles state that the Group will contribute to global economic growth as multi-modal transport group. Realizing these principles is the foundation of all MOL Group CSR activities. Three committees under the control of the Executive Committee —

with the president as the chief executive officer — play a central role in setting CSR-related policies and measures.

Committees Setting CSR-related Policies and Measures

Name	Function
CSR Committee	Identify priority issues related to MOL Group's overall CSR (materiality assessment), discuss those policies, set targets, and review achievements
Operational Safety Committee	Study and discuss basic policies and measures to ensure the thoroughness of safe operation on MOL- and MOL Group-operated vessels
Compliance Committee	Develop the group's compliance system and take action on compliance violations, and discuss related policies and measures related to as well as basic policies and measures covering the protection of personal information.

Participating in the UN Global Compact

With business activities spread across the globe, the MOL Group believes that building good relationships with various stakeholders worldwide and contributing to the realization of sustainable growth of society are vital as it seeks to realize the ideas set forth in the MOL Group Corporate Principles. In order to contribute to an international framework for realizing these goals, MOL became the first Japanese shipping company to participate in the United Nations Global Compact in 2005. Since then, MOL has worked to support and practice the 10 principles in 4 areas of the UN Global Compact, which shares the same values as MOL's Rules of Conduct, which were established as a set of guidelines for executives and employees.



10 Principles of the Global Compact

Human Rights	Principle 1: The support and respect of the protection of international human rights; Principle 2: The refusal to participate or condone human rights abuses.
Labour	Principle 3: The support freedom of association and the recognition of the right to collective bargaining; Principle 4: The abolition of compulsory labor; Principle 5: The abolition of child labor; Principle 6: The elimination of discrimination in employment and occupation.
Environment	Principle 7: The implementation of a precautionary and effective program to environmental issues; Principle 8: Initiatives that demonstrate environmental responsibility; Principle 9: The promotion of the diffusion of environmentally friendly technologies.
Anti-Corruption	Principle 10: The promotion and adoption of initiatives to counter all forms of corruption, including extortion and bribery

Corporate Governance

Basic Concept

MOL continually strives to bolster its corporate governance to ensure sustainable growth and maximize mid- and long-term group corporate value. The corporate value is based on the group corporate philosophy and long-term vision, as well as the values set out in the midterm management plan.

The ocean shipping business environment and risk factors change rapidly. As we set our course, we must accurately grasp business environment, always confront risks appropriately, and effectively utilize our management resources in a careful balance of offense and defense. We believe that the essentials of corporate governance are fostering sustainable growth and increasing corporate value by making decisions swiftly and boldly. They are guided by appropriate risk management, while ensuring the transparency and fairness of management by carefully considering the viewpoints of our diverse stakeholders.

MOL Corporate Governance Organizational Structure

At MOL, we believe that the optimal form of governance is to have the president serve as the chief executive officer to execute business operations, backed by the supervisory function of the Board of Directors and the auditing function of the Audit & Supervisory Board.

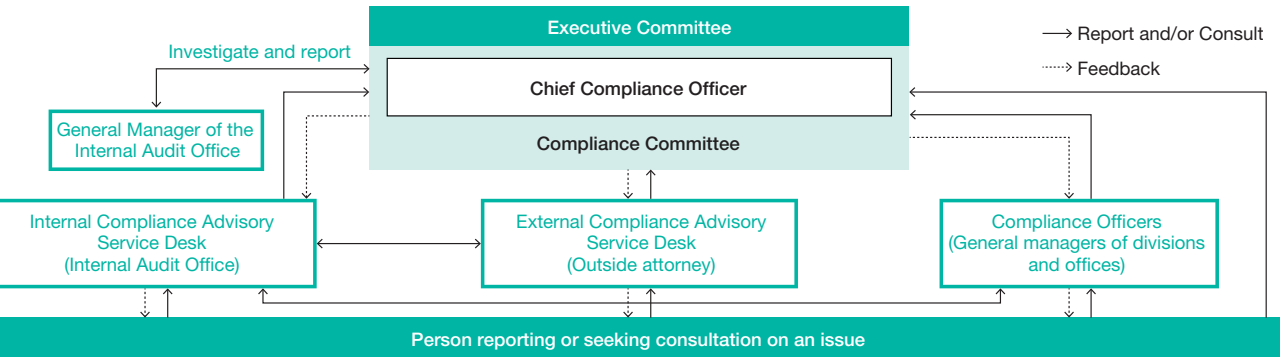
We believe that the essence of corporate governance lies not in its structure or organization, but in whether or not it functions effectively. In 2015, we took initiatives aimed at further strengthening our corporate governance e.g. enhancing the auditing function of the Board of Directors.

[Please refer to the annual report for corporate governance and risk management.]



- 1. Established the Nomination Advisory Committee and the Remuneration Advisory Committee
- 2. Further vitalized the Board of Directors
- 3. Reformed presidential selection process
- 4. Changed time to appoint management executives and restructure organizations

Compliance Structure (As of July 2017)



Thoroughness of Compliance

On March 18, 2014, the Japan Fair Trade Commission (JFTC) found that the MOL Group had violated Article 3 of the Japanese Antimonopoly Act in certain car carrier shipping trades. The MOL Group has taken measures to reinforce its compliance efforts, including reform of its corporate culture to ensure that the importance of compliance – as the major premise of all corporate activities – is etched deeply into the minds of all executives and employees.

The Compliance Committee, chaired by the Chief Compliance Officer, meets every three months to monitor our compliance.

Initiatives on Compliance with the Antitrust Act

While investigating the cause of the Antitrust Act violations, it became apparent that we needed to revamp the MOL Group's corporate culture. To analyze the group's current corporate culture, we conduct a questionnaire survey of the employees.

As a result of the survey, we developed a program under which the division GMs will foster a corporate culture aimed at eliminating compliance violations. The program includes planning and executing improvement measures such as building awareness of compliance within the divisions under their management and monitoring achievements.

To create a more open organization, we hold bimonthly dialogue meetings "Cross Talk Wednesday" in the employee cafeteria, bringing together personnel from all levels – from the CEO to young employees.

MOL also held E-learning sessions about the Antitrust Act and Competition Act to provide distance learning targeting overseas group companies. About 9,700 employees in Japan and overseas took the E-learning session. We made the Antimonopoly Act course mandatory for all personnel assigned to a new career level, thus continually providing added programs for executives and employees every year.

E-learning Participation Rate (FY2015)

Antitrust Act or Competition Law	Anti-corruption (Anti-bribery)	Internal Control	Information Security
98.8%	97.8%	95.6%	94.4%

* E-learning sessions about the Anti-monopoly Act or competition law and anti-corruption were presented at MOL Group companies in Japan and overseas. Sessions on internal control and information security were held only in Japan.

Initiatives on Anti-corruption

MOL established "Mitsui O.S.K. Lines' Anti-Corruption Policy in October 2015 to eliminate bribery and excessive business entertaining of public servants as well as those outside the government. That ensures that we "Build good relationships based on trust with clients and contractors," as stated in the Compliance Policy.

MOL also held a new session featuring an overview of anti-bribery laws and regulations in Japan and overseas for executives and employees.

Information Security Measures

The MOL Group Rules of Conduct clearly state: "Protect confidential information and respect intellectual property rights," and the MOL Group Electronic Information Security Rules are aimed at putting this into practice. The rules set standards for managing electronic information handled by the group, protecting various types of confidential information, and so on, reinforcing security to prevent leaks of corporate information and unauthorized access from inside and outside the company. In addition, we regularly offer E-learning sessions to increase awareness of this issue among group executives and employees.

In October 2015, we established the My Number Management Rules as a result of the introduction of the My Number System in Japan in January 2016. We assigned the Chief Compliance Officer as the Chief Officer for personal information management.

Initiatives on Human Rights

To build consciousness of human rights, we organize workshops and training sessions about human rights-related issues, distribute information about human rights, participate in lectures inside and outside the company, and seek employees' ideas for human rights slogans. In addition, we participate in the United Nations Global Compact, supporting universal principles regarding human rights and labor and putting them into practice.

[Please refer to page 8 for information about the Global Compact.]

In addition, the treaty concerning the Maritime Labor Convention in 2006 (MLC2006), which stipulates the basic rights of crewmembers, sets forth the following four acts regarding human rights:

- 1. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- 2. The elimination of all forms of forced and compulsory labor;
- 3. The effective abolition of child labor; and
- 4. The elimination of discrimination in respect of employment and occupation.

Our vessels adhere to onboard compliance guidelines, respect the four human rights as mentioned above, prohibit discrimination by religion, nationality, age, and gender, and establish procedures to address complaints of harassment. They also hold monthly onboard compliance

committee meetings to implement and evaluate efforts on human rights issues, discrimination, and harassment through dialogues between crewmembers and onboard compliance officers.

Basic Procurement Policy

To fulfill our responsibility as a corporate group that plays a part in our customers' supply chains, we introduced the "MOL Group Basic Procurement Policy." That outlines our stance on CSR activities related to MOL Group's procurement systems. We strive to contribute to the realization of sustainable societies together by complying with laws and regulations covering supply chains, as well as social norms, protecting the environment, doing our utmost to ensure safety, promoting fair trade, and building trust, while instilling this policy throughout the MOL Group and gaining the understanding and cooperation of our business partners.

MOL Group Basic Procurement Policy

- 1. We comply with applicable laws, regulations and social norms, and pay due consideration to the protection of the environment.
- 2. We procure goods and/or services, including the delivery or execution of such goods and/or services that meet high safety standards.
- 3. We conduct fair trade, and endeavor to establish trusting relationships with contractors.

Initiatives on Ship Construction

Vessel procurement is one of the most important, fundamental aspects of the MOL Group's business activities. When building ships, MOL asks shipbuilding contractors to incorporate specifications compliant with the MOL Safety Standard Specifications, which prescribe the company's safety and environmental quality standards. In addition, MOL endeavors to enhance quality by dispatching ship construction superintendents from MOL Group companies to supervise the shipbuilding process, and also collaborates with shipbuilders to develop and introduce eco-friendly ships. With the aim of contributing towards the realization of sustainable societies together, while gaining their understanding of the MOL Group Basic Procurement Policy.

Compliance Advisory Service Desks

MOL has two Compliance Advisory Service Desks – internal and external – for group company employees. Outside attorneys are responsible for the external desk, providing consultation and reporting issues to the Compliance Committee Office. They handle follow-up contacts between persons reporting or seeking consultation on various issues related to the company. The desks also accept anonymous reports, strictly maintaining the confidentiality of anyone reporting an issue. In addition, those who report a breach of compliance, and those who cooperate in related investigations are fully protected from any reprisal. We also accept reports online for those outside the group companies, i.e. business partners in Japan and overseas.

CSR Activities Results (FY2015) and Targets (FY2016)

The Midterm Management Plan: Aiming to achieve sustainable growth together with society and to respond to stakeholders' trust by making all MOL Group executives and employees aware of our social responsibility and putting it into practice.

Legend: ●Achieved ○Generally achieved △Partially achieved ●Did not achieve (target period/content changes)

	CSR Targets in the Midterm Management Plan		FY2015 Targets		FY2015 Results		Achievement	FY2016 Single-year Targets	Reference
High Priority	1. Thoroughly implement safe operation and provide safe, secure, stable, high-quality services.	Supplying safe, secure and stable services is the basis for earning stakeholders' trust and becoming their choice. By reminding ourselves once again that marine shipping is a social mission as it supports industries and the daily lives of people around the world, we will strive to supply high-quality services, which meet the requirements of the new era and contribute to the development of the world economy.	1. Achieve "Four Zeroes," i.e., an unblemished record in terms of serious marine incidents, oil pollution, fatal accidents, and cargo damage.		<ul style="list-style-type: none">• Issued reminders before/after the dates when past serious marine incidents occurred to make sure these incidents do not fade from memory.• Introduced and explained the importance of achieving the "Four Zeroes," and past cases and corrective measures at the Safety Conference, seafarer seminars, and safety campaigns, in the monthly report aimed at sharing information on safe operation, at pre-boarding meetings, and other opportunities.• Building awareness and establishing a corporate culture in which seafarers voluntarily think about specific ways to continually achieve the "Four Zeroes" and increase safe behavior, by promoting group discussions.• Could not achieve "Four Zeroes" in FY2015 due to fatal workplace accidents that occurred on vessels operated by MOL and MOL Group companies. (FY2015 workplace fatality accidents)		●	1. Achieve "Four Zeros" (an unblemished record in terms of serious marine incidents, oil pollution, fatal accidents, and cargo damage)as MOL group. 2. Achieve KPI targets for vessels owned by MOL (1) Reduce operational stoppage time per vessel (achieve operational stoppage time per vessel of 24 hours/year or less) (2) Reduce operational stoppage accident rate per vessel (achieve target operational stoppage accident rate of 1.00 incident per vessel/year or less) (3) LTIF (0.7 or less) 3. With both land-based and seagoing employees, continue full-scale efforts to build awareness of the "Return to Basics" and "Behavior Based Safety" messages. 4. Expand use of IT system for effective utilization of data related to incidents, to help prevent similar incidents in the future. 5. Fully review the content of Rank Step required duties, position by position, and its operational system. 6. Enhance and ensure comprehensive initiatives on external crises including piracy/terrorism. 7. Promote services that meet customer needs and are ahead of their time, with the watchwords "One MOL, One Goal."	P.13-20
			2. Further reduce operational stoppage time per vessel (achieve operational stoppage time per vessel of 24 hours/year or less).		<ul style="list-style-type: none">• Work continues to prevent reoccurrence by horizontally disseminating information on reasons for halting operation on MOL- and MOL Group-operated vessels, and measures to address those issues.• Introduced and explained the past cases and measures at the Safety Conference, seafarer seminars, and safety campaigns, in the monthly report aimed at sharing information on safe operation, at pre-boarding meetings, and other opportunities.• Building awareness and establishing a corporate culture in which seafarers voluntarily think about specific ways to continually achieve the "Four Zeroes" and increase safe behavior, by promoting group discussions.		●		
			3. Further reduce operational stoppage accident rate per vessel (achieve target operational stoppage accident rate of 1.00 incident per vessel/year or less).		Same as above (0.99 incidents/vessel/year, achieved)		○		
			4. Improve seafarers' occupational safety and health. Achieve LTIF ^{(*)1} 0.7 or less after making LTIF standards more stringent.		Same as above (0.53, achieved)		○		
			5. Share near-miss and incident information using IT tools. Develop measures to prevent incidents by analyzing near-miss information.		Promoted use of Shipnet ^{(*)2} to managed vessels, remedied problems, and shared near-miss information, which is circulated to encourage measures to prevent such incidents.		○		
			6. Extend targets of the safety campaign to MOL Group ship management and manning companies. Through visits by vessel inspectors and marine superintendents, explain the background and reasoning behind operation manuals and seafarers' responsibility to prevent incidents by thoroughly following onboard operating procedures.		<ul style="list-style-type: none">• Implement Safety Campaign at in-house ship management companies and manning companies, led by personnel from the Safety Operation Headquarters and local employees on a case-by-case basis.• Inspectors and superintendents checked every operation manual during vessel visits. Land-based marine engineers also conducted these checks when visiting vessels during the Safety Campaign. This highlighted the importance of operational procedures, and helped explain the background and reasoning behind the manuals.		○		
			7. Strengthen business continuity plan (BCP) system by implementing practical drill exercises along with continuous education to all executives and employees.		<ul style="list-style-type: none">• Prioritized issues of each division and office raised by BCP drill implemented, and confirmed future steps.• Uploaded updated version of "MOL BCP summary" on company-provided mobile phones.• Revised "Earthquake and other disaster response manual".		○		
			8. Promote services by meeting and responding to our customers' needs and to this new era.		<ul style="list-style-type: none">• Sealed shipping deal for transportation of liquefied ethane from the U.S. to India, becoming the first shipping company to launch full-scale transport of liquefied ethane.• Met customer needs, while collecting the most up-to-date information on construction plans for new power plants and new ports, in addition to supplying the existing power plants of electric utility companies.• Developed the world's first methanol carrier equipped with a low-speed dual fuel (methanol/diesel) main engine.		○		
			9. Provide high-quality services.		<ul style="list-style-type: none">• Revised antitrust law compliance "Dos & Don'ts Guide" (Japanese/English) (May 2015).• Presented antitrust seminars in level-specific required training programs, organized by the Human Resources Division. (New employees in May, mid-career hire employees in July, AMGR appointed employees in August,• Presented antitrust law E-learning program (MOL Liner: May-Sept, group companies in Japan: August-October, Headquarters and employees seconded to HQ: September-November, overseas group companies: November-December).		○		
	2. Deepen initiatives to ensure thorough compliance.	Each of the MOL Group executives and employees values compliance as a corporate social responsibility, and fosters a company culture that demonstrates compliance in business activities.	1. Fully appreciate the seriousness of the Japan Fair Trade Commission's March 2014 ruling that MOL violated the Japanese Antimonopoly Act in certain car carrier shipping trades, and continue thorough compliance with antitrust laws on a global scale.		<ul style="list-style-type: none">• Anti-corruption: (1) Presented the anti-corruption (bribery) E-learning program (Japan/Overseas group companies: Compliance Advisory Service Desks provide consultation on discrimination, harassment, and suspicious conduct as well as legal compliance and compliance with rules and regulations. After initiating consultation, the desks determine the facts of the cases and work on solutions while obtaining legal advice.• Established the new Chief Information Officer (CIO) position in November 2015, with the aim of enhancing cross-organizational systems that plan, develop, and maintain the group IT strategies, and established IT governance guidelines.		○	1. Do not let the seriousness of the Japan Fair Trade Commission's 2014 ruling that MOL violated the Japanese Antimonopoly Act in certain car carrier shipping trades fade from memory, and do everything in our power to prevent a recurrence. 2. Continue various measures including internal training and E-learning on "compliance with antitrust laws, "anti-corruption," "information security," "prohibiting discrimination and harassment."	P.9-10
			2. In addition to complying with antitrust laws, build a more thorough compliance structure for anti-corruption, protecting the confidentiality of customer and company information, and prohibiting discrimination and harassment, and continue implementation of various measures including internal training and E-learning.		<ul style="list-style-type: none">• Continued bimonthly in-house dialogue meetings called Cross Talk Wednesdays with the aim of building an open corporate culture. Conducted an organizational atmosphere assessment, targeting the Head Office in August. Provided feedback to division/office GMs on November 9 and executed reforms of corporate culture for FY2015.		○		
			3. Foster an open and free corporate culture through roundtable talks, etc., and observe changes by regular and extensive surveys of the organization culture.		<ul style="list-style-type: none">• Established the Nomination Advisory Committee and the Remuneration Advisory Committee under the umbrella of the Board of Directors, concentrating on and reviewing issues to be discussed by the Board of Directors, to help the board focus on deliberating the direction of long-term vision and strategies.		○		
	3. Strengthen initiatives on corporate governance.	Further enhance corporate governance to ensure that MOL gains the trust of stakeholders and achieves sustainable growth.	1. Enhance corporate governance to meet the needs of the times and study the advancement of governance structure.		<ul style="list-style-type: none">• Held meetings of the Compliance Committee, chaired by the Chief Compliance Officer, every three months, continually monitoring the group's compliance. The committee addressed the requirement that the Board of Directors approve the submission of Q1 and Q3 financial results and the financial statements, and established guidelines for preventing bribery, etc.		○	1. Establish a method to assess the overall effectiveness of the Board of Directors. 2. Confirm appropriateness of group companies' operations. 3. Enhance the Business Continuity Plan (BCP) system by implementing practical drills.	P.9
			2. Comply with and put into practice of the revised Corporate Law in FY2014 — the basic policy of establishing an organization to ensure the appropriateness of business operations (internal control system)—to prevent illegal activities and corruptions and operate the organization in sound, effective, and efficient manner.		<ul style="list-style-type: none">• Aimed to create a deterrent against excessive investment by regularly measuring the magnitude of MOL's consolidated market risks (fleet, securities, and real estate) and allowable investment additions and reporting those results to management. Started measurement for every three months from FY2015, ended Mar 2015, striving to firmly establish this initiative.		○		
			3. Provide comprehensive risk management to ensure appropriate investment in management resources.		<ul style="list-style-type: none">• Further improved the content of the "Global Management College" program, which aims to improve management skills in a cross-cultural work environment, and provided a short-term training program at IMD, an overseas business school for mid-career professionals.		○		
	4. Promote personnel training and diversity to strengthen comprehensive Group capabilities.	Further strengthen human resources development of the entire MOL Group globally. Improve the comprehensive capabilities of the MOL Group by facilitating work environment where multinational and diverse human resources including women can demonstrate their abilities.	1. Further enhance training programs to strengthen management capabilities of MOL Group personnel (executives and employees, seafarers in Japan and overseas).		<ul style="list-style-type: none">• Explained these concepts at the group executive committee and group company meetings, during visits to overseas subsidiaries and at group workshops, sought contributions from group companies and vessels, streamed video of a message from the president & CEO, distributed posters, and made presentations at various training programs and organized group workshops.		○	1. Enhance management skills of MOL Group employees, and expand training with the goal of improving the quality of its businesses. 2. Instill the concepts of MOL CHART, established as the group's shared sense of value, and promote the creation of an environment that allows diversified personnel to play active roles with a sense of unity. 3. Continue to support women employees to encourage their success and career development, toward achieving the target of 8% of women in management ranks in 2020. 4. Promote use of systems that flexibly meet changes in lifestyles to improve work-life balance, and study ways to improve those systems in the future. 5. Step up preparations to establish a school in the Philippines, with opening slated for 2018, that aims to be one of Asia/ Oceania's largest maritime academies. 6. Further improve onboard welfare programs.	P.33-38
			2. Instill the concepts of MOL CHART, which reflect ideal MOL Group employees, throughout MOL and MOL Group companies. Foster a corporate environment that allows diverse personnel to play active roles with shared values.		<ul style="list-style-type: none">• Established a division responsible for promoting diversity, presented diversity promotion seminars, and publicized its initiatives in the in-house magazine.		○		
			3. Continue to support women employees to encourage their success and career development.		<ul style="list-style-type: none">• Rolled out a partial working at home system, presented briefings on the theme "Promoting diversified ways of working" for management class when the system was introduced, and improved pre/post-leave interviews for employees on maternity/childcare leave.		○		
			4. Promote use of systems that flexibly meet changes in employees' life stages and lifestyles to improve work life balance.		<ul style="list-style-type: none">• Installed FBB ^{(*)3} or VSAT ^{(*)4} fleet broadband with in-house chartered vessels, and confirmed the establishment of an environment in which broadband service is freely available to seafarers.• Standardized division of business and personal use in onboard LANs and enhanced security measures.		○		
	5. Make further progress on solving social issues and promoting environment initiatives as an environmentally advanced company.	Further enhance initiatives to reduce environmental impact as an "Environmentally Advanced Company" with full awareness of the environmental impact of the business activities of the MOL Group, and protect the global environment, which is an issue common to the whole world.	Please refer to page 23-26.		Please refer to page 23-26.			Please refer to page 23-26.	P.21-32
Issues	6. Proactively disclose sustainability data.	Foster stakeholders' trust by proactively disclosing information to show the sustainability of MOL businesses	1. Proactively disclose information demanded by stakeholders regarding MOL's solid growth through the execution of the new midterm management plan "STEER FOR 2020".		<ul style="list-style-type: none">• Proactively invited media not only in Japan, but also overseas to publicize the company's business strategies on a global scale, and accomplished these initiatives.• Proactively developed public relations activities in close cooperation with relevant divisions/offices centering on the Marine Safety and Technical divisions, and CSR & Environmental Office in the Corporate Planning Division to disclose information on safety, technology, and the environment in a more proactive manner.		○	1. Proactively disclose the progress of business structural reforms. 2. Proactively disclose information based on KPI and achievements on the Web site, Environmental and Social Report, Annual Report, etc. 3. Further increase the transparency of corporate information including negative information, and disclose it in a timely and appropriate manner, as a company trusted by stakeholders.	All pages
			2. Earn stakeholders' trust by proactively disclosing information based on KPI and achievements on the Web site, Environmental and Social Report, Annual Report, etc.		<ul style="list-style-type: none">• Proactively disseminate the company's long-term strategies centering on STEER FOR 2020 to investors and shareholders through the Annual Report, etc.• Publicize initiatives on safe operation and diversity using KPI through the Safety, Environmental, and Social Report.• The MOL Annual Report and Safety, Environmental, and Social Report 2015 received the Award of Merit in Environmental Report section at the Environmental Communication Awards, earning praise for their integrated approach to reporting.		○		
			3. Further increase the transparency of corporate information including negative information, and disclose it in a timely and appropriate manner, as a company trusted by customers and society.		<ul style="list-style-type: none">• Zero serious marine incidents occurred involving MOL vessels (on a non-consolidated basis). One serious accident occurred on a group company vessel, and the information was proactively disclosed through a press conference and press release.		○		
	7. Promote social contribution activities related to MOL's businesses.	Promote social contribution activities that are highly relevant to MOL's businesses, and continue our efforts to solve social issues as a corporate citizen	1. Address social issues using know-how accumulated in the company's main business and drawing upon the company's resources.		<ul style="list-style-type: none">• Invited 21 university students living in Miyako City to a "One Night Cruise," boarding the ship "NIPPON MARU" during a call at the port of Miyako, Iwate Prefecture. Presented onboard dialogue between the youth and the city's mayor to envision the future of Miyako City.		○	1. Further enhance social contribution activities by executives and employees in Japan and overseas. 2. Address social issues using know-how accumulated in the company's main business and drawing upon the company's resources. 3. Further enhance educational activities that convey the important role of the maritime industry. 4. Further enhance support of seafarer supply areas.	P.39-42
			2. Further enhance social contribution activities by executives and employees in Japan and overseas.		<ul style="list-style-type: none">• Implemented educational support activities in which company employees explained the ocean shipping industry to high school students in Japan.• Invited children to visit TICT and the ship operation simulator in cooperation with "The Project Linked by Sea" organized by the Japanese Shipowners' Association. Group employees served as guides for the visits.• In December 2015, presented in-house charity events in cooperation with the United Nations World Food Programme (WFP), which helped provide nutritious meals to about 4,000 children.		○		
			3. Further enhance support of seafarer supply areas.		<ul style="list-style-type: none">• Transported used wheelchairs and firefighting equipment to the Philippines, a nation that is critical to the development of a highly skilled seagoing workforce, and received letters of appreciation from related organizations at local ceremonies.		○		
			4. Respond quickly to disaster-affected areas, and continue activities to support reconstruction after the Great East Japan Earthquake.		<ul style="list-style-type: none">• In addition the activity in item No.1, the Head Office cafeteria served a menu of foods sourced from disaster stricken areas, in combination with exchange meetings.• Transported relief supplies to quake-stricken areas in Nepal.		○		

^{(*)1} LTIF: Lost Time Injury Frequency. The number of industrial accidents occurring per 1 million man-hours. Conventionally, occupational injuries and illnesses, which forced seafarers to disembark vessels, were counted. But starting in FY2015, the total includes cases in which seafarers did not have to disembark, but were unable to return to work, including light duty.
^{(*)2} Shipnet : A database system that manages information among vessels and shore, ensuring speedy and accurate transmission of information.

^{(*)3} FBB: Fleet Broad Band. INMARSAT Satellite telecommunication service, using L Band (frequency range: 1-2 GHz)
^{(*)4} VSAT: Very Small Aperture Terminal system. Satellite telecommunication service, using mainly Ku Band (frequency range: 12-18 GHz).

Making Effective Use of ICT (IoT / Big Data)

The Challenge of Constantly Improving Safety and Protecting the Environment

Usage of ICT such as the “Internet of Things” (IoT) or big data is expected to help address societal issues and act as a step toward greater innovation.

By drawing fully on data gained from operated vessels, up-to-the-minute reports on weather and sea conditions, and information from past incidents, the MOL Group forges ahead to become the world leader in safe operation and strives to preserve and protect the marine and global environments. These efforts also help us offer our customers safe, secure, and reliable services.

<FMS. Safety> Monitoring system for weather information and conditions surrounding vessels in operation.



MOL uses FMS. Safety, which was developed in cooperation with Weathernews Inc. (WNI), to check on the weather, sea conditions, and other conditions surrounding the approximately 880 vessels operated by MOL Group companies, 365 days a year, 24 hours a day. There is always someone available if a ship captain requires assistance.

(Please refer to page 18 for details)

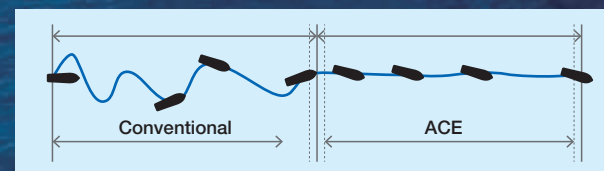
<Captain's DOSCA*1> Selecting the optimal course <ECDIS> Electronic Chart and Display Information System



MOL Group introduced the WNI-developed Captain's DOSCA communication system, which makes effective use of weather data to develop route plans that offer improved safety, on-time performance, economic efficiency, and environmental friendliness. MOL will move ahead toward greater safety improvements by concurrently adding its own information and using the Electronic Chart and Display Information System (ECDIS).

*1 Capt's DOSCA: Captain's Dynamic Operation System for Counter planning and Analysis

<ACE> New autopilot route control function



MOL, along with Tokyo Keiki Inc., conducted a performance demonstration test of its autopilot route control function, called “Advanced Control for Ecology (ACE)”, onboard a vessel in service. The ACE estimates disturbance effects such as wind and tide by setting the vessel's course direction. It optimally controls the helm to minimize route deviation and reduce the number of course changes required during a voyage, achieving significant reductions in fuel consumption compared to a similar vessel with a conventional control system.

Approximately 1.5% energy-savings effect was confirmed through a verification test using “Fleet Monitor”.

<CMAXS e-GICSX*2> Condition-based engine monitoring system

MOL has started a demonstration test of a next-generation condition-based engine monitoring system called “electronic Global Internet Customer Support neXt” (CMAXS e-GICSX) aboard the methanol carrier *Mayaro*, delivered in 2015.

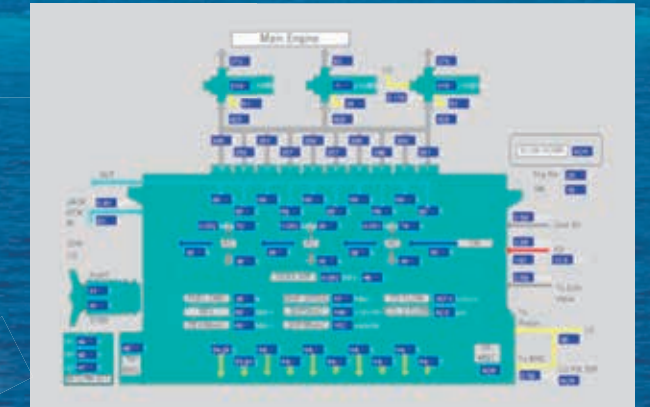
Using the vessel operation monitoring system, CMAXS e-GICSX offers early detection of engine abnormalities that crewmembers may not be aware of. Thus, it contributes to prevent engine problems and minimizing downtime.

*2 CMAXS e-GICSX

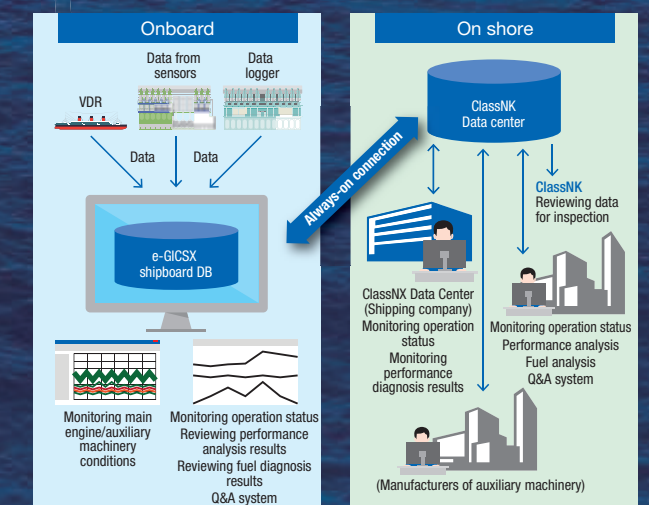
This advanced engine monitoring system brings together cutting-edge data analysis functions based on joint research between Mitsui Engineering & Shipbuilding Co., Ltd. and ClassNK. It detects abnormalities onboard, regardless of ship-to-shore telecommunication status, and creates troubleshooting displays based on the detected abnormalities. It is different from conventional condition-based monitoring systems and can analyze correlations among multiple sensors.

<Fleet Monitor> Vessel operation monitoring system

MOL Group has introduced Fleet Monitor, a system developed by Mitsui Engineering & Shipbuilding Co., Ltd., on 60 vessels. The Internet-based ship-to-shore integrated information infrastructure system manages ship operation while sharing operation information from vessels in service. The system is automatically transmitted to offices on land at regular interval via satellite telecommunication.



Data analysis
helps detect
possible engine
abnormalities in
advance.



Forging Ahead to Become “the World Leader in Safe Operation”

CSR Targets in the Midterm Management Plan (FY2014 ~ FY2016)

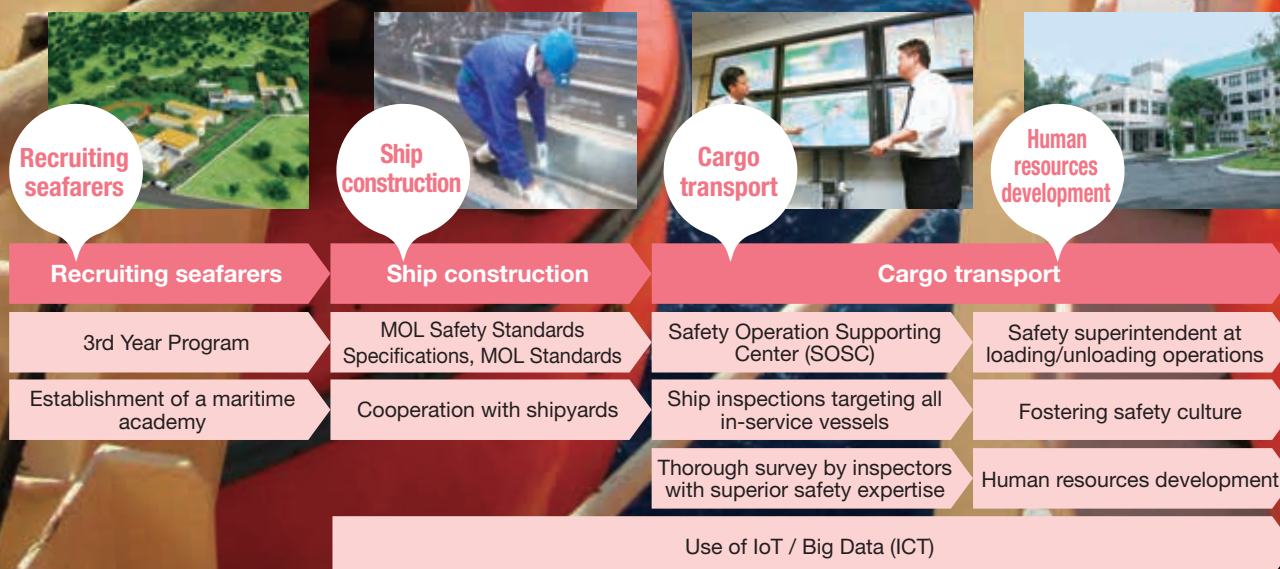
Thoroughly implement safe operation and provide safe, secure, stable, high-quality services.

Supplying safe, secure and stable services is the basis for earning stakeholders' trust and becoming their choice. By reminding ourselves once again that marine shipping is a social mission as it supports industries and the daily lives of people around the world, we will strive to supply high-quality services, which meet the requirements of the new era and contribute to the development of the world economy.

Opportunities and Risks

- | | |
|--|--|
| <p>Opportunities</p> <ul style="list-style-type: none"> Earn customers' trust and create new business opportunities by accumulating a solid record of safe, secure, and reliable transport services. Increase competitiveness by meeting customer needs and continually enhancing the safety of our operations. | <p>Risks</p> <ul style="list-style-type: none"> Significant impact on society, the environment, and corporate management in the event of an incident. Loss of trust from customers and business opportunities due to incidents or decline in service quality. |
|--|--|

Initiatives on “Safe Operation” in Value Chains



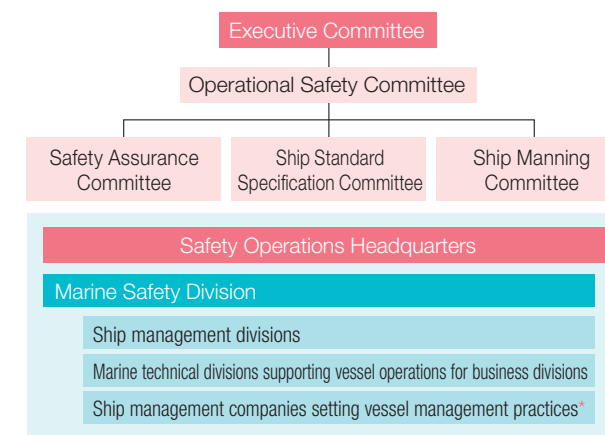
MOL's Approaches

All land-based and ocean-going personnel are united in working to achieve our goals including “Four Zeroes.”

🚫 Safety Operation Management Structure

The MOL Operational Safety Committee, chaired by the president, meets bimonthly to deliberate basic policies, countermeasures, and other items related to secure and completely safe operation of MOL- and MOL Group-operated vessels, and makes decisions on safety related measures.

Committees Related to Safe Operation



* MOL Ship Management Co., Ltd., and MOL LNG Transport Co., Ltd.

🚫 Safety Cost-focus Management

A well-known oil spill occurred off Spain in 2002, which resulted in the spill of about 63,000 tons of heavy oil after the oil tanker Prestige suffered hull damage and sank. Victims' claims totaled about 1 billion euros (about ¥140.0 billion). This is typical of a serious marine accident that results in significant damage to the environment.

MOL established its unique “MOL Safety Standard Specifications (please refer to page 17 for details).” This includes the “Fail Safe” concept required to ensure safety even at the ship design and construction stages. This also includes additional installation of backup equipment and other devices that allow for emergency operations. Normally, specifications and estimates quoted from shipyards are based on the standard specifications, but MOL is committed to taking additional safety measures even though it increases vessel construction costs by 2% to 3%. This can add up to billions of yen, but all of MOL's vessels offer the most advanced safety specifications.

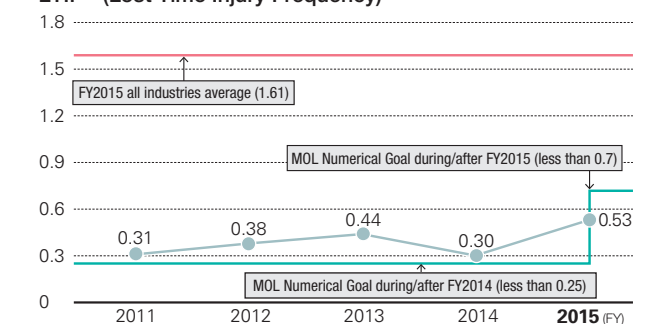
🚫 Key Performance Indicators (KPIs)

MOL sets the following numerical goals including “Four Zeroes,” as objective indices to measure safety.

- ① “Four Zeroes” (zero serious marine incidents, zero oil pollution, zero fatal accidents, and zero cargo damage)
- ② Less than 0.25 (till FY2014), Less than 0.70 (from FY2015) LTIF (Lost Time Injury Frequency)*¹
- ③ Less than 24 hours of downtime per ship per year*²
- ④ Less than 1.00 incidents per ship per year that require stopping the ship.*³

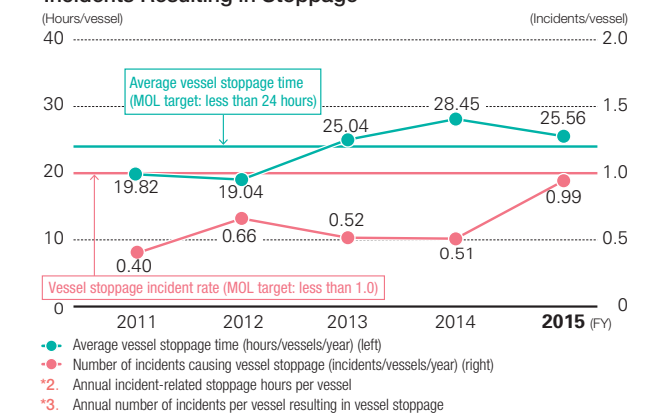


LTIF*¹ (Lost Time Injury Frequency)



● MOL LTIF
*¹ Conventionally, occupational injuries and illnesses that forced seafarers to disembark vessels were counted. But starting in FY2015, the total includes cases in which seafarers did not have to disembark, but were unable to return to work, including light duty.
Reference: Overall industry average (2015): 1.61, water transportation industry: 1.23, transportation machinery and equipment manufacturing industry: 0.41 (source: Ministry of Health, Labour and Welfare “Outline of 2015 Survey on Industrial Accidents”)

Average Vessel Stoppage Time*², and Percentage of Incidents Resulting in Stoppage*³



Incident Aboard MOL Ferry Sunflower Daisetsu

In FY2015, a serious marine incident and workplace fatality occurred on an MOL Group-operated vessel, so the group did not achieve “Four Zeroes.”

(Outline of Incident)

On July 31, 2015, an accidental fire broke out on the vehicle deck of the ferry *Sunflower Daisetsu* operated by MOL Ferry Co., Ltd., resulting in the death of a crewmember who was fighting the fire.

(Prevention of Reoccurrence)

To prevent the reoccurrence of such an incident, MOL Ferry installed additional firefighting equipment and facilities and provided a more practical firefighting plan. Upon the approval of the proper authorities, the vessel returned to service on February 3, 2016. It continues to conduct periodic firefighting training and is sharing its firefighting plan and safety measures with other group companies.

Initiatives on Safe Operation During Ship Construction

In cooperation with shipowners and shipbuilding companies, MOL continually strives to maintain and improve the quality of all operated vessels.

MOL Safety Standard Specifications

With the goal of effectively maintaining the safety of our operated vessels, MOL formulated the first edition of the MOL Safety Standard Specifications in the aftermath of serious marine incidents in 2006, and since then has been revising it accordingly. Serious incidents such as collisions and groundings, fires, sinking and loss of hull stability, oil spills, and other environmental pollution can have a huge impact on both society at large and the group's profitability, not to mention the loss of trust from customers and other stakeholders. In FY2016, we decided to expand the scope of the specifications to include workplace accidents.

MOL Standards systematically compile knowledge and expertise—gained through many years of experience in ship operation—related to ① countermeasures for issues such as inferior quality oil, which inhibits ship operation, ② maintenance procedures, and ③ policies and practices that contribute to life saving, security, and environmental protection, after technical and economic analysis.

Some of these countermeasures are as follows.

Countermeasure 1: MOL Integrated Bridge

The bridge is the nerve center of a merchant ship. MOL has adopted the “integrated bridge” approach, which clarifies the bridge position of officers on duty and ensures their traffic flow and communication lines by integrating instruments and gauges in one central location. In addition, they can obtain updates on ever-changing conditions surrounding the vessel more quickly than with a standard bridge layout, allowing them to make swifter, better decisions regarding vessel operating safety.

- ① Officers can see 360° around the vessel, enhancing visual watch-keeping.
- ② Traffic flow and communication lines of the officers on duty can be secured without inhibiting the forward visibility of the helmsman. Everyone on duty – the captain, pilots, and officers can independently operate and monitor nautical gauges and instruments, strengthening Bridge Resource Management (BRM)(*).
- ③ Integration of nautical gauges and instruments also allows their wiring to be integrated. This helps prevent a reoccurrence of a past incident in which wires to nautical instruments burned out.



(*) Bridge Resource Management (BRM)
BRM prevents human errors or remedies the effects of those errors at an early stage. The concept is based on making the best use of human resources (captain, officers, and other crewmembers on deck) and resources such as information available on the bridge.

Countermeasure 2: Introduction of Iridium Satellite Mobile Phones

MOL verified the effectiveness of iridium satellite mobile phones as a backup to existing telecommunication equipment when an engine room fire resulted in an electric power outage on an MOL Group-managed vessel. MOL Safety Standard Specifications now call for iridium satellite mobile phones for telecommunications backup to ensure smooth communication in case of an emergency. The company decided to retrofit existing vessels with iridium satellite mobile phones in addition to installing them on newbuilding vessels.

Working Closely with Shipyards

There are three shipbuilding supervisors' duties at a shipyard: ① quality management, ② process control, and ③ Health, Safety and Environment (HSE) management.

Quality management verifies that shipyards reliably meet required specifications that contribute to safe operation, rules for each ship type, and other requirements.

Health, Safety and Environment (HSE) management ensures the safety of employees onboard, for example, establishing safety rules prohibiting crewmembers from entering an enclosed space alone, or requiring them to must warn each other when they encounter unsafe behavior onboard.

MOL assigns two to three personnel – marine engineers from the group company and MOL engineering personnel – to the shipyard during the construction of a vessel. They work on-site at the shipyard for one to two years from the initial stage (about a month after steel cutting) to the completion of the vessel.



Initiatives on Safe Operation During Cargo Transport ①

24/7/365 Support from the Safety Operation Supporting Center (SOSC)

Strong Determination to Safe Operation

Four serious marine incidents occurred in 2006. After those incidents, MOL thoroughly investigated the causes, and in 2007, we established the SOSC, with the motto “Never let the captain get isolated.” The MOL Group executives and employees working together, took the lessons learned from those incidents to heart, and developed measures “forging ahead to become the world leader in safe operation.”

Risks Are Present Everywhere in the World

Our group vessels navigate the oceans of the world. Not only in bad weather situations such as winter storms, hurricanes and typhoons, and frozen river port, but also in places like the Middle East and Ukraine, where political situations can be volatile, we must always be ready to take appropriate measures. We also go where there is a chance of piracy. In other words, we must appropriately address myriad situations on a daily basis.

Global warming is upon us, and that serves to increase the power of tropical depressions – winds are stronger and accompanying rains are fiercer, so the linkage between vessels and shore becomes even more important. In addition, ship-to-shore cooperation becomes more crucial as deteriorating international conditions require greater preparation against possible pirate or terrorist attacks.

Our SOSC grasps these risks in real time, confirming that communications between vessels, ship management companies, marine technical teams, and personnel responsible for vessel operation is clear and constant. The SOSC's motto is “Never let the captain get isolated,” and its initiatives are built on that premise. There are always two people on watch at the SOSC, one of whom must have experience as a captain of a vessel. Information on weather, reports from overseas media, and other things that might have something to bear on vessels under way is gathered. Thus, the SOSC is always ready to offer timely information and advice, and help prevent serious accidents before they happen.

Gathering Information

(Overseas media, or international information agencies^{*2}, Maritime security information companies on piracies, etc.)



^{*2} International information agencies: IMB Piracy Reporting Centre, UK Marine Trade Operations, North Atlantic Treaty Organization

Inform internal divisions of the operating conditions of vessels steaming in the Indian Ocean or the Persian Gulf. (7:00)

Watch coming on apprised of current situation (8:00)



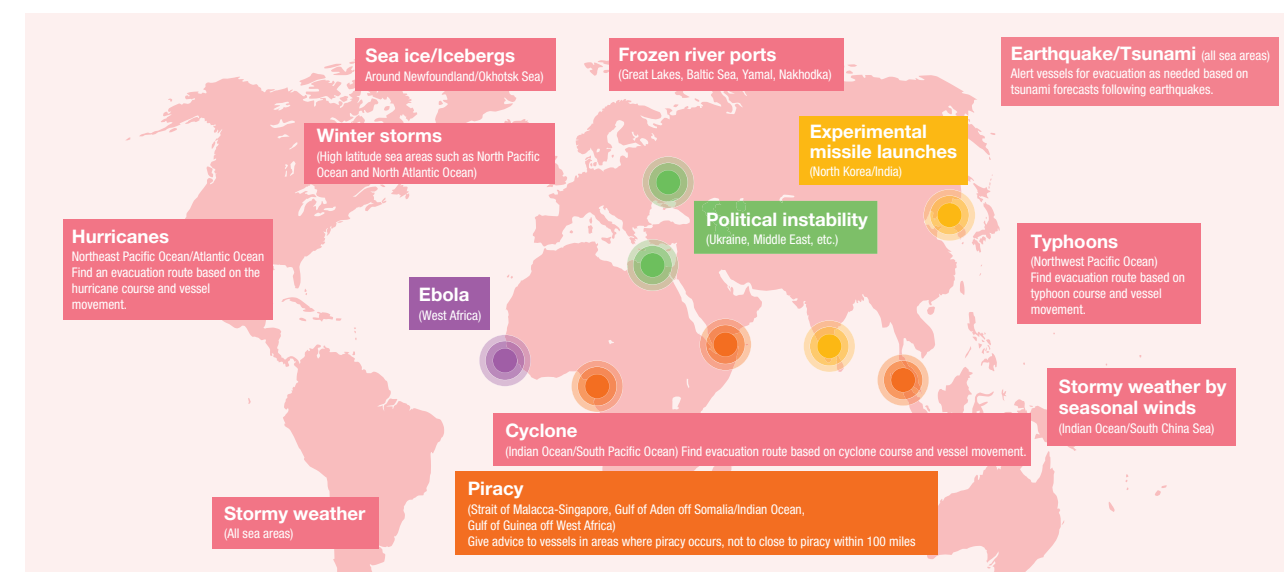
Video conference with the Weathernews. Confirming the conditions surrounding vessels that might need warnings. (12:00)

Broadcast information on rough weather areas around the world as well as coastal storm areas. (15:00)

Broadcast information on typhoon to vessels in harbors/ports and under way. (0:00, 6:00, 12:00, 18:00)

Watch coming on apprised of current situation (19:00)

Video conference with the Weathernews. Confirm observation of vessels that need warning. (22:00)



Initiatives on Safe Operation During Cargo Transport ②

Ship Inspection Activities Targeting All Operated Vessels

MOL conducts periodic ship inspections, based on our unique safety standards, targeting all group-operated vessels, regardless of whether they are owned or chartered. These inspections verify that the vessels are properly maintained and can operate safely.

With chartered vessels, we communicate closely with the shipowners and assigned ship management companies, to make sure they have a full understanding of the safety standards we require. We also cooperate with them to pursue safety measures while building mutually trusting relationships.

Thorough Investigation by Highly Skilled Ship Inspectors

A team of two ship inspectors, who have a thorough knowledge of MOL's safety standards through onboard experience as a captain or chief engineer, visit ships in person and conduct a detailed investigation based on a checklist of about 500 items, such as qualifications and career experience of crewmembers, records of the hull's maintenance status, and engine inspection and maintenance records.

If they spot an unsafe condition, they make sure the vessel and concerned ship management company take appropriate corrective measures so the ship meets MOL's strict safety standards.

Their completed report, which covers the entire inspection and is illustrated with photographs, is circulated among relevant divisions including the responsible business division. Thus, the quality of the vessel is confirmed. In case of charter vessels, the shipowner receives any corrective guidance through the business division. This consistent, professional approach ensures the safety of both owned and chartered ships.



Safety Supervision during Loading/Unloading

MOL assigns captains or former captains to supervise the safety of loading/unloading operations in port. They arrange communication between the foreign crewmembers and terminal (port), and offer guidance for crewmembers to improve their unloading/loading skills. They maintain and improve the quality of operations, ensuring safety at every step.



Fostering a Culture of Safety

Safety Campaign

MOL launches a biannual Safety Campaign with a different theme each time, during which executives and employees conduct an extensive series of visits to MOL-operated vessels and exchange information and opinions about ways to prevent incidents. Proposals and ideas gained through this campaign are shared throughout the MOL Group and among group-operated vessels to further enhance the group's safe-operation structure. Since FY2014, the theme of the Safety Campaign is "Behavior Based Safety (BBS)*." And starting in FY2015, we provide background information on recent incidents and near miss cases, and hold discussions about measures to eradicate incidents caused by overconfidence that stems from complacency and carelessness. Land-based executives and employees also think about what goes into each onboard task and the role and importance of safe operation. In these ways, we strive to build company-wide safety awareness and create a sense of unity among all executives and employees, whether they work on shore or at sea.

Safety Campaign Attendance in total (unit: persons)

FY2013	FY2014	FY2015
584	464	780

* Behavior Based Safety (BBS) is the concept that increases "safe behavior" and ensures the safety of the vessel by thinking of background factors when people select "safe behavior" or "unsafe behavior" and working on the factors behind the selection process.

Safety Conference

As a part of the MOL Group's measures to ensure safe operation, we have held Safety Conferences every year since 2007. In February and March 2016, Safety Conferences were held in Tokyo, Manila, Croatia, and India and attended by 540 crewmembers who were on leave. They actively exchanged opinions during presentations and group discussions focusing on two main themes: "lessons from incidents" and "preventing the occurrence of onboard fires."

Beach Cleanup at Kashima-nada Beach

This year marks 10 years since the grounding of the MOL-operated Giant Step in 2006. To prevent the memories and lessons of this incident from fading with time, MOL Group executives and employees meet every year at Kashima-nada beach, where the incident occurred, and conduct a beach cleanup. In 2015, 86 people participated in the cleanup activity.

Captain's Comment

When training my crewmembers, I put special emphasis on the concept of BBS: "Think Twice" that your behavior is correct; and do not depart from prescribed procedures to save time or work.



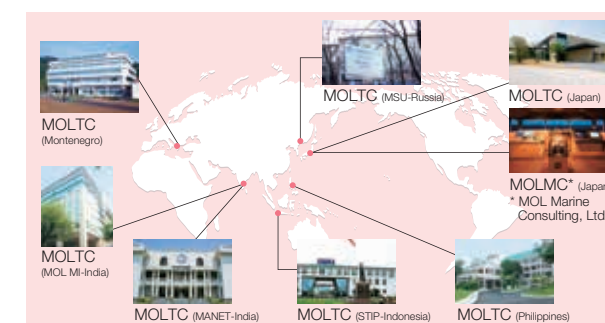
Prasanth M.E. Manuel
Captain

Multinational, Diversified Seafarers Hone MOL Seamanship, to Address Any Situation

Human Resources Development

In order to achieve safe operation, we must have highly qualified crewmembers, which means recruiting and developing the very best people we can find. MOL employs the best personnel, regardless of nationality, and gives them the high level of education and training required to cultivate high morale, technical skills, and knowledge. The MOL Training Center provides not only the basic skills necessary for vessel operation, but also operational techniques specific to ship types. Thus, the center holds a wide variety of training programs from theoretical studies in the classroom to practical training that uses actual equipment and various types of simulators.

Training Highly Competent Crewmembers on a Global Scale (MOL Training Centers)



Crewmembers Receiving Instruction at MOL Training Centers (unit: persons)

	2013	2014	2015
The Philippines	7,983	8,511	6,114
India	3,004	2,067	1,405
Europe	508	1,046	1,035

In addition, MOL has introduced its unique systems such as "Cadet Actual Development for Education with Tutorial (CADET Training)," a practical training program aboard its-operated vessels, and the "OJT Instructor System," in which experienced captains and chief engineers go aboard a vessel and provide direct advice and instruction. These are just a few of our initiatives to hone the seamanship skills of mariners throughout the MOL Group.

We also plan to open a new marine university, MOL Magsaysay Maritime Academy Inc., in Dasmariñas City, the Philippines, in June 2018.

[Please refer to P.37-38 for details on MOL Magsaysay Maritime Academy Inc.]

Yamal LNG Project

MOL supports groundbreaking development to meet the world's continually expanding demand for energy, contributing to the world with our advanced transport services. In May 2016, construction of our first vessel for the Yamal LNG project (and the fifth overall to serve the project) started at the Okpo shipyard of Daewoo Shipbuilding & Marine Engineering Co., Ltd. in Korea. The first vessel built for the project will be delivered in early 2017, and then undergo an ice-breaking performance test in the Kara Sea in Russia, in the presence of all the shipping companies participating in the project. After it is confirmed that the vessel can safely navigate the Arctic Ocean, it will start transport service.



CG provided by Daewoo Shipbuilding & Marine Engineering Co., Ltd.

The Yamal LNG terminal faces the Kara Sea, which completely freezes during the winter. The average temperature is about minus 30°C in winter, and in some situations dips below minus 40°C. Our crewmembers are the most critical link in ensuring safe operation, so it is important to develop an environment where they can fully demonstrate their skills and abilities under a harsh natural environment. Our ship management company in London will play the main role, while cooperating with ship management companies working with other shipping lines involved. We are currently evaluating the operational risks.

[Please refer to the website for details of the YAMAL LNG project.]
<http://www.mol.co.jp/csr-e/safety/yamal/index.html>



Steel cutting

A Message from Director General, Safety Operations Headquarter

In the same way that a food company must absolutely never sell unsafe food to its customers, an ocean shipping company must never provide its customers with service that is not safe. That would be completely unforgivable. However, it is difficult to accurately predict the kinds of crises that may occur due to natural causes or other vessels. No matter how carefully we operate these huge vessels and all their machinery, something can break or malfunction.

Our initiatives are patient efforts with the long-term goal of eradicating any incidents, but many of them are not immediately linked to results. Thus, there are many days in which we must regret the occurrence and reoccurrence of incidents or trouble that we could have been able to avoid. There are still many things to do to create a true "safety culture."



Masaaki Nemoto
Senior Managing Executive Officer,
Director General,
Safety Operations Headquarter

Further enhancing initiatives to reduce environmental impact as an “Environmentally Advanced Company”



Environmental Targets in the Midterm Environment Plan (FY2014 ~ FY2016)

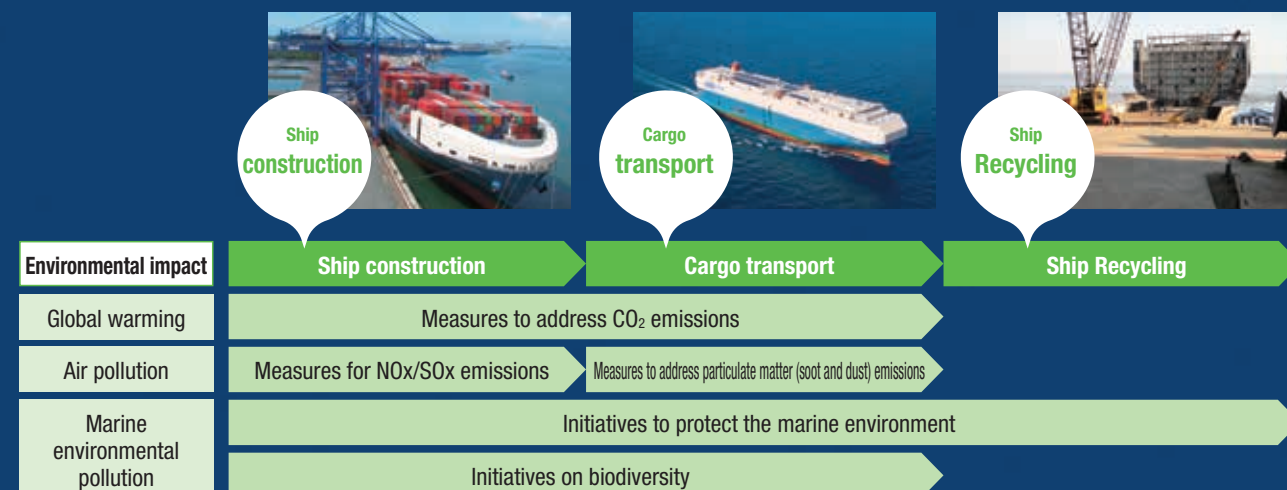
Fully aware of the environmental impact of its business activities, the MOL Group will lead the world shipping industry by proactively responding to environmental regulations and differentiating our performance by actively adopting superior environmental technologies for protecting the global environment.

Opportunities and Risks



- Opportunities**
 - Use technology to differentiate the MOL Group and gain a competitive advantage, while meeting the needs of customers who have especially high standards regarding environmental performance.
 - Environmental measures help reduce fuel consumption and result in lower operating costs.
- Risks**
 - Environmental laws and regulations covering the shipping industry have become more stringent, and companies that do not respond quickly enough risk losing business opportunities.
 - Delaying the response to laws and regulations also results in higher costs.

Environmental Impact of Business Activities and Initiatives



MOL's Approaches

MOL identified the highest-priority environmental issues and set about addressing those issues in a proactive manner.

MOL Group Environmental Policy Statement

Philosophy

As one of the world's leading multi-modal transport groups, the MOL Group is committed to protecting the health of our marine/global environment and therefore promotes and supports the following policies.

Policies

1. Protect all aspects of the marine/global environment and foster safe operation;
2. Comply with all environmental legislation and regulations required by law, and all relevant standards and other requirements that we subscribe to. And, whenever possible, further reduce the burden on the environment by setting and achieving even tougher voluntary standards;
3. Periodically review and revise our environmental protection measures on the basis of our framework for setting and reviewing environmental objectives and targets;
4. Conserve energy and materials through recycling and waste reduction programs;
5. Purchase and use environmentally safe goods and materials;
6. Promote the development and use of environmentally safe technology;
7. Educate and encourage group employees to increase their focus on protection of the environment through enhanced publicity efforts, and communicate our Environmental Policy to group employees;
8. Publish our Environmental Policy Statement and disclose our environmental information on a regular basis;
9. Always strive to ensure that our business activities contribute to and adequately support worthy environmental protection activities

Key Environmental Issues

In March 2014, we identified the highest-priority environmental issues and set about addressing those issues in a proactive manner. To identify these priorities, we analyzed issues from international conditions regarding about environmental issues, the opinions of stakeholders including customers, investors, and so on, as well as our own internal viewpoints. Finally, through discussions in

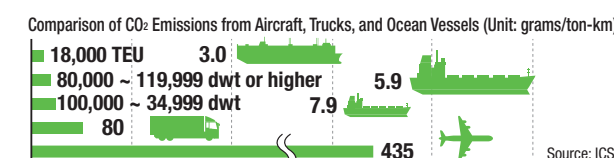
the CSR and Environment Committee, we identified the following five issues.

1. Comply with environmental regulations
2. Utilization of technologies to reduce environmental impact
3. Disclose environmental data
4. Ensure safe operation
5. Contribute to conservation of biodiversity

Ocean Shipping's Impact on the Environment

Compared to other modes of transport, ocean shipping can transport larger volumes of cargo at once and is rather an environment-friendly mode, with lower emissions per ton-mile of CO₂ and other air pollutants.

However, with a growth of the world economy spurred by the development of emerging markets, the overall world ocean cargo traffic continues to increase. Seaborne trade has exceeded 10 billion tons, and we anticipate further increases in the future. As seaborne trade increases, CO₂ emissions will rise in step with growing energy consumption. This can exacerbate pressing environmental issues. CO₂ emissions from merchant vessels account for about 2% of global emissions, and the shipping industry must do more to protect the environment. MOL strives to control emissions of pollutants through ongoing initiatives, such as the adoption of advanced technologies and slow steaming. In FY2015, we reduced CO₂ emissions per ton-mile by 3.0% in comparison with the previous year.



Organizational Structure for Environmental Initiatives

Establishing Technology, Innovation, and Environment Committee

To effectively promote environmental initiatives based on the MOL Environmental Policy, the CSR Committee, a sub-committee of the Executive Committee, oversees planning and promotion of environment-related measures under the direction of the president. The CSR Committee assesses environment-related risks and opportunities involving MOL, identifies the highest-priority issues in the group's environmental management, and sets environmental targets, striving to achieve environment-friendly business activities.

In addition, MOL formed the new Technology, Innovation, and Environment Committee in February 2016, to more effectively promote initiatives that fulfill our environmental policy. We continue to take a proactive approach to reducing the burden our business activities place on the global environment.

Organizational Structure to Promote Environmental Management



Every fiscal year, MOL Sets Environmental Targets related to each important issue, and works steadily to achieve those targets.

Midterm Environment Plan: Fully aware of the environmental impact of its business activities, the MOL Group will lead the world shipping industry by proactively responding to environmental regulations and differentiating our services by aggressively developing and adopting the best technologies to protect the environment.

Legend: ●Achieved ○Generally achieved △Partially achieved ●Did not achieve (target period/content changes)

Objectives	FY2015 Environmental Targets		FY2015 Environmental Activities and Results	Achievement	FY2016 Environmental Targets	Reference
1 Build environmental business, which contributes to sustainable society	Study R&D of advanced environmental technology, creation of new environmental businesses, and taking part in logistics that contributes to the environmental protection.				MOL established the Technology, Innovation, and Environment Committee to promote the development and adoption of innovative environmental technologies that increase corporate value and enhance the effectiveness and profitability of our businesses. (1) Build a system that promotes internal sharing, extension, and review of information, and allows us to tap into and discover needs, including potential ones, from our customers' viewpoint. (2) Create a system that sets mid- and long-term targets for environmental technologies, creates road maps, and introduces new technologies in the MOL Group owned and operated fleet. (3) Explore and review issues in the maritime industry and formulate solutions.	P.22
2 Comply with Environmental Regulations	Reduce environmental impact through overall optimization and protect the global environment by engaging in company-wide efforts including ballast water management, ship recycling, prevention of global warming, prevention of atmospheric pollution, and response to diverse environmental regulations.					
	1. Further promote installation of the ballast water treatment system prior to the enforcement of new regulations, while monitoring developments in the ballast water convention. Test the effectiveness of the ballast water treatment system installed on a vessel, and provide the manufacturer with feedback on defects/malfunctions/failures and requests for improvements.	1. Appropriately installed ballast water treatment systems, while monitoring developments in the ballast water convention. Number of vessels equipped with the system in FY2015: 30 Evaluated effects of ballast water treatment systems installed on the vessels, and provided feedback and suggestions for improvement.	●	1. Further promote installation of the ballast water treatment system prior to the enforcement of new regulations, while monitoring developments in the ballast water convention. Test the effectiveness of the ballast water treatment system installed on a vessel, and provide the manufacturer with feedback on defects/malfunctions/failures and requests for improvements.	P.27-30	
	2. Continue to consider installation of SOx emission reduction systems (scrubbers). Comply with SOx Emission Control Area (ECA) rules, which took effect in January 2015. Collect information on supplies of low-sulfur fuels, which produce fewer SOx emissions.	2. Continued to consider installation of SOx emission reduction systems (scrubbers). Started research on retrofitting car carriers with SOx scrubbers. Began comparing functions of manufacturers' equipment such as SOx scrubbers. Continued to collect information on supplies of low-sulfur fuels, which produce fewer SOx emissions.	●	2. Jointly collect information on scrubbers and fuel supply, with an eye toward retrofitting vessels with SOx emission reduction systems (scrubbers).		
	3. Continue to verify NOx reducing system (Selective Catalytic Reduction; SCR), and make a final evaluation.	3. Continued to verify NOx reducing system (Selective Catalytic Reduction; SCR) while using heavy fuel oil.	○	3. Collect and verify data on installed NOx reducing systems and complete the demonstration test.		
	4. Develop and implement specific reduction measures for complying with domestic environmental regulations such as the Amended Energy Conservation Act and Tokyo Metropolitan Environmental Security Ordinance.	4. Developed and implemented specific reduction measures in cooperation with MOL Engineering Co., Ltd., to comply with domestic environmental regulations such as the Amended Energy Conservation Act and Tokyo Metropolitan Environmental Security Ordinance. Has reduced unit energy consumption by 15.9%, compared to the 6% target for FY2009.	●	4. Develop and implement specific reduction measures for complying with domestic environmental regulations such as the Amended Energy Conservation Act and Tokyo Metropolitan Environmental Security Ordinance.		
	5. Establish the selection criteria for environment-friendly scrapping yards in preparation for the enforcement of the Hong Kong International Convention.	5. Conducted a wide range of inspections in scrapping yards. Discussed the scrapping yard selection criteria based on international interpretation of the Hong Kong International Convention.	○	5. Select environment-friendly scrapping yards. 6. Prepare the inventory related to the Hong Kong International Convention, and promote its use on vessels. 7. Maintain the same level of paper, water, and electricity consumption as in FY2015.		
3 Proactively Utilize Technologies to Reduce Environmental Impacts	Promote energy-saving innovations for ships and eco-sailing through active utilization of refined energy-saving technology that MOL acquired in the ISHIN project for the next-generation vessel concept. Reduce CO ₂ emissions 11.5%* per ton-mile by FY2016 compared to FY2009.					
	1. Reduce environmental impact (1) Reduce CO ₂ by 1% in FY2015 compared to FY2014. (2) Reduce NOx by 1% in FY2015 compared to FY2014. (3) Reduce SOx by 1% in FY2015 compared to FY2014.	1. Continued efforts by business divisions on further enhancement and increased use of slow steaming operation. Installed systems to improve propeller efficiency such as PBCF on all 15 newbuilding vessels delivered during FY2015. Studied adoption of the optimal trim system and vessel operation support system and conducted demonstration tests on the vessels in operation. Reduced CO ₂ emissions by 3.0% compared to FY2014 (by 17.9% compared to FY2009); Reduced NOx emissions by 3.0% compared to FY2014; Reduced SOx emissions by 5.2% compared to FY2014.	●		P.13-14 P.23-26 P.27-30	
	2. Install and verify the low-temperature waste heat recovery system (Variable Phase Cycle : VPC) on an actual vessel.	2. Started to order and assemble VPC system. Continued review of equipment layout.	○	1. Reduce environmental impact (1) Reduce CO ₂ by 1% in FY2016 compared to FY2015. (2) Reduce NOx by 1% in FY2016 compared to FY2015. (3) Reduce SOx by 1% in FY2016 compared to FY2015.		
	3. Develop and build methanol-fueled vessels.	3. Finished a verification test of the methanol-fueled engine. Conducted test sailing with the new engine (tested at the end of March).	●	2. Install and verify the VPC system on an actual vessel.		
	4. Conduct feasibility study of positioning the engine room for installing LNG fuel and SOx scrubbers for the new building containership.	4. Conducted feasibility study of the specification changes required to equip containerships with methanol-fueled engines.	●	3. Deliver 3 of methanol-fueled vessel series.		
	5. Begin planning and design of an LNG-fueled tugboat.	5. Continued study of the design, tank, and engine of an LNG-fueled tugboat.	○	4. Continue deeper feasibility study of the specification changes required to equip containerships with methanol-fueled engines.		
	6. Promote projects that use wind power, such as Power Assist Sail and Wind Challenger Project.	6. Power Assist Sail: Conducted Hazard Identification (HAZID**), which is currently under evaluation. Window Challenger Project: Continued the study with the project participant organizations.	●	5. Study the design, tank, and engine of an LNG-fueled tugboat. Study the conversion of other types of vessels to LNG-fuel.		
	7. Verify feasibility of a car carrier with teardrop-shaped stern (design a smoother stern shape).	7. Determined the basic vessel shape and layout based on the effects of different loading capacities. Started verification of wider-breadth type of vessel.	○	6. Promote projects that use wind power, such as Power Assist Sail and Wind Challenger Project.		
	8. Verify wind pressure reducing technologies on containerships.	8. Installed a windscreen on the bow of a containership, and started collecting in-service data. "	○	7. Promote R&D on ways to reduce wind resistance on car carriers.		
	9. Continue to verify and develop DPF <PM (particulate matter) removal system> installed on a vessel.	9. Conducted durability test of heavy fuel oil on a vessel that is already installed with Diesel Particulate Filter (DPF). Tests to verify the effectiveness are under way.	○	8. Continue to verify wind resistance reducing technologies on containerships.		
	10. Develop technologies to improve combustibility of vessel fuels at the MOL Technology Research Center.	10. Continued joint R&D on a special spray nozzle with a manufacturer, university, and research institute. Verified test data, using the test engine.	○	9. Continue to verify and develop DPF <PM (particulate matter) removal system> installed on a vessel.		
	11. Thoroughly implement Eco-Sailing and promote development of an advanced operation supporting system that improves operation efficiency.	11. Started research aimed at using big data for vessel, while taking into account joint use of data with manufacturers.	●	10. Fully practice Eco Sailing/Continue research on the use of big data for vessels.		
	12. Continue to examine environmental concept vessels in consideration of internal needs and seeds and refine the concept of the environmental business.	12. Studied environmental concept vessels.	○	11. Reduce unit energy consumption at offices and on domestic coastal vessels for the medium to long term. Reduce by 1% in FY2016 compared to FY2015.		
	13. Reduce unit energy consumption at offices and on domestic coastal vessels for the medium to long term. Reduce by 1% in FY2015 compared to FY2014.	13. Reduced unit energy consumption at offices by2.7% compared to FY2014 but on the domestic coastal vessels side, consumption increased by 0.1% due to factors including stormy weather.	●	12. Move ahead with construction of four ferries, which will offer improved environmental performance (two slated for delivery in 2017, two in 2018).		
	14. Consider introduction of a wide variety of leading-edge environmental impact-reducing technologies on the world's largest 20,000 TEU containership.	14. Introduced a variety of leading-edge environmental impact-reducing technologies on the world's largest 20,000 TEU containership.	●	13. Promote more energy-efficient vessel operation through the use of improved power management systems.		
	15. Begin preparations to build two ferries that feature both high speed and excellent environmental performance.	15. Started construction of two ferries with delivery slated for 2017.	●			

*1 HAZID stands for Hazard Identification, which systematically identifies and documents risks.

FOCUS

Progressively Adopting Technologies to Reduce Environmental Impact

Compared to other modes ocean shipping is an environmentally friendly means of transport with lower CO₂ emissions per unit load. The MOL Group continually takes an active approach to technological innovation aimed at further reducing the environmental impact of its operations.

① Main Engine: R&D on System to Recover Waste Heat from Low-temperature Sources Variable Phase Cycle (VPC)

VPC is a technology we have worked on from the viewpoint of making effective use of exhaust gas after fuel is burned in the engine, as well as heat generated from the engine itself. In general, on-board energy recovery systems rely on high-pressure, high-temperature exhaust gas from the engine, but VPC collects heat generated when the engine is in operation. MOL, in cooperation with Nippon Kaiji Kyokai (ClassNK) and Mitsui Engineering & Shipbuilding Co., Ltd., plans to select a test vessel, equip with a VPC system, and conduct a demonstration test to determine its effectiveness in reducing CO₂ emissions.

② Next-generation Car Carrier *FLEXIE*

The name is derived from the word “flexible,” which refers to features such as the newly designed liftable decks, and expresses not only the ship's flexibility in boosting loading efficiency, but also in fulfilling MOL's sales and marketing strategy aimed at meeting diverse customer demands.

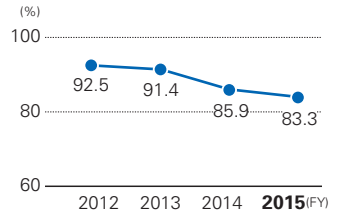
The rounded bow shape of the *FLEXIE*, which is slated to be delivered in 2017, will minimize wind resistance and is expected to reduce CO₂ emissions by about 2% compared to today's car carriers.



The new shape is the result of joint research by MOL, MOL Techno-Trade, Ltd., and Akishima Laboratories (Mitsui Zosen) Inc.

Major Environmental Indicators

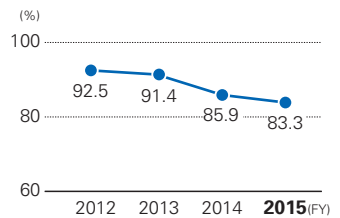
MOL Group CO₂ Emissions



● Emissions per unit load (ton-mile: Ocean-going vessels) (Comparison with FY2009^{*2})

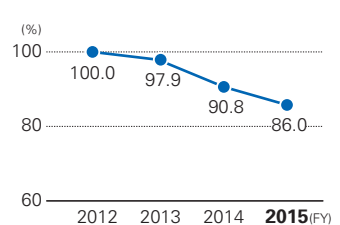
*2 Reduction target benchmark year

MOL Group NOx Emissions



● Emissions per unit load (ton-mile: Ocean-going vessels) (Comparison with FY2009^{*2})

MOL Group SOx Emissions



● Emissions per unit load (ton-mile: Ocean-going vessels) (Comparison with FY2012^{*3})

*3 Reduction target benchmark year

Reduction of CO₂ Emissions by CO₂ Measures (Unit: thousand tons)

FY2011	FY2012	FY2013	FY2014	FY2015
432	303	280	348	303

Cost Reduction by CO₂ Measures (Unit: ¥ billion)

FY2011	FY2012	FY2013	FY2014	FY2015
7.3	5.3	5.5	5.5	3.1

- The amounts are estimated with reduced CO₂ emissions and reduced cost based mainly on increased use of slow steaming, installation of PBCFs, and the fuel-saving effects of low-friction paint.
- The calculations do not include cases in which it is difficult to measure the effects.

Legend: ●Achieved ○Generally achieved △Partially achieved ●Did not achieve (target period/content changes)

Objectives	FY2015 Environmental Targets	FY2015 Environmental Activities and Results	Achievement	FY2016 Environmental Targets	Reference
4 Actively Disclose Environmental Data	Respond to stakeholders' interests in MOL's environmental policy by disclosing KPI for transport with low environmental impact and various environmental data using the Web site and Safety, Environmental and Social Reports.				
	Proactively promote calculation, analysis, and disclosure of following data and disclosure of reduction effects. 1. Energy consumption volume 2. GHG emission volume (Including Scope 1~3) 3. SOx, NOx emission volume 4. Consumption volume of other resources	1~4: Disclosed environmental data through the Environmental and Social Report, the company Web site, and other various external media. Recognized in the Climate Disclosure Leadership Index (CDLI). In addition, MOL Liner made its own disclosure of CO ₂ , NOx, and SOx emissions on its Web site.	●	1. Proactively promote calculation, analysis, and disclosure of following data and disclosure of reduction effect through the Environmental and Social Report, the company website, and various other external media. (1) Energy consumption volume (2) GHG emission volume (Including Scope 1~3) (3) SOx, NOx emission volume (4) Consumption volume of other resources	P.26 P.43 P.46
	5. Accept third-party verification of CO ₂ emissions to improve accuracy and transparency.	5. Accepted third-party (SGS) verification of CO ₂ emissions and improved accuracy and transparency.	○	2. Continue third-party verification of CO ₂ emissions.	
5 Ensure Safe Operations	Ensure safe operations to prevent unexpected environmental impacts, and pursue zero ocean pollution caused by marine incidents.				
	1. Prevent serious marine incidents by improving MOL's safe operation system.	1. Held the company-wide biannual safety campaign twice, and held division-by-division safety operation meetings to enhance safe operation. In addition, regularly visited vessels. Serious marine incidents occurred despite these efforts to raise safety awareness of employees both on land and at sea.	△	1. Prevent serious marine incidents by improving MOL's safe operation system. 2. Further improve the quality of new vessel design and construction through health, safety, and environmental (HSE*) activities at shipyards. 3. Continue to adopt the MOL Safety Standard Specifications on newbuilding vessels.	P.13-14 P.15-20
	2. Further improve the quality of new vessel design and construction.	2. Reported problems to manufacturers/held information exchange meetings with them. MOL and its group companies conducted shipyard assessment visits. Checked the shipyards' HSE* manuals to share safety standards among MOL and shipyards. Validated health/hygiene/safety management methods of workers and superintendents.	○		
	3. Continue to adopt the MOL Safety Standard Specifications on newbuilding vessels.	3. Adopted for all 15 newbuilding vessels delivered.	○		
6 Contribute to Conservation of Biodiversity	Raise awareness of biodiversity protection, promote waste reduction from vessels, and participate in volunteer activities for conserving biodiversity on a company-wide level.				
	1. Continue to reduce waste from vessels such as on-board waste, waste oil, and bilge.	1. Continued to reduce waste from vessels such as on-board waste, waste oil, and bilge.	○	1. Continue to reduce waste from vessels such as on-board waste, waste oil, and bilge. 2. Prevent cross-border transportation of foreign marine organisms through ballast water exchange in the open sea, and implement vessel cleaning to remove organisms on vessels to help conserve biodiversity. 3. Support volunteer activities to help conserve biodiversity in Japan and overseas, such as tree planting. 4. Promote navigation with special consideration in the areas with high populations of large-sized marine life.	Web
	2. Prevent cross-border transportation of foreign marine organisms through ballast water exchange in the open sea, and implement vessel cleaning to remove organisms on vessels to help conserve biodiversity.	2. Disseminated Ballast Water Management Report, which is the new requirement concerning ballast water management in the U.S., to vessels. Shared case study information on problems caused by ballast water exchange operations and issued warnings of dangers related to the use of ballast water.	○		
	3. Support volunteer activities to help conserve biodiversity in Japan and overseas, such as tree planting.	3. Conducted beach cleanup in Kamakura and Kashima in Japan, and in Hong Kong and Malaysia overseas.	○		
	4. Promote navigation with special consideration in the areas with high populations of large-sized marine life.	4. Circulated the information about sea areas with high populations of large marine, on the Port and Navigation Information. Especially containerships, which frequently sail in sea areas with high populations of large marine life, continued to operate along the North America East Coast and in other areas in conformity with laws and regulations.	○		
7 Advocate Transport Policies and Measures Aimed at Contributing to Reduction of Environmental Impact	Proactively make recommendations so that environmental policy promotes utilization and reinforcement of the high environmental efficiency of shipping as transport mode, and contribute to environmental impact reduction and sustainable growth.				
	1. Make various efforts to encourage the modal shift, which has a low environmental impact, to industry groups, government agencies, and relevant ministries.	1. Promoted the Modal Shift, which aims at reducing the environmental impact of transportation, in cooperation with Japan's Ministry of Land, Infrastructure, Transport and Tourism and Ministry of Economy, Trade and Industry.	○	1. Make various efforts to encourage the modal shift, which has a low environmental impact, to industry groups, government agencies, and relevant ministries. 2. Actively participate in energy-saving policies.	-
	2. Actively participate in energy-saving policies.	2. Proactively made recommendations through the Japanese Shipowners' Association and Ministry of Economy, Trade and Industry to develop a more feasible Monitoring, Reporting, and Verification (MRV) system, which is to be introduced in the near future.	○		
8 Environmental Investment	Make environmental investment of 20 billion yen in 3 years, 60 billion yen in 6 years to respond to environmental regulations and to promote energy-saving innovation for vessels.				
	1. Make proactive investments in new environmental technologies such as methanol-fueled vessels. 2. Further improve waste heat energy recovery systems for vessel main engines. 3. Promote installation of ballast water treatment systems prior to the enforcement of new regulations, and respond to environmental regulations.	1. Environmental Investments in FY2015 was 4.63 billion yen. Recalculated again after results were finalized. (Details) Environment-related R&D activities: High-efficiency waste heat energy recovery system, Methanol-fueled vessel etc. 0.28 billion yen Utilization and expansion of existing environmental technologies: PBCF, Electronically controlled engine, Onshore power supply system, Low-friction hull paint, etc. 0.91 billion yen Compliance with environmental regulations: Ballast Water Treatment System, Ship Recycling Regulation and SOx Regulation related etc. 2.19 billion yen Initiatives to save bunker fuel: Fuel additives, optimal trim, vessel operation support system 0.99 billion yen Initiatives of Group companies: International Ocean Shipping group companies' environment investments 0.26 billion yen	○	1. Make proactive investments in new environmental technologies such as methanol- and LNG-fueled vessels. 2. Develop a low-temperature waste heat recovery system (VPC). 3. Promote installation of ballast water treatment systems prior to the enforcement of new regulations, and respond to environmental regulations.	P.23-30

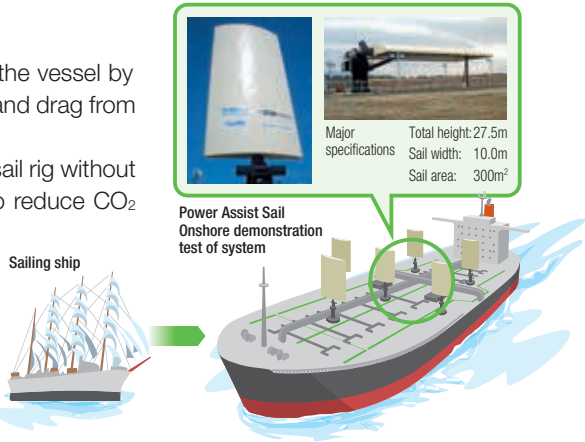
* HSE: Health, Safety & Environment.

③ Power Assist Sail

The Power Assist Sail provides supplementary propulsion force for the vessel by using the lift force of crosswinds, similar to the wings of an airplane, and drag from tailwinds.

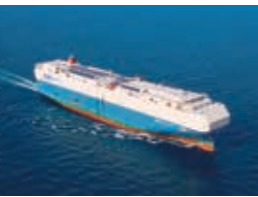
Taking advantage of the sail's small size, the goal is to install the sail rig without making major design changes to existing vessels. It is estimated to reduce CO₂ emissions by 2-5%.

It is a joint research project by MOL, MOL Techno-Trade, Ltd., and Akishima Laboratories (Mitsui Zosen) Inc. under ClassNK's "Joint R&D with Industries and Academic Partners" program.



④ Hybrid PCC Solar Power Generation System

The world's first newbuilding hybrid car carrier Emerald Ace is equipped with a hybrid electric power supply system that combines a 160kW solar generation system with lithium-ion batteries that can store some 2.2MWh of electricity. On board the vessel, electricity is generated by the solar power system while it is underway and stored in the lithium-ion batteries. The batteries provide all the electricity the vessel needs while it is in berth, resulting in zero emissions at the pier. We are also currently verifying the durability of solar panels at sea in the four years since the vessel was delivered in 2012.



Actively Disclose Environmental Data

■Clean Shipping Index (CSI)
The Clean Shipping Index is an environmental assessment tool for ships and shipowners, used by a network of cargo owners and forwarders (customers) when buying sea transport. Ship owners present the environmental performance on emissions of CO₂, sulfur oxides, particulate matter and nitrogen oxides and the use and handling of chemicals, waste and waste water. Vessels are then ranked from 'low performance' to 'good performance'. With the information collected, the cargo owners and forwarders evaluate the ship owner in the procurement process. In line with MOL's target to "Actively Disclose Environmental Data", MOL started reporting in CSI in 2013.

■Clean Cargo Working Group (CCWG)
The global nonprofit organization "Business for Social Responsibility (BSR)," which works with containership owners, container shipping customers, and non-vessel operating common carriers, has established the Clean Cargo Working Group (CCWG) in 2003. CCWG measures, evaluates, and reports the Ship owner environmental performance including CO₂, NOx, SOx and Environmental Management System. MOL has been participating since 2012.

■CDP
CDP is a U.K.-based non-profit organization that represents 827 institutional investors all over the world. It holds about \$100 trillion in total (about one-third of the total invested capital in the world). It sends specific questionnaires asking about strategies on climate change and on greenhouse gas emissions to companies. Answers and scores of the results are publicly announced, and the scores are becoming a key indicator in measuring corporate value. MOL has responded to CDP's inquiries every year, and was recognized for Climate Disclosure Leadership Index (CDLI) in FY2015.

[For details of CDLI: Page 46]
[For details of third-party verification of CO₂ emissions: Page 43]

Viewing environmental regulations as a business opportunity and a strategy for differentiation, MOL proactively develops and adopts advanced technologies that reduce the environmental impact of our business and set the stage for real solutions to global environmental issues.

It is not really possible for a single nation to regulate merchant vessels, because they move all over the world, so international initiatives are indispensable. The United Nations Framework Convention on Climate Change (UNFCCC) in the Kyoto Protocol directs the International Maritime Organization (IMO) to study measures to control greenhouse gas (GHG) emissions in international ocean shipping. Currently, IMO studies, adopts, and issues various international conventions and regulations.

MOL continues its company-wide efforts to ensure compliance with a wide variety of environmental regulations. (Please refer to the website for details.)

Preventing global warming

Global Warming Issues

Along with global warming caused by the increased atmospheric emissions of CO₂, forecasts say tropical lows will gain intensity, wind forces will gain power, and rainfall amounts will increase. Unstable weather may cause catastrophic events that make safe ocean transport impossible.

Example of Initiatives Development of New Windshield

MOL has moved ahead in developing new wind shields to reduce wind resistance, especially on a new, larger vessels, and thus improve fuel efficiency and reduce CO₂ emissions. The wind resistance-reducing windshield installed on a 6,700TEU containership sailing the north Pacific route at 17 knots (about 31km/h) is expected to reduce CO₂ emissions by about 2%.



Windshield on the containership MOL Marvel

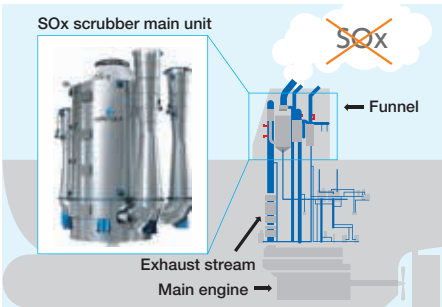
Preventing Air Pollution

Air Pollution Issues

NO_x and SO_x cause acid rain and air pollution. As industrialization has grown, air pollution has become even problematical, affecting the daily lives of people and damaging the natural environment.

Example of Initiatives SOx Scrubber

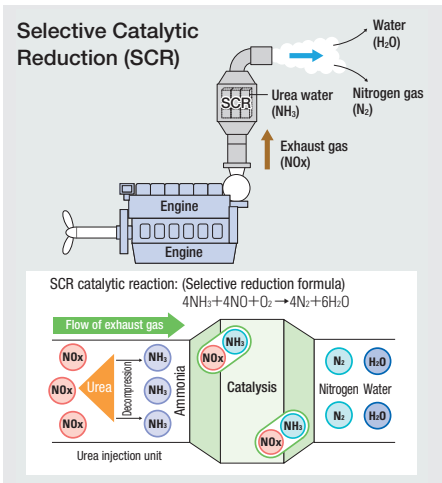
MOL launched a study to equip its in-service fleet with SO_x scrubbers in advance of a revised international treaty that places stronger restrictions on vessel exhaust emissions. It targets car carriers, because their structure makes it more technically challenging to add scrubber systems, compared to other types of vessels. It also focuses on ships already in service, which are more difficult to equip with scrubbers than newbuilding vessels. We will promptly develop detailed specifications for the scrubber system and use the latest technologies such as 3D scanning to promote operational efficiency in installation process, aiming for results that will streamline the development of ship class rules and guidelines.



Example of Initiatives Selective Catalytic Reduction (SCR)

NO_x is generated by bonding nitrogen in fuel oil and the oxygen in the air under high temperature during combustion in the engine. MOL equipped SCR systems, which eliminate NO_x emissions from vessels, to three power generators on its-owned/operated large-scale iron ore carrier. We confirmed that its denitration performance for diesel oil conforms to IMO's NO_x Tier 3 regulations, which will be valid in 2016.

MOL, in cooperation with ClassNK and Yanmar Co., Ltd., has been operating the system since the vessel was delivered in December 2013. Its verification using marine diesel oil (MDO) as fuel and about 3,100 hours of operation (total operation hours of three SCR systems) have been completed. Verification using heavy fuel oil (HFO) is now in progress.



Regulations to Prevent Global Warming

	2014	2015	2016	2017	2018	2019	2020	2025
EEDI	Phase 0	Phase 1					Phase 2	Phase 3
SEEMP	Mandatory							
MRV, MBM (under consideration)								

In 2013, conventions related to energy efficiency (EEDI and SEEMP) were adopted as measures to reduce GHG emissions from international ocean shipping.

EEDI: Energy Efficiency Design Index. Requires that CO₂ emissions in theory conform to the regulations at the design stage of a newbuilding vessel. Target of reduction rate in each phase: Phase 0 = 0; Phase 1 = 10%; Phase 2 = 20%; and Phase 3 = 30%.

SEEMP: Ship Energy Efficiency Management Plan. Requires the selection of an operational method for each vessel to improve energy efficiency, documentation of the action plan, and adoption of method aboard the vessel. It targets newbuilding vessels and existing vessels.

In addition, MRV and MBM have been studied for adoption as measures to further reduce emissions.

MRV: Monitoring-Reporting-Verification system. Preceding the Market-Based Method (MBM), MRV is a system to monitor, report, and verify operational data concerning actual fuel consumption.

Regulations to Prevent Air Pollution

		2014	2015	2016	2017	2018	2019	2020
SOx (sulfur oxides)	General sea area	Sulfur content 3.5%						Sulfur content 0.5%
	ECA	Sulfur content 1.0%	Sulfur content 0.1 %					
NOx (nitrogen oxides)	General sea area	Tier 2 regulation						
	ECA	Tier 2 regulation		Tier 3 regulation				

SOx emissions regulations: Regulate the sulfur content in fuel oil to control SO_x volume in exhaust emissions. From 2015, the ratio level in the Emission Control Areas (ECAs) was reduced to 0.1%. Another regulation soon to be introduced will limit fuel sulfur content in general sea areas to 0.5% or less. The year of adoption, either 2020 or 2025, will be decided by 2018 after a survey of demand and supply for relevant fuel oil.

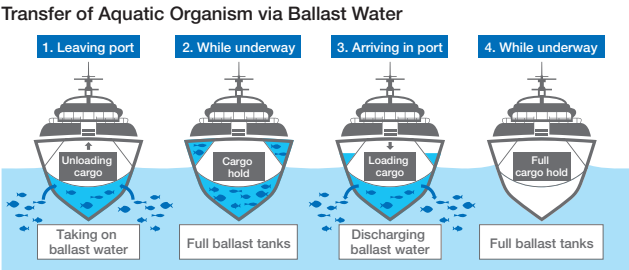
NOx emissions regulations: Regulate NO_x in exhaust gas from engines in a step-by-step manner. Tier I regulates emission levels by rated engine rpm, targeting the vessels built between 2000 and 2010. Tier II requires the vessels built in 2011 or later to reduce a further 15.5-21.8% from the Tier I level. Tier III applies to vessels built in 2016 or later, in specific Emission Control Areas (ECAs), requiring a reduction of 80% from Tier I.

* ECA-designated sea areas: (1) North America Coast – within 200 nautical miles (NO_x/SO_x), (2) United States Caribbean Sea (NO_x/SO_x), (3) Baltic Sea and North Sea (SO_x)

Contributing to Conservation of Biodiversity

Ballast Water Issues

Ballast water, which is discharged while loading cargo, carries marine organisms around the world and can have a negative impact on marine ecosystems and biodiversity. Accordingly, IMO adopted the Ballast Water Management Convention in February 2004, and its ratification is under way.

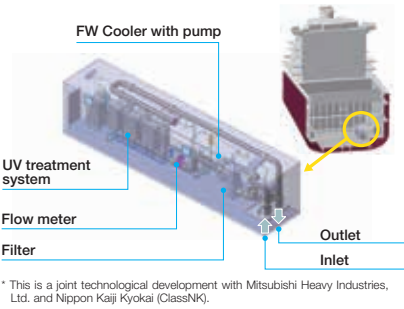


Example of Initiatives Installation of Ballast Water Treatment System before Convention Took Effect

MOL developed a ballast water treatment system in cooperation with manufacturers. And in FY2014, we set a company-wide policy to install the system on our vessels before the convention took effect, and began the process of selecting target vessels and preparing them for system installation. As of May 31, we have installed the system on a total of 57 ships—25 newbuildings and 32 in-service vessels.

Ballast Water Treatment System

MOL has developed the technology to install a packaged ballast water treatment system that takes up the same space as a standard container and can fit in the cargo hold of a containership, and acquired approval in concept from Nippon Kaiji Kyokai (ClassNK) for the first time in Japan. The system makes the most of limited space availability and is designed for easy accessibility and maintenance. Further, installation time is reduced by about seven days compared to installing a system in the engine room. MOL has installed the system on some of its containerships and is now conducting demonstration tests.



Safe, Environment-friendly Ship Recycling

Ship Recycling Issues

Aged vessels need to be scrapped from the viewpoints of both safe operation and marine environmental protection. In May 2009, the IMO adopted the Hong Kong International Convention, which sets objectives for solving issues related to vessel scrapping, and is moving toward ratification. This convention prohibits and limits the content of stipulated harmful substances aboard throughout the life of the vessel and requires to create, maintain, and update an inventory list including the amounts of harmful substances and their locations aboard, and to provide that list when handing the vessel over to a recycling yard.

Example of Initiatives Ship Recycling

When a vessel is to be scrapped, we select an environment-friendly recycling yard in conformity with the Hong Kong International Convention. We also check a broad range of items including the yard's ISO certification status, conduct site inspections to confirm that the yard's environmental management standards conform with ISO 14001 or its equivalent, and that its scrapping methods and procedures meet acceptable standards for environmental protection, occupational safety, and human rights.

Currently, the MOL Group was one of the first to start providing these inventory lists to ensure a smoother response to the requirements of the convention. We also provide thorough explanations of the convention's requirements, and share information related to recycling as well as conditions in recycling yards.



Scrapping operations at an MOL-selected safe, environment-friendly recycling yard

Regulations to Protect the Marine Environment

		2015	2016	2017	2018	2019	2020
Ballast Water Management Convention	General sea area	Adopted in 2004: yet to take effect		Expected to be mandatory			
	USCG regulations	Enforced in 2012	Mandatory				
Ship Recycling Convention		Adopted in 2009: yet to take effect, effective year undetermined					
Convention on biofouling on Hulls		Adopted guidelines in 2011					

Ballast Water Management Convention: A convention to prevent cross-border transfer of foreign marine organisms through ballast water of vessels. It was adopted in 2004 and there is an increasing possibility to be effective in 2017. Vessels are mandated to install ballast water treatment systems by the stipulated year, depending on the age of the vessel and ballast water capacity.

USCG Ballast Water Management regulations: United States Coast Guard ballast water regulations took effect in 2012. The regulations for the relevant sea areas cover the same level as the BWM Convention. However, the USCG regulations require a specific type of ballast water treatment system approved by the USCG. As of 2016, all vessels calling at ports in the U.S. are required to use ballast water treatment systems within 12 miles of the coast.

Ship Recycling Convention: A convention to prevent workplace accidents in ship recycling and minimize environmental pollution. It was adopted in 2009, and will be issued 24 months after the requirements for the issues are satisfied. It stipulates rules for ship recycling facilities and recycling procedures, and requires recyclers to create, maintain, and update a list of hazardous substances (inventory list) for existing vessels.

Convention on biofouling on hulls: As marine organisms attached to the bottoms of ships and crossing national borders has emerged as an environmental issue, IMO is holding discussions on formulating guidelines to address this problem. The "Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species," which was adopted in 2011, was voluntarily implemented during the review period (five years). It may become a convention after a comprehensive review in 2017.

Environmental Initiatives in Business Activities

Environmental Impact of Business Activities	Environmental Initiatives	Ship Construction	Cargo Transport	Scrapping
Global Warming	Measures to reduce CO ₂ emissions	Main engine: Research and development of a system that recovers waste heat from sources of low-temperature heat Improve transport efficiency by adopting larger vessels Introduction of Propeller Boss Cap Fins (PBCF) Introduction of low-friction ship bottom paint Introduction of high-efficiency waste heat recovery system Research of special rotation nozzles Adoption of wind-pressure resistance-reducing design Introduction of hybrid car carriers Research on Power Assist Sail Participation in Wind Challenger Project Study of LNG-fueled Vessels	Expansion of Eco Sailing Use of optimal operation support System Use of optimal trim calculation system	
	Measures to reduce NOx emissions	Selective Catalytic Reduction (SCR)		
Air Pollution	Measures to reduce SOx emissions	Development of methanol-fueled vessels Study of SOx scrubber Use of low-sulfur fuels Study to introduce LNG fuel		
	Measures to reduce particulate matter (soot and dust) emissions		Self-cleaning particulate matter (PM) Filter System Use of on-shore electricity in berth	
Marine Environmental Pollution	Initiatives on marine environmental conservation	Double hull structure on tankers Double hull structure on fuel tanks Adoption of NSafe™-Hull with improved collision safety	Proper treatment of waste, waste oil, and bilge	Initiatives on ship recycling
	Initiatives on biodiversity	Installation of ballast water treatment system before convention takes effect Prevention of biofouling		

Aiming for Leadership in Environmental Protection

The MOL Group believes that responding to environmental laws and regulations and initiatives on reducing environmental impact as business opportunities and strategies for diversification. We have proactively adopted advanced environmental technologies and moved boldly to promote the development of even more sophisticated ones. And we believe that novel, innovative initiatives are indispensable if we are to achieve targets of Paris Agreement adopted at COP21 in December 2015 and for further growth of our group. In this report, we visited Fujifilm Corporation, which consistently expands its range of businesses and grows by developing innovative technologies, to take part in a dialogue on the theme of “innovation.”



Date and Place
Wednesday, June 15, 2016
FUJIFILM Open Innovation Hub

Yoshikazu Kawagoe

Managing Executive Officer,
Mitsui O.S.K. Lines, Ltd.

Naoto Yanagihara

Corporate Vice President, General
Manager Research & Development
Management Headquarters,
General Manager Innovation &
Strategy Planning Headquarters,
FUJIFILM Corporation

Kawagoe First, I will briefly explain the characteristics of the ocean shipping industry and its environmental regulations. Emissions per unit load of CO₂ and other air pollution substances in the ocean shipping industry are lower than other transport means. On the one hand, ocean shipping is far superior to other modes of transport in terms of environmental friendliness. On the other hand, the CO₂ emissions from ocean freighters account for about 2% of the total global emissions. This is roughly equivalent to the emissions generated by the entire nation of Germany. Currently, the world population is 7 billion, and annual international ocean cargo trade is 10 billion tons. As population is projected to increase to 9.7 billion in 2050, and we expect cargo trade to grow in line with that projection.

Continued efforts to reduce the industry's environmental impact are critical to balance worldwide economic growth and environmental conservation. Against that backdrop, the ocean shipping industry faces stricter environmental regulations every year.

Yanagihara I am surprised that CO₂ emissions from ocean freighters are equivalent to the total amount produced by Germany. It is likely that environmental

regulations will become even more severe, but which direction will you take in your initiatives from now on?

Kawagoe In recent years, customers have a remarkably higher environmental awareness, and their transport needs are also more diverse. Some customers select us as their shipping partner just because they trust us to respond appropriately to environmental regulations. So to proactively meet customer needs and promote further technological innovation, we established the new IT Strategy Committee and the Technology, Innovation, and Environment Committee in February 2016. The committee will build an internal organization that allows us to move forward in cross-divisional way. In the future, we will look for new values that we can offer our customers, while fully leveraging our collective capabilities. This gives us a competitive advantage as a group that owns a variety of ships and provides a broad range of services.

However, it is not easy to create new values and diversify, so we think it's indispensable to make use of all our creative powers for innovation, free from preconceived concepts. Therefore, I would like to ask you about Fujifilm's system and culture that foster innovations.

Yanagihara Our corporate slogan is “Value from Innovation,” so the innovation is deeply rooted internally as the watchword. Then, this is because employees share our history of success in the face of big changes and severe competition. Currently, we develop market-oriented businesses, but we were completely the product-centered until after 2000, when global demand for color photo film reached its peak. We faced a crisis with the advent of today's digital society, but what we did at the time was taking stock of the technologies we owned and could use as the seeds of future development. This effort revealed many technologies that were applicable for other industries. A typical example is a cosmetic product based on the technology accumulated by long-term technological development of photo films, such as collagen research, antioxidation, and nanodispersion.



Kawagoe I can see that you faced many challenges and difficulties. Was the sense of crisis at the root of your technological development personnel's creativity and ability to execute?

Yanagihara We were pressed to transform our business model as we entered the digital era, so I think there is no doubt that a sense of crisis is a driving force behind creativity and ability to get things done. Also, we can say innovation came to us just because we had to face the fact that the photo film business was disappearing. For example, in case of Mitsui O.S.K. Lines, what would happen if vessels went away, or if the seas disappeared? From a different viewpoint, what if factories were eliminated and replaced with vessels, for example?

Kawagoe The idea that vessels would be eliminated is unimaginable for us. However, the development of 3D printers, for example, might imply that finished products would not need to be transported. So that could bring us drastic changes.

Yanagihara It takes lots of hard work for individuals to actually purchase raw materials and provide a 3D printer. So for example, when we order a product online, the raw materials could be loaded on the vessel and the product could be manufactured onboard using 3D printers, while the ship is on the way to its delivery destination. This is one way to imagine adding value in the transport process. From the viewpoint of value,

we transport various products for export and import. But the past concept was that carrying the product from point A to point B without changing its value was the value. In other words, we accepted the cargo on the condition that we would fully maintain its quality and keep it safe during the month or so that it was in transport. But today, if we cannot create value by transport alone, what about ways to add value during the transport process? For example, if we sent the product from point A, and a customized product was completed when it arrived at point B, the value would be increased, wouldn't it? If such things are actually possible, there are many things vessels can do to make peoples' lives more comfortable and prosperous.

Kawagoe In a way, time stops during transport, so that would be a way to use time more effectively. In addition, we can make beneficial use of the environment, such as generating electricity through wind power, during a voyage.

Yanagihara When we refer innovation, what comes to mind is usually technological innovation, but we think the key is to create value for



the customer by first, taking stock of the company's technologies and other advantages, next, offering a solution that is really responsive to the world's needs while being adaptable to potential needs, and then newly integrating the technology and everything else it takes to provide that solution. One of our challenges is the “Open Innovation Hub,” which was opened in January 2014. This is a place where we work closely with other industries to exchange information and generate sources for new innovation.

Kawagoe Thank you very much for giving us so many novel ideas and opinions during today's dialogue. Our group has taken a proactive stance in developing and adopting superior environmental technologies. But this dialogue with Mr. Yanagihara made us more confident that there are still many things we can do to create new values, and received some tips on how to cultivate creativity. Our group is united as a team to move ahead and create value through technological innovation.

Maximizing the Potential of Human Resources: the Driving Force behind Growth and Value Creation

CSR Targets in the Midterm Management Plan (FY2014 ~ FY2016)

Promote personnel training and diversity to strengthen comprehensive Group capabilities.

Further strengthen human resources development of the entire MOL Group globally. Improve the comprehensive capabilities of the MOL Group by facilitating work environment where diverse and multinational personnel including women can demonstrate their abilities to the fullest.

Opportunities and Risks

The driving force behind any company's growth and value creation is the power of its people, so employees' growth and development are essential in expanding our business and differentiating the MOL Group from its competitors. Putting the responsibility for decision making in the hands personnel with various backgrounds and characteristics makes it easier for everyone to accept a more diversified sense of values. This gives the MOL Group an edge in adapting to market changes and risk tolerance.

- If we face a shortage of skilled seafarers, we will lose competitiveness and miss business opportunities.
- MOL's brand image and trust are backed by our people, and failing to adequately develop human resources, accumulate know-how, and create an effective working environment will hamper the MOL Group's growth

Initiatives to Maximize the Potential of Employees



MOL's Approaches

Aiming at development of global human resources — personnel who channel the group's common sense of values, MOL CHART, to our corporate culture, recognize our social responsibility, and can create shared value with society



Moving ahead to Create a Working Environment that Allows Diversified Personnel to Play Active Roles with a Sense of Unity

To strengthen and concentrate the MOL Group's comprehensive efforts, we are pushing forward with group-wide initiatives on development of independent-spirited personnel who are committed to acting with a sense of ownership and playing an active role in global markets. In April 2015, we introduced MOL CHART to express the core values that all group executives and employees continually pass on to new generations as the group's business globalizes and diversifies.

During the past year, we developed training programs to promote broader understanding and acceptance of the MOL CHART values and presented them in places where employees gathered. This allowed them to hold deep discussions on the meanings of MOL CHART, MOL's strengths, and their own views on work regardless of their positions.



A scene of MOL CHART training events at aboard operated vessels

Personnel System



Penetration of MOL CHART

The introduction of MOL CHART is aimed at achieving the company's long-term vision and enhancing its corporate value, by strengthening and concentrating its comprehensive group-wide efforts while encouraging MOL Group employees to keep the MOL CHART values foremost in mind as they execute business operations.

A Message from the Human Resources Division GM

Our group, which develops businesses on a global scale, has always proactively recruited diverse, multinational personnel. Today when the business environment is showing significant changes, we think that creating a working environment that brings together people who have not only external differences such as nationality and gender, but also with different perspectives and philosophies, enables each of them to flower into their potential and to work with vigor and enthusiasm. That in turn creates a stronger corporation. We need to align on the same vector and share the direction the company will take and what it will emphasize. That is the reasoning behind MOL CHART, which we introduced last year. We look forward to it taking root in our group's corporate culture, fully understood and appreciated by employees, and guiding them in their day-to-day business activities.



Miwako Ando
General Manager of
Human Resources Development Division

To strengthen and concentrate the MOL Group's comprehensive efforts, we are pushing forward with group-wide initiatives on development of independent-spirited personnel who are committed to acting with a sense of ownership and playing an active role in global markets.

Global Human Resources Development

Launch of Global Management College

MOL has held the MOL Global Management College since FY2014 to improve management skills in our cross-cultural working environment and cultivate the next-generation of executives. In FY2015, it took place from September to December, bringing together 18 employees from group companies around the world. They shared an awareness of the issues and a sense of value that transcended differences in divisions, nations, and cultures.

Comments from the Participants

MOL Global Management College 2015 gave me a golden opportunity to meet and learn from each global participant about MOL's diversified business activities and created opportunities to network with MOL colleagues worldwide. Professionally, I have gained immensely in the following specific areas: a) It enlightened me to realize my "leadership core" and learn how to use it in my workplace, and b) Learning effective communication and utilizing it in today's multicultural, diversified business world.

Captain Animesh Hore
MOL Ship Management (Hong Kong) Company, Limited



It has been an epic journey, one of the greatest experiences of my life. I learned all the time from my colleagues and facilitators, and I left MGMC 2015 with new friends and with the firm intention to apply what I learned in my daily job.

Diego Morandi
MOL(PERU)S.A.C.



MOL POWER Program

MOL Liner, Ltd., an MOL Group company, presents a global human resources development program called “POWER” aimed at fostering the skills, knowledge, and abilities needed for management positions. Over the course of the four-year program, trainees are given various business tasks in their regions. They are also allocated to different regions and involved in actual operations.

Comments from the Participants

The POWER programme is a great opportunity to experience our liner business from all aspects. Being part of a department for a short period gives you unrivalled possibilities to broaden your knowledge extensively. After a while knowledge gained in one department can be extremely useful in others and gives an opportunity to tackle the challenges we face today with a non-standard approach. On a personal level you are given opportunities to work on your competencies and develop skills that will help you in any future role.



Michiel Warnes
MOL (Europe)B.V.

I would say POWER is challenging but at the same time rewarding to one's career. One of the crucial aspects in this program is to rotate key-role sections and develop knowledge of business on a fast track. You'll be exposed to dynamic Liner business and expand and deepen your insight with knowing the connectivity and impact of the business in different ways. For me, POWER is impressive in its features that trainees can exchange their own opinions with colleagues no matter they are junior or senior through on-the-job-training. If you're eager to learn MOL Liner deeply and widely and make innovation together, I recommend POWER to you.



Maki Tsujii
Mitsui O.S.K.Lines(Japan),Ltd.

Training to Enhance Frontline Capabilities

To raise our group-wide safety consciousness, it is important for all executives and employees, including those who work on land, to go on-site aboard vessels and learn to understand and appreciate vessels and their role in our business. We present various programs intended to strengthen bottom-up management in our human resources development. This fiscal year, 26 new land-based MOL employees spent seven working days training at seven agencies all over Japan. Along with observations of loading/unloading operations and vessels, they visited customers' plants and logistics centers, and gained firsthand experience in ensuring safe operation throughout the supply chain.

Feedback from New Employees Who Participated

I visited Tokyo International Container Terminal, which is managed and operated by Utoc Corporation. During the visit, I was impressed with the operation of the 51m-high gantry crane, and actually went inside it. If the part that holds the container is even a few centimeters out of alignment, it could tear a hole in the container, or even cause the crane to collapse. This operation requires a great degree of precision. It was miraculous to look through the glass floor of the cab and watch the container being moved around with the meticulous operation of a steering wheel.



Emika Hatasaki
MOL Information Systems, Ltd.



A view of operations from inside the gantry crane

I had the chance to visit various vessels at the Port of Nagoya as part of my agency training program. It was also a good experience to visit the fully automated terminal, but during the training program, I was especially impressed when I went aboard a tugboat and watched it assist the arrival and departure of an LNG carrier. I had a close-up look at the important role a tugboat plays in on-site operations. I do my best to give the optimal instructions as an operator while thinking from the vessel's viewpoint.



Hidetoshi Takano
Tanker Division, Crude Oil Tanker Group



Port call by an LNG carrier

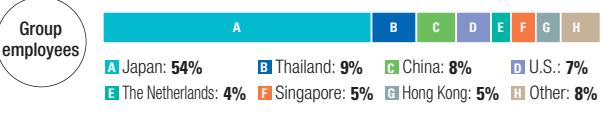
Diversity, Work -life Balance, Development of Work Environment

Striving to develop an environment where multinational, diversified personnel can maximize their personal development

Promotion of Diversity

The MOL Group, which develops businesses globally, has about 20,000 employees and crewmembers of various nationalities. We have worked to develop an environment that will increase our group-wide comprehensive strength and allow multi-national, diversified personnel including women to play more active roles.

Employment by Region



Establishment of Diversity Management Unit

MOL positions diversity management as one of its important management strategies, and is moving ahead to create a working environment that allows multinational, diversified personnel including women, to make full use of their talents and reach their full potential. To further encourage them to play more active roles, we established the new Diversity Management Unit in July 2015. During FY2015, we conducted programs to promote women's engagement in the company, such as holding internal seminars and formulating an action plan, In addition to fulfilling systems centering on childcare and nursing care. We will continue our push to develop a working environment where people from all nationalities and backgrounds can play active and essential roles in the group.

Promoting Women's Initiatives

To encourage women to play more active roles in the company, we have worked not only to fulfill systems centering on childcare support, but also to expand support for female personnel in pursuing their career paths. In addition, female managers receive various kinds of support including seminars to increase motivation.

Voice of a Woman Marine Officer

When I first came on board, I was disappointed in my lack of physical strength, and I had a hard time understanding the natural order of things at the port where I arrived. I can't count how many times I have felt frustrated. But still, when I can complete my job with no problems, or overcome a difficult situation, I am happy. So I always do my work with a positive attitude.



Saori Shiokawa
MOL Ship Management Co., Ltd.

Work-life Balance

In consideration of changes in life stages and lifestyles of employees and crewmembers, MOL has promoted efforts to enhance the work-life balance. We also recognize that employees and crewmembers must be in excellent health, both mentally and physically, to do their jobs effectively. We strive to help them manage their health and to provide working environments that comply with laws, regulations, and treaties.

Voice of an Employee

In August, I took a short two-week childcare leave to look after a baby born in February. Even though it was a short time, I was able to spend time with my wife, caring for the baby during the daytime. It was a great experience since my job does not allow me to be involved in raising my children every day. It is still rare for men to take childcare leave, but it is a great opportunity for men who want the chance to be more involved in raising their families. It helps build closer ties with the children, too.



Nobuhiro Nishii
Dry Bulker Supervising Office
Assistant Manager (1st Officer)

Development of Work Environment

MOL recognizes that employees and crewmembers must be in excellent health, both mentally and physically, to do their jobs effectively. We strive to help them manage their health and to provide working environments that comply with laws, regulations, and treaties.

Please refer to the website for initiatives on mental health and eradication of industrial accidents.

Family Day for Crewmembers

In consideration of crewmembers who are separated from their families for long periods of time, and their families who must cope with their absence, MOL worked to develop an onboard Internet environment, and took various other measures including holding Family Day events. We placed consultation service desks for crewmembers and their families in our local offices, providing detailed services reflecting regional cultures and needs.

In the Philippines, our main source nation for crewmembers, annual Family Day events are held throughout the nation. Particularly in Manila, this is a major event – an entire theme park is reserved for the enjoyment of some 4,000 participants.

The purpose of this event is to build bonds between MOL and its crewmembers and their families. Through this activity, the dedicated seafarers can head out to sea with peace of mind, knowing that their families are supported and cared for. These bonds are made even more solid as they are key factors behind MOL's safe operations.

MOL to Establish Maritime Academy in the Philippines

— With the aim of recruiting and training top-quality seafarers, who play a vital role in helping the MOL Group become the world leader in safe operation —

MOL will inaugurate a new maritime academy, MOL Magsaysay Maritime Academy Inc. (MMMA), in Dasmariñas City, Cavite State in June 2018. With its local partner Magsaysay Maritime Corporation (MMC), it plans to recruit about 300 graduates every year, providing continuous training programs to develop top-quality seafarers who can hit the ground running through a four-year curriculum that encompasses basic education and specialized coursework.

Background of Establishment of MMMA

MOL develops competent seafarers in cooperation with seven local maritime universities in the Philippines. Currently, Filipino seafarers serve as the core of the workforce serving aboard our operated vessels, and we expect them to play an even more critical role as technology advances.

To meet our need for seafarers, in terms of both quality and quantity, we must nurture top-quality seafarers by getting deeply involved at the educational stage. That's why, in January 2016, we acquired governmental approval to establish an academy in the Philippines, in cooperation with MMC, our local manning partner.



MOL Chairman Koichi Muto delivers a speech at the groundbreaking ceremony

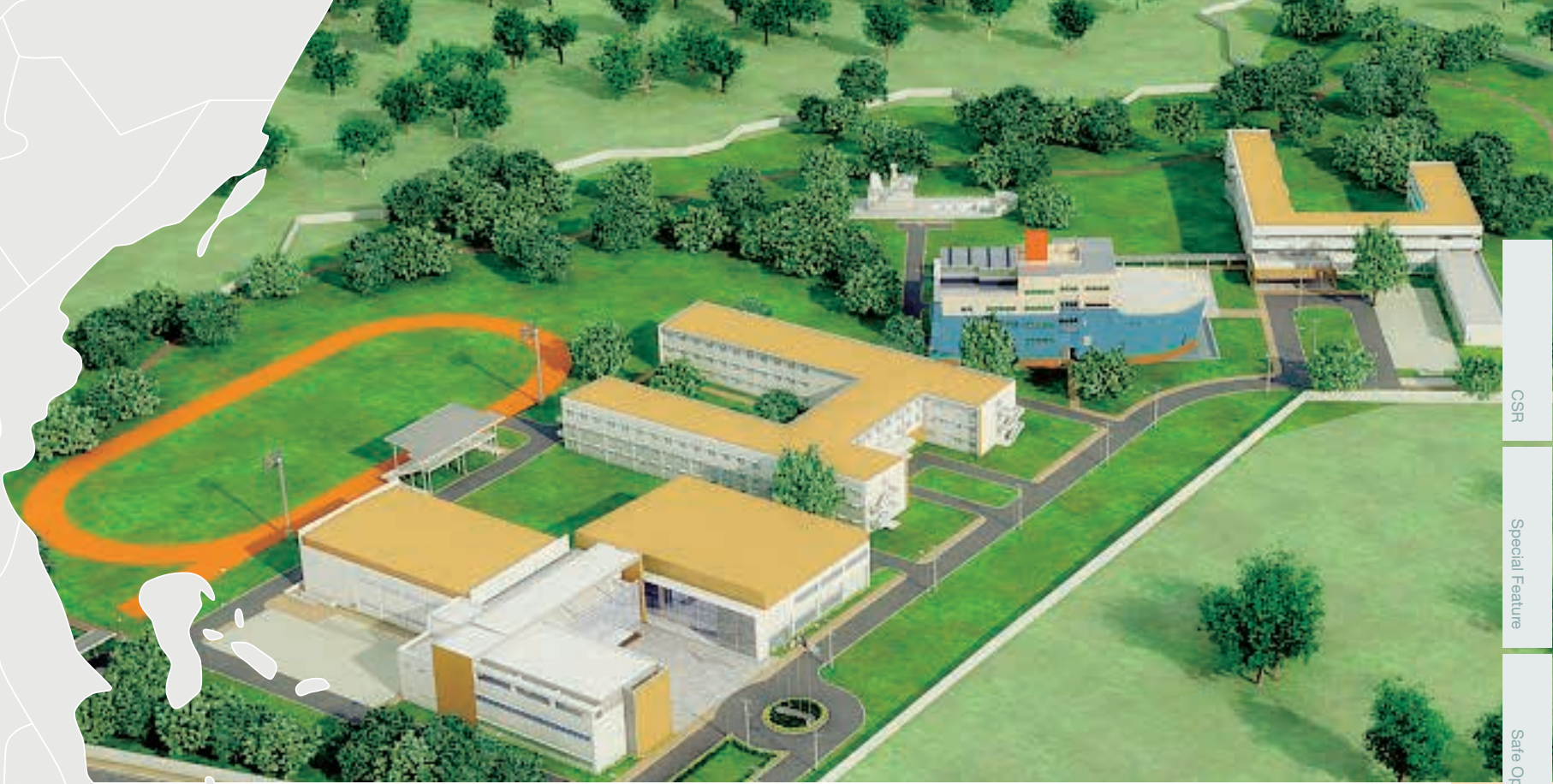
Outline of MOL Magsaysay Maritime Academy Inc.

Name	MOL Magsaysay Maritime Academy Inc. (MMMA)
Planned construction site and scale	Salitran, Dasmariñas City, Cavite State, the Philippines (about 30km south of Manila) Total site area: About 13.2 ha, Total floor area: About 30,000m ²
No. of students	Max. 300 per year (150 each for navigation school and engine school)
Scheduled opening	June 2018 (plan)
Ownership	Mitsui O.S.K. Lines, Ltd. : 40% Magsaysay Maritime Corporation : 35% Magsaysay Institute of Shipping : 25%

Milestones of MOL's Seafarer Education and Training Programs in the Philippines

1980s	Starts manning containerhips and crude oil tankers with Filipino seafarers. Starts assignment from MMC.
1993	Jointly establishes Magsaysay Institute of Shipping (MIS) with MMC, and starts education for new graduate cadets in addition to internal training for officers and crewmembers.
1997	Establishes Magsaysay MOL Marine and starts seafarer manning operations through an in-house manning company.
2005	Establishes MOL Training Center (Philippines) in MIS
2007	Starts onboard seafarer training with dedicated instructors on the Spirit of MOL. (Over 2,200 cadets graduated from this program before the ship was retired in 2013.)
2009	Establishes Magsaysay MOL Ship Management.
2011	Introduces the Third-year Program under the Academe-Industry Linkage Program (AILP)*1 promoted by the government of the Philippines. Provides education and training at MIS, targeting third-year students selected from partner maritime schools.
2013	Starts a cadet education program, which provides practical training on MOL-operated vessels in service, which have been specially equipped with training facilities and accommodations for trainees.
2018	MOL Magsaysay Maritime Academy scheduled to open.

*1 Academe-Industry Linkage Program (AILP): A program to help schools upgrade the education of students and enhance employment opportunities for top-quality students, based on cooperation between academia and industry.



Social Responsibility as an Educational Institute

MOL has established training centers and placed a high priority on seafarer training. These facilities are critical in helping seafarers learn about vessel operating technology and providing pre-boarding training.

What sets MMMA apart from other training centers is that it will provide students with a basic education before they become seafarers. To carry out their duties on the front lines of safe operation, they must have a solid, basic knowledge of the mechanism and structure of vessels. They will complete a general education curriculum focusing on physics and chemistry to help them build a greater understanding of advanced technologies.

MMMA aims to become an educational institute that nurtures the personnel who will play key roles in the Philippines, by providing a solid academic education and honing logical thinking skills, in addition to training in vessel operating technology.



Ship in Campus at the practical training building

Ship in Campus Develops Seafarers who can Hit the Ground Running

MMMA is the first in the Philippines to introduce the Ship in Campus, which simulates an actual vessel. The Ship in Campus provides practical training so graduates can hit the ground running when they complete their education. The facility enhances the drills conventionally provided at AILP, not only by replicating the exterior of the vessel, but also with cutting-edge ship equipment and systems. This ensures more realistic training for tasks such as launching lifeboats and mooring with adjacent pool, so they can complete their entire education and training except boarding practice right on campus. This is one of the key advantages of MMMA.

The academy will also invite MOL Group officers and engineers who are currently in active service at sea and on shore, to the campus to talk about our group's safety culture and preparedness from the point of view of those entrusted with onboard operation, as well as career and life plans. MMMA will turn out highly competent seafarers who have a thorough knowledge of MOL Group safe operation systems and standards, by providing the education, from the first-year stage, required to realize MOL Group's goal: becoming "the world leader in safe operation."

And, those high-competent seafarers, accumulating boarding experiences on our operated vessels for many years, lead to support of safe operation.

Volunteer Activities in Flood-ravaged Area of Joso City

Many of MOL's social contribution activities center on relief efforts to assist areas hit by storms, earthquakes, and other natural disasters. While it is critical to provide swift transport of aid supplies in the immediate aftermath of a disaster, we believe it is also important to follow up with additional assistance even afterwards. This special feature introduces relief activities by 26 new MOL employees in the flood-stricken area of Joso City in April 2016.

Flood in Joso, and MOL's response

The Kinugawa River overflowed its banks on September 10, 2015, leaving a huge section of the city's eastern district underwater – an area measuring 18km north-south and 4 km east-west. Three people died, and more than 5,000 homes were flooded. Today, the flood-ravaged area still faces a host of problems such as delays in repairing the flooded houses, a decline in agriculture, the area's major industry, a weakening of the local economy, and a worsening sense of distress among those affected by the disaster. Government agencies and non-profit organizations are both working to assist in the reconstruction efforts.

In light of the current situation, employees who joined MOL in fiscal 2016 visited the area as a part of the new employee training program, and conducted support activities in cooperation with the Tasukeai Center Juntos operated by the non-profit organization Ibaraki NPO Center Commons.

About Ibaraki NPO Center Commons

The authorized non-profit Ibaraki NPO Center Commons, established in 1996, provides Japanese language education for foreign children in its Joso office. In September 2015, it established the Tasukeai Center Juntos to conduct relief activities for those affected by the disaster and to serve as an information center during the disaster. Juntos is working to restore homes damaged by the flood, help displaced people move, and support the local community.

Relief Activities

1 Bus trip to disaster-affected area

The area affected by the flood is large, and different areas face different obstacles to recovery. MOL new employees toured the area by bus, and learned about the diversity of difficulties facing the community by looking closely at the collapsed banks of the Kinugawa River and the area that suffered the most serious flooding.



Examining traces of the flood damage on a hedge

2 Eating emergency rations for lunch

New employees ate a lunch of emergency rations such as canned bread and rice, the same foods served at evacuation shelters during the flood. This allowed them to see the aftermath of the flood from the point of view of those most impacted by the tragedy, and reminded them how important it is to make preparations for a disaster.



New employees eat a lunch of emergency rations. Heating water to prepare emergency rations

Joso City

3 Volunteer activities in disaster-stricken areas

Activity 1: Cleanup at noodle factory affected by disaster

At the request of the owner's spouse, the new MOL employees helped to clean up a local noodle factory that was severely damaged in the flood. Wearing dust-protective masks, they split up into teams to rearrange household goods and furnishings that were hastily moved to the second floor as the floodwaters approached and clean up floors and ceilings. They took everything outside for a thorough cleaning and removed garbage from the site. "The place has been cleaned beyond recognition," said the owner's spouse. "We are so happy."



Inside the noodle factory before cleanup

New employees clean and rearrange household goods.

Activity 2: Sharing a tea break with local residents

Many restaurants, which served as meeting places for community associations and gathering places for local residents, were damaged in the flood, so the sense of community in the flood-ravaged area is rapidly disappearing. To prevent elderly residents from feeling isolated, which could aggravate their physical and mental health problems, it is essential to find spots where people displaced by the flood can get together. As part of that effort, eight flood-displaced residents were invited to the NPO office to chat with new MOL employees and enjoy tea, cookies, and other snacks.



Tea and conversation at the NPO office

4 Voices of New Employees after the Visit

- I could clearly appreciate the huge difference between learning about disaster-stricken areas through the media and actually seeing it with my own eyes. Before this, I had a vague knowledge of such things through the news, but now I will be more conscious about disaster-stricken areas and think about what I can do to help.
- I experienced how the perceptions of flood damage and the degree of reconstruction required vary so much even among people who suffered similar damage. I realized anew that I don't have to talk to community members with incorrect, preconceived notions about their positions.
- From talking with those affected by the flood, I learned that safety depends on awareness of risks. I will take care not to fall into ignorance and lack of consideration when thinking about safety, and I realize that when I say things like "I don't know" and "It has nothing to do with me," I can be opening myself up to unnecessary risks



A group shot of new MOL employees with NPO staff and the spouse of the noodle factory owner

5 Comment from NPO

As time passes since the flood, fewer volunteers come to the disaster-stricken areas. There are still many homes that have not yet been cleaned up. Thanks to MOL employees, reconstruction has started on the noodle factory. Thanks to their visit, we know we are not forgotten, and we have people who support us. This encourages us more than anything. Thank you very much.



Yoshihiro Yokota
Representative of Tasukeai Center Juntos

The MOL Group continually takes a proactive stance to assist in disaster relief and reconstruction activities in Japan and around the world.

MOL Group's Social Contribution Activities: Connecting with the World

As a corporate group that strives for sustainable growth in step with society, we take a proactive stance in social contribution activities that are unique to an ocean shipping company with a global network. The group also emphasizes activities that get employees engaged and involved.

The MOL Group expresses its heartfelt sympathies to all those afflicted by the recent Kumamoto earthquake, and wishes for their safety and the swiftest possible reconstruction and restoration of the quake-stricken areas.

~ Activities Involving Executives and Employees, in Japan and Overseas ~

MOL plans various programs for executives and employees to implement on their own initiative. It also believes participation in social contribution activities presents an opportunity for personal growth.

▶ Charity Event Draws Attention to Child Hunger

MOL held a charity event to help the World Food Programme (WFP)*'s school meal initiative. The event gave executives and employees the chance to taste the same kind of meals provided through the aid program and purchase WFP charity merchandise, with all the proceeds going to the WFP. More than 300 people took part in the event. Their contributions through the event will help provide about 4,000 children with nutritious meals.

* The World Food Programme (WFP) is part of the United Nations system and the world's largest humanitarian agency fighting hunger worldwide. It implements school meal programs to ensure that every child has access to education, health, and nutrition.

▶ Lights-off Hour Event and Blood Donation Program at MOL Global Offices

MOL, Hong Kong-based MOL Liner, Ltd., and other MOL Group companies — 17 in all — joined the lights-off hour event called "Earth Hour 2016" organized by the World Wide Fund for Nature (WWF) to promote environmental protection. MOL Liner and other group companies in Hong Kong also participated in a blood donation drive that resulted in more than 50 employees giving blood.

* WWF is one of the world's largest leading conservation organizations, working in more than 100 countries. Its efforts focus on promoting biodiversity and preventing global warming.

~ Addressing Social Issues in a Way Unique to an Ocean Shipping Company ~

MOL supports local communities in need of relief supplies and NPOs that work to assist them, by providing containership and car carrier transport at no cost.

▶ Transport of Used Shoes to Zambia/ Providing Secondhand Containers

MOL has transported used shoes to Zambia since 2010 in cooperation with the Japanese Organization for International Cooperation in Family Planning (JOICFP)*. Shoes are collected at Sogo and Seibu department stores and Ito-Yokado supermarkets. MOL also donates secondhand containers to Zambia to serve as Maternity House, a standby facility to help expectant and nursing mothers.

* The Japanese Organization for International Cooperation in Family Planning (JOICFP) is a non-governmental organization (NGO) that contributes to the welfare of local residents by conducting research related to family planning and maternal and child health in developing nations.



~ Supporting Source Nations of Our Seagoing Workforce ~

MOL offers ongoing support to the nations and regions that develop our seafarers, such as the Philippines, and works to deepen ties with these areas.

▶ Transporting Wheelchairs to the Philippines

MOL provided free transport of 90 used wheelchairs for children in the Philippines. The wheelchairs were donated to the non-profit organization The Volunteers Group to Send Wheelchairs to Overseas Children, which recognized our contribution at a ceremony in the Philippines, and in a letter of appreciation.



~ Education Activities to Convey the Significance of Japan's Maritime Industry ~

MOL continues activities to convey the maritime industry's importance to Japan as an island country. In fiscal 2015, we presented lectures to about 230 young people.

▶ Head Office Visit by Marine Technology Grad Students from Delft University

MOL welcomed 34 graduate students from the Delft University of Technology in the Netherlands in a visit to the Tokyo Head Office. We showed them the Safety Operation Supporting Center (SOSC), and MOL employees enjoyed an active exchange of opinions about our response to environmental issues.

▶ Presenting Marine Day Event to let people come in contact with the Sea and the Ships

MOL presented tours of a containership, container terminal, cruise ship, and ferry, and offered guests the opportunity to experience the ship operation simulator, in cooperation with the Japanese Shipowners' Association and the Japan Captains' Association.

~ Voices of Participants ~

"It was a rare opportunity to see the inside of the ship."
"It was amazing to see how big the containership was."



~ Supporting Disaster-stricken Areas ~

MOL is always ready to support reconstruction efforts in areas affected by disasters, including the Great East Japan Earthquake, as well as swift emergency aid relief right after a disaster.

▶ MOL Presents Dialogue between Miyako City Mayor and Local Youth aboard Nippon Maru

MOL invited Miyako City Mayor Masanori Yamamoto and university students and adults living in the city to a dialogue event aboard the cruise ship Nippon Maru during a call at the port of Miyako, Iwate Prefecture.

Comment from Miyako City Mayor Masanori Yamamoto

"Mitsui O.S.K. Lines, Ltd. created the program, which invited 21 university students and adults living in the city to exchange opinions and ideas. The visit provided an opportunity for the younger generation, which will create the future of the region, to rediscover the attractiveness of the area and strengthen their ties with each other. During the dialogue, the participants shared their ideas of "My Favorite Miyako," and discussed ways to promote the region's attractions to more people."

"We received comments from university students who took part in the dialogue such as: 'For me, who grew up in an urban city, Miyako's nature itself is very attractive,' 'I was moved to find out that scenes we see every day are amazing to people coming to Miyako from outside the prefecture,' and 'I usually have few opportunities to meet people of my generation, so it was very good to have an opportunity for exchange. I want to continue this.'"

"I heard some very valuable opinions, too. Everyone has the same feeling about wanting to promote Miyako City. I hope the young people come up with a lot of ideas and measures to do this."



Masanori Yamamoto
Miyako City Mayor

▶ Effort to Aid Quake-stricken Areas in Kumamoto, Japan

To provide group-wide support after the Kumamoto Earthquake in April 2016, MOL established an aid relief task force in the immediate aftermath of the quake. We launched a charity donation drive, collecting about ¥4.3 million within the group to help people impacted by the disaster and to start reconstruction of the affected areas. It has also made a donation of ¥30 million as a group.

▶ Effort to Aid Quake-stricken Areas in Ecuador

MOL contributed secondhand cargo containers to serve as emergency shelters for those left homeless after a severe earthquake in Ecuador, and arranged for the transport of drinking water and other critical relief supplies.



MOL Group’s Environmental Data (As of March 31, 2016)

Energy Consumption	Unit	FY2013	FY2014	FY2015
Fuel oil (C oil)	thousand tons	5,895	5,837	5,631
MOL vessels	thousand tons	4,796	4,547	4,375
Group company vessels	thousand tons	1,099	1,290	1,256
Diesel oil (A oil)	thousand tons	108	157	312
MOL vessels	thousand tons	59	93	210
Group company vessels	thousand tons	49	64	102
Electricity	thousand kWh	92,672	107,383	99,294
Municipal gas	thousand m³	1,542	1,545	1,626
Energy consumption (equivalent)	thousand GJ	260,967	259,996	258,290

Greenhouse Gas Emissions	Unit	FY2013	FY2014	FY2015
Scope 1: CO₂ emissions	thousand tons	18,860	18,803	18,676
MOL vessels	thousand tons	15,268	14,547	14,380
Group company vessels	thousand tons	3,569	4,216	4,229
Others	thousand tons	23	40	67
Scope 2: CO₂ emissions	thousand tons	53	62	56
Scope 3: CO₂ emissions	thousand tons	9,960	8,038	7,306

NOx and SOx Emissions	Unit	FY2013	FY2014	FY2015
NOx emissions	thousand tons	504	503	499
MOL vessels	thousand tons	408	389	385
Group company vessels	thousand tons	96	114	114
SOx emissions	thousand tons	332	335	319
MOL vessels	thousand tons	269	260	247
Group company vessels	thousand tons	63	75	72

Other Resources	Unit	FY2013	FY2014	FY2015
Waste	tons	135,597	114,576	180,983
Recycled	tons	134,601	113,940	179,974
Non-recycled	tons	995	637	1,009
Recycling rate (MOL Head Office Building)	%	67	66	64
Water	m³	721,574	637,694	632,174
Tap water	m³	721,574	637,694	632,174
River water	m³	–	–	–
Seawater tons (cyclic usage)	m³	–	–	–
Office paper	thousand sheets	77,887	72,075	65,873

Eco Sailing Initiatives	Unit	FY2013	FY2014	FY2015
Ocean-going vessels				
CO₂ emissions per unit load (ton-mile)	FY2009 = 100	91.4	85.9	83.3
MOL	FY2009 = 100	94.0	88.7	84.7
Domestic coastal vessels				
Unit energy consumption	FY2009 = 100	101.2	101.6	101.7

Onshore Initiatives	Unit	FY2013	FY2014	FY2015
Unit energy consumption (MOL, Daibiru, Shosen Koun)	FY2009 = 100	83.6	78.3	76.1
Solar power generation	thousand kWh	257	252	203

Data scope

- MOL Group consolidated subsidiaries in Japan and overseas. Excludes some small offices
- Noted areas such as “(MOL)” are limited to that scope

Third-party Verification of CO₂ Emission Data

MOL acquired third-party verification by SGS Japan, Co., Ltd. to ensure the fairness, accuracy, and transparency of FY2015 CO₂ emission data included in this report. The verification was conducted based on ISO14064-3:2006.

Through the third party verification, we will identify issues and enhance our efforts to further reduce CO₂ emissions.

Verification target

- Scope 1, 2 (energy originated carbon dioxide emissions) and Scope 3 (downstream leased assets).

C oil/A oil: Used mainly for vessel fuel.

Energy consumption: The energy equivalent of heat originated from C oil, A oil, electricity, municipal gas and other energy consumed

Scope 1: CO₂ emissions originating mainly from A oil and C oil used as fuel in vessels

Scope 2: CO₂ emissions originating mainly from electricity consumption

Scope 3: Estimated value of CO₂ emissions originating mainly from A oil and C oil used as fuel in vessels MOL has chartered out to other companies; calculated from FY2012

Waste: Mainly vessels sold to be scrapped; recycled at scrapping yards

Water: The volume of water used in offices. Most of the water used in vessels is made from seawater and recycled.

MOL Human Resource Data (as of March 31, 2016)

Employees

			FY2013		FY2014		FY2015	
Number of employees Excludes expatriate employees, loaned employees, contract employees and part-timers. etc.			Land	Sea	Land	Sea	Land	Sea
	Male		444	269	438	277	465	277
	Female		162	7	168	7	177	6
	Total		606	276	606	284	642	283
Number of employees by position Excludes loaned employees, contract employees and part-timers, etc. / Includes expatriate employees	General managers	Male	23	11	21	10	22	8
		Female	0	0	0	0	2	0
		Subtotal	23	11	21	10	24	8
	Group leaders	Male	178	103	171	113	175	116
		Female	8	0	8	0	5	0
		Subtotal	186	103	179	113	180	116
	Managers	Male	162	108	150	101	143	97
		Female	9	0	12	0	11	0
		Subtotal	171	108	162	101	154	97
	Below manager level	Male	278	259	289	262	286	271
		Female	200	9	196	11	200	12
		Subtotal	478	268	485	273	486	283
	Total		858	490	847	497	844	504
Ratio of females in managerial positions** (%)		4.5	0	5.5	0	5.0	0	
New hires	Male		19	22	19	20	18	25
	Female		7	1	6	2	8	1
	Total		26	23	25	22	26	26
Ratio of employees with disabilities (%)		1.9* ³		2.0* ³		1.9* ⁴		
Average years of continuous service* ²		16.0	11.0	16.0	11.0	16.1	11.0	
Job turnover rate within 3 years of continuous service* ² (%) Calculation method: (New graduate hires resigning within 3 years of joining the company) / (New graduate hires over past 3 years)		1.3	3.0	2.6	1.5	3.9	1.4	

*1. Excludes loaned employees, contract employees and part-timers, etc. *2. Excludes expatriate employees, loaned employees, contract employees and part-timers. etc.
*3. The number of employees with disabilities meets the statutory employment number of employees with disabilities *4. 2.07% as of April 2016

Employee Support Systems

		FY2013	FY2014	FY2015
Number of annual leave days taken*5 (including summer vacation)	Days	11.6	12.8	13.3
	Percentage (%)	43.7	47.4	50.3
Maternity leave (pre- and post-childbirth)*6	Number of employees	3	7	13
	Ratio (%)	100	100	100
Paternity leave usage*5	Number of takers	23	21	19
	Ratio (%)	45	100	73
Child-care leave system*6	Number of users (males shown in brackets)	9(1)	9(1)	14(3)
	Usage rate (%)	100	100	100
Short-time work shift to allow for child-care	Number of users	1	1	3
Retirement reemployment system after spouse transfer Introduced in FY2014	Number of users	–	0	2
Working mothers*6	Number	39	43	33
Nursing care leave system	Number of users	0	0	0
Re-employment system for mandatory retirees	Number of employees	1	2	0

Care Support Systems	System	Application Period and Details
Childbirth	Pre-and post-childbirth leave	8 weeks of leave before and after childbirth (Of those weeks, 6 weeks are paid)
Child-care	Child-care leave	Until a child becomes 2 years old
	Short-time work shift	1 hour shorter work day
	Overtime work exemption	Until a child becomes 3 years old
	System for partial work at home	Can work at home for 6 hours
Nursing Care	Nursing care leave	Up to 2 years leave
	Short-time work shift	1 hour shorter work day
	Special working arrangements	Flexible working hours

*5 Excludes personnel working onboard, loaned employees, contract employees and part-timers, etc.
*6 Excludes expatriate employees, loaned employees, contract employees and part-timers, etc.

Number of MOL Group Employees

Number of Employees (person)	FY2013	FY2014	FY2015
Bulkships	1,307 (118)	1,342 (121)	1,357 (139)
Containerships	5,348 (348)	5,534 (350)	5,456 (354)
Ferry & Domestic Transport	878 (89)	858 (86)	845 (62)
Associated Businesses	2,099 (1,503)	2,123 (1,468)	2,160 (1,489)
Others	364 (81)	351 (78)	355 (71)
Company-wide (common)	293 (65)	300 (71)	327 (66)
Total	10,289 (2,204)	10,508 (2,174)	10,500 (2,181)

(1) The number of employees includes the entire labor force, and the approximate average number of temporary employees is indicated in parentheses.
(2) The employees indicated as Company-wide (common) belong to administrative departments, which cannot be classified in any specific segment.

Other Support System

“Refresh” Leave: Employees are allocated extra holidays after 15 years and 25 years of continuous service.

Industrial Accidents (on land)

Industrial Accidents (on land)		FY2013	FY2014	FY2015
Industrial accidents (excludes commuting accidents)	Number of cases	0	6	5
Industrial accident leave	Number of days	0	55	5.5

* Days of Industrial accident leave for FY2014 have increased due to employee falls, broken bones, and other injuries during business trips.

Employee Education

			FY2013	FY2014	FY2015
Education / Training cost	Land-based	¥/person	80,000	130,000	120,000
	Ocean-going	¥/person	374,000	327,000	301,000

(Note 1) The cost to the Human Resources Division (including part of the costs for English language training programs taken by ocean-going employees)
(Note 2) Education and training costs for ocean-going employees do not include travel and accommodation expenses.



Third-party Opinion



Eiichiro Adachi
Director
The Japan Research Institute,
Ltd.

Biography
Currently serves as Head of ESG Research Center, via Corporate Strategy Research and Technology and Research divisions. Engages mainly in industrial research and corporate assessment from the viewpoint of corporate social responsibility (CSR).

This year marks the fourth time I have contributed a third-party opinion on the MOL Group Safety, Environment and Social Report. Reading through this year’s report, I paid particular attention to some new challenges in FY2015 on which the MOL Group is taking a proactive stance in social responsibility.

The first is the establishment of the IT Strategy Committee and Technology, Innovation and Environment Committee. It is a natural step for the MOL Group to focus on safe operation and environmental conservation as critical challenges facing the ocean shipping industry, and further, it underscores how both are intertwined. I was especially interested in evaluating the group’s stance on advancing safe operation and environmental conservation by using ICT (IoT/big data) in this report.

The second is establishment of the new “guidelines for prevention of bribery, etc.” Payment of port fees for loading/unloading, customs clearance, and so on, mainly in developing countries, has shown a tendency to become a problem among overseas ocean shipping companies. There is criticism that ocean shipping companies are involved in illegal trade with local corporations in Africa and other regions. In FY2015, MOL presented seminars outlining laws and regulations in Japan and overseas and points to remember for executives and employees. I expect the company to maintain and sharpen its focus on expanding this initiative to its overseas companies and group companies to establish a more solid framework of business ethics.

The third is gaining approval to establish MOL Magsaysay Maritime Academy Inc. in the Philippines. The MOL Group

has established training centers in the Philippines, and has focused on training of seafarers, based on the idea that a workforce of highly skilled, committed seafarers is fundamentally important to maintain and enhance its leadership in safe operation and environmental protection. I expect that this school, which is slated to open in June 2018, will play a key role in the MOL Group’s infrastructure.

The fourth is establishment of the new position responsible for diversity in the MOL Human Resources Division. It is now driving initiatives to promote larger roles for women in the workplace. Considering that the company now has major offices in 36 countries and regions, establishment of a global human resources development system is a major objective in developing a workplace environment that allows for multinational, diversified personnel to maximize their own abilities. In addition, I believe this will directly connect to MOL’s competitiveness as a world-leading multimodal ocean shipping company. I hope the company continues to promote these measures over the long term.

Looking back at events in the past year, the Paris Agreement adopted by the 2015 United Nations Climate Change Conference (COP21) marked a new step in international cooperation toward addressing global warming. The MOL Group’s CO₂ emissions per unit load (ton-mile) (merchant freighters) shows a steady downward trend, but considering the various treaties and guidelines under examination by the International Maritime Organization (IMO), we must accept the possibility of measures to limit business activities and place additional financial burdens on ocean shipping companies. So please continue to focus on initiatives to stay a step ahead of changing environmental regulations.

Furthermore, Sustainable Development Goals (SDGs), comprising 17 goals and 169 targets set out in “Transforming our world: the 2030 Agenda for Sustainable Development” adopted by the United Nations, clearly shows the social issues that various countries, corporations, citizen’s groups and other organizations must address in the future. I hope MOL Group will internally discuss how it can help fulfill the SDGs through its main business.

Management’s Response to the Third-party Opinion

We appreciate your objective analysis and your praise for the new initiatives aimed at fulfilling our group’s social responsibility. The four initiatives that were appraised in this report are integrated to realize our group’s corporate principles, meet our social responsibility as a multimodal ocean shipping group, and enhance our competitiveness. We have worked steadily and consistently to implement these measures, acknowledging that we cannot achieve sustainable growth unless we meet the challenges of this new era. In addition, we will hold further internal discussions on the MOL Group’s initiatives aimed at achieving the SDGs you pointed out, as another issue that we need to address.

We will continue to promote highly transparent business management, draw upon the activities of the CSR and Environment Committee to build group-wide awareness of CSR, and maintain our tireless efforts to earn even greater trust from stakeholders as a corporation that takes a proactive stance in contributing to society.



Kenichi Nagata
Executive Vice President and
Executive Officer
Chairman of CSR Committee

External Recognition

Overall, CSR Related (Including Socially Responsible Investment (SRI) Index)

Earns inclusion in Dow Jones Sustainability Indices ▶ A
MOL has been included in the Dow Jones Sustainability Indices (DJSI) Asia Pacific thanks to its highly regarded efforts in the areas of environmental protection, CSR, and IR activities. The DJSI identifies companies expected to show long-term sustainable growth. (Since 2003)

Earns inclusion in FTSE4Good Index ▶ B
FTSE is a global index company owned by the London Stock Exchange. FTSE has included MOL in one of its major socially responsible investment indices, the FTSE4Good Index. (Since 2003)

Morningstar Socially Responsible Investment Index (MS-SRI) ▶ C
MOL has been included in the MS-SRI for its superior CSR efforts. The MS-SRI is composed of stocks that have been selected by Morningstar Japan K.K. on the basis of their superior performance in CSR. (Since 2003)

MSCI Global Sustainability Index
MOL has been included in the MSCI Global Sustainability Index for its superior efforts on measures taken for risks and opportunities related to environmental, social, and governance (ESG). (Since 2010)

SMBC Sustainability Assessment Loans ▶ D
MOL has received the highest rating for SMBC Sustainability Assessment Loans from Sumitomo Mitsui Banking Corporation and earned the highest mark for its comprehensive information disclosure and efforts to promote sustainability. (2016)

SMBC Nadeshiko Loans
MOL became the first company in the ocean shipping industry to receive SMBC Nadeshiko Loans from Sumitomo Mitsui Banking Corporation. It was also recognized as a leader among major corporations for its initiatives aimed at creating a workplace where women can play more active roles. (2016)

Cruise of the Year 2015 Awards
The Nippon Maru: Tonde (“fly to”) cruise packages to Okinawa, Kyushu, and Hokkaido, which were planned and marketed by its group company Mitsui O.S.K. Passenger Line, Ltd. won the Grand Prix in the “Cruise of the Year 2015” awards sponsored by the Japan Oceangoing Passenger Ship Association (JOPA). The company’s efforts to develop new cruise markets and its leading role in the promotion of regional tourism were key to its selection for this award.

Safety, Environmental and Social Report 2015 Honored at Environmental Communication Awards
The MOL Group Safety, Environmental and Social Report 2015 took home the prize for excellence in the environmental report category of the 19th Environmental Communication Awards, jointly organized by Japan’s Ministry of Environment and the Global Environmental Forum, and won favorable reviews for its description of technologies intended to reduce the environmental impact of MOL Group businesses, its detailed look at the group’s compliance structure, and an integrated approach to reporting in combination with the MOL Annual Report. (February 2016)

IR Related

Internet IR Commendation Award ▶ E
MOL received the Internet IR Commendation Award from Daiwa Investor Relations Co., Ltd. (2015)

Safe Operation Related (Including Recognition of Seafarer Training)

Certification from DNV GL AS for Seafarer Training Related to Liquefied Gas Transport ▶ F
MOL’s training programs for seafarers serving on LNG carriers and LEG/LPG carriers, held in Japan and overseas, have earned certification from DNV GL AS, as a program that satisfies the crew competency standards advocated by Society of International Gas Tanker & Terminal Operators Ltd. (SIGTTO). (LNG carriers: since 2007) (LEG/LPG carriers: since 2016)

Certification from DNV GL AS for Seafarer Education and Training Management Program ▶ G
MOL’s tanker and LNG carrier divisions have acquired certification from DNV GL AS, in recognition of the effectiveness of its unique seafarer training and education management program and its conformance with the Competence Management System (CMS). (Since 2012)

Environment Related

ISO 14001 Certification ▶ H
MOL has used its own environmental management system MOL EMS21 since April 2001, and it holds ISO 14001 certification, an international standard for environmental management. (Since 2003)

ISO 50001 Certification
MOL acquired ISO 50001 certification for its energy management system and ISO 14001 certification for its environmental management system.
Certified companies: MOL Ship Management Co., Ltd. (2014), MOL Ship Management (Singapore) Pte. Ltd. (2014), MOL Ship Management (Hong Kong) Company Ltd. (2014), and Magsaysay MOL Ship Management, Inc. (2015)

Recognized as leader in Climate Change Transparency ▶ I
MOL was recognized as a leader for the depth and quality of the climate change data it has disclosed for independent assessment through CDP, an international non-governmental organization, and included in the Climate Disclosure Leadership Index for the third time, and for two consecutive years. (2015)

Coal Carrier Soma Maru Honored as ‘Bulk Ship of the Year’ ▶ J
The vessel was named the “Bulk Ship of the Year” at the IBJ Awards 2014 for its versatility and environmental performance as a state-of-the-art coal carrier with a wide-beam/shallow-draft design, various safety features and energy-saving specifications. (2014)

Commendations from the Port Authorities of Los Angeles and Long Beach, U.S.A. ▶ K
MOL received the Green Flag Award and Vessel Speed Reduction Award from the ports of Long Beach and Los Angeles, respectively, for its efforts to ensure compliance with standards that call for vessels to slow down within 40 nautical miles (nm) of the shore. (2015)



Corporate Profile (As of March 31, 2016)

Name:	Mitsui O.S.K. Lines, Ltd.
Head Office:	1-1, Toranomon 2-chome, Minato-ku, Tokyo 105-8688, Japan
President & CEO:	Junichiro Ikeda
Capital:	¥65,400,351,028
Number of shares issued:	1,206,286,115
Number of shareholders:	104,202
Share listings:	Tokyo and Nagoya stock exchanges
Business:	Multi-modal transport, mainly by ocean-going vessels
Branches and offices in Japan:	Nagoya, Kansai, Hiroshima, Kyushu
Overseas network:	35 nations and regions
Number of Group companies:	65 in Japan, 374 overseas; Total: 439 (The parent company and consolidated subsidiaries)
Number of MOL Group employees:	10,500 (The parent company and consolidated subsidiaries)
Group fleet:	883 vessels, 63,472 thousand DWT (including vessels on short-term charter contracts and those owned by joint ventures)

For Inquiries

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The MOL Group discloses CSR and environmental information in:

Safety, Environmental and Social Report 2016



"CSR/Environment" section (Web site)



"CSR/Environment" section (Web site)

<http://www.mol.co.jp/csr-e/index.html>

More detailed information not included in this report can be found on our Web site.

Other communication tools

Annual Report

Explains detailed investor relations information such as management strategy, business environment, financial reports, and financial data, primarily for shareholders and other investors.



MOL Investor Guidebook

(http://www.mol.co.jp/ir-e/data_e/ig_e.html)

Explains the MOL Group's management plans, key financial indicators, characteristics of business activities, market position, and operating environment by business division, primarily for shareholders and other investors, with charts and figures in an easy-to-understand way.

Web site

(<http://www.mol.co.jp/en>)

Provides an overview of businesses and the latest information through press releases for all stakeholders. The Web site also has links to the sites of MOL Group companies.



This Safety, Environmental and Social Report is printed on Forest Stewardship Council™ (FSC)-certified paper made of wood from responsibly managed forests. It was also printed using waterless printing and vegetable oil inks.

