MOL Group
Safety, Environmental, and Social Report 2015 (Editorial Policy)

MOL decided to rename its former Environmental and Social Report, changing its title to the Safety, Environmental, and Social Report to more accurately reflect that its contents more clearly demonstrate the MOL Group's worldwide leadership in safe operation. The report specifies and introduces five of our highest-priority issues, explains details of the actions taken on those issues, the data on results, as well as background information on the role of ocean shipping and the issues it faces. The Annual Report, which is published at the same time, is aimed mostly for shareholders and other investors, and has a different focus well as background information on the role of ocean shipping and the issues it faces. The Annual Report, which is published at the same time, is aimed mostly for shareholders and other investors, and has a different focus than the information in the Report on Safety, Environmental, and Social Report, which is for customers and other stakeholders. QR codes in this report’s printed version or URLs in the PDF version link to related topics in the Annual Report for your reference.

Period
FY 2014 (April 1, 2014 to March 31, 2015). 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.)

*MOL Group
Mitsui O.S.K. Lines, Ltd. (MOL), a global shipping company, operates the safe transport services and introducing environmental technologies in a proactive manner.

MOL Group is also proactively engaged in offshore business projects such as crude oil and LNG production facilities and receiving terminals.

LNG Carriers
Liquefied natural gas (LNG) is a valuable, clean energy source, and the MOL Group, as a leading LNG carrier, strives to maintain the highest standards of safety and environmental performance. The MOL Group is also proactively engaged in offshore business projects such as crude oil and LNG production facilities and receiving terminals.

Car Carriers
Ever since MOL launched the first domestic car carrier in Japan, our group has continued to strengthen its position as the world leader in car carrier operation. The trend of shrinking overall logistics industry, not only by supporting environmental efforts, 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 burden, through Japan’s largest network of car ferries and coastal services.

Business Summary
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.

The MOL Group’s CSR and the environment information are disclosed in:

Safety, Environmental, and Social Report 2015

http://www.mol.co.jp/en/csr-e/

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

MOL Investor Guidebook
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.

Corporate Brochure
Explains MOL business activities in a clear, concise manner, primarily for customers, business partners, communities, students and professionals who are seeking jobs, and the general public.

Web site (http://www.mol.co.jp/en/csr-e/)
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.
In the more than 130 years since MOL was founded, we have continued to expand by our never-ending spirit of challenge. MOL generates added value to the goods we transport via our main business, international ocean shipping. Through ocean shipping, we contribute to the development of regional industry and to more prosperous communities, which is part of our corporate social responsibility (CSR). Still, this has been inherited as the spirit of our company from its founding, and we are proud to say that we continue in that vein.

MOL History: The 130 Years

1884 Osaka Shosen Kaisha (OSK Lines) is founded.
1914 Panama Canal opens.
1915 WWI ends.
1918 WWI ends.
1918 Panama Canal opens.
1918 Russia's revolution begins.
1918 State of Maine wins 25 days and 17.5 hours, well below the industry average of 35 days.
1919(iter) 1st 130 Years

MOL Ships in History

1939 The Argentina Maru and Brazil Maru are launched, and cover the Yokohama-New York route in 25 days and 17.5 hours, well below the industry average of 35 days.
1942 Mitsubishi Shippin Co., Ltd. founded.
1943 Dönitz set out on Operation Bodenplatte.
1943 November 30: 2 atom bombs dropped on Japan.
1944 Army Air Corps destroys 1,000 ships, 800 airplanes.
1945 Berlin is occupied.
1945 WW II ends.
1945 Japanese Shippers Association established.
1949 Foreign exchange rate pegged at $1 = ¥360.
1949 Argentina Maru.
1950 Uruguay FSRU Project

The Big Picture: Worldwide Events Since MOL's Founding

1952 Passenger Liner Tenryu sinks in the North Atlantic.
1954 Panama Canal opens.
1954 State of Maine wins 25 days and 17.5 hours, well below the industry average of 35 days.
1955 Stop! Look! and Listen to Safe Practice: Three-Minute Safety Barrage.
1956 The high-speed cargo ship Komakino Maru is launched.
1956 First container ship, the Alouette II, enters service.
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1974 Hong Kong becomes a Special Administrative Region of China.
1975 Suez Canal reopens.
1976 Panama Canal opens.
1977 Argentina’s debt crisis begins.
1978 The 1st 130 Years

MOL Milestones

1983 The 1st 130 Years

MOL Head Office building at the time of OSK Lines founding.
1984 The Mitsui Head Office building at the time of OSK Lines founding.
1985 The 1st 130 Years

MOL Participates in the 1804-bulled Global Compact.
2005 Japan moves toward fluctuating exchange rates.
2006 MOL participates in the 1804-bulled Global Compact.
2007 Russia Yamal LNG Project

2014 MOL Head Office and MOL-operated vessels earn ISO14001 certification.
2015 Uruguay FSRU Project

2017 Japan Line and Yamashita-Shinnihon Steamship Co. Ltd. merge to form Nippon Ocean Lines Co. Ltd (NOL).
2018 MOL and Navix merge, establish new Mitsui O.S.K. Lines, Ltd.

2019 MOL, JL, and YSL launch the full containerships.

2020 MOL, JL, and YSL launch the full containerships.
2021 Japan Line and Yamashita-Shinnihon Steamship Co. Ltd. merge to form Nippon Ocean Lines Co. Ltd (NOL).
2022 MOL Group logomark introduced.
The MOL Group: An Excellent and Resilient Organization That Leads the World Shipping Industry

MOL Group’s Roles and Accountability in Society
Contribute to the Growth of the World Economy as a Multi-modal Transport Group

The MOL Group, whose main business is global ocean shipping, supports the prosperity of people around the world through the safe, reliable transport of goods that are indispensable for human life—food-, clothing-, home-related products, energy resources, raw materials, components, and parts for industry, and so many other items—as the linchpin of the global economy and communities around the world. At the same time, the group has contributed to growth of local industries. Currently, the world population is about 7 billion, and annual international seaborne trade totals about 10 billion tons. By 2050, population is expected to reach 9.6 billion, with annual seaborne trade growing to some 16 billion tons. And as worldwide population growth and economic expansion in emerging nations fuel new demand for transport services, the volume of shipping is bound to grow in both scale and importance. Added value generated by ocean shipping contributes significantly to the growth of the world economy. The shipping industry’s key role naturally brings with it great responsibility, making corporate social responsibility (CSR) a core issue for our management.

Addressing Global Risks, Responding to Social Issues
Solve Social Issues in Cooperation with Stakeholders

As the world economy has grown and become increasingly borderless, systemic, interconnected, and complicated, global risks are coming to light—for example, climate change, depletion of various resources, economic disparity, human rights, and political instability. The MOL Group cannot shut its eyes to these issues. For example, piracy issue resulting from economic and political strife and the greater frequency of natural disasters brought about by global warming threatens the safety of our operation and affect the continuity of our business. Not only our group, but also the entire shipping industry, must address such global risks. Therefore, we will focus on preventing incidents and problems and disclosing information that will contribute to global environment protection. We will share issues with customers and suppliers through information disclosure, cooperate with the industry, governments, and international institutes, and solve issues surrounding ocean shipping in a proactive way. Our group has demonstrated its commitment to solving issues in cooperation with international society and stakeholders, such as providing humanitarian assistance to address the root causes of piracy in Somalia, making proposals to the government through industrial institutes, sharing intelligence on pirate activity and marine weather conditions with governmental bodies, and becoming the first shipping company to join the Global Compact proposed by the United Nations. The group continually steps up its efforts in these areas. Every executive and employee takes a proactive stance in addressing issues that affect our vessels and our customers and is committed to playing a role in realizing a sustainable society.

MOL Group’s Key Priorities
Safe Operation is the Top Priority

As the impact of corporate activities on society becomes more pronounced, corporate social and environmental initiatives have a greater effect on corporate value every year. In its report called “A Concept of a Sustainable Maritime Transportation System,” the International Maritime Organization (IMO) lays out tasks to be addressed, as well as action plans covering 10 items including safe operation, environmental conservation, human resources development, corporate governance, improvement of energy efficiency, responses to piracy and terrorism, to ensure “sustainable ocean shipping.” The MOL Group promotes corporate activities specific to the five key issues of “safe operation,” “environmental conservation,” “governance,” “compliance,” and “human resources development.” Among them “safe operation” is the highest priority because a serious marine incident can have a significant impact on society and the natural environment. We cannot win the trust of our customers and expect society to let us do business unless we can operate vessels safely. In that spirit, we added the word “Safety” to the name of the “Environmental and Social Report” this year to clearly convey our safety-first stance to readers.

Forge Ahead to Become the World Leader in Safe Operation

Safe operation is the major premise in the group’s business activities. To forge ahead to become the world leader in safe operation, we set various key performance indicators (KPIs) to objectively measure safety, in addition to the must-achieve goal of “Four Zeros” (zero serious marine accident, zero oil pollution, zero fatal accident, zero serious cargo damage), and make continual improvements by “visualizing” safe operation and enhancing transport quality. In addition, we introduced the new concept of Behavior Based Safety (BBS) in fiscal 2014 to intensify our initiatives toward eradication of human errors.

Make the Difference by Proactively Adopting Excellent Environmental Technologies

In the face of customers’ demands for reducing the environmental impact of our activities, the MOL Group continues to reinforce its environmental initiatives by drawing upon its excellent technologies and know-how, and in a way that brings us closer to our customers. Ocean shipping is the most environment-friendly means of transport, particularly from the standpoint of energy efficiency. But considering both the growth of the world economy and the greater importance of global environmental protection, we must do more in terms of reducing our environmental impact and improving energy efficiency. In this situation, the group chooses to respond to environmental regulations as a business opportunity and a strategy to differentiate itself from competitors, and proactively adopts environmental technologies and other advances as a challenge of a new era.

Etch Compliance into the Minds of Executives and Employees Alike

In March 2014, the MOL Group was found to have violated the Antimonopoly Act in its car carrier service. The group took this misconduct very seriously and strengthened its measures to prevent a recurrence. Compliance must be deeply etched into the minds of all executives and employees until it becomes reflexive behavior. I personally put compliance into practice with stubborn determination. I will continue to raise awareness of this issue among group executives and employees until “walking the straight and narrow path” becomes deeply rooted as MOL Group corporate culture, and earns us the ongoing respect of society as a trustworthy organization. We will never let up in our efforts to maintain the highest standards of corporate governance as we strive to meet the needs of the times and retain the trust of our stakeholders.

Ensuring the Growth of MOL Group
MOL CHART Reflects Our Shared Values

Fiscal year 2014 marked the 130th anniversary of the MOL Group’s founding. Throughout our long history, we have come together with tremendous effort and creativity to overcome various hardships although we’ve been hit by wave after monstrous wave. And now we have grown into a corporate group with a diverse workforce of some 20,000 people (including seafarers) in 36 nations and regions of the world. The MOL Group has already set a course for its future growth under the midterm management plan STEER FOR 2020 formulated in 2014. And effective April 2015, we introduced MOL CHART to express the values our employees will inherit and pass down to future generations to ensure sustainable growth and success.

The CHART stands for “Challenge” (Innovate through insight), the H for “Honesty” (Do the right thing), the A for “Accountability” (Commit to acting with a sense of ownership), the R for “Reliability” (Gain the trust of customers), and the T for “Teamwork” (Build a strong team). While we must be conscious of every element, I want myself to be especially cognizant of Reliability. In customer relations, it means doing our utmost to meet their needs, no matter how difficult that may be. And we must accumulate mutual trust by walking the straight and narrow path while doing our very best in compliance, and always providing safe, stable, reliable transport service.

Then, we must trust our partners to build mutually successful relationships. It all begins with reliability.

People make the difference

Our qualities all come down to human qualities. As we work to set ourselves apart from the competition, while dealing with a host of social issues that must be addressed on a global scale, the driving force behind the growth of our group and our inspiration for the source for creation of new value will be nothing more than human qualities. I recognize that my most critical mission is the establishment of an environment that allows employees to maximize their own abilities and experience personal growth, set the stage for corporate growth, increase the company’s contribution to society, and focus on the development of global employees. On that basis, MOL CHART must be instilled in everyone at every level. I will make MOL CHART the key to our culture, and develop personnel who are aware of our social responsibility and can create new shared value along with society. The MOL Group Corporate Principles clearly direct us: ‘as a multi-modal transport group, contribute to global economic growth and development by meeting and responding to our customers’ needs and to this new era.’ We will never lose sight of our principles as we work to create new value and sustainably grow with society by leading the world shipping industry.

Junichiro Ikeda
President, Chief Executive Officer
Forging Ahead to Become the World Leader in Safe Operation:

Recognize the Scale of Social Impact and Responsibilities as a Multi-modal Transport Group, Forging Ahead to Become the World Leader in Safe Operation

Nemoto: Three core innovations—innovation of business portfolio, innovation of business model, and innovation of business domain—were set out in the midterm management plan STEER FOR 2020 established in 2014. Then you took the helm to drive further growth. Today I want to ask you about measures for safe operation, which is considered the foundation of your plan’s success.

Nemoto: Currently (as of March 31, 2015), the MOL group operates 947 vessels totaling about 68 million DWT, one of the largest fleets in the world. While this gives our group a competitive edge, we must also recognize the immense social impact of our operations, and our responsibilities as a multi-modal transport group that continually supports the daily lives of people and the growth of industries all over the world through transport of resources, energy, and various other commodities, including finished products. Therefore, our group positions safe operation as the highest priority, forming the foundation of our business as we forge ahead to become the world leader in safe operation. We promote various, specific approaches from the aspects of both hardware (vessel facilities and equipment) and software (seafarers, ship management, and a safety culture). We also set various key performance indicators (KPIs) to objectively measure safety, in addition to the must-achieve goal of “Four Zeroes” (zero serious marine accident, zero oil pollution, zero fatal accident, zero serious cargo damage), and make continual improvements by “visualizing” safe operation and enhanced transport quality.

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Kawaguchi: The risk is much higher when your responsibilities cover all operated vessels. With chartered vessels, in particular, your level of involvement and responsibilities can be critical.

Kawaguchi: Basically, shippers have the prime responsibility to prevent accidents and other safety-related incidents. That means, as the interested party of owned vessels, we can make decisions and control safety measures and costs under our responsibilities. On the other hand, in case of chartered vessels, we get engaged in those vessels as we investigate situations, precisely point out risks, and urge improvement, because shipowners of chartered vessels have the prime responsibility. Another way to look at it is that we do business with a consistent brand using our own “cars” and “chauffeur-driven cars.” We keep a watchful eye not only on our own cars as a matter of course, but also others’ cars to ensure safety, so we sometimes face difficulties. However, when it comes to the customers who rely on our vessels, there is no room for compromise—we bear all responsibilities for transport quality. Naturally, we conduct thorough inspections on vessels and closely share information with shipowners of chartered vessels and entrusted ship management companies so they will have a full understanding of the safety standards and responsibilities. On the other hand, we make sure our crew members in cooperation with them while building mutually trusting relationships.

Kawaguchi: Let me ask you about specific vessel inspections.

Kawaguchi: Currently, 34 marine officers in our group are dedicated as vessel inspectors. A team of two officers who have a thorough knowledge of our safety standards through experience as captains or chief engineers actually board a vessel, and do a thorough inspection based on about 800 check lists including qualifications and career experience of crew members, the status of hull maintenance, and records of engine inspections and maintenance. In the rare event they find a problem, they point it out in writing, explain what must be done to meet our safety standards, and conduct a follow-up survey to confirm that appropriate measures were taken. Then, a report of their response with photos will be circulated among concerned divisions including the responsible business division to make the final confirmation. That is, with professional eyes, we thoroughly check the status of our vessels, which are our products, to identify problems, and make sure the necessary improvements are made.

Kawaguchi: You entrust external companies to manage vessels. Is there any difference in the management system?

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Nemoto: The Four Zeroes target covers all operated vessels including chartered ships. Does the Four Zeroes target apply to all your operated vessels?

Kawaguchi: To ensure safety, in the vessel design and construction stages. We have not taken a proactive stance to show our maritime professionalism. But crew members on site put their lives in serious danger, show no sign of significance. I have gained a new recognition that the ocean shipping industry requires a certain level of personnel and other necessary actions.

Kawaguchi: The safety of products and the safety of employees are required in various industries and types of businesses. In reality, Japan’s initiatives on adapting to climate changes are behind those of Europe and the U.S. I think you need to drive further growth. Today I want to ask you about measures for safe operation, which is considered the foundation of your plan’s success.

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Nemoto: Ships might seem to be very solidly built, but they are still fragile against natural forces. For example, hundreds of containers fall off of ships into the seas around the globe every year. Some get swept overboard by huge waves and others fall off when the ship lists heavily to one side. On lumber carriers, the lumber is piled high and strapped down tightly with cables, but some of it is carried away by waves every year. What I am trying to say is, there is no vessel that can withstand all bad weather or rough sea conditions, and it is an absolute must to avoid foul weather in advance. Thanks to the rapid advancement of technologies such as satellite communication and supercomputers, the accuracy of weather forecasting has improved. This makes it easier for us to take countermeasures. For example, when the vessel is on a voyage, it can make a major course change in advance, or evacuate and anchor in a safe place until conditions improve. I think marine incursions caused by bad weather have decreased steadily in recent years.

Kawaguchi: Still, typhoons are obviously becoming more powerful, and we now face many rapidly changing low pressure systems. These must be considered threats.

Nemoto: In 2006, one of our operated iron ore carriers ran aground off Kashima Port, after we could not foresee a rapidly growing low pressure and missed the opportunity to evacuate. This was very unfortunate. Using difficult lessons like that, we have continually taken measures to improve on both hardware and software sides. From the hardware aspect, we established unique MOL Safety Standards Specifications, which cover the concept called “fail safe” needed to ensure safety, in the vessel design and construction stages. We do not have the space here to go into details, but the idea is to add backup equipment for critical systems. Normally, specifications and estimates presented by shipyards are standard, but when it comes to safety, we go beyond their standard specifications and add 2% to 3% to the cost. This is an internal understanding. It costs several billion yen more per vessel, but all of our ships feature MOL Safety Standard Specifications.

Kawaguchi: This is a very important expenditure. Even if safety costs increase the price of a vessel by 2% or 3%, you don’t really convey the importance of that. After I watched that DVD, I can understand how important it is and the reasons why you spend that much extra and I have a better appreciation for the harsh environments your ships operate in.

Nemoto: Some equipment may never have to be used, if no incident occurs. But if we face a serious risk, in an emerging market, we might have to take whatever steps are necessary. We always keep our eyes peeled and let not our failures stand in the way of ensuring safety that “this could never happen to us.” We are also sometimes asked “Did you sacrifice safety to cut costs?” but that is the final check on quality at vessel inspections, and can say with confidence that we never cut costs when it comes to safety. As I mentioned a little earlier, in case an incident occurs there’s a risk of damaging not only the vessel, but also a risk of seriously damaging the environment, depending on the time and place. It is especially critical to prepare for leakage, to other transport modes, the world of ocean shipping requires a flexible response to a broad range of risks. We make ongoing efforts to eliminate weak points one by one.

Kawaguchi: This is the basis of risk management. I think your comprehensive efforts are excellent.

Nemoto: A highlight of the second measure, from the aspect of software, is the initiatives by the Safety Operation Supporting Center (SOSC). It provides immediate shore-side support to avoid risks to vessels including weather and sea conditions and measures against pirate and terrorist attacks.

With the slogan, “Never let the captain feel isolated,” the SOSC is staffed with marine specialists including those who have experience as captains of MOL-operated vessels, to provide the information needed to ensure the safety of every vessel 24/7, 365 days a year, supporting captains in their decision-making. More specifically, SOSC monitors the positions and movements of about 950 vessels on voyages around the world, sends detailed information about forecasts of adverse weather and tsunamis, problems or obstacles that could disrupt a voyage, incidents of piracy and terrorism, and so on to vessels and concerned parties on shore, alert them to take necessary measures, and give advices from the viewpoint of the captain.

Kawaguchi: Do pirate attacks still happen frequently in the Gulf of Aden and off Somalia?

Nemoto: Armed robberies and heinous crimes, which subject seafarers to threats and hardships, have decreased significantly and the frequency of incidents is far lower than in the past. But the pirate attacks haven’t disappeared entirely. In the Indian Ocean, piracy is still happening. In reality, the problem of piracy is not limited to the Indian Ocean. It is spreading to the Southeast Asian region as well.

Kawaguchi: That’s right. We have strengthened the measures to cope with pirates, not in just the Indian Ocean.

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Nemoto: We have not taken a proactive stance to show efforts that are out of sight as we could say they are like the natural result of how we run our company. But the reasons is not just for Japan, which depends on imports for foods and energy, cannot exist without ships. Our industry has started initiatives to build social awareness of such facts in a small way.

Kawaguchi: Finally, I would like to talk about climate changes and what we can expect in the future. I have researched climate changes because of my expertise. In Japan, it is understood that we can take steps to mitigate climate changes and we can reduce global warming by reducing CO2 emissions through energy saving. However, this is not enough; on a global scale, we must focus on how we adapt to the climate changes that have already occurred. In reality, Japan’s initiatives on adapting to climate changes are behind those of Europe and the U.S. I think you need to discuss measures to adapt to climate changes and take the necessary actions.

Nemoto: Thank you very much for your insights and advice. We are going to have such discussions as soon as possible. Today, I explained about the MOL Group’s safety measures from various viewpoints. Finally, I want to talk about one more important matter in conjunction with our commitment to safety in the future. Weather lore has it that fishermen and seafarers have learned to forecast weather from natural phenomena better than anyone else. With our own eyes to spot abnormal changes is the basis of our operations. In the world of vessels, self-sufficiency is sometimes required in unpredictable nature. No manual or technology can perfectly respond to rapid changes and sudden phenomenon of weather and sea conditions. What gives full play to our ability to cope with such dangerous situations is “seamanship.” Long, many years went to sea without depending on technology, but making full use of their five human senses, wisdom, and instinct. We are returning to the basics of seamanship such as the ability to foresee dangers, the judgment to overcome a crisis, mental strength, physical strength, and tenacity. Make efforts to install our diverse, multinational crewmembers with the concepts of MOL seamanship.

Nemoto: Four pirates arrested on our vessel were tried, convicted, and are still serving prison time in Japan. But the prison sentences are limited to 10 years, and when they are released, they are sent back to their countries. We don’t know what will they do after that. Since ancient times, pirates have been defined as “a common enemy to all humanity,” they could be treated when asked in international waters, and brought to justice in the nation whose forces captured them. And usually the punishment was death by hanging. This was the international law until most heinous crimes are subjected to such harsh punishment. However, there is no death penalty for piracy now. And right from the start, it seems that coastal nations are more lacking in the interest, rather than the capability, of crushing down on pirates. Further, I find it very frustrating that the public isn’t more concerned about this state of affairs.

‘Seamanship’ Is What Makes it Possible to Cope with Unpredictable Nature

Kawaguchi: The world’s safety and the products of employees are required in various industries and types of businesses. We have gained a new recognition that the ocean shipping industry needs a broader range of risk management to address problems such as pirates and political instability as well as other unpredictable natural threats. I have a lot of respect for the efforts you make in the face of such risks. However, it’s unfortunate that the general public does not fully appreciate the situation you are in.

Nemoto: We have not taken a proactive stance to show efforts that are out of sight as we could say they are like the natural result of how we run our company. But the reasons is not just for Japan, which depends on imports for foods and energy, cannot exist without ships. Our industry has started initiatives to build social awareness of such facts in a small way.

Kawaguchi: Finally, I would like to talk about climate changes and what we can expect in the future. I have researched climate changes because of my expertise. In Japan, it is understood that we can take steps to mitigate climate changes and we can reduce global warming by reducing CO2 emissions through energy saving. However,
Working Closely with Captains to Ensure Safety

– Safety Operation Supporting Center (SOSC) on duty, supporting safety 24hours/365days –

An Unshakeable Commitment to Safe Operation

In 2006, four major maritime incidents involving MOL vessels occurred. After the incidents, we did everything possible to clarify what caused them, 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.”

This section shows how the SOSC works to keep our vessels out of harm’s way, reflecting our commitment to 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 heavier, so the linkage between vessels and shore becomes even more important.

Our SDSC grasps these risks in real time, confirming that communications between vessels, ship management companies, the Marine Technical Group, and personnel responsible for vessel operation is clear and constant. The SDSC’s motto is “Never let the captain get isolated,” and its initiatives are built on that premise.

365days
Special Feature 2

Working Closely with Captains to Ensure Safety
– Safety Operation Supporting Center (SOSC) on duty, supporting safety 24 hours/365 days –

24 Hours at SOSC

There are always two people on watch at the SOSC, one of whom has experience as a captain of a vessel. They use FMS.Safety, which was developed in cooperation with Weathernews Inc., to check on the weather, sea conditions, and other conditions surrounding the approximately 950 vessels operated by MOL Group companies. 365 days a year, 24 hours a day, there is always someone available if a ship captain needs assistance. Information on weather, reports from international media, and other things that might have something to do with a vessel under way is gathered so that the SOSC is always ready to offer timely information and advice, and help prevent serious accidents before they happen.

Gathering Information

Gathering information (Overseas media, or international information agencies), Maritime security information companies (in practices, etc.)

Inform internal divisions of the opening conditions of vessels steaming in the Indian Ocean or the Persian Gulf

Video conference with Weathernews. Confirming the conditions surrounding vessels that might need warnings.

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

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

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

Case Studies

Confirmation System between Vessels and Shore Helps Avoid Danger

Pirate Attack!

Informs the ship from ship management companies, the Marine Technical Group, and persons responsible for operation of the vessels.

SOSC broadcasts an alert to all vessels steaming in the vicinity of the point of the attack.

No. of piracy incidents reported

3,860

Ship management companies, the Marine Technical Group, and persons responsible for operation of the vessels under way in the vicinity are informed of the piracy attack.

Developing tropical depression

Vessel captains inform SOSC of course changes necessary to avoid the typhoon, confer on what course to take.

SOSC informs ship management companies, the Marine Technical Group, and persons responsible for operation of the vessels about developing tropical depressions or typhoons.

No. of typhoon alerts delivered

17,349

No. of Earthquake alerts delivered

161

No. of Tsunami alerts delivered

236

Earthquake alert

SOSC gets information when an earthquake occurs from Japan’s Meteorological Agency, the U.S. Geological Survey (USGS), or Weathernews. Confirms tsunami information from the World Data Center of the Meteorological Agency, the Pacific Tsunami Warning Center (PTWC), or FMS.Safety.

Captains confer with SOSC whether ship should be escape or not

SOSC sends tsunami warning to ship management companies, the Marine Technical Group, and persons responsible for operation of the vessels under way in the vicinity of the path of the tsunami.

SOSC from the Captain’s point of view

The MOL Dominance, which serves routes linking Japan, Southeast Asia, and China, always runs the possibility of encountering typhoons, especially during the summer. SOSC is very helpful because vessels get weather and ocean condition information from SOSC four times a day, but a typhoon is approaching, information is supplied more frequently if necessary, and in advance of the actual path of the storm, so the vessel can take evasive maneuvers.

MOL Dominance Captain

Capt Than Htut
MOL Group’s Management and CSR Initiatives

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**

1. As a multi-modal transport group, we will actively seize opportunities that contribute to global economic growth and development by meeting and responding to our customers’ needs and to this new era.
2. We will strive to maximize corporate value by always being creative, continually pursuing higher operating efficiency and promoting an open and visible management style that is guided by the highest ethical and social standards.
3. We will promote and protect our environment by maintaining strict, safe operation and navigation standards.

**Long-term Vision**

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

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

**CHART** stands for five words that express the company’s shared values: “Challenge,” “Honesty,” “Accountability,” “Reliability,” and “Teamwork.” It is easy to make a sea chart, which sets the course for our future.

The word “Challenge” means creation of new values from a macro-view, with a wide perspective and sense of history, and taking on new challenges after thoroughly analyzing the environment.

The word “Honesty” incorporates a sincere examination of MOL’s past infringements regarding compliance, reflecting the importance of compliance with social norms and high expectations to do business fairly.

The word “Accountability” is an attitude of always having a sense of ownership even when confronting a difficult problem, and solving it while cooperating with everyone involved.

The word “Reliability” is our core competency — offering the world’s highest standards of safety and service to gain the trust of our customers.

The word “Teamwork” expresses the importance of property sharing-technologies, know-how, and relationships with customers, which we have inherited from our predecessors and will in turn pass on to the next generation.

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, it leads the world shipping industry and enhances its corporate value by strengthening and concentrating its comprehensive group-wide efforts. At the same time, we will encourage MOL Group employees to keep the MOL CHART values foremost in mind as they execute their day-to-day business operations.

**CSR Overview**

<table>
<thead>
<tr>
<th>MOL Group’s CSR Initiatives</th>
<th>Long-term Vision</th>
</tr>
</thead>
</table>

**MOL CHART**

Our Values

- **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

**Identifying Key Issues**

As the impact of corporate activities on society becomes more pronounced, corporate social and environmental initiatives have a greater effect on corporate value every year.

The MOL Group identifies “safe operation,” “environmental conservation,” “governance,” “compliance,” and “human resources development” as five key issues as it moves ahead with its corporate activities.

We identified those issues based on international CSR-related guidelines, the opinions of stakeholders inside and outside the company, and the results of a customer questionnaire survey, among others, and then through meetings with relevant divisions. Finally, those issues were discussed at the CSR and Environment Committee, and selected after approval by top management.

**Corporate Governance**

The basic philosophy of our corporate governance is summarized as “We will strive to maximize corporate value by always being creative, continually pursuing higher operating efficiency and promoting an open and visible management style that is guided by the highest ethical and social standards” in the Corporate Principles.

To establish the ideal corporate governance structure for our company, we have implemented a series of management reforms, focusing on inviting outside directors to join the board, separating management and execution of operations, accountability, and risk management and compliance. These measures are aimed at realizing the philosophy outlined above.

[Please refer to the annual report for corporate governance and risk 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 stigmas. In addition, we participate in the United Nations Global Compact, supporting universal principles regarding human rights and labor and putting them into practice.

Our vessels adhere to onboard compliance guidelines, respect the four human rights as mentioned above, prohibit discrimination by religion, nationality, age, and sex, 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 formulated the “MOL Group Basic Procurement Policy” in 2012.

[Please refer to the Web site for more information on the basic procurement policy.]


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.
4. The elimination of discrimination in respect of employment and occupation.

[Please refer to the Web site for more information on the basic procurement policy.]

Our vessels adhere to onboard compliance guidelines, respect the four human rights as mentioned above, prohibit discrimination by religion, nationality, age, and sex, 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.

**Committees Setting CSR-related Policies and Measures**

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR and Environment Committee</td>
<td>Identify priority issues related to MOL Group’s overall CSR (materiality assessment), discuss those policies, set targets, and review achievements.</td>
</tr>
<tr>
<td>Operational Safety Committee</td>
<td>Study and discuss basic policies and measures to ensure the thoroughness of safe operation on MOL and MOL Group-operated vessels.</td>
</tr>
<tr>
<td>Compliance Committee</td>
<td>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.</td>
</tr>
</tbody>
</table>

[Please refer to the annual report for more information on the basic procurement policy.]

---

**CSR Activities**

- Trust of stakeholders
  - Enhance corporate value
  - Gain the trust of customers
  - Involve stakeholders
  - Help solve social issues and contribute to society’s sustainable growth.
<table>
<thead>
<tr>
<th>CSR Targets in the Midterm Management Plan (High Priority)</th>
<th>FY2014 Targets</th>
<th>FY2014 Results</th>
<th>Achievement</th>
<th>FY2015 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Thoroughly implement safe operation and provide safe, secure, stable, high-quality services.</td>
<td>Supplying safe, secure and stable services is the basis for earning stakeholders’ trust and becoming their choice. By formulating strategies since autumn that same year in which a large business ship left a social occasion at its support industries and the daily lives of people around the world, we strive to supply high-quality services, which require the realization of the new era and contribute to the development of the global community.</td>
<td>Achieved Year’s Target. 26.45 triannual — Did not achieve.</td>
<td>2.5% incidence per vessel — Achieved.</td>
<td>1. Achieve Year’s Target. 26.45 triannual — Did not achieve.</td>
</tr>
<tr>
<td>2. Make further progress on a company culture that demonstrates compliance in each of the MOL Group executives and employees.</td>
<td>A company culture that fosters a strong sense of compliance in each of the MOL Group executives and employees is of utmost importance to the sustainability of the company. To ensure that all executives and employees feel its importance, we are promoting continuous education to all executives and employees.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Strengthen initiatives on corporate governance.</td>
<td>Further enhance corporate governance to ensure that MOL has the trust of stakeholders and achieves sustainable growth. Enhance corporate governance to meet the needs of the times and study the advancement of governance structures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Promote personnel training and diversification to strengthen comprehensive Group capabilities.</td>
<td>Further strengthen human resources development of the MOL Group globally. Improve the comprehensive capabilities of the MOL Group by facilitating work environment where multidimensional and diverse human resources including working women can demonstrate their abilities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Make further progress on solving social issues and providing environmental initiatives as an environmentally advanced company.</td>
<td>Further enhance initiatives to reduce environmental impact as an &quot;Environmentally Advanced Company&quot; with full consideration of the environmental impact of the business activities of the MOL Group, and protect the global environment, which is as much connected to the whole world. Please refer to page 33.</td>
<td></td>
<td>Please refer to page 34.</td>
<td></td>
</tr>
<tr>
<td>6. Proactively disclose sustainability data.</td>
<td>Foster stakeholders’ trust by proactively disclosing information to show the sustainability of MOL businesses.</td>
<td></td>
<td>Please refer to page 34.</td>
<td></td>
</tr>
<tr>
<td>7. Promote social contribution activities related to MOL Group’s businesses.</td>
<td>Promote social contribution activities that are highly relevant to MOL Group’s businesses, and continue our efforts to solve social issues as a corporate citizen.</td>
<td></td>
<td>Please refer to page 34.</td>
<td></td>
</tr>
</tbody>
</table>

* FY14: Last Time Injury Frequency. The number of industrial accidents occurring per 1 million man-hours.

**MOL Group Safety, Environmental and Social Report 2015**

**CSR Activities Targets and Results (FY 2014/2015)**

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 contribute to our social responsibility and putting it into practice.

- **FY2014 Targets**
  - Achieved Year’s Target. 26.45 triannual — Did not achieve. 2.5% incidence per vessel — Achieved.
  - 1) Revised the basic policy of establishing the internal control system, 2) Established the position of Chief Compliance Officer (CPO). 3) Enhanced the internal environment for comprehensive management by introducing CPO and Chief Risk Officer (CRO) to the executive committee. 4) Further reduce operational stoppage accident rate per vessel (achieve target operational stoppage accident rate of 1.50 incident per vessel per year). 5) Improve occupational safety and health for seafarers (achieve LTIF* 0.25 or less). 6) Swiftly respond to disaster-stricken areas and continue support for areas affected by typhoon Haiyan. 7) Promote a stable supply of high-quality services by meeting and responding to our customers’ needs and this new era. 8) Promote high-quality services.

- **FY2014 Results**
  - Achieved Year’s Target. 26.45 triannual — Did not achieve. 2.5% incidence per vessel — Achieved.
  - 1) Revised the basic policy of establishing the internal control system. 2) Established the position of Chief Compliance Officer (CPO). 3) Enhanced the internal environment for comprehensive management by introducing CPO and Chief Risk Officer (CRO) to the executive committee. 4) Further reduce operational stoppage accident rate per vessel (achieve target operational stoppage accident rate of 1.50 incident per vessel per year). 5) Improve occupational safety and health for seafarers (achieve LTIF* 0.25 or less). 6) Swiftly respond to disaster-stricken areas and continue support for areas affected by typhoon Haiyan. 7) Promote a stable supply of high-quality services by meeting and responding to our customers’ needs and this new era. 8) Promote high-quality services.
Initiatives on Safe Operation

The MOL Group positions safe operation as the highest priority because incidents will pose huge risks of damage to people and society, stakeholders and the natural environment. In 2006, we set out the goals including “Four Zeros” based on lessons of a serious incident that occurred in that year. We can sum up our approach to safety as follows: “The MOL Group forges ahead to become the world leader in safe operation.”

Safe Operation Management Structure

MOL reorganized the division responsible for safe operation in February 2015. This move was aimed at integrating and horizontally disseminating information among different types of vessels while maintaining a structure that focuses on the front-line operations of anchor chain, vessel type, reinforcing company-wide operational safety measures, and developing an organizational structure that focuses all the authority necessary to be responsible for the entire Group’s safe vessel operations into the Marine Safety Division. Under the new structure, all land-based and ocean-going personnel are united to strive for maximizing operation safety, with the goal of becoming the world leader in safe operation.

Committees Related to Safe Operation

MOL conducts 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 safety-related incidents. Proposals and ideas garnered through this campaign are shared throughout the MOL Group and among group-operated vessels to further enhance the group’s safe-operation structure. The theme of our FY2014 Safety Campaign was Behavior-Based Safety (BBS).

Measures to Ensure Safe Operation

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 moral, 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, so 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.

Quick Release System for Dropping Anchor Chains

- **Windlass**
- **Anchor chains**
- **Anchor**
- **Anchor chain**

**Quick release system**

When dropping the chains

- **Anchor**
- **Normal conditions**

- **Overhead view**

**Engine Room: High Expansion Foam Fire Extinguishing System**

The foam extinguisher is a system that fills the engine room with a massive amount of foam to put out fires. In the past, engine rooms were filled with CO₂ gas to fully extinguish fires, but if there are any crewmembers in the engine room, they may not be able to exit quickly enough and run the risk of oxygen deprivation. Or air could be pumped back into the engine room if the air vent for the engine room is not closed properly, and the fire will not be extinguished as quickly. To eliminate such risks, the engine rooms of all MOL Group vessels have foam fire extinguishing systems as standard equipment.

Use of Information and Communications Technology (ICT)

The MOL Group companies strive to provide each vessel with the necessary ICT equipment that will allow onboard crewmembers to concentrate on keeping watch and effectively monitoring equipment.

Digital transmission of notices, public announcements, and safety alerts, from shore side; and reports, equipment maintenance records, and so on, from vessels, the distance between vessel and shore is greatly reduced and the accuracy of information is significantly enhanced. And to make it easier for crewmembers of various nationalities to receive information in a form they can understand quickly and accurately, we have focused efforts on providing visual-based information. We are also working to facilitate a satellite-vessel-shore ICT system that will support those information systems. By enhancing the onboard work environment with the use of ICT, we can make it easier for crewmembers to contact and speak with their families and friends on a regular basis. The current satellite-vessel-shore ICT does not offer the same performance as land-based systems, but we constantly monitor updates and improvements and will add new technology when it proves reliable.

Ship-to-Shore Information Transmission System

- **Onboard LAN**
- **Communication satellite**
- **Database (Cloud)**
- **Private communication**

- **MOL Group**

<table>
<thead>
<tr>
<th>Nation</th>
<th>Region</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Philippines</td>
<td>5,995</td>
<td>7,963</td>
<td>8,511</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>3,481</td>
<td>3,004</td>
<td>2,067</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>553</td>
<td>508</td>
<td>1,046</td>
<td></td>
</tr>
</tbody>
</table>

**Crewmembers Receiving Instruction at MOL Training Centers**

(For details on crewmember training, please refer to the Annual Report.)
Objective Safety Operation Indices

We set the following objective indices including “Four Zeros” to manage safety.

1. “Four Zeros” (zero fatal accidents, zero serious marine incidents, zero oil pollution, and zero cargo damage)
2. Less than 0.24 (FY2015) LTIF
3. Less than 0.70 (from FY2015) LTIF (Lost Time Injury Frequency)**
4. Less than 24 hours of downtime per ship per year**
5. Less than 1.00 incidents per ship per year that require stopping the ship.*

In FY2014, several important goals were set that aimed to root out trouble in advance. (1) Eliminate industrial incidents resulting in death, reduce industrial incidents resulting in injury. (2) Eliminate collisions and standing/running around. (3) Eliminate engine and other mechanical or equipment trouble that results in the vessel’s inability to maintain way under its own power.

LTIF (Lost Time Injury Frequency)

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013 (H)</th>
<th>2014 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.53</td>
<td>1.46</td>
<td>1.30</td>
<td>1.30</td>
<td>1.50</td>
</tr>
</tbody>
</table>

*Conventionally, occupational injuries and illnesses that forced seafarers to disembark under its own power.

**Annual number of incidents per vessel resulting in vessel stoppage

MOL Comfort

(Measures to Prevent Similar Incidents on Sister Ships, and Mental Health Follow-up for Crewmembers)

Incident Summary

While the 8,800TEU containership MOL Comfort (launched in 2009) was under way from Singapore to Jeddah on the Indian Ocean, on June 17, 2013, a hull crack developed amidships, and the vessel became unable to proceed under its own power. Later, the ship broke in half. The aft half sank on June 27 and the forward half sank on July 11.

Immediately after the incident, crewmembers inspected the hull to assess the damage, and when their information was passed on to the ship management company, the decision was made for the crew to take it to the breakwater. All 26 crewmembers were then ordered to abandon ship, and after that the decision was made for the crew to take to the lifeboats. All 26 crewmembers escaped unharmed.

Part of the reason all crewmembers escaped unharmed was the high level of awareness onboard various types of vessels and the high level of training done at the training center.

Ref: “Message from the Chief Engineer Mr. Oleg Zaitcev at the Time of the Incident (excerpt)”

During an emergency or unexpected incident at sea, there is not so much time to think what to do, who will do it, or how it will be done. Therefore, it is important to prepare the correct and quick response when in advance. The essential part of preparation for emergency response is the emergency plan. The system of emergency responses creates and establishes procedures for constant education, training, and instruction of the crew on board.

During an emergency or unexpected incident at sea, there is not so much time to think what to do, who will do it, or how it will be done. Therefore, it is important to prepare the correct and quick response when in advance. The essential part of preparation for emergency response is the emergency plan. The system of emergency responses creates and establishes procedures for constant education, training, and instruction of the crew on board.

Behavior Based Safety (BBS)

To break “error chains” aboard its vessels, the MOL Group focuses on a program called Behavior Based Safety (BBS), which 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. For example, drivers’ fastening their seatbelts after they get behind the wheel is “safe behavior.” Crewmembers pointing out “safe behavior” to their colleagues is in itself “safe behavior” and accumulating such examples will lead to safer operation.

Vessel Stoppages, Average Hours Stopped, and Percentage of Incidents Resulting in Stoppages

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Vessel Stoppage Time (hours/vessels/year) (left)</th>
<th>Number of Accidents causing vessel stoppage (incidents/vessels/year) (right)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>3.80</td>
<td>1.50</td>
</tr>
<tr>
<td>2011</td>
<td>3.36</td>
<td>1.56</td>
</tr>
<tr>
<td>2012</td>
<td>3.06</td>
<td>1.58</td>
</tr>
<tr>
<td>2013</td>
<td>2.96</td>
<td>1.59</td>
</tr>
</tbody>
</table>

Ref: Ministry of Land, Infrastructure, Transport, and Tourism Press Release

Causes of the Accident

Taking heed of the major accident involving the large containership MOL Comfort that occurred in June 2013, in which the ship broke in half and sank, MOL established the Committee on Large Container Ship Safety, which included experts in the field and representatives of the industry. In August 2013 to investigate large container ship operations and the measures being taken to ensure safety. Recently, the committee issued its final report on the incident, which contained the assumed causes of the incident and measures to be taken to prevent recurrences, as detailed below.

Assumed Causes of the Accident

The committee found that the current safety regulations did not take into account additional stress factors that are placed on the hull plates due to “full vibration caused by wave action,” or whipping loads, which increased the forces brought to bear on the hull. Further, “effects of lateral loads on the hull” reduced the hull’s strength. As a result, the committee concluded that the hull’s structural strength and caused it to buckle and fracture.

Measures to Prevent Recurrence

As for vessel safety standards, the committee recommended amending classification requirements for large container ships to strengthen structural strength in the following ways. The effects of lateral loads that induce bi-axial stresses on bottom shell plates and the effects of whipping responses which are partially described in the classification requirements for the ultimate strength of hull girders, taking into account the relationship of lateral loads and hull girder strength. As similar standards are required internationally, the International Maritime Organization (IMO) inspection organizations are being urged to consider such revisions.
Safety Measures Supporting the YAMAL LNG Project

In the Arctic regions, vast reserves of natural resources such as gas and oil lie dormant and undeveloped. By supporting the logistics to develop these new frontiers, MOL will play a critical role in slaking the world’s ever-growing demand for energy.

Highest Safe and Robust Ship Designs against Heavy Ice and Severely Cold Environments

Yamal Arc-7 project has been thoroughly studied a variety of risk analysis and deep review of ice-strengthen design, ice navigation and winterization specification for a long time, involving many ice specialist parties in Russia and Northern European, majorities of Classification societies, Russian authorities, Ice model test companies, Building Shipyard, etc. Besides that, Sowcomcall has the experience as ship owner in ice operations has deeply reviewed the specifications. Ship is designed at the highest safety and robust redundancy philosophy based on rich experiences.

1 Double-Acting LNG Carrier

Yamal Arc-7 ship is a Double-Acting LNG Carrier with three sets of diesel-electric driven Azimuth-propulsion unit. The ship is designed to sail at long-speed in severe condition, and under the ice, hull turn around and prevent accident in heavy condition. Hull form is designed as called “Horizontally-streshold type” hull form with bulbous bow has capability to break ice efficiently up to 1.6m thickness first year ice. Maltese bow is typical to bulwark freeboard type in order to be able to sail. Unit of upper thinness condition, the ship turns around to astern operation. The developed hull form breaks up ice, and three sets of (the maximum ship’s propulsion system) are close to the ice to control the ship’s direction, capable to weather the maximum 11-12 Beaufort wind force.

2 Ice-strengthened Hull Structure

Arc-7 is a class merchant ship intended the highest ice class, with only a few ships existing in the world. Speaking with Ice class LNG Carrier, hull structure is one of the most strengthened special region, so called as “Ice belt”, where in this region ship is equipped high level special steel is selected in order to withstand and prevent any impact on ice and remain Sibog-80kg cold test.

3 Engine Room Design

Yamal Arc-7 LNG Carrier equips double-hull structure in engine room space in addition to cargo hold spaces. The increased safety design is achieved considering all of a probable breaking operation in heavy ice condition, which brings prevent the worst scenario caused by damage of hull structure. Center bulwark dividing two engine rooms. Engine room space is segregated into two spaces, an astern and forward sections being divided by the mid-bulkhead wall. Ship machinery are fitted to both part and divided sections, in order to cabin the ship capability to keep alive ship’s machineries without total blackout, even under the worst scenarios of ice or seawater flowing into either of engine room section.

Ice Sea Chest

Any ships, constantly during navigation, intake cool seawater from outside, coming down ship’s main engine’s and other machineries, and then seawater discharge overboard. Sea chests with relatively small box are normally fitted at the bottom of engine room, where this design is sweeter into ship. During ice operation, it is well known that sea water enters instead piping, especially a suction strainer, often causes of small ice chips being accumulated into a strainer, and this is a feasible for ice ship operations. Accumulated sea chips must be removed by ice chip hander in order to prevent seawater intake. During this ice navigation, ship’s propulsion engine has to reduce ship speed or ship stopping condition is not sufficient to totally stop. In order to prevent such scenario, Yamal Arc-7 ship adopts a special designed huge sea chest boxes, so called as “Ice Sea chest”.

Ice Sea chest is designed to have a large mesh of grids on the inlet hull shell and also a couple of internal buffer plates in this box in order to prevent small ice chips unable to easily flow the ship’s intake. Ice sea chest is designed a huge size and instead of the box reaches of upper ship’s intake draft height, which design is aimed that some of ice chips finally floating up to top section of an ice chest before they trapped in this profiles. Recirculated hot seawater is supplied at the top region, which have an effect to melt floating ice chips. The exit of this sea chest tunnel is located at bowfair at the ship’s bow, which design enables pumping only seawater without ice chips.

Navigation Bridge

Yamal Arc-7 ship has dual warehouse stations, one facing forward and the other aft. The five wheelhouse station each have enough kinds of navigational and radio equipment with a highly redundancy design. Two wheelhouse stations are connected via a corridor space with easily access to each other, and the white wheelhouse space including bridge wings and corridor is horizontally fully enclosed, and protected from cold outside air. A variety of special navigational and radio equipment are fitted in wheelhouse sections, as aimed for ice operation at any high latitudes zone. For example, ice radar, additional winter radar on forecast, Night vision camera, Xeon search lights, etc. aimed to early detection of ice in the forward ship’s deck, full areas monitoring system which to measure for ice pressure, CAMS-IQ radio equipment covering 4.500 miles latitude zones, etc.

Winterization in Living Quarters

For the purpose of crew safety during ice navigation under extreme cold environment, living quarter is specially studied to the highest protection from cold air outside. Heating systems are robust with different heat sources, consisting of a traditional central coal-fired heating system, hydraulic oil driven heating system in each cabins and public spaces. Living quarter structure is made of thick glass-veneer insulation besides standard design. Windows in living quarters are made of high-quality safety triple glass. In addition, zeana and hot water swimming pool are also fitted for crew’s good health.

Winterization on Deck

Winterization specification on exposed deck area is one of the most outstanding design. Electric-driven equipment are mostly selected on exposed deck, because of most reliability option against cold environment. Hydraulic driven system is definitely utilized where electric system is not applicable technically, and in such area a short length of oil recirculation line with a suitable space heating system is well designed. Air driven system is in very exceptional cases with any applicable in a very rare equipment, because air system is relatively easier to clog by snow system by blowing snow. All the deck’s equipment are severely being selected up the system is verified to work under -50°C ambient conditions.

Piping network are mostly placed inside enclosed space (deck passageway, etc.), and piping on exposed area is minimum length in general. Piping network for make relatively in standard attention. In order to avoid freezing water in the piping, an electric or hot water trace is arranged on the surface of piping and properly insulated. In addition, provide enough number of drain valves and anti-freezing connections in the piping network. Ballast tanks are protected by duplicated double heating coils and being placed on the top sections of tanks, in order to maintain the hull structure above sea water surface to keep suitable temperature. Oil piping network is also very designed to provide an enough surface of drainage pipe injection at each place. Additionally, fire and seawater line is able to supply hot seawater through a space heating system in the deck medium.

For crewmanship who are working in exposed spaces, main control stations with thermal heaters are provided on each deck, protected by done double coats, in order to reduce snow accumulation in deck and keep ice-free deck operation by supplied an thawed seawater from the ship’s side. Shoulder MARPA on upper deck are designed with high alone than standard design.

Life Saving Equipment

Considering of an emergency case, as just one example, Survival kits for maximum onboard numbers of drain valves and air purging connections in the piping network. Ballast tanks are protected by duplicated double heating coils and being placed on the top sections of tanks, in order to maintain the hull structure above sea water surface to keep suitable temperature. Oil piping network is also very designed to provide an enough surface of drainage pipe injection at each place. Additionally, fire and seawater line is able to supply hot seawater through a space heating system in the deck medium.

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

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. In September 2014, we revised the Compliance Policy, adding the following statement: “Compliance is the highest priority for executives and employees to carry out their duties. Each one of them must not only uphold compliance as a corporate citizen, but also to recognize that compliance is the major premise of continual corporate activities and is essential to ensure earnings.” We believe the MOL Group must focus on compliance not only with the antimonopoly and competition laws of various nations, of course, but also with regulations covering anti-corruption (bribery), confidentiality of customer, corporate, and other information, and non-discrimination and harassment. The MOL Group also established Rules of Conduct for its executives and employees in the Compliance Policy.

Compliance Structure

Compliance (As of July 2015)

Executive Committee

Chief Compliance Officer

Compliance Committee

Internal Compliance Advisory Service Desk (Internal Audit Office)

General Manager of the Internal Audit Office

Person Reporting or seeking consultation on an issue

New Organizational Structure for Initiatives on Compliance

In July 2014, MOL revised the Rules of Conduct for compliance with the antimonopoly act, established the new position of Chief Compliance Officer to chair the committee and oversee the planning and promotion of compliance-related measures. The committee also supervises the compliance officers in maintaining and enhancing the organizational structure.

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, and then handling 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 the confidentiality of anyone reporting an issue. In addition, consultation on various issues related to the company. The follow-up contacts between persons reporting or seeking consultation on an issue. Outside attorneys are responsible for the external desk, providing consultation and reporting issues to the Compliance Committee Office, and then handling 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. We also accept reports online for those outside the group companies, such as business partners in Japan and overseas.

Introduction of MOL CHART

As a global company, MOL introduced MOL CHART, expressing five shared values embraced by the group executives and employees. “Honesty (Do the right thing)” is one of the five. “Honesty” means “Maintain compliance as a top priority. Ensure that actions comply with social norms and the highest ethical standards,” upon which to rely when judging on doing their duties. We will instill the values of MOL CHART throughout all group companies to help them recognize anew the importance of compliance.

Initiatives on Compliance with the Antimonopoly Act

Review Committee on Measures to Prevent Reoccurrence of Anti-competitive Practices

MOL takes the violation of the Antimonopoly Law very seriously, and in April 2014 established the Review Committee on Measures to Prevent Reoccurrence of Anti-competitive Practices, chaired by the CEO. The committee has discussed various specific measures to prevent the reoccurrence of anti-competitive practices including reviews of the compliance structure and reform of corporate culture. The Compliance Committee has followed up on the measures established by the committee since October 2014.

Anti-monopoly Act Dialogue Workshops in Japan and Overseas

MOL presented a video with an overview of the cartel scandal in certain car carrier shipping trades to its group executives and employees around the world, and delivered a message from the CEO saying, “Compliance is the highest priority of all management issues, and the major premise of the company’s sustainable growth.” The dialogue workshops were also held for all divisions and offices of the Head Office, explaining measures to prevent the reoccurrence of violations of the Antimonopoly Act and building their awareness of those measures. During the workshops, executives and employees had the opportunity to discuss measures to prevent future violations. Similar dialogue workshops were held at three overseas subsidiaries (Hong Kong, Singapore, the U.K.).

Initiatives on Reform of Corporate Culture, Training/E-learning

While investigating the cause of the Antimonopoly Act violations, it became apparent that we needed to revamp the group’s corporate culture. To analyze the group’s current corporate culture, we conducted 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. MOL also held E-learning sessions about the Antimonopoly Act and Competition Law to provide distance learning targeting overseas group companies. About 5,700 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.

FY2014 E-learning Participation Rate

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<tr>
<th>Field</th>
<th>Group Companies in Japan</th>
<th>Group Companies Overseas</th>
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<tr>
<td>Anti-monopoly Act of Competition Law</td>
<td>99.9%</td>
<td>98.6%</td>
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<tr>
<td>Anti-corruption (bribery)</td>
<td>99.9%</td>
<td>-</td>
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<tr>
<td>Prevention of Insider Trading</td>
<td>99.9%</td>
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<tr>
<td>Internal Control</td>
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<td>Information Security</td>
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Cross Talk Wednesday

The Review Committee on Measures to Prevent Reoccurrence of Anti-competitive Practices says poor communication across divisions/offices and job positions is one of the causes of noncompliance, and saw the need for a venue where employees can freely exchange opinions and think about ways to prevent noncompliance problems.

In July 2014, to help create a more open organization, we began holding bimonthly dialogue meetings in the employee cafeteria, bringing together personnel from all levels – from the CEO to young employees. This aims to provide opportunities for free discussions that transcend the borders between divisions and generations.

Information Security Measures

The MOL Group Rules of Conduct clearly state: “Protect confidential information and respect intellectual property rights,” and the MOL Group Electronic 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.

Feedback from a Participant

Feel a sense of unity of MOL group

I participated in Cross Talk Wednesday for the first time. Soon after the meeting started, conversation came into bloom everywhere. I felt a sense of the group’s unity. This was a perfect place for people who normally have no opportunity to hold face-to-face conversations with executives and people from other MOL Group companies. Events like this are great from the viewpoint of group exchange.

Noriyuki Suzuki
Manager, Product Planning Group, Mitsui O.S.K. Passenger Line, Ltd.
Human Resources Development, Diversity, Development of Work Environment

The MOL Group aims to establish an environment where multinational, diversified personnel can fulfill their social responsibilities, maximize their personal development, and create shared value with society by weaving “MOL CHART” – which was introduced in April 2015 to express the core values embraced by all group employees – into the corporate culture.

Global Human Resources Development

To strengthen and concentrate the MOL Group’s comprehensive efforts, we are pushing forward with group-wide initiatives on development of independent-minded 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 goal, global going diversifies. MOL CHART was created to incorporate the MOL Group’s history and reflect the vision of management, the demands of society, the expectations of customers, and the voices of employees.

We provide separate training programs for land-based employees and ocean-going personnel. This page introduces our initiatives on development of global land-based employees.

For details on the development of seagoing employees, please refer to the Special Feature “Development of LNG Carrier Crewmembers” in the Annual Report “A Voice of Employees” (Page 19 of this report).

MOL Global Management College

We held the MOL Global Management College in August, October, and December 2014 to improve management skills of many different nationalities.

Ten foreign and Japanese employees from MOL Group companies took part in the program to share awareness of issues and senses of values across their nationalities, and cultures.

Onboard Training Programs

We provide onboard training programs aimed at helping young employees deepen their knowledge of vessels and operations through hands-on experience and further increase their consciousness of safe operation. At the same time, the programs are intended to foster an awareness of working at a global company through communication with crewmembers of many different nationalities.

Promoting Women’s Initiatives

To encourage women to play a more active role in the company, we have worked not only to fulﬁl systems centering on childcare support, but also to expand support for female personnel in pursuing their career paths. In addition, female managers are supported from various aspects as they take part in a volunteer activity called “Women’s Initiatives,” which include holding seminars to increase motivation and provide networking opportunities for women managers from MOL and its group companies.


Continued Employment System

MOL has a reemployment system for workers who have reached mandatory retirement age, and re-enters retirees who desire to work.

Creating Opportunities for Disabled Workers

Disabled employees accounted for 2.0% of the MOL workforce as of March 31, 2015. We continue our efforts to promote the hiring of disabled workers by cultivating job fields where they can make the most of their abilities and cooperatively closing with social welfare organizations.

Measures for 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.

Starting from April 2015, to meet requirement of employees who are in the middle of childcare and/or nursing care, we have introduced options allowing employees to partly work at home instead of fully working in the office.

As of fiscal 2014, we also introduced a new system under which female personnel can be reemployed with the company even if they have to resign to follow their spouse to an overseas posting. This system gives new opportunities for employees to continue their career paths.

Promotion of Diversity, Initiatives on Work-life Balance

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.

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Before diversity emerged as a major social concern, we had already taken proactive stances in hiring and promoting the best-qualified personnel, regardless of nationality, gender, and age, and pursued diversity ever since. We have reviewed our understanding of the importance of women employees’ desire to advance in the company, and are working to accelerate their career development.

This year’s report examines this issue from the viewpoint of women, with two women—one in management and one at the junior level—interviewing the executive officer responsible for human resources development, who talked about the necessity of female employees playing active roles in the workplace and future directions of the company’s initiatives.

Koriyama: Please tell us about your understanding of the current situation concerning diversity in the MOL Group work force, including our initiatives related to women in the company.

Yashima: First of all, let me emphasize that our current recruiting standards, training policies, and transfer and job posting regulations make no differentiation regarding gender. Within our corporate group of companies, our employees and crewmembers hail from more than 50 different countries, and they are about fifty, male and female. I think we can confidently say that our group is definitely anchored in diversity. Looking at MOL alone, we see that women account for 27% of our employees and about 6% of our management. We realize these numbers put us in the corporate group of companies, our employees and crewmembers who have been with the company for several years and is really advancing quickly can have a life event that will require her to take a leave of absence for two or three years, so we strive to ensure a wide choice of possible career paths for female personnel when they return.

Further, as of fiscal 2014, we introduced a new system that gives female personnel to be reemployed with the company within four years even if they have to leave the company to follow their spouse to an overseas posting. Another important program is the “Women’s Initiatives (WI),” which are administrated by our female executives. WI has carried forward activities aimed at promoting active roles for women, such as planning and presenting seminars and setting up networking opportunities for female executives among group companies. Of course the company continues to support these movements.

Koriyama: Finally, looking forward toward more active roles for females, what specifically does management expect of our employees?

Yashima: First of all, in line with our robust policies on human resources development, we hope each employee will commit to working with a sense of ownership. That means an attitude of always having a sense of ownership even when confronting a difficult problem, and solving it while cooperating with everyone involved. That’s the sense we need and want, and it applies to male and female employees alike.

It doesn’t matter whether an employee is male or female, we still want them to have that sense of ownership; we don’t want someone who just does what he or she is told to do. Instead, the employee should always be aware of how his or her job is positioned, whether there is anything else that could be added to it, and we hope all employees will keep those things in mind as they go about their daily jobs.

Managers with women on their teams have to keep in mind the historical background of their active roles as well as the life events unique to females. With that in mind, old-fashioned hesitation to assign women to certain tasks should no longer be an issue. By the same token, first we will educate managers about the idea that they should not consider their female employees for special training and business assignments, though they are required to make a certain consideration for female employees.

Last year, when I visited companies in Sweden and Norway, both known as advanced countries in the realm of female rights and progress, everyone I talked to saw basically the same thing: Awareness (understanding that women have all the skills and capabilities of men) is most important. That’s why we do “awareness” seminars on a regular basis, and I was able to learn many of the things they do. In our group as well, we should proactively communicate our expectations to our female employees through managers, and in training programs. We will make our best endeavors to help nurture the “awareness” of each female employee and to build the proper work environment that allows them to fully demonstrate all of their skills.

I Comments from Female Workers

I loved ships from the time I was a little girl, so I enrolled in the Kobe University of Mercantile Marine (now Kobe University). I won my English skills by studying abroad, and joined the company in 2004 as a female officer. I have encountered no disadvantages and things have not been inconvenient at all. On board, we have a fined sociales, an officer serves in a management post, and actual operations are done mostly by non-Japanese crewmembers. It is important to speak to them about even the small things, and making it easy for crewmembers to come and talk is very much a part of safe operation. The greatest sense of accomplishment we get on our vessel is arming and leaving harbors at precisely the scheduled time.

Kayo Sugai First Officer

MOL Liner, Ltd., based in Hong Kong, serves as headquarters and handles Asian area management of MOL’s liner business. Many of its important strategic decisions are made by the managers there. In all, 26 women are managers or above, and the percentage of women among all managers has reached 20%.

Also, a female manager at MOL (HM) Agency Ltd., which does agency work out of Hong Kong, organized “Women in MOL.” This is a network involving female employees who work in Hong Kong and southern mainland China. Women in MOL provides various activities such as training programs that help women gain a better understanding of themselves and those around them while helping them improve their skills.

Connie Or Director, MOL Line Ltd., General Manager, MOL (HK) Ltd.
Initiatives on the Environment

The MOL Group seeks to offer more environmentally-friendly services through various environmental protection measures—development and introduction of environmental technologies, ship operation with the minimum environmental impact, and measures to protect the air and ocean environments—to meet worldwide demand for shipping.

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 an environmentally-friendly mode, with lower emissions per ton-mile of CO₂ and other air pollutants.

However, with 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.

Environmental Policy

We are thoroughly aware of the environmental impact created by our group’s business activities, and issued the MOL Group Environmental Policy Statement in 2000.

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

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

Organizational Structure for Environmental Initiatives

To effectively promote environmental initiatives based on the MOL Environmental Policy, the CSR and Environment Committee, a sub-committee of the Executive Committee, oversees planning and promotion of environment-related measures under the direction of the CEO. The CSR and Environment 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 March 2014, we set new environmental targets in the mid-term management plan STEER FOR 2020 for three years starting from FY2014.

Environmental Management System

To precisely grasp and manage the environmental risks and opportunities in our businesses, we established the environmental management system MOL EMS21 in April 2001, and since then we have made ongoing efforts to improve it. Every year, the CSR and Environment Office conducts an internal audit based on MOL EMS21. The chairman, who is responsible for environmental management, receives the results of the internal audit and confirms whether the system is functioning effectively.

Please refer to the Web site for MOL Group companies’ environmental initiatives.

Yoshikazu Kawagoe
Executive Officer

Comment from Executive Officer Responsible for Environmental Technologies

Environmental regulations serve as very important guides for our introduction of environmental technologies. We determine where the regulations are pointing us, and then it’s important that we proactively and precisely comply with them.

We have worked voluntarily to reduce our environmental burden and improve fuel efficiency. In cooperation with the business divisions, shipyards, and equipment and machinery manufacturers, we realize a competitive advantage through differentiating technologies, meeting the needs of customers who have especially high standards regarding environmental performance.

There are still many things we can do from both hardware and software aspects. We will continue to aggressively adopt new technologies, gain feedback and knowledge seeders on the front lines, and direct our research and development activities to proactively develop the technologies of the future.
New Midterm Management Plan: Fully aware of the environmental impact of its business activities, the MOL Group will lead the worldwide shipping industry by proactively responding to environmental regulations and differentiating our performance by actively adopting superior environmental technologies for protecting the global environment.

Environmental Activities Targets and Results (FY 2014/2015)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>FY2014 Environmental Targets</th>
<th>FY2015 Environmental Targets</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce CO2, NOx by 1% in FY2014 compared to FY2013</td>
<td>1) Reduce CO2, NOx by 1% in FY2014 compared to FY2013</td>
<td></td>
<td>P.35</td>
</tr>
<tr>
<td>Promote installation of the ballast water treatment system prior to the enforcement of new regulations</td>
<td>1) Promote installation of the ballast water treatment system prior to the enforcement of new regulations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comply with Environmental Regulations

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 Web site for details of the environmental initiatives.)

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 operational selection of each vessel for 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.

MBM: Market-Based Mechanism. A two-phase jet, which rotates the turbine wheel to recover the motive power. Heat is simultaneously transmitted from a gas phase to a liquid phase to become CO₂ power, which can be subsequently used to power a generator. VPC allows the recovery of heat without evaporating the working fluid in the heat exchanger equipped with the engine scavenge air coolant. This mechanism relies on two-phase nozzle. The working fluid turns into a gas-liquid two-phase jet, which rotates the turbine wheel.

Other Measures to Reduce SO₂

From technological aspect

- Use of optimal trim calculation system
- Introduction of hybrid sail devices
- Improvement of the condition of the engine
- Use of optimal navigation system

From organizational aspect

- Informed the vessel's company in advance of the turn around
- Informed the crew in advance of the turn around

Variable Phase Cycle (VPC)

A 50,000 DWT methanol carrier now under construction at Minaminippon Diesel Engine & Shipbuilding Co., Ltd., plans to select a test vessel, equip with a VPC system on it, and conduct a demonstration test to determine its effectiveness in reducing CO₂ emissions.

Proactively Utilize of 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. MOL Group continually takes a proactive approach to technological innovation aimed at further reducing the environmental impact of its operations.

Variable Phase Cycle (VPC)

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Selective Catalytic Reduction (SCR)

NOS is generated by binding nitrogen in fuel and the oxygen in the air under high temperature during combustion in the engine. We equipped SCR systems, which eliminate NOx emissions from vessels, to three power generators on the MOL-owned operated large-scale iron ore carrier. We confirmed that its denitration performance for diesel oil conforms to Bunko’s NOx Tier II regulations, which will take effect in 2016.

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

Initiatives on Ship Recycling

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. 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. It also thoroughly informs the convention, and shares information related to recycling as well as conditions in recycling yards. Meanwhile, when selling a vessel on the assumption of scrapping, based on the international understanding of Hong Kong International Convention, we select a recycling yard after checking a broad range of list items including the yard’s ISO certification status, conducting site inspections, confirming that the yard’s environmental measures conform to IMO’s 400 or equivalent, and whether scrapping methods and procedures meet acceptable standards for environmental protection, occupational safety, and human rights.

The Highest-priority Environmental Issues


For a list of specific regulations, please refer to the Web site for details of the environmental initiatives.

Other Measures to Reduce CO₂

From technological aspect

- Use of optimal navigation system

From organizational aspect

- Informed the vessel’s company in advance of the turn around
- Informed the crew in advance of the turn around

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MOL will lead the shipping industries in terms of environmental protection by differentiating by adopting advanced environmentally-friendly technologies to one of the world largest class containerships, with capacities of 20,000 TEU.

From the energy efficiency improvement by becoming larger and the technologies to reduce environment load, these vessels can reduce CO₂ emissions per container moved by about 50% compared to 8,000 TEU containerships, which are the mainstream size today.

* Comparison with MOL-operated latest type 8,000 TEU containerships

**World’s Largest Containerships: 20,000 TEU**

MOL pays attention to propulsion resistance by changes in trim and verifies the minimum resistance trim in vessel operation by water tank tests, helping to ensure energy-saving operation.

**Technological Initiatives**

1. **Auxiliary Equipment**
   - Inverter control is adopted for the air conditioning system in the living areas, escape routes, and engine room ventilation fans. Improved control of the large-capacity fan motor rpm minimizes electric power consumption and reduces fuel consumption.

2. **Diesel Generators**
   - Exhaust gas economizers are installed on two of four diesel generators. They recover exhaust gas energy from the generator engines, contributing to higher fuel efficiency.

3. **High-efficient Propellers**
   - Optimizes the angle of the propeller blade tips increases propeller efficiency by about 1%.

4. **Energy-saving Device Attached to the Hull (SAVER STATOR)**
   - A rectifier Fin is mounted on the underwater portion of the hull in front of the propeller. This is expected to generate an energy-saving effect of 5-9% by optimizing the flow of the water coming into the propellers.

5. **Full Spade Twisted Rudder (with Rudder Bulb)**
   - To ensure vortex energy recovery of the propeller slipstream, adopted a twisted leading edge and set a bulb with round-shaped center front, in front of the rudder. In addition, the hanging-type rudder improves maneuverability and reduces damage to the rudder caused by propeller cavitation erosion.

6. **For Shifting to LNG Fuel**
   - MOL is carrying out feasibility study to allow the ship to run on LNG fuel as a measure to comply with stricter environmental regulations limiting SOₓ emissions.

7. **Easy-to-Retrofit SOₓ Scrubber**
   - Other than allowing the option of using LNG as a fuel, MOL is carrying out feasibility study to allow retrofitting of an SOₓ scrubber, providing more flexibility in coping with the fuel supply situation in the coming years.

8. **Low-load Tuning with Exhaust Gas Bypass (EGB)**

9. **PMI Auto Tuning**
   - This equipment optimizes the maximum pressure in a cylinder’s combustion chamber by monitoring pressure in each engine cylinder and automatically adjusting the fuel injection timing. This auto-tuning optimizes fuel combustion and improves fuel efficiency.

10. **Optimized hull form**
   - Design refinements in the bow and stern of the hull, and the optimized bulbous bow shape are expected to realize a 4.5% boost in fuel efficiency.

11. **Low-friction Hull Paint**
   - Special low friction paint on the underwater portion of the hull has the potential to significantly reduce drag and improve fuel efficiency.

12. **Ballast Water Treatment System**
   - The system will meet the requirements of the Ballast Water Management Convention.
Actively Disclose Environmental Data

Demand for proactive disclosure of environmental data is increasing. Customers have raised their awareness of the importance of calculating and reducing the environmental impact such as CO2 emissions generated in transport activities because their efforts on reducing the environmental load on their supply chains contribute to improving their social evaluations and positions. At the same time investors recognize that businesses whose activities produce GHG emissions may be impairing their corporate value more than ever due to various policies and regulations to address the environmental issues such as escalation of global warming, and growing concern among consumers.

Clean Shipping Index (CSI)
The Clean Shipping Index is an environmental assessment tool for ships and shipowners, used by a network of cargo owners (customers) when buying sea transport. Ship owners present the environmental performance on CO2, SOx, NOx, Chemicals and Waste and Water management, of their fleet to CSI. Ships are then ranked from 'low performance' to 'good performance'. With the information collected, the cargo owners will 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.

Contribute to Conservation of Biodiversity

MOL employees raise awareness of biodiversity conservation and nature protection, and participate in volunteer activities in a proactive manner.

Participating in Declaration of Biodiversity Promotion Partners
MOL endorsed the purpose and aim of the ‘Biodiversity Declaration Preservation’ by Nippon Keidaran, and participated as one of its declaration promotion partners to show our practices both inside and outside the company.

World-first to Adopt ‘NSafe®-HULL’ to Ensure Superior Collision Safety

In a world-first, MOL adopted highly ductile steel plate NSafe®-HULL, developed by Nippon Steel & Sumitomo Metal Corporation, for a newbuilding vessel. NSafe®-HULL plates absorb side impact to the hull three times more effectively than conventional steel plates, thereby reducing the risk of cracks in the hull and significantly increasing the safety of the vessel. For the new vessel, use of NSafe®-HULL for the sections such as the side plates of cargo holds and fuel tanks, where hull strength is especially critical, will improve puncture resistance to help prevent flooding, protect cargo, and prevent serious oil leakage damage to the marine environment.

Ballast Water

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. 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. The same year, we decided to install the system on 26 Group vessels before the convention took effect, and since then have been testing them.

Ballast Water Treatment System

MOL developed the technology to install a packaged container ballast water treatment system that can fit in the cargo hold of a container ship, and acquired approval in concept from ClassNK for the first time in Japan. The system is packaged in a 40-foot container (about 12m long) with all necessary equipment, and designed for easy accessibility and maintenance. Installation time is reduced by about seven days, compared to installing a system in the engine room. We installed the system on some of our container ships, and are conducting demonstration tests.

Educational Support in Communities Affected by the Great East Japan Earthquake

Even though four years have passed since the Great East Japan Earthquake, the affected areas are still only partway through the reconstruction process and various measures have been taken to improve the situation. Upon the 130th anniversary of our company’s founding, we asked our executives and employees both in and out of Japan for ideas and proposals of social contribution activities. This page introduced the MOL Group’s educational support in the affected areas, which we implemented based on the above ideas.

Donation of Book Coupons and Maritime-related Books to Junior High Schools in Affected Areas — Group Employees Donate 6,900 Books

A month-long book drive, from August to September 2014, solicited donations of used books from group executives and employees. In all, we received about 6,900 books. We purchased book coupons and books about vessels and the sea, which were funded by the sale of used books and donations from the company, and then donated those coupons and books to the following schools in the affected areas, upon recommendation of the boards of education in three cities—Ofunato, Kamishi, and Miyako — where the Fuj Maru called to provide aid and support shortly after the earthquake.

**Group Employees Donate**

**6,900 Books**

**Marine Officers Present Career Education Lecture at Junior High Schools in Affected Areas — Attended by 327 Students at 3 Schools**

In November 2014, MOL presented a career education lecture titled “Experience the Job of Ocean Shipping” for students at the three schools listed above. While junior high schools in Japan offer “career education,” encouraging students to think about their future jobs by listening to workers’ stories and experiencing corporate activities, there are few companies in the quake-stricken areas, so in reality, those schools offer limited opportunities in this regard. To address this issue, many companies went to the affected areas and presented various programs about different careers – what the jobs entail and the satisfaction the workers gain from them. We took a similar approach, presenting a lecture about the ocean shipping industry and the jobs of crewmembers, with the goal of helping students expand their career horizons.

Before the lecture, we visited the Japan Red Cross and received advice on the emotional state of the children in the quake-damaged communities. The lecture helped students understand the structure of the ocean shipping industry through a quiz that had them connect ship types, cargoes, and routes, and with various photos that conveyed seafarers’ joy in their day-to-day work aboard MOL Group vessels.

**Attendees by 327 Students at 3 Schools**

**Students’ comments posted at the Tokyo Head Office**

• Kazuyuki Onodera (right)
  MOL Cooperate Planning Division CSR and Environment

• Office General Manager Junichi Nagata (left)
  MOL Cooperate Planning Division CSR and Environment

**Lecture at Kamishi Junior High School**

• Akasaki Junior High School in Ofunato City
• Kamishi Junior High School in Kamishi City
• Sakiyama Junior High School in Miyako City

**Teachers and Students Share Their Impressions After the Lecture**

• There are so many jobs in the world. I will search out my favorite things and find a job that lets me do those things. (Student at Akasaki Junior High School)

• I didn’t know how deeply ships are involved in our livelihood. I don’t yet know what my dream job is, so I am going to think about my career based on today’s lecture. (Student at Sakiyama Junior High School)

• Some students have decided to work in their hometowns, but I think the lecture motivated some of them to think about connecting with the world through the sea. (Kazuyuki Onodera, Principal of Sakiyama Junior High School)

The MOL Group continues its proactive approach to supporting the recovery of the people and communities affected by the Great East Japan Earthquake.
MOL Group’s Global Social Contribution Activities

The MOL Group engages in social contribution activities with three principles, as a company sustainably growing with society. We take a proactive stance in social contribution activities specific to an ocean shipping company with a global network.

**Principles of MOL’s Social Contribution Activities**

1. **Contribute to the United Nations Millennium Development Goals**
   - As a company growing in step with the global economy and social development

2. **Contribute to Protecting Biodiversity and Preserving Nature**
   - As a company that impacts the environment to an extent and as a company that does business on the ocean, a rich repository of living organisms

3. **Contribute to Local Communities**
   - As a good corporate citizen

*The common framework that integrates the Millennium Declaration adopted at the United Nations Millennium Summit held in September 2000, and the International Development Goals that were adopted at major international conferences and summits in the 1990s. The Millennium Development Goals consist of specific numerical targets to be achieved by 2015 in eight fields, including “achieve universal primary education” and “reduce child mortality.”*

**In-house Blood Drive (Ghana)**

A shortage of blood for transfusions has become a serious issue in the Republic of Ghana. MOL Ghana Ltd. held an in-house blood drive in cooperation with the West African Rescue Association (WARA). Many employees volunteered to donate blood for this worthy cause.

**Transporting Used Wheelchairs for Children**

As an activity unique to a shipping company, MOL Group provides free ocean transport of used wheelchairs from Japan to Paraguay, where they were delivered to needy children. Paraguay’s Ambassador to Japan Naoyuki Toyotachi presented MOL with a letter of appreciation from Somaliland National Association for Disabled People (SNAPND) President Siad Yared Yared.

Other cases of free ocean transport
- To Zambia (blind and disabled children)
- To South Africa (blind)
- To Cambodia (medical equipment)
- To Paraguay (medical equipment)

**Supporting an Orphanage (India)**

MOL-Information Processing Services (India) Pvt. Ltd. [MOL-IPS (India)] provided support for an orphanage in Mumbai, donating books, stationery, and clothes, and setting up a playground where the young ladies can play safely after school. The employees visited the orphanage in person to help set up the grounds, sharing the joy with children.

**Donating Vessel Photos to Maritime Educational Institutes (Japan)**

In commemoration of the 130th anniversary of our company’s foundation, we donated vessel photographs to nine maritime educational institutions in Japan.

**Establishing a Recycling Program for Lashing Belts Used in Car Carriers**

Until now, when lashing belts used to secure vehicles in car carriers reached the end of their useful lives, they were treated as industrial waste, but we planned and established a unique new recycling program. We entrust the work of preparing the belts for recycling to a non-profit organization in Oita Prefecture that creates employment opportunities for disabled workers.

**Coastal Cleanup (Hong Kong/Malaysia/Japan)**

A group of 78 enthusiastic colleagues from MOL Liner Ltd. and their family members pitched in for the International Coastal Cleanup 2014. Our group has participated in volunteer beach-cleanup activities since 2000, starting in Japan and this activity has now spread overseas. In FY 2014, 144 colleagues took part in a beach cleanup in Japan, while 40 colleagues took part in Malaysia. The beach cleanup increases environmental awareness among employees, and helps foster a culture of safety among group executives and employees.

**Pledging Emergency Support to Combat Spread of Ebola (Paraguay)**

In September 2014, we provided a monetary donation to help the Republic of Liberia cope with the rapid spread of the Ebola virus. We arranged for Liberian ship registry companies LISCR Japan and LISCR LLC to allocate air transported from the U.S. to Liberia. The donation towards much-needed materials and medical equipment, LISCR LLC: The Liberian International Ship & Corporate Registry. LISCR LLC: The Liberian International Ship & Corporate Registry.

**Comment**

Yoshiharu Hanamiya,
Chairman of the Oita City Conference of Support for Disabled Employment

Employees can enthusiastically engage in this work, so their productivity increases as they get used to doing the job. At present, they can separate more than 1,000 belts per day. And their wages have increased, so they are more motivated than ever to work. I want to thank everyone who helped create this program, which provides such a great opportunity.

**Beach Cleanup in Japan and Hong Kong**

[Image of a clean beach with people volunteering]

Please visit MOL’s website for activity details and information about other activities.
### MOL Group’s Environmental Data (As of March 31, 2015)

<table>
<thead>
<tr>
<th>Energy Consumption</th>
<th>Unit</th>
<th>FY2009</th>
<th>FY2010</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel (C of oil)</td>
<td>thousand tons</td>
<td>5,942</td>
<td>5,830</td>
<td>5,837</td>
</tr>
<tr>
<td>MOL vessels</td>
<td>thousand tons</td>
<td>5,175</td>
<td>4,797</td>
<td>4,544</td>
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<tr>
<td>Group company vessels</td>
<td>thousand tons</td>
<td>762</td>
<td>1,036</td>
<td>1,250</td>
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<tr>
<td>Diesel (A of oil)</td>
<td>thousand tons</td>
<td>114</td>
<td>106</td>
<td>157</td>
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<tr>
<td>MOL vessels</td>
<td>thousand tons</td>
<td>72</td>
<td>58</td>
<td>93</td>
</tr>
<tr>
<td>Group company vessels</td>
<td>thousand tons</td>
<td>43</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>Electricity</td>
<td>thousand kWh</td>
<td>94,027</td>
<td>92,672</td>
<td>107,383</td>
</tr>
<tr>
<td>Municipal gas</td>
<td>thousand m³</td>
<td>1,530</td>
<td>1,542</td>
<td>1,545</td>
</tr>
<tr>
<td>Energy consumption (equivalent)</td>
<td>thousand GJ</td>
<td>263,729</td>
<td>260,821</td>
<td>258,396</td>
</tr>
</tbody>
</table>

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

- **Mainly vessels sold to be scrapped, recycled or used in remelting yards.**

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

- **CO₂ emissions originating mainly from C of oil and A of oil as fuel in vessels:**
  - MOL has charted out to other companies; calculated from fiscal 2013

#### Scope 2: CO₂ emissions originating mainly from electricity consumption

- **Estimated value of CO₂ emissions originating mainly from A of oil and C of oil used as fuel in vessels:**
- **Electricity:**
  - MOL Group’s Environmental Data (As of March 31, 2015) | thousand kWh | 94,027 | 92,672 | 107,383 |

- **Scope 3: CO₂ emissions originating mainly from electricity consumption:**
  - **Water:**
    - MOL vessels | thousand m³ | 1,530 | 1,542 | 1,545 |
  - **Electrical equipment:**
    - MOL vessels | thousand GJ | 263,729 | 260,821 | 258,396 |

#### NOx and SOx Emissions

<table>
<thead>
<tr>
<th>NOx and SOx Emissions</th>
<th>Unit</th>
<th>FY2009</th>
<th>FY2010</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx emissions</td>
<td>thousand tons</td>
<td>10,053</td>
<td>8,000</td>
<td>8,400</td>
</tr>
<tr>
<td>MOL vessels</td>
<td>15,499</td>
<td>15,268</td>
<td>14,547</td>
<td></td>
</tr>
<tr>
<td>Group company vessels</td>
<td>2,516</td>
<td>3,170</td>
<td>4,215</td>
<td></td>
</tr>
<tr>
<td>others</td>
<td>38</td>
<td>23</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>SOx emissions</td>
<td>thousand tons</td>
<td>68</td>
<td>96</td>
<td>114</td>
</tr>
<tr>
<td>MOL vessels</td>
<td>320</td>
<td>532</td>
<td>576</td>
<td></td>
</tr>
<tr>
<td>Group company vessels</td>
<td>10,900</td>
<td>9,960</td>
<td>8,036</td>
<td></td>
</tr>
</tbody>
</table>

#### Water and Other Resources

<table>
<thead>
<tr>
<th>Waste</th>
<th>Unit</th>
<th>FY2009</th>
<th>FY2010</th>
<th>FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>ton</td>
<td>241,484</td>
<td>135,567</td>
<td>114,576</td>
</tr>
<tr>
<td>Recycled</td>
<td>ton</td>
<td>240,537</td>
<td>134,601</td>
<td>113,940</td>
</tr>
<tr>
<td>Non-recycled</td>
<td>ton</td>
<td>967</td>
<td>905</td>
<td>637</td>
</tr>
<tr>
<td>Recyclable MOL, Head Office (tanking)</td>
<td>%</td>
<td>69</td>
<td>67</td>
<td>66</td>
</tr>
<tr>
<td>Water</td>
<td>m³</td>
<td>861,846</td>
<td>861,468</td>
<td>867,894</td>
</tr>
<tr>
<td>Top water</td>
<td>m³</td>
<td>861,846</td>
<td>861,468</td>
<td>867,894</td>
</tr>
<tr>
<td>River water</td>
<td>m³</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Sewerage tons (cyclic usage)</td>
<td>m³</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Office paper</td>
<td>thousand sheets</td>
<td>76,364</td>
<td>77,867</td>
<td>72,075</td>
</tr>
</tbody>
</table>

#### Eco-Efficiency Initiatives

<table>
<thead>
<tr>
<th>Co2 savings generation</th>
<th>Unit</th>
<th>FY2009-100</th>
<th>FY2010-100</th>
<th>FY2011-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co2 emissions per unit load (ton-m)</td>
<td>FY2009-100</td>
<td>92.5</td>
<td>91.4</td>
<td>85.9</td>
</tr>
<tr>
<td>MOL vessels</td>
<td>FY2009-100</td>
<td>92.7</td>
<td>94.0</td>
<td>86.7</td>
</tr>
<tr>
<td>Domestic coastal vessels</td>
<td>FY2009-100</td>
<td>99.4</td>
<td>101.2</td>
<td></td>
</tr>
<tr>
<td>Energy consumption</td>
<td>FY2009-100</td>
<td>99.4</td>
<td>101.2</td>
<td></td>
</tr>
<tr>
<td>Energy consumption (MOL, Dalian, Shosen Kour)</td>
<td>FY2009-100</td>
<td>83.4</td>
<td>83.8</td>
<td></td>
</tr>
<tr>
<td>Solar power generation</td>
<td>thousand kWh</td>
<td>255</td>
<td>231</td>
<td>252</td>
</tr>
</tbody>
</table>

**Data scope:** MOL Group consolidated subsidiaries in Japan and overseas. Excludes some small offices.

### MOL Human Resource Data (as of March 31, 2015)

#### Employees

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Fiscal Year</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>168</td>
<td>6</td>
<td>174</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>193</td>
<td>122</td>
<td>315</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>363</td>
<td>128</td>
<td>491</td>
<td></td>
</tr>
<tr>
<td>Group leaders and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>174</td>
<td>106</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>27</td>
<td>9</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>201</td>
<td>115</td>
<td>316</td>
<td></td>
</tr>
<tr>
<td>Below manager level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>200</td>
<td>124</td>
<td>324</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>182</td>
<td>34</td>
<td>216</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>382</td>
<td>158</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>290</td>
<td>258</td>
<td>548</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>258</td>
<td>265</td>
<td>523</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>548</td>
<td>523</td>
<td>1,071</td>
<td></td>
</tr>
</tbody>
</table>

**Other Support System**

- **Eco Sailing Initiatives** | FY2012 | FY2013 | FY2014 |
  - **Pre-and Post-Childbirth Leave (Office)** | 2 | 3 | 7 |
  - **Child-care Leave** | 1 | 1 | 1 |
  - **Six-month Maternity Leave for Ocean-going Employees** | 2 | 3 | 5 |
  - **Twice-Annual Leave** | 2 | 3 | 5 |

**Employee Support Systems**

- **Childcare Leave**
- **Short-time Shift**
- **Retirement reemployment system after spouse transfer introduced in FY2014**
- **Children’s education allowance**
- **Child-care leave**

#### Other Industrial Accidents

- **Industrial accidents (excluding accidents involving third parties)** | FY2012 | FY2013 | FY2014 |
  - **Days of Industrial accident leave has increased due to an employee’s injury during a business trip** | 2 | 0 | 0 |

#### MOL Group’s Consolidated Subsidiaries

#### Note:

1. The number of employees excludes 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 category.

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**Third-party Verification of CO₂ Emission Data**

MOL acquired third-party verification from IGIS Japan Co., Ltd. to ensure the fairness, accuracy, and transparency of FY2014 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).

**CO₂ at oil:**

- Used mainly for vessel fuel.
- The amounts in the chart were revised retroactively to past years because the MOL non-consolidated calculation method of heavy was changed.

**Energy consumption:**

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

**Scope 1:**

- CO₂ emissions originating mainly from C of oil and A of oil as fuel in vessels

**Scope 2:**

- CO₂ emissions originating mainly from electricity consumption

**Scope 3:**

- Estimated value of CO₂ emissions originating mainly from A of oil and C of oil used as fuel in vessels.

---

**Data source:** MOL Group consolidated subsidiaries in Japan and overseas. Excludes some small offices.

**Note:** The amounts in the chart were converted into SCR (Singapore Currency) for comparison purposes.
The editorial policy on page 1 covers the change of the report name to “Safety, Environmental and Social Report” to clearly express the corporate stance – “Forging ahead to become the world leader in safe operation.” After reading the report in its entirety, my impression was that this intent was fulfilled. The Top Management Commitment clearly conveys that “the piracy issue caused by disparity and unstable political situations, and the greater frequency and larger scale of natural disasters brought about by global warming, threaten safe operation and affect the continuity of the business.” It also clearly expresses that “safe operation” is MOL’s highest priority issue. Those points were persuasive. Actual reference to the fact that the company can not predict the rapid occurrence of a suddenly-developed low pressure in 2006 when the incident occurred off Kashima, and the frequency of alerts to warn vessels of typhoons and incidents of piracy, as disclosed on the page that introduces the Safety Operation Supporting Center (SOSC), are very specific. The report also gave me a clear understanding of the company’s multilayered approach to ensuring safe operation by concentrating hardware and software while drawing upon various experiences.

I paid particular attention to two points: (1) You take additional safety measures even if it means increasing the cost of a vessel by 2% to 3% compared to standard specifications, and (2) you are engaging in comprehensive personal development including the newly introduced MOL CHART as you recognize the importance of attracting and retaining personnel development including the newly introduced MOL CHART. I recognize anew that the human element also plays an essential role.

After Receiving Your Opinion
We appreciate your warm words of praise for the Safety, Environmental, and Social Report, which was renamed this year to include the word “safety.” The CSR & Environment Committees has discussed our essential corporate value based on requests from customers and suppliers, and opinions of the group company employees, particularly crewmembers. And then the committee reached the conclusion that clear communication of our safety-first stance will lead to winning stakeholders’ trust. We feel both proud of the success of our activities and the commitment of our employees. We are proud of the success of our activities and the commitment of our employees. We are also proud of the success of our activities and the commitment of our employees.

Kenichi Nagata
Executive Vice President and Executive Officer
Chairman of CSR and Environment Committees

The “Yamal LNG Project” in Special feature 3 gives a detailed explanation of your stance on safe operation, and at the same time I read with great interest about the introduction of a new business opportunity as merchant vessel operator on the Arctic Ocean route. This shows your group’s leadership in that field, and I felt it symbolizes your DNA of “continued growth, with an unerring spirit of challenge” since your founding.

Speaking of environmental issues, I appreciate your honest recognition that increasing seaborne trade has escalated various environmental issues into serious problems. Reporting your disclosure of the environmental data in a proactive manner as well as multilateral efforts to reduce the environmental burden of your operation reminded me once again that your group businesses are involved, directly and indirectly, in the supply chains of numerous customer companies.

At the Q7 Elmau Summit held in June 2015, one item: “responsible supply chain” was added to the leaders’ declaration, declaring the urgency of taking measures to address “unsustainable, poor labor conditions that lead to serious social and economic losses and are related to environmental damage.” Your group makes specific efforts to protect crewmembers’ human rights. In the future, I expect you will demonstrate leadership in correcting “unsustainable, poor labor conditions,” which are seen in logistics overall, including cargo loading/unloading operations and on-land transport, particularly in developing nations.

In conclusion, you explained in this year’s editorial policy on page 1 that “the Annual Report targets mainly shareholders and investors, but this report was produced by separating the content and targeting other stakeholders including customers.” This might be taken as going backwards against a series of efforts to integrate the reports. But I felt this report is valuable for non-financial information analyzers, because it explains very specific priority issues and explains measures to address those issues from the standpoints of both risk and opportunity. I express my deep respect for your choice of that unique challenge after probing the true essence of the matter. At the same time, I appreciate how this report lets me realize that thinking about the role of non-financial information plays in building your group’s corporate value is a part of our responsibility as information analysts.

Eiichiro Adachi
Director
The Japan Research Institute, Ltd.

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

Third-party Opinion
The “Yamal LNG Project” in Special feature 3 gives a detailed explanation of your stance on safe operation, and at the same time I read with great interest about the introduction of a new business opportunity as merchant vessel operator on the Arctic Ocean route. This shows your group’s leadership in that field, and I felt it symbolizes your DNA of “continued growth, with an unerring spirit of challenge” since your founding.

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20,000 TEU containerships (Please refer to P.37-38)

Corporate Profile (As of March 31, 2015)

Name: Mitsui O.S.K. Lines, Ltd.
President: Junichiro Ikeda (Assumed on June 23rd, 2015)
Shareholders’ equity: ¥782.6 billion
Number of shares issued: 1,206,286,115
Number of shareholders: 104,192
Share listings: Tokyo and Nagoya stock exchanges
Business: Multi-modal transport mainly by ocean-going vessels
Number of MOL Group employees: 10,508 (The parent company and consolidated subsidiaries)
Number of Group companies: 441 (The parent company and consolidated subsidiaries)
Group fleet: 947 vessels, 67,780 thousand DWT
Consolidated subsidiaries in Japan: 60
Overseas network: 36 nations and regions
Head Office: 1-1, Toranomon 2-chome, Minato-ku, Tokyo 105-8688, Japan
Branches and offices in Japan: Nagoya, Kansai, Hiroshima, Kyushu

For inquiries
Mitsui O.S.K. Lines, Ltd.
CSR and Environment Office, Corporate Planning Division
1-1, Toranomon 2-chome, Minato-ku, Tokyo 105-8688, Japan
Tel: +81-3-3587-7063 fax: +81-3-3587-7702
E-mail: plemo@molgroup.com