



Sustainability Report

INTEGRATED FUTURE GROWTH SALES GLOBAL SALES CONCEPTS PROFIT CONNECT PTS DATA INVESTMENT FUTURE DATA INTERNATIONAL

STALLES







#### GOAL

To provide our customers with the highest quality of service while focusing on the safety of our crew and the protection of the environment.

#### **MISSION**

DANAOS SHIPPING CO. LTD. ("DANAOS SHIPPING" or the "Company") seeks to provide safe, efficient and cost-effective seaborne container transportation and remain the premier choice for containership owners. To meet this goal, we continuously make substantial investments in operational, technical and financial infrastructure, while striving for environmentally friendly solutions.

#### **OUR VALUES**

- Enhancing the training of our personnel ashore and on-board
- Integrating the vessels in the organization
- Actively participating and leading research & development projects











- Promoting Company culture and bonding of all personnel on board
- Seeking growth by our strong comparative advantages to become the leader in our sector















#### **CONTENTS**

	Letter from the Management of DANAOS SHIPPING	7
<b>0</b>	Sustainability Report 2017	8
09	About the Company	
	History	8
	Products/ Services	10
	Financial Information	10
	Awards	11
	Participation in Associations ® Organizations	12
1 /_	Corporate Governance	
14	Policies & Certifications	13
	Ethics and Governance	16
18	Stakeholders	
22	Materiality Assessment	
24	Our Employees	
<b>Z</b> 4	Employees	24
	Training and Development	26
	Employee Functions	29
34	Community Engagement Strategy	
	Operations & Environmental Protection	
38	Energy	50
	Biodiversity	54
	Waste and Spills	56
	Emissions	60
	Compliance with environmental laws and regulations	63
C /	Responsibility for our CLIENTS	
64	Supply Chain	64
	Evaluation & Audit Inspections	65
	Anti- corruption	67
68	Sustainable Development Goals	
69	GRI Index	









#### Message from the Company's Management

Every aspect of our activities reflects the core values of the Company, such as the provision of quality services to our clients, the training and development of our employees, off-shore and on-shore, the constant upgrade of our fleet and the commitment to innovation, research and development. In order to uphold these values, we strive to maintain the highest level of ethical conduct and social and environmental responsibility.

The present Sustainability Report is our second attempt to communicate to our stakeholders our sustainability strategy and our social initiatives. Our goal is the transparent and complete representation of our strategy and our performance; hence for the first time we decided to use the most widely used sustainability reporting guidelines, those of the Global Reporting Initiative. Our commitment to sustainability is evident through our actions, performance and initiatives for our employees, the society and the environment.

Our employees are our most important asset, thus we give our maximum attention to their health, safety and wellbeing, as well as to their constant training and development. Through a variety of employee initiatives we build teamwork and create a safe and enjoyable working environment.

This year we decided to adopt the United Nations Agenda for 2030, as it is expressed through the Sustainable Development Goals. It is our decision to actively contribute to the promotion of the prosperity and safety of people, to the protection of the environment and to sustainable SHIPPING. We have set as priorities the goals which are directly linked to our initiatives and the challenges of our sector, as well as with the material issues, as they are defined in the present report.

It is crucial to understand the impact we have as a Company and as individuals on the environment and on society, to understand how we interact with each other and our stakeholders, and how we interpret the changes in each sustainability pillar and to be better prepared for the future in order to ensure the long-term growth of DANAOS SHIPPING.

The Management of DANAOS SHIPPING

# GRI 102-50 • GRI 102-51 • GRI 102-52 • GRI 102-53

## Sustainability REPORT 2017

#### Aim

The aim of the present sustainability report is to inform all stakeholders of DANAOS SHIPPING of our sustainability performance, in a complete, comprehensive manner.

## Targets and Reporting Period of the Report.

This sustainability report is the Company's second attempt to represent the strategy and the annual actions of the Company in the four pillars of Corporate Social Responsibility, the Environment, Society, our Employees and the Marketplace for the period between January 1st and December 31st 2017.

The Report includes our commitment regarding the principles and the strategy of DANAOS SHIPPING on Corporate Social Responsibility, as well as the progress made in the goals that were set in our previous report.

#### Global Reporting Initiative (GRI)

This is the first sustainability report of the Company, which is based on the guiding principles of the Global Reporting Initiative (GRI) and more specifically on the new GRI STANDARDS (In Accordance with Core), which are the most recognized and demanding guidelines globally.

#### **Contact for the Report**

For any further queries concerning the Social Responsibility Report for 2017, you may contact sustainability@danaos.com







#### About The Company

The Company's management is also responsible for meeting the quality and the environmental and safety requirements set by DANAOS SHIPPING stakeholders and business partners

#### History

DANAOS SHIPPING is the exclusive Manager of DANAOS Corporation (DAC). DANAOS Corporation is a leading international owner of container ships who deploys its containership fleet principally under multiyear charters with major liner companies that operate regularly scheduled routes between large commercial ports.

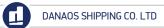
Founded in 1972, DANAOS SHIPPING has developed into a well-structured organization, putting emphasis on technological solutions to optimize the management of its vessels.

Our goal is simple – to provide our customers with the highest quality of service while focusing on the safety of our crew and the protection of the environment. Each department has clear lines of authority and accountability.

Additionally, specific responsibilities and tasks have been assigned to all managers in their specific areas of management, including:

- Relevant environmental protection and risk reduction measures
- Ensuring compliance with the Company's Safety Management System (DSMS)
- Reporting to regulatory agencies and use of corrective action when required

Apart from supervising compliance with the requirements of the DSMS policies, the Company's management is also responsible for meeting the quality and the environmental and safety requirements set by DANAOS SHIPPING stakeholders and business partners. For this reason, we have established incentive programs for all managers and other key people to promote and encourage them to meet or exceed DSMS standards and procedures.



#### **Products/ Services**

We are an international provider of seaborne transportation services, and one of the world's leading providers of containership operations.



The fleet managed by DANAOS SHIPPING boasts modern, high-quality vessels. Many of our containerships were built in the last five years, using

the latest in design standards, and all enjoy a reputation for safety and reliability in the industry.

At the moment, we manage 59 container vessels ranging from 2,200 TEU to 13,100 TEU...

#### Financial Information

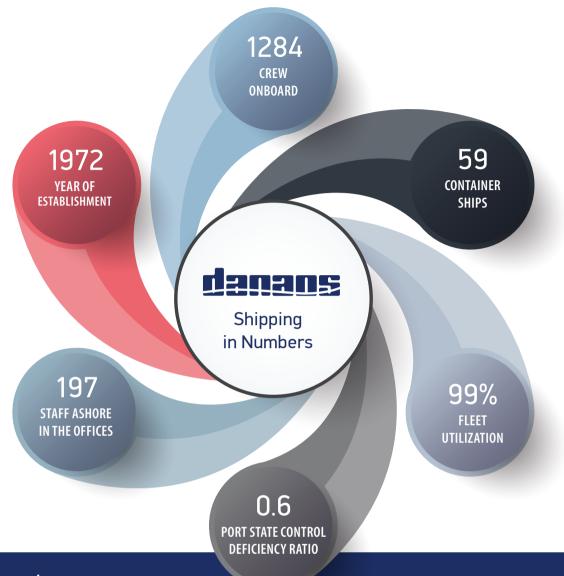
DANOS SHIPPING has built a strong reputation in the SHIPPING community by providing customized, high quality operational services

in an efficient manner utilising new and older vessels. DANAOS SHIPPING provides DAC with technical, administrative, and certain commercial services. The profitability and growth of DANAOS SHIPPING are exclusively linked to the operation of DAC from which the Company derives all of its revenue.

The financial statements of DANAOS SHIPPING are audited on an annual basis by PricewaterhouseCoopers S.A., an independent registered public accounting firm. The audits conducted by PricewaterhouseCoopers S.A. are in accordance with International Standards on Auditing (ISAs), whilst the Company's financial statements are prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and the requirements of the Cyprus Companies Law, Cap. 113 which the Company is subject to as it has been incorporated pursuant to the laws of Cyprus.

59 container vessels	2,200 TEU 13,100 TEU
8 X 2,200 TEU	11 X 6,500 TEU
3 X 2,500 TEU	7 X 8,500 TEU
6 X 3,400 TEU	2 X 9,600 TEU
12 X 4,300 TEU	3 X 10,100 TEU
2 X 5,500 TEU	5 X 13,100 TEU





#### **Awards**

We have consistently been recognized as a pioneer in operational efficiency and technological innovations. The recognitions we have received serve as validation and give us added inspiration to continue working to make meaningful contributions for a more sustainable, eco-friendly future in SHIPPING.

 June 2017 Awarded by the Government of the United Republic of Tanzania for the Company's service and contribution towards the promotion of seafarer development in Tanzania. The award was presented to the Company by Representatives of the Government during the National Seafarer Day Exhibition in Zanzibar

- 2015 Lloyd's List Intelligence Big Data Award (jointly with Danaos Management Consultants S.A.)
- 2012 Lloyd's List Ship of the Year Hyundai Ambition
- 2012 Franz Edelman Finalist Award ORISMA (Operation Research in Ship Management – jointly with Danaos Management Consultants S.A.)
- 2006 Lloyd's List Dry Cargo Company of the Year
- 2004 Lloyd's List Technical Achievement Award

#### **AMVER Awards**

Since 2000, DANAOS SHIPPING has participated in the Automated Mutual Assistance Vessel Rescue reporting system (AMVER) and has performed remarkably well every single year. AMVER is a unique, computer-based and voluntary global ship reporting system sponsored by the United States Coast Guard and used worldwide in search and rescue operations to assist persons in distress at sea.

On Thursday, November 3rd, 2017, DANAOS SHIPPING was proudly awarded by the International Propeller Club of the United States (Piraeus) with AMVER (Automated Mutual-Assistance Vessel Rescue System) awards during a spectacular event that took place in Athens. The event is organized annually by the Propeller Club and the US Coast Guard and is supported by the Ministry of SHIPPING & Island Policy, the Union of Greek Ship-owners & the Marine Chamber of Greece.

In 2017 "more than 220 ship managing companies and 1800 ships (under Greek management), were enrolled in the AMVER system", voluntarily participating in the promotion of safety at sea.

During the event, representatives from SHIPPING companies were awarded for their vessels' contribution in rescuing human lives over the last year.

Last year, DANAOS SHIPPING received 53 AMVER awards and it was ranked in 2nd place for 2016. The awards were received by the Senior Operations Manager, Captain Georgios Kakouris. DANAOS SHIPPING was further represented by the late Zoe Lappa-Papamatthaiou, who was the Company's Legal Director, also having held the position of Secretary General of the International Propeller Club of the United States, International Port of Piraeus at the time.



## Participation in Associations & Organizations

We are actively seeking the participation in industry associations and committees in order to contribute to the advancement of the sector through the exchange of experience and knowhow, as well as sustainability and environmental issues

- UNION OF GREEK SHIPOWNERS (Member of the BOD) – Represents Greek-owned commercial vessels over 3000gt under the Greek and other flags
- SYN-ENOSIS The Greek Ship-owners social welfare Company
- CYPRUS UNION OF SHIPOWNERS The major representative organization of the international shipping community with vessels under the Cyprus flag
- MALTA SHIPOWNERS
- PEMEN Union of Engineers of the Greek Merchant Marine
- PEPEN Union of Masters and Mates of the Greek Merchant Marine
- AMERICAN HELLENIC CHAMBER
- PIRAEUS MARINE CLUB
- GREEK SHIPPING PUBLICATIONS
- BIMCO Baltic and International Maritime Council
- HELMEPA Hellenic Marine Environment Protection Association
- PEMMEKEN Union of Engineers of Internal Combustion Engines of Greek Merchant Marine
- CSSF (Container Ship Safety Forum)
- NEE (Member of the BOD)

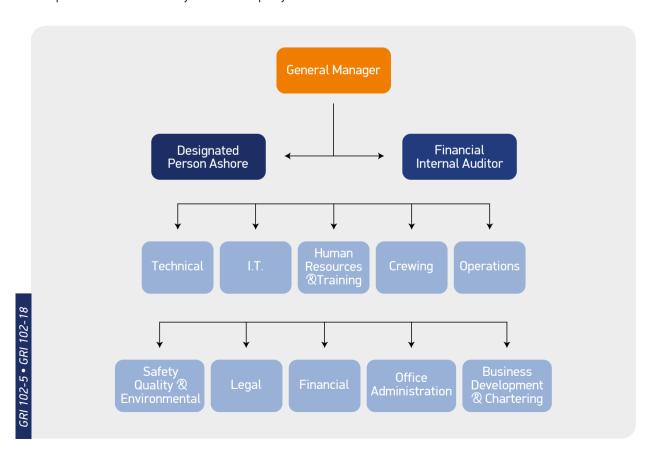


## Corporate GOVERNANCE

Through established standard operating procedures, we have created accountability and a culture of compliance throughout our organization. This helps us to ensure that our operations are consistent with environmental and safety laws, regulations and requirements. have developed and implemented procedures for identifying, interpreting and effectively communicating compliance issues to our shore-based and onboard personnel.

All our employees as well as our vendors, agents, technicians, contractors and consultants involved in the management or operation of any vessel operated by us are encouraged to report any environmental violations and other safety compliance issues directly to the Company.

We provide a safe system for anyone who wishes to report an environmental violation to the Company in good faith. However, we retain the right to dismiss any employee or crew member on board any of the ships under our management for violation of the Company's environmental protection policies or applicable international rules and laws. We have established procedures for the receipt, recording, investigation, evaluation, reporting and closing of such reports. The online reporting capability does not substitute the Company's systems for reporting non-conformities, accidents, near misses or other non-compliance events. Rather, it complements and/or supplements the Company's reporting systems.





#### Policies ® Certifications

#### 1. ISO 14001 - ENVIRONMENTAL MANAGEMENT

ISO 14001 is an international standard that sets forth the requirements for a SHIPPING Company to develop an Environmental Management System to control and minimize the environmental footprint of its operation. The Company was first certified in 2011. Through the ISO 14001 certification there are multiple benefits for DANAOS SHIPPING, such as:

- Increases employees' awareness in their daily tasks of the associated impacts on the environment
- Ensures compliance with statutory and regulatory requirements
- Reduces the number of possible environmental defects during a port state control inspection and/or eliminates potential fines from non-compliance
- Provides discounts on port dues
- Improves Company reputation and the confidence of customers
- Achieves strategic business aims by incorporating environmental issues into business management
- Provides a competitive and financial advantage through efficient use of materials and reduced waste
- Encourages better environmental performance of suppliers by integrating them into the organization's system.





#### 2. ISO 9001 - QUALITY MANAGEMENT

ISO 9001 is an international standard focused on the quality of the ship management system and driven by a set of principles, including customer focus, management commitment, process approach and continual improvement. The Company was first certified in 2015. Through the ISO 9001 there are multiple benefits for the employees, such as:

- Increased reliability of services
- Greater competitiveness
- Productivity improvement
- Cost reduction and process improvement
- Decreased process errors
- Upgraded quality of services
- Enhanced customer satisfaction





#### 3. ISO 50001 - ENERGY MANAGEMENT

ISO 50001 is a voluntary international standard developed to provide organizations with an internationally recognized framework to manage and improve energy efficiency. The Company was first certified in 2016. Through the ISO 50001 certification there are multiple benefits for DANAOS SHIPPING, such as:

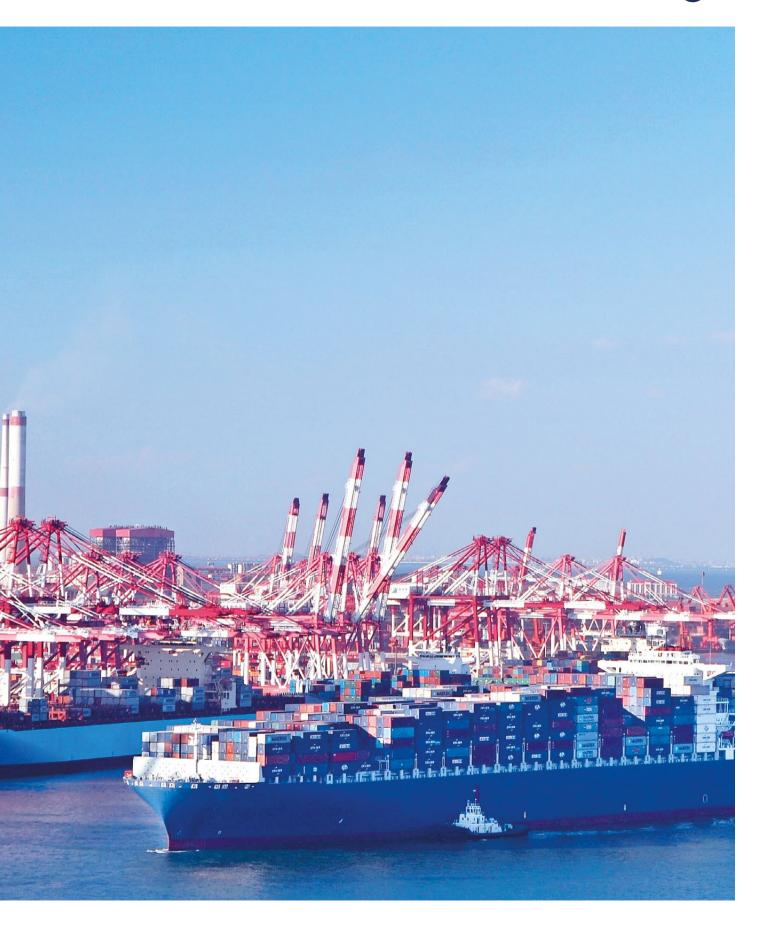
- Increased energy awareness among staff members at all levels
- · Reduced greenhouse gas emissions and carbon footprint
- Increased energy cost savings for the organization and charterers alike
- Increased knowledge of equipment efficiencies
- Improved operational efficiencies and maintenance practices
- Enhanced corporate image and credibility with all stakeholders

#### **Ethics and Governance**

DANAOS SHIPPING, being the exclusive manager of DAC, follows and abides by the Code of Business Conduct and Anti-Fraud Policy of DAC. The purpose of the Code of Business Conduct is to uphold the reputation and integrity of DAC, its subsidiaries and its affiliate Company which are valuable assets, vital to the Company's success. Each employee of the Company, including each of the Company's the Company's business in a manner that demonstrates a commitment to the highest standards of integrity. No Code of Conduct can replace the thoughtful behavior of an ethical employee. The purpose of this Code is to raise employee awareness on areas concerning ethical risk, provide guidance to help employees recognize and deal with employees to report unethical conduct, will constitute a violation of this Code, regardless of whether such conduct is specifically referenced herein.



17



#### **Stakeholders**

#### Stakeholder Engagement Table

DANAOS SHIPPING recognizes the importance of all stakeholder groups whether these are internal stakeholders such as shareholders and employees or external stakeholders such as suppliers and customers. Primary stakeholders that have been identified to date are shown below:



Our Stakeholders	What they expect from us	Communication channels and forms of engagement	Frequency of Engagement
Employees	Compliance with contract terms Motivation and meaningful work Career paths and development opportunities Ethical Behavior Good and safe working conditions Recognition Fair and competitive compensation Fair evaluation (performance appraisal criteria) Equal treatment	Support and open communication between management and employees as well as with seagoing ® shore based personnel  Code of Business Conduct  Familiarization training process (seminars, knowledge tests, classroom courses)  Training opportunities  Team building events  Employee welfare initiatives  Employee satisfaction surveys (shore-based personnel)  Complaints procedure  Materiality survey	• Ongoing
	<ul><li>Job security</li><li>Work-life balance</li><li>Care</li></ul>	Management meetings     Internal meetings (onboard and ashore)	<ul><li>Weekly</li><li>Monthly</li></ul>
	Clarity and efficiency of HR nolicies	Management KPI REPORTING     Management Review report (demonstrating, among other KPIs, progress on sustainability-related targets)	• Quartely • Annual
	<ul> <li>Fulfill and anticipate their needs High-quality service and flexibility</li> </ul>	• Review Meetings, sharing improvement action plans and long term strategy	• Every 6 months and when needed
Adherence to terms and conditions (reserved space, prices, timelines etc.)     Ongoing support Availability/Responsiveness     Accurate information     Effective problem solving / flexibility Responsibility/Accountability     Easy adaptation to changing customer requirements     Added-value/innovative Solutions	<ul> <li>Cargo booking process &amp; dedicated Customer Service Coordinators</li> <li>Conference calls and extraordinary meetings</li> <li>Participation in customers' benchmarking systems</li> <li>Attendance in industry exhibitions, &amp; in exhibitions/events /workshops organized by customers</li> <li>Participation in customers' sustainability assessments</li> <li>Working with major customers to develop services that promote sustainability</li> </ul>	• Daily & when needed	
	<ul> <li>Transparency</li> <li>Conducting business and delivering our service in a sustainable manner (ethical,</li> </ul>	• Materiality survey	• Annual or Biannual
saf res	safe, environmentally-friendly, respecting of human rights) • Charter Party complacency	• Charter Party awareness	• As needed
Finance Related	Creditworthiness/Optimum financial performance     Transparency and accurate information     Responsibility/Accountability Consistency     Risk Control/Management     Robust management processes and long-term growth	<ul> <li>Credit analysis</li> <li>Payroll accounts</li> <li>Contracts</li> <li>Periodical financial reports</li> <li>Progress meetings</li> <li>Corporate presentations</li> <li>Day to day transactions</li> </ul>	• Daily $\otimes$ when needed

Our Stakeholders	What they expect from us	Communication channels and forms of engagement	Frequency of Engagement
Government	<ul> <li>Compliance and consistency</li> <li>Due diligence</li> <li>Transparency</li> <li>Safe and environmentally-friendly operations</li> <li>Collaboration and timely action</li> <li>Quality standards implementation</li> <li>Risk Management</li> <li>Verification of process implementation and responsiveness</li> <li>To generate economic growth</li> </ul>	<ul> <li>Notices/instructions with latest rules and requirements</li> <li>Inspections and auditing process</li> <li>Formal dialogues/correspondence</li> </ul>	•Daily & When needed
	<ul> <li>Active participation – collaboration</li> <li>Keeping up-to-date with new requirements coming into force</li> </ul>	Participation in committees and councils	• Annual & ad-hoc meetings
International and Industry Organizations and Regulators	and ensuring compliance  Ethical behavior  Transparency  Responsibility and due diligence  Reliability/Accountability  Support  Action  Quality Management according to Standards  Sustainability culture  Risk Management	Company and vessel audits      Memberships     Circulars and announcements     High-level meetings/steering groups     Seminars and workshops/lectures/summits     Participation in industry forums featuring sustainable SHIPPING trends     Action plans     Participation in projects	• Annual  • Daily, annual & when needed
1			

	Our Stakeholders	What they expect from us	Communication channels and forms of engagement	Frequency of Engagement
	Suppliers	<ul> <li>Fair and long-term cooperation</li> <li>Timely execution of financial responsibilities and adherence to our contractual obligations</li> <li>Honest projection of our Company's needs and timely information on any significant changes affecting them</li> <li>Endorsement and positive word of mouth for their products/ services</li> <li>Business opportunities</li> </ul>	<ul> <li>Supplier performance evaluation</li> <li>Agreements</li> <li>Exhibitions Participation in workshops organized by suppliers</li> <li>Conference calls and day to day communication</li> <li>Close cooperation in projects</li> <li>On-site sales presentations</li> <li>On-site visits</li> </ul>	• Annual
			• Service review meetings with major suppliers	• Ad-hoc
		Know-how exchange	• Materiality survey	• Annual or Biannual
	Society	Social and economic development Transparency Support Ethical behavior and protection of human rights Accountability/Responsibility Availability of information Employment opportunities Contactability and opportunities to dialogue/communication channels Adherence to public statements and commitments Environmental measures	<ul> <li>Press releases/interviews</li> <li>News published on corporate web-site and social media</li> <li>Donations and charities</li> <li>Participation and discussions/dialogue in sustainability forums organized by NGOs</li> <li>Subscription to receive notifications of relevant actions/events</li> </ul>	• Daily & When needed
MMM	MANAMANA			



#### Materiality ASSESSMENT

The identification of the key material aspects for DANAOS SHIPPING were determined through a survey conducted among the most important stakeholders of the Company (suppliers, employees, crew members, charterers) according to the Global Reporting Initiative (GRI) guidelines. Overall, 60 respondents completed this survey. We went through the following process:

- Consulted a cross section of stakeholders from across DANAOS SHIPPING's business to define a list of material issues and prioritize these into high and low importance.
- Presented a materiality matrix, along with areas for prioritization and strategic suggestions related to stakeholder concerns.



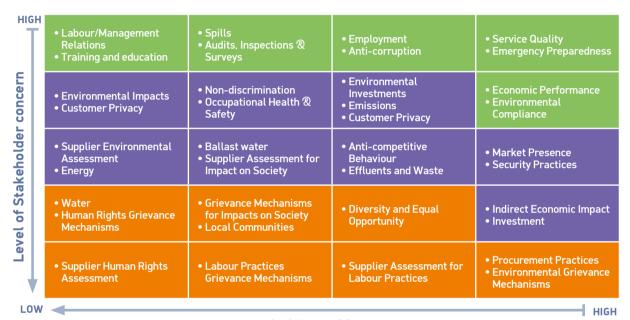


#### **MATERIALITY MATRIX**

The following materiality matrix demonstrates the importance of the issues that were included in DANAOS SHIPPING's stakeholders' survey, as determined by internal and external stakeholder groups.

The material issues are:

- Service Quality Emergency Preparedness Employment Anti-corruption
- Audits, Inspections & Surveys Spills Economic Performance Environmental Compliance
- Labor/Management Relations
   Training and Education



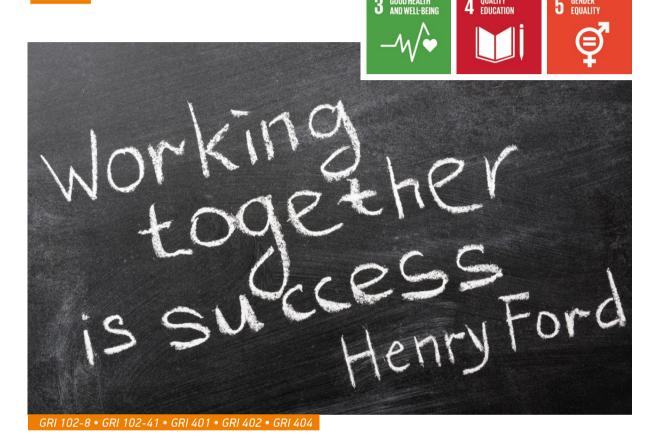
Level of DANAOS concern

#### **BOUNDARIES AND LIMITATIONS OF MATERIALITY ISSUES**

Material Issues	Internal Boundaries	External Boundaries	Limitations
Service Quality	Danaos Shipping	Clients	
Employment	Danaos Shipping Employees	Communities	
Anti-corruption	Danaos Shipping	Authorities	
Audits, Inspenctions & Surveys	Danaos Shipping	Authorities • Clients	
Spills	Danaos Shipping	Authorities • Clients Communities • NGOs	The present report and its contents cover all the activities of Danaos
Economic Performance	Danaos Shipping		Shipping
Environmental Compliance	Danaos Shipping	Authorities • Clients Communities • NGOs	
Labor / Management Relations	Danaos Shipping Employees		
Training and Education	Danaos Shipping Employees		



## Our EMPLOYEES



#### **Employees**

The Company supports a friendly and pleasant working environment. Our employees are our power and our goal is to offer them a safe and familiar working experience, proper rewards, as well as being supportive and recognizing and achieving their potential.

Through communication, the Company encourages its employees to discover and develop their abilities and to accept and confront challenges in order to improve their careers and cultivate their personalities. Thus, our main concern is to inspire our people, encourage them and enhance their self-esteem with rewards and promotions.

Furthermore, the Company promotes meritocracy,

equal opportunities and motivation; We invest in our employees and as a result, they express their gratitude by supporting us all through their working career. At the same time, we make sure that all of our employees are informed on time for any operational changes, through predetermined communication channels which all of our employees are aware of. With respect to collective bargaining agreements, we follow all

Total Number of Employees		
2017	1284 CREW ONBOARD 137 STAFF ASHORE IN THE GREEK OFFICE	
2016	1284 CREW ONBOARD 144 STAFF ASHORE IN THE GREEK OFFICE	

national laws and regulations.

Our belief is that constant and detailed training of the staff is the key in order to achieve our development goals. Therefore, we have managed to build specific strategies for each and every department of the Company, as well as reward schemes for highly qualified employees.

Having established our own KPIs in pursuit of managerial excellence we decided to participate the **BIMCO** in SHIPPING KPIs program, from the early stages of its inception. BIMCO SHIPPING KPIs allows ship-owners and managers to compare their ships' efficiency against the performance of the industry and sector averages. It is a well-organized standard. consisting of 64 different performance indicators (PIs) which are directly observable measurable within the Company (such as: number of fire incidents, exposure hours, number of navigational related deficiencies, number of collisions etc.). The PIs then formulate the next level of Key Performance Indicators (KPIs)

which measure the Company's performance in relation to the target set. The target is common for all participants and accepted as the industry standard. On the highest level, the KPIs combine with the SHIPPING Performance Indexes (SPIs) in order to express the overall performance within specific main areas such as:

- Health and safety management and performance
- HR management performance
- Environmental performance
- Navigational safety performance



- Operational performance
- · Security performance and
- Technical performance.

The participation in the SHIPPING KPI System allows us to benchmark and monitor the Company's and ship's performance at the level of quality management among other industry players. DANAOS SHIPPING considers that the ratings extracted will definitely provide a source for positive decision-making in order to achieve the best practices and results.

#### Employee Health & Safety

The Occupational Health and Safety regime has been implemented in the DANAOS SHIPPING safety system through carefully designed policies and procedures. Fields related to personnel fatigue, job high risk factors, training and response in emergencies and zero tolerance for the possession and use of alcohol and drugs has reduced the LTIF considerably.



#### **ACCIDENTS ® NEAR MISSES**

Our objective is to eliminate accidents and have all crew ending their workday in the same manner in which they started it:

#### SAFE and HEALTHY

A safe environment onboard the ships and at the office is of our highest concern and a first priority in every decision made. Our objective is to eliminate accidents and have all crew ending their workday in the same manner in which they started it: safe and healthy. Special attention is also given to stevedores and visitors accidents of whatever nature (minor/ major or alleged). All incidents (accidents and hazardous occurrences) are reported, investigated and analyzed (without the fear of reprisal on behalf of the personnel involved) and with the objective to analyze the cause and improve the safety and pollution prevention systems of DANAOS SHIPPING. Near misses and seemingly minor accidents are regarded as a warning of incorrect procedures or unsafe practices.

All such incidents are investigated by the ship's Master, with the support of the safety Officer, seafarers' safety representative or any other member of the Safety, Environmental & MLC

Committee. Any equipment or procedure defect or deficiency is immediately rectified. Near misses are also reported to the office using the DANAOS SHIPPING ISM Module. Our officers and crew are encouraged to report incidents which do not result in injuries. All reported near misses are analyzed and any lessons learned are circulated around the fleet so that all crewmembers on all managed vessels may be guided.

This focus on elimination of accidents has resulted in a significant reduction of injuries in 2016 compared to 2015. DANAOS SHIPPING uses the most objective measuring tool, the Loss Time Injury Frequency (LTIF) which measures the number of hours a seafarer is unable to work due to injuries (the number of lost time injuries (fatalities + lost work day cases) per 1,000,000 work hours).

2016 ended with the lowest LTIF rate compared to the results of the last five years. There were 150 Reported Near Misses for 2016 and 166 for 2017.

#### LOCKOUT/TAGOUT (LOTO)

The failure to control hazardous energy of any form, accounts nearly for 10% of accidents in the SHIPPING industry. The Lockout/Tagout system is used to secure energy stored equipment in a manner that will render them safe to work on and prevent the inadvertent startup of such equipment while being worked on. The Lockout/Tagout system is an essential part of an effective safety system. Both components of this system have been incorporated in DANAOS SHIPPING procedures with the scope to further decrease the LTIF rate.

#### **Training and Development**

In a rapidly changing social and economic environment, DANAOS SHIPPING has developed its own training programs with in-house seminars and pre-boarding training. We firmly believe that our people are our greatest asset, so we invest in training that promotes safety, efficiency, environmental awareness and multicultural communication. Throughout

our training programs, we encourage bonding between people and promote the DANAOS SHIPPING culture as participants exchange views, ideas, and experiences.

The main ingredient of DANAOS SHIPPING's success is based on the performance, devotion and technical expertise of its employees both onshore and offshore. Ensuring long-term employment, while offering secure and attractive jobs, is a priority for us. In order to achieve this, we are focusing on training and fostering the talents of our employees on an ongoing basis. Keeping up in such a competitive and fast paced industry is challenging and this is why the training process is of great importance to us. The key factor in employee motivation and retention is the opportunity to enhance their skills and advance themselves through training which leads to long-term career prospects.

For DANAOS SHIPPING, retaining satisfied employees is crucial and we constantly invest in the promotion of qualifications and comprehensive development. We embrace the idea that training is the roadmap for the opportunity to create qualified and motivated employees, a benefit for themselves and our business. We continuously identify training needs for employees and seafarers, and we have designed a customized training program to

ensure safety awareness and competence.

- Trained Seafarers in Greece (2017): 213
- Trained Seafarers in Branches (2017): 2251
- Training hours in Greece (2017): 431
- Training hours in Branches (2017): 604
- Seminar hours in 2017: 520
- Bridge Simulator Training Hours 2017: 272
- Seminar Attendances for Employees (2017):
   155

We continuously identify training needs for employees and seafarers, and we have designed a customized training program to ensure safety awareness and competence. It is important that employees and seafarers are trained on subjects such as:

- Environmental policy and goals
- Relevant environmental aspects
- Operational, monitoring and contingency procedures
- Updates in laws and regulations affecting ships' operations
- · Day to day activities

Our computer based training programs ensure the evaluation and appraisal of seagoing and shore-based employees on an ongoing basis throughout the course of employment. A variety of seminars specifically designed for DANAOS SHIPPING are held at our premises.



#### **Danaos Assessment and Training Center**

The DANAOS Assessment and Training Center (DATC) was established in 2016 in order to cover the newly arising training need of the fleets' Officers, Crew and shore staff employees. It accommodates an on-premise installation, housed at the DANAOS SHIPPING Piraeus offices, comprising of the full-mission Bridge Simulator and state of the art training facilities. The DATC defines the Company's inherent duty and obligation to provide the best training facilities to our seafarers and shore personnel and to continuously develop and advance their competence in order to ensure operational excellence, both in terms of safety, as well as efficiency and performance towards our clients. An integral part of the curriculum is our Company's Safety Management System (DSMS). as well as the feedback and lessons learnt from actual fleet experience. During the training, our seagoing personnel combine theoretical knowledge and practical training, tests and enhanced competence by using actual scenarios as simulation exercises. DATC has been certified and accredited by Lloyd's Register of SHIPPING and the DMS (Cyprus Government Department of Merchant SHIPPING) with the Approved Training Provider Certificate and the ISO 9001:2008 Certificate, pending the newly launched ISO 9001:2015 standard certification. The DATC personnel continuously support and cooperate with all the Company's departments for the identification of their specific training needs and thus providing training activities aimed to

further enhance the knowledge, the awareness, the competence and the performance of the Company's personnel. Through the DATC the following Simulation Trainings are provided:

- BR(T)M: Bridge Resource Management (theory and simulation)
- MRM: Maritime Resource Management
- Mega Carrier Ship handling basis Danaos 13.100/10.100 TEU vessels
- Incident Command & Rescue Sim AFF Module

Also, the following Trainings/Courses/Seminars are provided:

- Modern Marine Meteorology (level I,II and III)
- Damage Stability (using software)
- Multicultural Ship's Crew Management & Effective Communication Onboard
- Damage Control School in cooperation with the Hellenic Navy (Fire Fighting and Flooding)
- Search and Rescue Operations (using simulation)
- HELM-MCRM: Leadership and Team Management
- ECDIS Awareness
- Bridge Seamanship
- Hazmat and Dangerous Goods Cargo Handling
- Accidents and Incidents Analysis
- The Human Element
- Fuel Management and Energy Efficient
- Voyage Optimization and route Planning
- Passage Planning
- Environmental Management in SHIPPING
- KYV ("Know Your Vessel") Program

Types of Seminars			
Maritime Resource Management (5 days)	Multicultural Ship Management (1 day)		
Bridge Resource & Team Management (5 days)	Damage Control (3 days)		
Mega Carrier Ship handling (2 days)	The Human Element in Shipping (1 day)		
Incident Command (2 days)	Marine Environment Awareness (1 day)		
Simulators Training (5 days)	Passage Planning and ECDIS awareness (2 days)		
Damage Stability ® Control (3 days)	Bridge Seamanship (3 days)		



#### Seminars in Odessa

The Company delivered four seminars in Odessa during 2017 addressed to Masters, Deck Officers and Electricians:

- 27-29 Sept "Reefers Support and High voltages on board" for Electricians by S/I Electrician Mr. Kryvovaz
- 2-3 Oct "Damage Stability" mainly for Masters and Chief Officers by Captain Petronios
- 4 Oct "Dangerous Goods Management" by Captain Petronios
- 5-6 Oct "Bridge Seamanship and Navigation Practices" by Captain Ladas

On October 1st, 2017, the DPA Captain Ladas held a special lunch for the Masters and Chief Engineers in the outskirts of Odessa, followed by an extensive discussion with the senior Officers expressing their views, their concerns and their proposals.



#### **Employee Functions**

We strive to provide a healthy working environment for our employees, taking special care of their wellbeing. Throughout the year we offer opportunities for entertainment and teambuilding.

#### The DANAOS SHIPPING Rafting Team is back! (May 2017)

The DANAOS SHIPPING Team accepted the challenge to fight against the rushing waters of the Lousios and Alfeios rivers, enjoying every moment of that beautiful "wet-route".

Our journey began at Vlachoraptis village, where we gathered the appropriate equipment (helmets, uniforms, and lifejackets) and set out for our rafting adventure. Our starting point was the bridge of Atsilochos, crossing Lousios River and after river-sailing for approximately 5 kilometers through Lousios' gorge we "fell" into the river Alfeios where we sailed towards our rafting tour end point: the spectacular old-stoned bridge of "Koukos".

Listening to our guide's commands ("all forward" – "all back") we were fully energized and soaked in the beauty of nature, the amazing green colors all around and the river's flow. At the finishing line, the teams, full of enthusiasm, picked up their boats and after a short trekking across the crystal-clear waters of a waterfall, we ended this amazing adventure with a big smile!

Of course, after such an exciting and strenuous activity, the final step before our departure was a delicious meal at a nearby restaurant of the wonderful and famous village of Dimitsana. It was an unforgettable experience, which we all enjoyed and wish to repeat in the future.



#### Bowling Tournament (April 2017)

The DANAOS SHIPPING spring bowling Tournament took place on April 4th. Five promising teams participated and cheerful fans of all ages eagerly awaited this event.

The winning team consisted of three members from the Operations Department and one from the Technical Department, demonstrating, yet again, the excellent co-operation between the departments! The Electrical Department fought with passion and promised to surprise us next time (some secret training is sensed!). Finally, the "Women's only" team won the admiration of the public for their courage and technique.

We thank everyone that participated and we are looking forward to the next session!

#### Day Trip to the Ranch (September 2017)

On Saturday September 23rd, the employees of DANAOS SHIPPING along with their families spent the day in the Western-themed accommodations of The Ranch in Korinthia.

We walked along the saloon, bar and hotels, we hung out with the horses, peacocks and wild boars while others played tennis or basketball. Later, the experienced staff guided us to the mills, factories and shops, which were authentically recreated according to the needs of the old professions that have disappeared in our time. It was a nostalgic trip for the elders and an explorative one for the youngsters!











## The DANAOS SHIPPING running team participated in the 35th Athens Classic Marathon supporting ELEPAP (November 2017)

Around 18,500 runners from all over the world participated in the 35th Authentic Marathon of 42km and another 30,000 participated in the shorter 5km and 10km races in downtown Athens.

History tells us that the 42km route from Marathonas to Athens was first run by Pheidippides, an Athenian messenger who in 490 BC ran to Athens with the news of the great victory his people had over the Persians, before dying of exhaustion.

Once more, we would like to thank and congratulate the DANAOS SHIPPING running team for being there and participating in the races, thus supporting ELEPAP and their important contribution to our society. Special thanks and a very big congratulation to Xara Tsochlas who successfully completed the Authentic Marathon of 42km!

## The Great Escape of DANAOS SHIPPING (February 2017)

The DANAOS SHIPPING Team got together for an extremely entertaining first time experience, the Great Escape Rooms! An escape room is a physical adventure game in which players solve a series of puzzles using clues, hints and strategy to complete the objectives at hand. Players are given a set time limit to unveil the secret plot which is hidden within the rooms. Participants were split into teams, consisting of 4-6 players each and departed on a "locked" journey to solve the riddles of each interactive theme room. To their utmost satisfaction, the DANAOS SHIPPING escapees had an effective cooperation, solved the riddles and escaped on time, showing once again that teamwork always leads to success!























#### Let the Carnival Begin! (February 2017)

On February 19th, DANAOS SHIPPING employees together with their children participated in a carnival themed party day at "Seferland", a multipurpose playground in a 3-story building in the form of a pirate ship, which combines entertainment. imagination and creative activities for children All kids were dressed in spectacular costumes; pirates, warriors, zombies, princes & princesses, Spiderman, super-heroes. Minnie mouse! Our children had the chance to discover the "Bottom of the Sea". the specially designed ground floor decorated with fish, jellyfish, mermaids, dolphins, whales and of course the sea trampoline which was

a favorite among the younger children. There were surprises in store for the children on the 1st floor as well, which housed the pirate ship's "Cargo Holds".

The holds contained pirates, a theatrical stage and impressive porthole cabins illuminated with multicolor lighting, where the children played with the wooden constructions and the electronic games. All the DANAOS SHIPPING parents and children enjoyed snacks and drinks in the "Captain's Cabin" on the 2nd floor which is specially designed to welcome and accommodate all visitors. There our children danced till the end of the party under the disco ball and arranged to meet again soon for another joyful experience!









#### "Getting Together" Event

For almost 10 years, our Manning Offices in Ukraine bring the seafarers together twice a year at the "Getting Together" events, which are coordinated by both offices in Odessa and Mariupol. The seafarers and their families come along to celebrate, exchange professional knowledge and share personal experiences from life at sea. The events usually take place at a cozy restaurant close to Odessa, whose Armenian owner prepares delicious traditional food and everyone dances and enjoys their time onshore. The parties take place usually around Christmas and on International Seafarers Day (25th of June), which is a day designated by the

IMO as a way to show gratitude to the seafarers for their contribution to the world economy and for the risks and personal costs they bear while at sea.

There are a vast number of difficulties a seafarer faces at sea, varying from the lack of social life and time spent away from their friends and family, to the hectic life onboard. It takes a lot







of courage to keep calm and remain focused while travelling for a long time and as the IMO secretary- General Kitack Lim has stated, we need to show appreciation for those "quietly, mostly unnoticed, keep the wheels of the world in motion". On behalf of all Ukrainian seafarers

who are employed by DANAOS SHIPPING, I would like to thank the Management and the Greek colleagues in Piraeus (DANAOS SHIPPING Head Office) for our fruitful cooperation. We are looking forward for many more years of safe and calm seas to come.

#### DANAOS SHIPPING Sailing Team

The DANAOS SHIPPING sailing team continues its hard efforts to prepare a well- trained team, which will participate in forthcoming races throughout this year. Following our skipper's instructions and the great cooperation of our crew, sailing training courses are being conducted on weekends enjoying the beauty of the sea and the power of the wind! Keep on sailing!

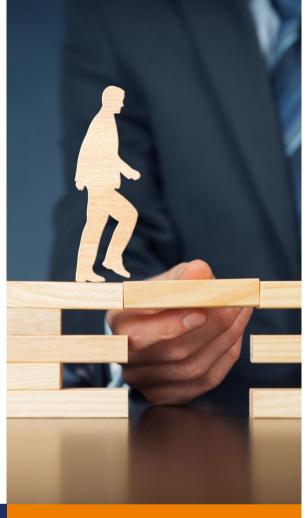












## We believe in the value and power of solidarity. We try to help those in need and sensitize our employees on the significance of a volunteers' social contribution. We are therefore involved in a series of valuable initiatives and actions.

### Community Engagement STRATEGY

#### "Act of Joy"

Assisting our communities is an essential part of our individual responsibilities as responsible citizens of our society. While poverty remains an alarming problem and we seem helpless to stop it, there is a lot we can do to alleviate the burden of the less fortunate. DANAOS SHIPPING has established a community engagement strategy, called "Act of Joy", which is based on a variety of activities supporting those in need. These activities are adapted to meet the current and local needs by assisting on various social or environmental issues. Employees are encouraged to proactively participate in the different community projects.

The policy of DANAOS SHIPPING is not to simply offer money but to contribute towards improving the lives of those in need. That is why we choose to either offer goods such as food or collect clothes which are donated by our employees.



RI 102-12

#### C

#### **ACT OF JOY - EASTER 2017**

DANAOS SHIPPING and its employees donated funds to buy groceries and goods for the "Together for Children" non-profit NGO and the Piraeus House for Minors "The Good Shepherd". Clothes that were in good condition were also collected and sent to the children staying at The Good Shepherd. The "Together for Children" Association is a union of non-profit NGOs, which work in the field of child welfare and offer

every form of assistance to children and young people. The Association supports more than 30.000 children on an annual basis, including children who face poverty and social exclusion, domestic





violence, chronic diseases, mental or physical disabilities and the sickness or death of an immediate family member.

The NGOs that are currently in greater need (and we opted to support) are the "Friends of the Child" and the "Link of Love" team. The Non-Profit Association "Friends of the Child" supports and secures all the required monthly needs for children until their coming of age, whose families (including single-parent families) face financial and social problems. The Association covers the cost of food, clothing, rent and bills for families with a housing risk, psychological and counseling support, medical care and entertainment. The "Link of Love" is a volunteer team created in order to offer goods such as groceries, medicine, clothes, shoes, toys to families in need and to other vulnerable social groups.

The House for Minors "The Good Shepherd" currently supervises 54 children between the ages of 5 to 16, while hosting 24 of them. The children come from lower class families with a problematic environment (delinquent parents, drug addicts, alcoholics, violence, etc.). The House aims to offer them shelter, food, supervision and security, despite the difficulties of the financial crisis Greece has been facing over the last years.

We might not live in a perfect world but there are some small and effective interventions which can bring relief and happiness to those in need, especially the children. The DANAOS SHIPPING Family is proud to be part of these supporting and alleviating gestures and we believe that even a small donation can bring a big smile!

#### "WOMEN IN SHIPPING"

DANAOS SHIPPING initiated the "Women in SHIPPING" campaign in an effort to support and empower women engineers, who are going to specialize in demanding engineering fields. In order to achieve this, they will receive extensive training,



guidance and support.

Inventory of Hazardous Material manual certification, paints and working

media onboard, vibrations and noise measurement, damage stability, lashing forces calculation, mooring forces analysis, engine thermodynamic model use, are some of the key fields where they will deploy their skills.

DANAOS SHIPPING, a solid Company with no glass ceiling, modernizes superintendence, daring its first big steps to enter the demanding SMART SHIPPING field. Our engineers' effort is welcome and deserves our management's outmost attention.



#### **UNIVERSITY VISITS (FEBRUARY-MAY 2017)**

We are always happy to welcome members and students of different universities at our offices in Piraeus. While the purpose of these visits is to educate, it is a good way to take the students away from the class and get them involved in their field of study.

In February, members of the Yes – Forum visited the DANAOS SHIPPING office in Piraeus and we spent a very productive day together. The Yes – Forum is a platform of open dialogue between principals, executives, university students, recent graduates and young executives.



We also had the pleasure to welcome 45 Greek and foreign students from ALBA's University ISF program, which runs in collaboration with the University of Reading and the MSc in SHIPPING Management program at ALBA. It is a 10 month program seeking to address the needs of the rapidly evolving, highly competitive and capital-intensive SHIPPING industry by bridging the gap between academic theory and business practice.

Last but not least, the MBA SHIPPING students of the Hamburg School of Business Administration (HSBA) accompanied by their Professor Orestis Schinas, traveled to Greece in order to visit our Company. Captain Ilias Ladas (DANAOS SHIPPING DPA/HR®T Manager), Mr. Dimitris Theodosiou (DANAOS Management Consultants SA's Managing Director) and Mr. Evangelos Chatzis (DAC's CFO) who delivered the presentations, provided the students with their special knowledge leading to a very constructive session.

During these visits, the students are given the opportunity to get a thorough understanding of how a large shipping company operates, what are the biggest challenges it faces and how it is structured.

#### **ACS ® HOME PROJECT - YOUTH TO YOUTH PROGRAM**

In December 2017 we welcomed in our offices 22 refugees living in the Home Project and 11 students from ACS School of Athens (ACS), involved with the Youth to Youth Program. The program is designed to assist unaccompanied refugee children to integrate into the local community through education. The refugees and students were welcomed by the Company's DPA and HR®T Manager, Captain Ilias Ladas, who also presented to them the importance of education and the path one needs to follow in order to work for a SHIPPING Company. Our guests also visited the Company's Technical Department, where Fleet Managers Goulielmos Alifragkis and Kostas Tzeferos gave a more detailed description on the technical aspects of the Company's vessels. At the end of the day we offered the refugees and students lunch at the building's restaurant.





#### We make a living by what we do, but we make a life by what we give

Winston Churchill



#### **RESPONSIBILITY TOWARDS OUR FELLOW SEAFARERS**

- Three Indonesian fishermen were saved from a sinking fishing boat in the Straits of Malacca through the swift and effective response of the Captain and the Crew members of M/V Express Argentina
- The Captain, the Officers and the Crew of M/V CMA CGM Bianca successfully evacuated the skipper of a sailing boat in distress off the Azores





# Operations **②** Environmental PROTECTION

#### **OUR TECHNICAL DEPARTMENT**

Our Technical Department is responsible for the technical management of our fleet, providing advanced monitoring and knowledge on all relevant aspects. The ultimate goals of our Technical Department are the high vessel utilization, cost-effective efficiency and the promotion of environmental awareness.

Our Technical Department consists of ten teams -each team is responsible for up to eight vessels. We employ one of the largest technical departments worldwide, and we were among the highest ranked companies in top university graduates' employment with regard to superintendent/ vessel ratio (3 employees per fleet, for six vessels on average). Our teams are subdivided into smaller groups assigned to particular vessels. This structure, which has been tested over a long period of time, has delivered the highest KPIs and uptime in a demanding SHIPPING industry.

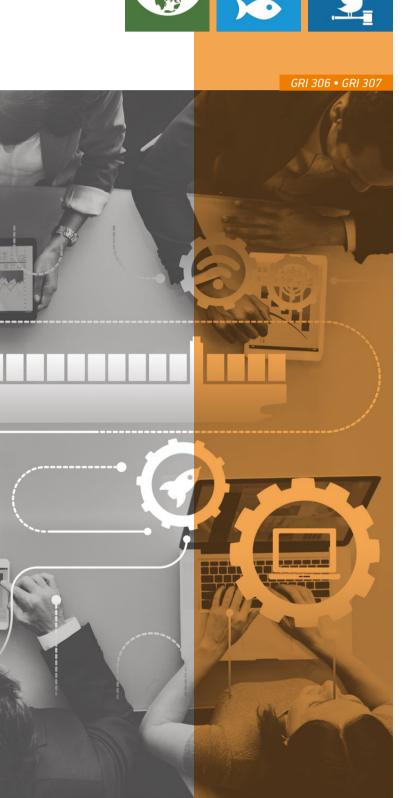
Our supervisory system is enhanced by monitoring, organizational and analysis software and hardware. The core of our fleet monitoring system is called Enterprise, an integrated software system we developed in-house that includes a variety of modules, including the email exchange center, the planned maintenance system, spares and supplies, crewing, operations and ISM administrator. Collecting data from an online data acquisition and process system, called the WAVES Business Intelligence and Analysis Platform, supports the online monitoring system and big data analysis.

Also, through specific routines and algorithms created to cover the Company's needs, WAVES delivers automated analysis, alerting, predictions, reliable conclusions, mobile functions, historical data enhancement to boost performance and transparency for every ship. The presence of

personnel on board the vessel is one of the most critical elements for monitoring conditions, identifying any defects and maintenance points, and resolving technical issues.







LIFE BELOW

Each attending engineer carries out a complete superintendent inspection at predefined areas of interest, using a detailed Company's checklist customized on individual vessel design and equipment.

Superintendent Engineers have been trained on how to carry out the inspection in the most efficient way, using instruments including vibration meters, thermographic and inspection cameras, roughness and hardness gauges, etc. Additionally, our crew is always supported through online troubleshooting, easier communication and safer operation.

All the hardware and software facilities mentioned above are continuously updated and built on state-of-the-art technologies and help to foster DANAOS SHIPPING leading position of technical and operational expertise. Through technology, superintendence is applied to the highest level via enhanced analysis, effective troubleshooting, problems' prediction or detection and reaction which contributes to minimum downtime and operating expenses.

#### **OUR R®D DEPARTMENT**

Officially established in 2011, our R&D Department falls under the umbrella of the Technical Department and consists of an R&D Manager, two Research Engineers and up to ten Fleet Engineers as peripheral staff. The goal of our R&D Department is to be at the forefront of innovation, generating innovative concepts and developing our knowledge and competencies to address our clients' needs in a changing and evolving maritime environment. We apply our knowledge and technical expertise to improve our fleet's fuel efficiency and our environmental performance, thus maintaining our competitive advantage and leading position in the SHIPPING industry.

Nowadays, the SHIPPING industry is tested under severe conditions, where trade is at a recent historical low and financing is too difficult to support SHIPPING companies' expansion plan. Therefore, everybody realizes that it is time to shift from traditional SHIPPING and

"smart ships" to "smart SHIPPING". Stakeholders involved with the industry's activities have to work jointly, sharing feedback and building new systems that can withstand present pressures and meet future requirements.

The key tool to manage new challenges is technology. New ideas such as real-time data acquisition and process platforms, big data analysis algorithms, promising neural systems, advanced operations software onboard and ashore etc., are available in the market, at their first steps, highlighting the walking path to the future.

Modern companies have adopted such changes in daily functions, enhanced culture and developed

consideration during planning and development of such systems.

#### **WAVES FLEET PERFORMANCE**

At a time when environmental concerns and energy come at a significant cost, ships' management optimization is imperative. Nowadays, SHIPPING is on a quest to adapt to the latest technological trends, such as the Internet of Things (IoT). As a result, data from traditional applications (operational, financial, technical) is pooled together with semi-structured data deriving from the vessel's sensors, mapping in a complete way the entire lifecycle of modern vessels, from building to everyday operations



intelligent systems respectively. Technology Transfer is a prerequisite to stay competitive, to modernize employees and partners, to safeguard stakeholders' interests at various activities. Technology advances very fast and full adoption in conservative and traditional systems is not readily welcome. Thus, companies have to analyze its effect on employee psychology and human behavior in general. People sometimes are afraid to move fast and this has to be faced with empathy, understanding and willingness to overcome obstacles smoothly. In conclusion, the human element has to be taken seriously into

and even demolition. However, these data sets become so large and complex that they can rarely institute really valuable information to managers ashore.

WAVES is an innovative maritime intelligence framework for extracting valuable information from maritime data. This is an analytics platform which aggregates and analyzes data being gathered from multiple sources, with the ulterior view to create a true competitive advantage in ships' management. Either in a strictly-defined structure, like operational and financial data, or in a more loose one, like online sensor data



streams and excel forms (e.g. fuel analysis, ISM), the WAVES algorithms and visualization tools transform data into useful information assisting maritime professionals with the decision-making process, uncovering new insights and optimizing operations. WAVES acts as an umbrella platform that enables the unified representation and visualization of enormous volumes of heterogeneous data, realizing superior decision making process through synergies between modern Big Data Analytics techniques and the accumulated technical and operational expertise of DANAOS SHIPPING. WAVES also moves vessel monitoring one step further by implementing the "push" scheme, generating automatically daily, monthly and quarterly reports highlighting to Superintendent Engineers KPIs, problematic situations or even cases that require immediate action.

Intelligent systems, qualified personnel and information management are vital to several functions of the Company such as monitoring and controlling emissions, identifying performance and associating optimizations, planning operations, pro-acting ship's maintenance needs; also, controlling transparency, sharing data and feedback with stakeholders and providing information to academics for research of further methods, as well, ensuring safety on board and cultivating employees both ashore and onboard

DANAOS SHIPPING Implementations						
The R®D Department has been established to contribute with in- house studies algorithms development and big data analysis	In- house study of technology transfer effect on employees psychology					
Development of modern intelligent systems	Joint Investment Project (JIP) utilizing systems and facilities					
Training of key personnel and knowledge sharing to employees	Support of graduates and co-operation of universities					
Presentations of latest developments and experience feedback						

ON LINE DATA AQUISITION & PROCESS SYSTEM					
WAVES Implementation	Real Time Data Acquisition	DANAOS SHIPPING Head Office Integrated Software	R@D		
100% of the total fleet	29 out of 59 vessels	100% of functions	4 qualified engineers		

## ENVIRONMENTAL MANAGEMENT SYSTEM USING THE ISO 14001 REQUIREMENTS

Since 2004, DANAOS SHIPPING's sensitivity on what impact its operations might have to the environment has increased and the company has performed a restructuring of its environmental management system. As of 2007, we have decided that an environmental management

system using the ISO 14001 requirements will benefit the organization as it will definitely assist in:

1. Identifying and complying with the various legal, regulatory and contractual requirements, thus boosting the Company's image and credibility between competitors.





#### **OUR TECHNOLOGIES**

Operational excellence based on green technology is DANAOS SHIPPING core strength. Our expertise spans the complex operational chain from advanced systems to performance improvements. Each of our technological initiatives provides us with the potential to minimize the environmental impact of significant shipping operations worldwide without compromising performance.

- Identifying enhancements to existing processes and assisting employees in reducing the Company's environmental impact.
- 3. Quantifying, monitoring and having control of the impact of operations on the environment, now and in the future.

DANAOS SHIPPING received its first ISO 14001 certification in 2008 and has maintained it every year since. DANAOS SHIPPING successfully completed the third party audit of the ISO 14001:2004 certification process for 2017. The effective management of environmental programs requires specific (to the nature of its activities) tools, to measure, monitor, audit and document the Company's holistic performance. Environmental measurement and reporting have been hallmarks of DANAOS SHIPPING's sustainability program for almost a decade, as has the Company's commitment to communicate its environmental performance in an open and transparent manner, both internally and externally. For the consistency of performance data. DANAOS SHIPPING maintains an annual set of records which demonstrate the measurable commitments to:

Preventing pollution

- Recycling
- Energy saving
- Meeting applicable legal and other requirements
- Continuous improvements in overall environmental performance.

## OPTIMIZATIONS **②** ENVIRONMENTAL PROTECTION

As a part of our core policy, in order to remain sustainable and address our client's needs in the best possible way, we have studied numerous optimizations for our ships' design, targeting increased fuel efficiency and a cleaner environment. DANAOS SHIPPING has made extensive studies in the key areas below:

- Online Data Acquisition & Performance Monitoring: Since 2012, DANAOS SHIPPING has started moving forward to advanced superintendence, advanced performance monitoring & parameters in depth analysis by investing in real time data transfer from ship to office, installing sensors onboard on critical equipment in order to evaluate and optimize the ship's performance
- Bulbous Bow Modification & Propeller Retrofits: Redesigning the bow of a container

vessel based on its current operation profile, as the originally designed speed was higher at the time that the ships were built, has proven to be beneficial in terms of fuel consumption and emissions consequently. DANAOS SHIPPING has carried out CFD studies for all vessels and particularly for 8500 TEU vessels, a package of 12 different solutions has been studied (in cooperation with the engine maker) examining along with bow optimization, a propeller retrofit. Within 2016, both our 8500 TEU vessels were retrofitted with a Kappel propeller and new bow, imposing also a power limitation in the engine for new maximum speed. Moreover. within 2017 DANAOS SHIPPING proceeded with bow retrofits for the 10100 TEU vessels as well. For 2018, bulbous bow optimization is planned for our 6500s TEU, Sundong built, vessels.

Cargo Flexibility & Reefer Maximization:

New lashing rules with route specific lashing forces and calculations have been implemented on our 8500 TEU, 10100 TEU, 13100 TEU, 3400 TEU, 9200 TEU, 8500 TEU & the MSc Zebra. Reefer maximization studies have also been carried out for all DANAOS SHIPPING vessels and the same has been implemented on the MSC Zebra (increase from 160 to 600), 8x2200s (from 70 to 220), 2x4250s (from 120 to 520), Danae C (from 44 to 447), 2x6500s (from 100 to 600), 1x5500s (from 200 to 700) and 3x3400s (from 100 to 400).

Shortening: In the effort of making a 4250
TEU ship more marketable and efficient in the
current trading scheme, DANAOS SHIPPING
has proceeded to hull shortening by removing
one and a half cargo holds, without any
machinery or equipment modification. Totally,
her length has decreased by 15% and container
capacity by 23%, retaining also fuel flexibility



in tanks with respect to HFO and MGO capacity. There were numerous technological issues involved, including among others, damage stability issues, Russian stowage flexibility, AMSA requirements, etc. All challenges involved have been identified and dealt with successfully, leading DANAOS SHIPPING to the top of marine technological innovation. Model tests have also been conducted in order to verify all performance

proud to be the first Company ever to proceed with shortening a container vessel!

 EEIMs: The imperative market need for environmental protection and fuel efficiency led the DANAOS SHIPPING R®D Department to investigate, in depth, all potential energy efficiency improvement methods. In total, 37 methods were examined and projects have been conducted by the DANAOS SHIPPING R®D Department in cooperation with

> various makers and classification societies. 57% of the below mentioned EEIMs have already been implemented on the DANAOS SHIPPING fleet. producing actual savings and promoting environmental sustainability. Turbocharger Cut-Out (TC c/o): Since 2009, DANAOS SHIPPING has begun to investigate how fuel efficiency can be improved and the carbon footprint minimized. A relative study has been carried out, based on the vessel's engine, turbochargers & auxiliary boiler in order to identify the modifications needed for engine optimization at lower speeds. It has been observed that the fuel consumption curve is exponential, i.e. speed reduction results in significant fuel savings. So in case an engine needs to operate at 10%, a turbocharger could be cut off, which could be flexible, manual-flexible (hybrid solution) or by blind flange. Cutting off one turbocharger increases its efficiency, along with increased scavenge pressure, compression

pressure and max cylinder pressure resulting in optimum SFOC. In case a vessel's engine is equipped with 4 turbochargers and one is off, then the maximum load that an engine can operate is 75%, in the case of 3 turbochargers where one is off, then max load limit is 60%, etc. Turbocharger cut-out has been applied to the majority of DANAOS SHIPPING vessels, adopting Ultra Slow Steaming into our core



and maneuvering aspects involved. The vessel resumed her service in February 2017, and the first results indicate that the new shortened vessel is extremely competitive in terms of both stability and consumption. Cooperation between all parties involved, (DANAOS SHIPPING, Class & Shipyard) has run smoothly and led to a successful project without delays. DANAOS SHIPPING is now

Environment							
O <sub>1</sub>	Operations & Technical Department						
Our Goals	Progress	Future Actions					
The main goal is to develop state of the art systems and cultivate employees accordingly.	The WAVES system and integrated software are already in use on all Company vessels.	Further algorithms analysis to cover stakeholders' needs and development of neural systems are to follow.					
Stay up-to-date with all new technologies and regulations, continue our work and focus on better environmental performance	Apart from our 8100s (within 2016) ® our 10100s (within 2017), our 6500s Sundong built vessels are being fitted with a new bulb for better environmental performance.	Continuous performance monitoring ® evaluation of all our completed modification work to fully quantify the reduction in environmental emissions and fuel efficiency.					

strategy and being both adaptive and fully efficient towards the industry's new trends and needs

- Trim Optimization: In an effort to identify the optimum operational conditions for a vessel in order to maximize fuel efficiency and eliminate emissions, DANAOS SHIPPING has carried out a series of trim optimization tests in our 4250 TEU, 6500 TEU, 8500 TEU, 10100 TEU & 13100 TEU vessels. Through these tests, the critical fore and aft drafts have been identified and conditions of trim by bow, even keel and trim by stern have been compared in terms of power demand and vessel efficiency. Total savings of up to 5% have been identified with trim by bow, with weather conditions corresponding to 4BF.
- Draft Increase: In the context of our vessel's capacity maximization, maximum draft increase has been studied for all DANAOS SHIPPING vessels, based on initial freeboard calculation of all relevant parameters @ reinforcements required. Increased draft has been implemented on our 8500 TEU vessels,
- EDVENO DERLIN

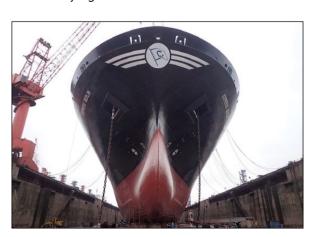
along with, bulbous bow modification and propeller retrofit. For the new scantling draft, DANAOS SHIPPING has also conducted model tests in order to confirm propulsion. Within 2017, increased draft has also been performed is 3x2200s.

Hull Appendages & Rudder Bulb: Our 4250
TEU vessels are fitted with hull appendages
and our 8500 TEU vessels with a rudder bulb.

#### **OPTIMIZATION OF 10100S**

DANAOS SHIPPING completed the optimization work for the container vessels with carrying capacity of 10100 TEU. It was a combined effort that resulted in fuel and energy savings of more than 10%. Following the R®D department's studies and extensive model tests, the fleet engineers materialized theoretical ideas and completed modification work within March 2017.

After studying a number of bulbous bow models,







produced by CFD analysis, the R®D Department selected the most suitable for the needs of this specific vessel. Model tests were then carried out at a recognized Institute and the modification work took place at a Chinese shipyard.

At the same time, top quality Low Friction (LF) paints were applied, achieving smooth hull surface roughness of less than 80 microns, contributing to fuel savings maximization, whilst the main engine was tuned for optimum SFOC.

The DANAOS SHIPPING R®D Department designed and uploaded new intelligent algorithms on its WAVES program to closely monitor vessel performance and take full advantage of the above mentioned optimization methods, enabling contractual speed range consumptions commitment.

Last but not least, during dry docking, modification work was completed in order to meet new Panama Canal requirements, preparing the vessels for the canal crossing.

#### CARGO CARRYING CAPACITY OPTIMIZATION

DANAOS SHIPPING, acknowledging the difficulties of the current market and the responsibility of reducing the environmental footprint, has extensively investigated the options in minimizing the transportation cost

and the subsequent fuel consumption required per TEU. The reduction of the fuel consumption per TEU can be achieved either through hull, engine optimizations and upgrades or through the increase of the transported container capacity.

To this respect, wanting to take advantage of both options, DANAOS SHIPPING's Technical department has materialized a series of modifications such as bulbous bow renewals, replacement of propellers with highly efficient ones, main engine derating @ TC Cut out and ultra-low friction paints among others. The latest upgrades, installed on the 3x 10100 TEU vessels, have recently completed their dry docking obligations, proving that DANAOS SHIPPING is investing towards the future and provides the market with vessels having the latest optimizations and adhering to the highest standards.

The Cargo Intake capacity has been jointly investigated with many well reputed Lashing Makers and Classification Societies. New lashing rules, updates of the pre-existing Cargo Securing Manuals and Loading software are now utilizing higher Cargo capacity on DANAOS SHIPPING vessels, with loading flexibility and heavier stack. The advantage of higher draft to accommodate more cargo which could benefit from it, derived from the results of the finite element  $\otimes$  direct strength analysis.

Dual loading system is offered with the addition of the mixed or otherwise Russian stowage. This is another way DANAOS SHIPPING vessels were benefitted further by upgrading their loading flexibility, enabling the loading of 40' TEU containers on top of 20'TEU, while maintaining their initial loading pattern. The demand for different kinds of container size carriage has been adopted, and many of DANAOS SHIPPING vessels are able to carry 53' TEU containers in addition to the high cube ones. The large sized container vessels of DANAOS SHIPPING are being offered with a multiple load line certificate, overcoming the draft or deadweight restrictions regulated by some commercial ports.





## DANAOS SHIPPING R®D PRESENTATION "RIDING THE WAVES OF INNOVATION" TO SNAME STUDENTS AT NTUA CAMPUS

A presentation was held by our R@D department on April 5th, 2017 for the Students of SNAME at NTUA Campus on Data Analysis supporting students on their initiative to keep up with today's shipping developments.

The 2 hour presentation was delivered by Ms. Evi Politi, RnD Manager and Dr. Stamatios Arkoulis, Analytics Specialist, who shared DANAOS SHIPPING's views on the upcoming way of ship management and monitoring that allows the creation of new high standards, in that way, maintaining the competitive advantage.

The presentation was held in the context of educational presentations and lectures

organized by the Greek Student Section of SNAME - NTUA and it was a great opportunity to enable students to find out more about how shipping is moving away from its traditionally isolated nature towards the new era of "Smart Shipping". Our speakers also presented our Danaos Waves platform, through a full demonstration of all our advanced analysis tools including the Map and the routines, to explain the design concept of making the best use of big data and remaining one step ahead in terms of technology and innovation.

The presentation brought our company closer to the future naval engineers and their concerns, and at the same time it was a fantastic opportunity for the students to get a glimpse of the big data analysis challenge and learn about further developments in the shipping industry.

The end of the presentation was followed by a very constructive Q@A section, as the students' interest and excitement were highlighted; their questions were targeted and addressed on real business issues.

## DANAOS SHIPPING LAUNCHES WAVES PERFORMANCE DASHBOARDS

The DANAOS SHIPPING R®D Department launched the new Waves Performance Dashboards, as part of "Smart SHIPPING" with customized reporting versions for Management and the Fleets. The new dashboards are designed to provide a user friendly visual analysis of our ships' performance evaluation over a specific period, making it easier to track the key metrics and gather all required data faster. From a preparation and implementation point of view, our experience has shown that a well-structured and visually engaging automated dashboard is essential to establish a quality overview and reporting tool for our ships monitoring.

Through automated processes, Waves advanced algorithms and routines are continuously running in the background using real-time data, building multiple feature dashboards on a monthly and daily basis that provide all the key performance indicators and control form alerts, in the context of our holistic approach for





our vessels' daily operation  $\otimes$  performance. At the same time, as the flexibility of our system remains one of our top priorities, all the features are easily shareable and can be operated through smartphones and tablets.

The dashboards consist of multiple features, such as hull performance, bunker consumption, energy management graphs and FOC benchmarking, while the vessel's route and position are illustrated on the world map. Operating profiles and average performance parameters (consumptions, emissions, etc.) are also included. As emissions monitoring is crucial for us, all emissions related efficiencies are automatically compared with those of last year and values appear in red/green depending on our targets set.

## DANAOS SHIPPING NON-HAZARDOUS POLICY

In the context of the new EU ship recycling regulation (No 1257/2013 (EMSA's Best Practice Guidance on the Inventory of Hazardous Materials) and the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009) (IHM guideline Resolution MEPC.269 (68)), Danaos Shipping acting proactively, has submitted within 2017 the first inventories of Hazardous Materials and same has been approved from classification societies. Same is

planned for several vessels within 2018.

Ship owners and operators shall record and monitor the presence of hazardous materials onboard their vessels, in order to protect health and safety and prevent environmental pollution at Ship Recycling Facilities (SRF). DANAOS SHIPPING has incorporated Hazmat Experts on their internal team for conducting sampling of Hazardous Materials and plans to further implement a non-hazardous policy on materials ordered and supplied onboard.

## DANGEROUS GOODS CARGO TRANSPORTATION

The transport of dangerous goods (DG) needs to be considered seriously and regulated, whilst special attention has to be paid during ship operations, in order to prevent, as far as possible, accidents to persons or property and damage to the environment, the means of transport employed



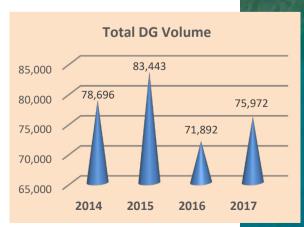
or to other goods. Mitigating the risks associated with hazardous materials may require the application of safety precautions during their transport, use, storage and disposal.

Title 49. Code of Federal Regulations (49CFR), and the IMDG Code Regulations are used in SHIPPING for transportation of Dangerous Goods (DG). However. beyond rules and regulations, in reality, it is the ship-owner's and, ultimately the shipmaster's responsibility to ensure the safe transportation of goods. transport is very important and requires the utmost attention of all parties involved since there is no hazard tolerance. DANAOS SHIPPING has adjusted its operations so as to ensure DG cargo safety and integrity.

Thus, the Company's major responsibilities are:

- To present with accuracy the ship's specification, concerning DG carriage onboard
- To sign transparent and comprehensive contracts/ charter parties with clients;
   DG carriage, limitations and restrictions have to be clearly addressed to involved parties
- 3. To exercise due diligence in the ship's operations
- 4. To carry out proper maintenance in order to avoid hazards and damages that might lead to DG cargo damage and adverse consequences

DANAOS SHIPPING has evaluated and optimized DG carriage design and operations, while, in parallel, developing an advanced ship maintenance system, including PMS. visits onboard. associated budgeting. R&D and training. Moreover. investments have been undertaken in establishing the Company's manning offices, in an effort to maximize training benefits increase retention rates, and preserve high levels of experience and knowledge onboard. It is the Company's duty to exercise due diligence and always strive for further improvement. The Company has invested in addition to container fire prevention and quick extinguishing systems, the following recommended industry proposals. Planned Maintenance System and ship's inspection quidelines have been amended to take care of contributing factors to cargo safety. The HR @ Training Department (HR@T) has also developed and applied onboard the "Know Your Vessel" campaign, to eliminate risks of bad operation and misjudgment, training courses for ship personnel, inhouse navigation simulations and numerous courses for Company staff. Also, the Company monitors through WAVES the carriage of DG to keep statistics and alert the attention of parties involved.





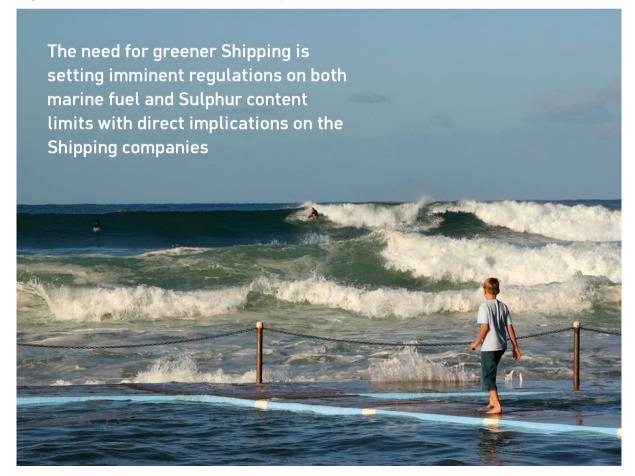


Environment Enviro						
The second second	Dangerous Cargo Transportation					
Our Goals	Progress	Future Actions				
To preserve the "O" DG cargo accident concept.	Maintenance scheme and training needs coverage are in full order. The HR®T department is always alert when it comes to discovering weaknesses.	Continuous ship's monitoring and crew training.				

52

#### Energy

Maritime transport is essential to world trade and the economy. The need for sustainable SHIPPING transport has emerged with increasing regulation focusing on emissions control. The International SHIPPING industry forms the greatest part of world trade. Liner SHIPPING, that constitutes an advanced network, operating scheduled transporting aoods services internationally, is among the most energy efficient means of international transportation. DAC is a leading containership owner with a well maintained fleet of 59 vessels, trading along principal trade routes throughout the world and whose primary goal is to provide high quality, efficient and safe transportation. The maritime industry is constantly evolving to respond to economic, technological, legislative and political trends. The rising environmental concern and the need for greener SHIPPING is setting imminent regulations on both marine fuel and Sulphur content limits with direct implications on the SHIPPING companies. As of January 1st, 2015, the permitted Sulphur content of fuel in ECAs (Emission control areas) was set to 0.1%. Ship operators must be able to use a different grade of fuel in order to meet the Sulphur content limits, comply with the legislation and operate within the ECAs. For DANAOS SHIPPING, it is of paramount importance that our vessels comply with the international standards so that they meet the market requirements and ensure safe trading. Maritime transport has a significant role in world trade. In an era of increasingly globalized markets, where quantities of goods are being transported from far distant countries around the world, the need for sustainable SHIPPING is imperative. The SHIPPING industry is governed by an ongoing trend to focus on sustainability and environmental The increasing regulations and the evolving legislation are calling for measures by ship

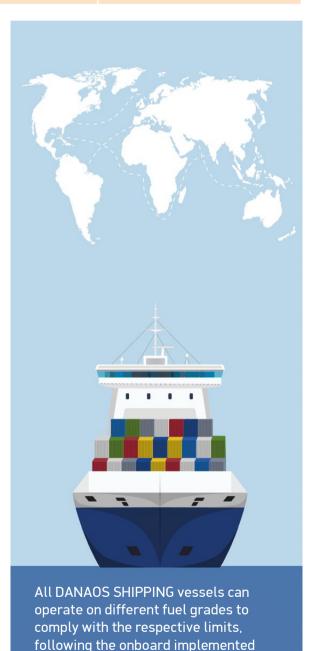




Environment					
Energy					
Our Goals	Progress	Future Actions			
To offer sustainable transport solutions in order to comply with global trends and meet not only present but also future requirements.	DANAOS SHIPPING has successfully completed the modifications to all of the Company's vessels prior to the date of entry into force.	Further investigation from engineers in order to be ready for upcoming regulations on Sulphur content limits.			

owners, so that they meet potential customers' requirements.

In order to reduce the SHIPPING industry's footprint on pollution, limitations are applied on Sulphur emissions in ECAs (Emission Control Areas). As a result, all vessels sailing through an ECA, should use fuel oil that contains a maximum Sulphur content of 0.10%, therefore need to change over to using ultra-low Sulphur fuel oil (ULSFO) or marine gas oil (MGO). DANAOS SHIPPING vessels are operating on principal trade routes all around the world, including emissions control areas. The implementation process has required modification to the vessels in order to comply with the regulations and ensure safe trade. DANAOS SHIPPING has adjusted all vessels accordingly, in order to be able to use different fuel grades and operate safety in principle routes all over the world. A thorough technical investigation was carried out by DANAOS SHIPPING in two phases, in order to assess the modifications that each vessel was required to implement. The first phase was completed in 2013, while phase 2 a year later. During 2014, all necessary measures were taken, such as modifications in piping, tank arrangement, transfer line, as well as bunkering line for vessels to have sufficient capacity of "MGO ready" tanks in order to avoid frequent bunkering and be able to satisfy their consumption needs inside ECAs,. The modifications were successfully completed on all vessels calling ECAs, as per project decision map. All DANAOS SHIPPING vessels can operate on different fuel grades to comply with the respective limits, following the onboard implemented written procedures from our engineers for change-over of fuel oils.



written procedures from our engineers

for change-over of fuel oils.

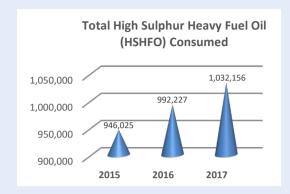


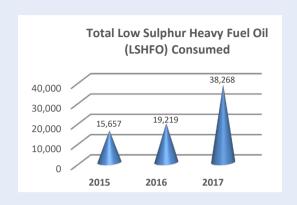
#### **ENERGY MANAGEMENT & CONSUMPTION**

The key drivers towards addressing energy efficiency are regulations, economics and customer-related requirements, which are all frequently changing parameters. Consequently, our focus has been placed in operating ships in an energy efficient manner by focusing on specific targets and indices that enable monitoring and improving energy performance through advanced systems and tools, in the context of the regulatory framework. However. it is not only a matter of addressing and implementing energy saving measures on a technical and operational level but it is also a matter of having the dedicated team and trained engineers monitoring energy performance and handling energy issues with the use of the right tools. In that way, energy efficiency monitoring is effectively enhanced within the organization and measurements are best shared with other stakeholders in a transparent and reliable manner. Nowadays, when there is rising concern over energy management in ships' operation, the commitment to carrying cargo following energy efficient initiatives and practices is part of our Company's responsibility. DANAOS SHIPPING has designed energy management algorithms which are incorporated in our WAVES analytics platform in order to closely monitor the vessels' energy performance. The online data acquisition of power consumption of reefer containers that is available for 18 vessels enables us to calculate the vessels' actual power efficiency through actual reefers load, via the WAVES algorithms. In that way, energy performance can be monitored in order to ensure optimum energy use onboard and minimize energy loss. A lot of focus has been placed on our Engineers' training and information sharing, in order to eventually build a strong energy culture both onboard and ashore, providing our Company with a competitive advantage in the market. As a matter of fact, the energy efficiency practices and measures are becoming part of our crews' habits. DANAOS SHIPPING has incorporated advanced techniques and focuses on its engineers' training in order to improve energy performance through close monitoring. DANAOS SHIPPING has the Ship Energy Efficiency Management Plan (SEEMP) in place since 2013 whose main objective is to provide practices and metrics to evaluate and improve efficiency and decrease fuel consumption. Moreover. DANAOS SHIPPING has been certified by DNVGL under ISO 50001 standard on energy performance, which has a broader scope and includes a commitment to planned interval and a dedicated procedure for improvement verification. The main objective through the ISO 50001 implementation is to improve management processes and procedures that control the Company's functions and activities with significant energy use. Three of our vessels have already adopted the ISO 50001 implementation, two new vessels were enrolled in the scheme in 2017, while one vessel was bareboat chartered and therefore and have a designated energy management system for monitoring the electric power during normal

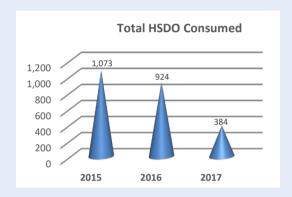








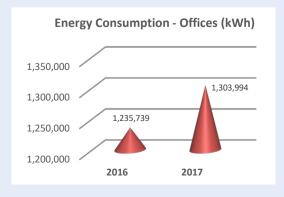








\*55 vessels in 2015, 57 in 2016 and until May 2017 and then 55 until end of 2017



#### **ENERGY MANAGEMENT & CONSUMPTION**

seagoing or super slow steaming through advance online data acquisition. Our 10100s and 13100s vessels are equipped with Alternative Maritime Power (AMP) systems. AMP is a cold ironing system which allows ships to turn off their engines when in port and plug into shoreside electricity supply. Danae C has also been

cause innumerable damages on a commercial, agricultural and recreational level. Invasive species may even harm humans. Ballast water contains a diversity of organisms, such as plants and animals from the native area the ballasting took place. There is a big chance many of these species survive and are released

Environment					
	Energy				
Our Goals	Progress	Future Actions			
To build energy into employee culture that will enable meeting regulatory and market requirements and maintaining the competitive edge.	SEEMP and ISO 50001 are adopted and energy management algorithms are incorporated into our WAVES analytics platform to monitor power efficiency and improve performance.	Further improvement of power efficiency and further implementation of ISO 50001 within the fleet.			

#### AMP fitted within 2017.

Climate change is considered to be the major global challenge during the next decades. Thus, one of our main concerns is to reduce the total fuel consumed and become more efficient in terms of our environmental performance aiming to minimize the Green House Emissions (GHE) and help reduce the phenomenon of global warming. Our energy consumption is expressed in terms of fuel we use and is divided into the following key performance indicators: High Sulphur Fuel Oil (HSHFO), Low Sulphur Fuel Oil (LSFO), Marine Gas Oil (MGO), High Sulphur Diesel Oil (HSDO). Total Diesel Generators (DG) Consumption at Sea. We also monitor the energy consumed, in terms of electric power, by our headquarters.

#### **Biodiversity**

It is everyone's duty and responsibility to protect the oceans. Leading by example is the best way to influence and inspire the Marine sector. Aquatic Invasive Species (AIS) (may be called invasive or non-native) are organisms of the marine environment that are transferred away from their natural area, thus invading a non-native area. These organisms can create imbalance in their new habitat which may compromise or wipe out the ecosystem and

during the de-ballasting process in their new aquatic area. The results could be disastrous to the new ecosystem accommodating the non-native organisms. This important issue is safeguarded by the IMO, by implementing the International Convention for the Control and Management of Ships' Ballast Water and Sediments. Commercial ships are responsible for up to 80% of introductions in coastal habitats DANAOS SHIPPING is committed to protecting the aquatic environment by adopting a Ballast Water exchange policy for all managed vessels, which prevents the transfer of harmful alien aquatic species from one region to another through Ballast water. Only within 2017, a volume of 6073075 cubic meters of ballast water has been exchanged through the DANAOS SHIPPING fleet, contributing to the significant goal of marine environment protection and environmental footprint reduction. DANAOS SHIPPING is aiming to go one step further, to explore possibilities of further efficacy. The Research and Development Department of DANAOS SHIPPING is currently investigating the optimum solution of the alien species' elimination through the use of ballast water management systems available on the market. Each of these systems, based on its operational principle, certification and acceptance by the USA Environmental Protection Agency and the



European Committee, is being evaluated for its efficiency, operational flexibility, durability and environmental friendliness

The selected Ballast Water Treatment equipment will be installed on DANAOS SHIPPING vessels, enhancing the quality of discharged ballast. All vessels are currently being upgraded with "ready to use" reception pipelines which will expedite the installation of the selected Ballast Water Treatment equipment. Another important issue is the toxicity of the biocides in the antifouling paints affecting the aquatic ecosystem.

DANAOS SHIPPING uses antifouling paints of the latest technology -which are TBT Free-, containing biocides that are non-bio-

accumulative to the aquatic organisms and are degraded and de-toxified in the environment. complying with existina environmental regulations and future legislation. Waters are being polluted from rust debris, oil and grease leakages accumulated on the hull structure. main and exposed decks of the vessels. These pollutants may end up in the sea through the green waters, rain or discharged through washing. DANAOS SHIPPING is looking towards improving its ballast water exchange and has been seeking answers for the past two years through technological evolution. The DANAOS SHIPPING policy is to keep vessels clean, leak free and maintain the scupper pipes -leading to the sea- isolated to control any incidental contamination of the aquatic environment.



	2016	2017
Total Ballast (m3)	6,648,767.8	6,073,075.1
Ballast exchange increase compared to last year	13.2% (Increase)	9.5% (decrease)
FO consumption reduction per ton of ballast exchange	11.8% (reduction)	3.6% (reduction)

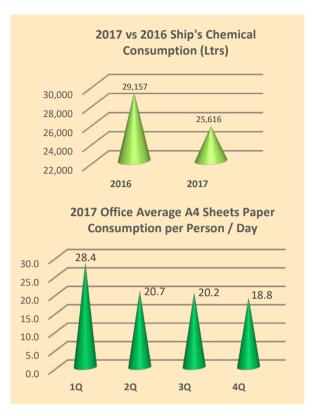
Environment					
Energy Consuption					
Our Goals	Progress	Future Actions			
DANAOS SHIPPING aims to preserve the good records from the implementation of the Ballast Water Management Plan and by adopting new technology, improve the environmental footprint and contributing to a clearer Marine environment.	The vessels are being prepared to accept the Ballast water treatment. This plant will be ready to be accommodated as a "plug ® play" device.	DANAOS SHIPPING is focused on the preparation of the vessels for the optimum BWMP.			

58

#### Waste and Spills

Contamination of the sea water due to oil. chemical or garbage pour, as a result of an accident or human error is termed as a spill. Spill pollutions can have a huge ecological, economic and safety impact. It should be the first priority of any stakeholder. One of the most conspicuous forms of pollution is oil. Petroleum products are among the most important energy sources on the planet. They are mostly transported by ships which in turn hold huge amounts of fuel, consumed by their main propulsion and auxiliary engines. An accident of a vessel can significantly pollute the sea through massive spills which may harm the aquatic environment, coasts, local economies and even human beings. The effects of oil spills can travel far away from the location the spill took place. Within a very limited period of time, even a small spill can pollute miles of the ecosystem. DANAOS SHIPPING will continue practicing the necessary due diligence with regards to environmental protection. Any procedure adopted and any action taken considers this interest as the outmost priority.

Since the most common reason for the spillages is the human factor, to minimize the exposure of any risk associated with pollution is a challenging task. DANAOS SHIPPING has developed a strict Safety Management System



potential threats to the marine environment.

The modern young fleet, with an average age of 7.5 years, is being maintained at the highest standards of the market, providing safe boundaries for the pollutants transported. The human factor is being controlled by selected

Environment					
	Waste and Spills				
Our Goals	Progress	Future Actions			
DANAOS SHIPPING is aiming for zero-spills	DANAOS SHIPPING is aiming through efficacious maintenance and dry docks to preserve the condition of its vessels. In addition, through a very large series of seminars and a selection of high quality crew pools through its own manning offices, is aiming to promote seafarers professionalism.	The superintendence modernization project is aiming to enhance the inspection efficiency on vessels and monitoring and response at the office should be more proactive and predictive, resulting in even higher quality maintenance of the fleet. Also, training seminars and CBTs will be enriched following the up to date legislation, feedback and lessons learned.			

and policies that promote pollution prevention as part of the Company's culture. Not only is the importance of International Conventions and Regulations being emphasized, but it is taken one step further to predict and prevent any Crew Pools from DANAOS SHIPPING owned Manning offices, in-house training to promote environmental safety culture @ awareness, very frequent visits onboard by the Technical and Quality experts of the office to evaluate the



condition, safety and navigational measures and practices implemented. In addition, there are many onboard training programs and Computer Based Trainings (CBT) promoting training on the field and learning through repetition. Fast response and accuracy are the key elements for successful Crisis Handling.

DANAOS SHIPPING Crisis Management is prepared to deal in the most efficient way with any Incident that might evolve into a Crisis, prevent it if feasible or handle the process and contain it. A specific Emergency Response Plan and an in house Emergency Response Service system have been developed to support the whole process and provide specific instructions and task allocations on a per case basis. The SMS system of DANAOS SHIPPING has been awarded with an ISO 9001 ® ISO 14001 On top of the Regulatory requirements, DANAOS SHIPPING has applied a Green Policy with regard to the chemical composition used onboard, and a Garbage Management plan that prohibits disposal at sea and only to shore facilities.

It is not a coincidence that, in 2017, DANAOS SHIPPING had a zero oil spillage record, something which rewards the structure and the efforts of the Company and its management. We also have taken measures to improve the management of waste generated by our headquarters. We monitor the average paper consumption per employee per day, and we take steps to inform our employees how they can reduce their consumption of paper.

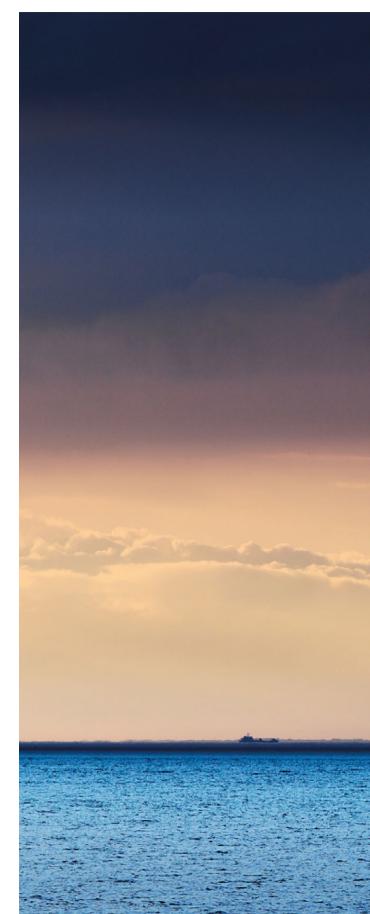
#### **HAZARDOUS MATERIALS**

The SHIPPING industry and officially recognized organizations have shown a tendency to establish regulations aiming towards the optimization of environmental and health issues. Towards this direction, the SHIPPING industry is looking closer at the life cycle of a ship and takes a more responsible approach towards it. The Industry is moving forward and immersing itself in Sustainability issues by establishing new Regulations (like IMO's "Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships" in

2009, and the EU's Ship Recycling Regulation in 2013 which requires every ship calling at an EU Port or flagged by an EU Administration to carry an inventory of hazardous material (IHM) verified by a recognized organization and specifying the location and approximate quantities of those materials. DANAOS SHIPPING has taken actions during the building stage of a new ship and proper controls/ records/ maintenance of the identified hazardous areas of existing ships is the step we have taken and will continue practicing. With reference to the construction of a ship, it has previously been a matter of how the vessel will be more cost efficient along with selected performance aspects,



thus incorporating procedures and materials of a specific budget. Over the last years, it has become our interest to examine the facts and materialize an advanced approach by minimizing the fitted hazardous materials and if possible proceed with their prohibition. For the existing ships, DANAOS SHIPPING has achieved proper records and maintenance and is not limited to that. We will continue collaborating with our suppliers (stores, machineries, paints, etc.) for the recording of possible hazardous materials and compliance with regulations. When it comes to the demolition of ships, the dangerous practices and pollution are a fact. Cutting apart big steel structures is a complex and hazardous business, not to mention the machinery that a ship might be equipped with or the paints that may have been applied, and even nowadays the minimum precautions are taken. It is well understood that the beaching methods during demolition make it difficult to ensure safety and properly manage pollutants. A DANAOS SHIPPING consideration for heading her vessels to selected recycling facilities embodying safer practices is a reality. Based on the hazardous or non-hazardous status of materials produced/ used/ disposed during the lifetime of a vessel, DANAOS SHIPPING promotes a road to a healthier way for this chain, both for the environment and human health. The challenge is how we can ensure this healthier and more environmentally friendly approach for the materials used onboard ships, taking into consideration that the shipping industry is also affected by economic, geopolitical and social issues. DANAOS SHIPPING newbuilding vessels carry a Green passport certificate and/ or IHM SoC at the time of building. For existing ships, a structured system has been established to control hazardous materials onboard and achieve compliance with the above requirements, thus minimizing risk, avoiding potential liabilities and enhancing the safety of the ships' crews by identifying, recording and controlling hazards onboard ships. DANAOS SHIPPING, as a pioneer in this field, has already become an approved service supplier for conducting Hazardous materials sampling by incorporating approved Hazmat experts. The project has been carefully set up to enable all concerned parties to realize that it is highly beneficial to embark on the new path of taking care of ourselves and our environment without diverging from the goals of profit and progress. The impact of EU regulation and HKC to humans and the environment is meaningful and sustainable. Thus, DANAOS SHIPPING promotes a road to the establishment of proper measurements for this task. Part of DANAOS SHIPPING management of hazardous waste, is the safe recycling of our vessels. Part of this commitment is the proactive compliance with the EU Ship Recycling Regulation, No 1257/2013 and the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. During the recycling of the vessels great care needs to be taken with the numerous hazardous substances onboard. Most of the world's vessels are recycled in Bangladesh, China, India, Pakistan and Turkey as evident by the number of vessels recycled in each facility, as well as each recycling facility's capacity (in mGT).







#### **Emissions**

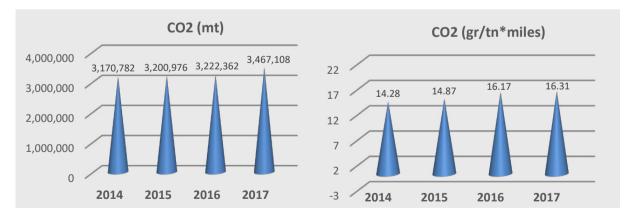
Close monitoring of emissions is imperative due to climate change and GHG effects. Risk involved in environmental emissions has significant effect in the majority of business sectors and everyday life.

#### Carbon Dioxide - CO,

It goes without saying that nowadays the amount of  ${\rm CO_2}$  emitted into the atmosphere and its reduction is crucial and it plays a key role worldwide in decisions concerning global SHIPPING  $\otimes$  trading. In this context and as the need to control and reduce emissions is imperative, the EU has introduced the

MRV regulation; MRV stands for Monitoring, Reporting & Verification. The regulation requires ship owners and operators to annually monitor report and verify CO<sub>2</sub> emitted from ships over 5000 gross tonnage on an annual basis starting from 1st January 2018. Companies should prepare relevant Monitoring plans, describing how they plan to monitor and report CO<sub>2</sub> emitted in all EU related voyages on an annual basis. Plans should be submitted and verified from an approved verifier and be kept on board. Environmental awareness constitutes a key business strategy formulation ingredient as staying sustainable is included in our top priorities and goals. DANAOS SHIPPING, always being proactive, has submitted monitoring plans

# Environmental Implementations about Emissions CO₂ Emissions are monitored and calculated from 2010 onwards SEEMPs have been on DANAOS SHIPPING vessels since 2013. SEEMP goals are evaluated every year from vessels' consumptions and operational profile. CO₂ Emissions calculations are incorporated in DANAOS SHIPPING WAVES with quarterly produced reports, indicating the cumulative emissions per quarter per vessel. DANAOS SHIPPING has voluntarily taken part in DNVGL's EEOI certification program from 2008 till 2016.



Environment					
CO <sub>2</sub>					
Our Goals	Progress	Future Actions			
Reduce emissions on an annual basis by implementing energy saving methods and studying each vessel's operational profile	Monitoring Plans for all vessels calling EU ports have been submitted and approved from DNVGL.	Timely submission of EU related reports and close monitoring of the vessels emissions and efficiency.			

for all vessels that fall under MRV regulation within June 2017 and by October 2017, all plans have been approved and relevant SoCs have been issued from the selected verifier. DANAOS SHIPPING has incorporated environmental monitoring policies and strategies into its core management practices. MRV is just a small part of our emissions monitoring program. Specific MRV routine has also been designed and incorporated into Waves Fleet Performance application, automatically producing all files that need to be submitted to the verifier and





Time At Sea		ME Consumption (MT)		DG	DG Consumption (MT)		Boiler Consumption (MT)			AH L E			
Leg Details	(Hrs) Distance (NW)	Leg Details (Hrs) Distance (NM) Cargo (MT	Cargo (MT)	HFO	LFO	MGO	HFO	LFO	MGO	HFO	LFO	MGO	All Legs 🕞
VERACRUZ → ALTAMIRA (07/01/2018 01:54 - 07/01/2018 19:18)	17.4	239.92	28154	43.07	0	0	9.71	0	0	4.37	0	0	No EU
ALTAMIRA ALTAMIRA (08/01/2018 15:00 - 09/01/2018 16:12)	25.2	434.39	28183	99.61	3.3	0	13.36	0.3	0	5.54	0	0	No EU
ALTAMIRA HOUSTON (09/01/2018 19:48 12/01/2018 21:06)	73.3	531.38	26746	26.09	47.77	0	7.34	18.71	0	2.29	7.44	0	No EU
HOUSTON ANTWERP (14/01/2018 06:54 - 25/01/2018 20:30)	270.6	5354.9	27757	1190.3	214.03	0	73.9	24.09	0	6.6	8.76	0	In EU
ANTWERP MARSAXLOKK (27/01/2018 23:54 - 02/02/2018 09:36)	129.7	2512.75	45105	530.25	116.09	0	35.86	25.47	0	1.18	8.18	0	Intra EU
MARSAXLOKK ALEXANDRIA (03/02/2018 08:06 - 05/02/2018 14:42)	53.6	820.25	43404	229.63	0	0	18.78	6.7	0	2.66	0	3.7	Out EU
ALEXANDRIA → MERSIN (06/02/2018 14:18 - 07/02/2018 22:12)	30.9	442.21	37185	112.41	0	0	18.84	0	0	8.64	0	0	No EU
MERSIN BEIRUT (08/02/2018 17:06 - 09/02/2018 13:24)	22.3	193.53	45955	29.69	0	0	7.86	5.6	0	1.24	3.5	0	No EU
BEIRUT PORT SAID (10/02/2018 06:54 - 11/02/2018 05:06)	22.2	244.27	33342	29.08	0	0	14.15	0	0	4.93	0	0	No EU

to the EU respectively, both in the necessary format. Moreover, MRV map has been designed, depicting all voyaged of the vessel, highlighting those that are EU related.

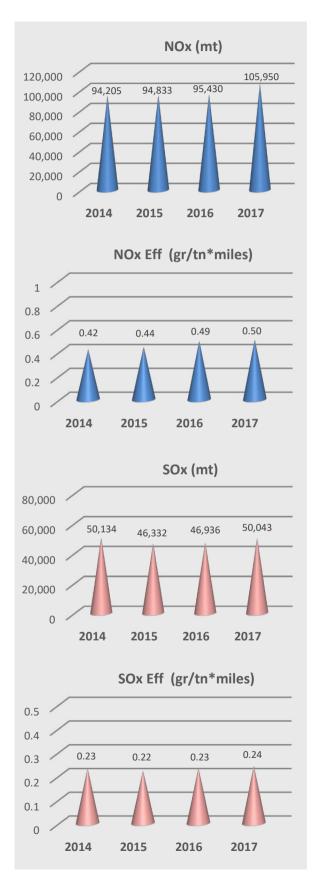
Total number of produced CO2 for 2017 is 7.6% higher compared to 2016. Within 2017, Danaos vessels' operating days have been increased, since 2016 contained significant idling

periods for our vessels. Super slow steaming activity has been reduced, accompanied by a significant increase in the weighted average operating speed of about 1 knot, resulting in a subsequent increase of fuel consumed and CO2 emitted. Though, as the amount of cargo transferred and miles sailed were also increased in 2017, the increase in gr/tn\*miles index was marginal.

Environment					
	ODS				
Our Goals	Progress	Future Actions			
Close monitoring of refrigerants of new vessels and modification as well proper management	Compliance with regulations. Through inspections and the Planned Maintenance System, refrigerant records are in order	Well established monitoring systems of refrigerant quantities and traced leakages			

#### **Ozone Depleting Substances**

It is important to use natural refrigerants and approach the main issues of global warming. Implementing the usage of areenhouse refrigerants could be properly performed onboard. The long-term approach of maintenance of the refrigerants and the minimization of refrigerants losses in order to avoid deliberate emissions of ODS. Emitted CFC and HCFC refrigerants have been directly connected to the destruction of the stratospheric ozone and the pollution of the oceans. International regulations have been adopted in order to phase out the production and the consumption of the refrigerants for the protection of the stratospheric ozone layer and the ocean properties. The HFC gases are very powerful greenhouse gases and they are all on the List of Undesirable Substances. When referring to the green refrigerants, the preoccupations are that substitutes and refrigerating systems might have lower energy efficiency, higher global warming potential and greater environmental impact than the Ozone Depleting Substance refrigerants and systems that they replace. In 2007, the Montreal Protocol Parties approved the acceleration of the phase-out process of HCFCs, gases with low Ozone Depletion Potential, which were nominated as replacements for CFCs. Implementing the usage of greenhouse refrigerants could be properly performed onboard. The long-term approach of maintenance of the refrigerants and the minimization of refrigerants losses in order to avoid deliberate emissions of ODS. On board we usually encounter R22, a refrigerant belonging to the HCFC family. International regulations impose that after January 1, 2015, the use of R22 in marine refrigeration plants is banned on European Union flagged vessels. R417A presents very close working parameters in marine applications to R22 and thus the changeover does not ask demanding system modifications and could easily be performed. Therefore, DANAOS SHIPPING has incorporated the modifications from the old systems to the new ones and, according to the regulations, any deliberate emission of ODS is prohibited. For new building vessels, any installation containing ODS. such as halons and chlorofluorocarbons (CFCs), is





prohibited. However, any installations containing hydro-chlorofluorocarbons (HCFCs) are allowed until 1 January 2020. The Freon Types in Use are R-404A, R-407C, and R-431A.

#### $NO_x$ , $SO_x$ and Other Emissions

Emissions are strongly connected with climate change which has a serious impact on the environment and life in general. Sustainability and Emission Reduction can no longer be considered as options, they have clearly become a necessity and an obligation for all business sectors. We remain ahead in terms of technology and energy efficiency fully adapting to the current constantly changing environment. We measure our emissions through the established key performance indicators. Our performance is expresses as total NO<sub>x</sub> and SO<sub>2</sub> emissions (MT) and as emission intensity (expressed as gr/tn\*miles).

 $NO_{x}$  and  $SO_{x}$  products equally contribute to climate change. Unlimited emissions will result in irreversible changes to the natural environment. As all Sulphur oxides pose a great threat to human

and sent on board on time in order to eliminate incidents related to fuel changeover. The crew has been trained and our people on board our vessels are fully capable to handle ECA area fuel changeover. Moreover, within 2014, a special project has been initiated and completed, in order to increase our vessels' capacity in MGO and make them "MGO ready". All required modifications in piping, tanks arrangement, transfer line bunkering lines have been successfully performed. In the context of the challenging emissions issue and their reduction, the DANAOS SHIPPING R@D Department has studied various energy efficiency implementation methods in order to optimize fuel consumption and reach the minimum possible level of environmental emissions. Within 2015, DANAOS SHIPPING has preceded to a derating study for the 8500 TEU container vessels, which have been retrofitted accordingly achieving a significant reduction of fuel consumption. DANAOS SHIPPING, being keen on new technologies, has begun a separate project for  $SO_x \otimes NO_x$  scrubbers along with the relevant cost-benefit and investment analysis.

Environment			
NOx, SOx and other Emissions			
Our Goals	Progress	Future Actions	
Eco-friendliness, sustainability and reduced amounts of NOx and SO2 quantities, remain a core goal for the Company's strategies and management practices	The WAVES system is integrated into our performance monitoring systems including all emissions calculations. The system was initiated in 2015 and is operating fully producing reports on a monthly and quarterly basis	Continuous and close monitoring of the vessel's operation pattern along with full implementation of SEEMP guidelines in order to preserve DANAOS SHIPPING' high standards of performance. Study any new energy efficiency device/ plan for evaluation and materialization if necessary	

health, the need to impose limits on the fuels' Sulphur emissions became imperative and led to Emission Control Areas (ECA) and to the 0.1% Sulphur cap from January 2015. Additionally, a global Sulphur cap is also on the way, despite the considerations for the available fuel quantity, fuel demand and prices of oil products. DANAOS SHIPPING is very strict with the implementation of ECA area rules, controlling the fuel that is burnt on our ships through laboratory analysis of all fuels bunkered. Procedures for FO changeover and relevant booklets have been prepared

## Compliance with environmental laws and regulations

During 2017, two fines were imposed on the company related to the Sulphur limit of the fuel oil consumed within Emission Control Areas. The failure of non-compliance was attributed to ship's design and fuel oil piping arrangements since all procedures for the use of compliant fuel were followed as required. After investigation all necessary technical modifications were made to prevent reoccurrence.





#### Supply Chain

We are actively working with our suppliers for the improvement of social conditions and the minimization of our environmental footprint. We recognize that everything is interconnected and that we share a common future. Through the collaboration with our suppliers we aim at contributing to achieving mutually shared targets and ease social considerations. The Company's Procurement Department is responsible for sourcing, analyzing, negotiating and supplying materials and services to meet the needs of the vessels and their personnel onboard. It interacts with hundreds of vendors and service providers across the globe producing tens of thousands of orders and service agreements.

A significant employment volume is therefore created, at a local and international level, for thousands of people and in the process has a considerable impact on the economy, in terms of job creation, production of revenue,

empowerment of companies and improvement of the economy's indices. In society the impact relates to the increased prosperity of people, sharing common interests and enjoying a chance for a better life. At the same time, an international culture is created and opportunities for sharing knowledge and innovation emerge. Finally, on the environment the impacts relate to the fact that everything that is produced (material or service) has an effect on the environment. It is everyone's duty to become conscious of the importance of our actions towards Earth.

DANAOS SHIPPING, as a responsible corporate citizen of the world, supports and promotes every effort that improves the above parameters in the best possible way.

The ability to conduct business in a manner appropriate towards promoting ethical, social and environmental standards plays a major role in the selection of our suppliers. They are expected to take steps for continuous improvement in the aforementioned fields and



adhere to our code of ethics and our commitment for environment protection, safety and proper working conditions in a responsible and sustainable way. Major areas of focus are equal opportunities, compliance with international labor standards (no child labor, decent working conditions), health and safety awareness, zero corruption tolerance, transparency and fair business policy. Although hundreds of suppliers cooperate with DANAOS SHIPPING, the Company promotes 'green' and quality suppliers (holders of relevant certification i.e. ISO 14001 or ISO 9001) and targets the increase of their usage in procurement services.

During 2017, more than 70% of our major suppliers and more than 50% of our medium and small suppliers have been characterized as "green suppliers" through the assessment of relevant certification they hold. We aim at increasing these percentages to 85% and 70% respectively.

State control -Memoranda of Understanding or MoUs- have been signed: Europe and the North Atlantic (Paris MoU); Asia and the Pacific (Tokyo MoU); Latin America (Acuerdo de Via del Mar); Caribbean (Caribbean MoU); West and Central Africa (Abuja MoU); the Black Sea region (Black Sea MoU); the Mediterranean (Mediterranean MoU); the Indian Ocean (Indian Ocean MoU) and the Riyadh MoU. The United States Coast Guard ("USCG") maintains the tenth PSC regime. The above PSC regimes arrange visits to 5%-15% of the vessels calling in their territories. A port state control inspection involves checking several aspects of the ship in both the deck and engine departments. The survey focuses on important SHIPPING documents, technical details, and the structural and technical elements of the ship. For DANAOS SHIPPING, good records in PSC examinations are an indication of a sound safety management system and associated culture within the organization. Apart from the regulatory PSC inspections,

Environment		
Responsibility in the Supply Chain		
Our Goals	Progress	Future Actions
Improving by procurement policies and procedures, all key elements which contribute to responsible practices.  Special attention to the extensive use of environmentally responsible vendors	Our vendors are already fulfilling our major criteria. However, the Company always sets targets at a higher level	New co-operations are tested and considered so as to achieve our target faster

#### **Evaluation & Audit Inspections**

Many of the IMO's most important technical conventions contain provisions for ships to be inspected -apart from the inspections performed by the Classification Societies- when they visit foreign ports to ensure that they meet IMO requirements. Ships should therefore be maintained at a particular standard by the combined efforts of the flag states, SHIPPING Company and the ship's master. In order to ensure that the condition of foreign ships is well above the excepted level, inspections are done on the ships when they visit international ports. This inspection of foreign ships is known as port state control. Nine regional agreements on port

The DANAOS SHIPPING Fleet is also subject to the annual safety inspections performed by our Flag States. All recorded deficiencies are immediately rectified and preventive actions are taken to the satisfaction of the local Port State Control. Additionally, on a Company level, the deficiencies are collectively analyzed- evaluated to avoid repetition of similar deficiencies and the necessary corrective measures are circulated for training purposes to the rest of our fleet. At present, DANAOS SHIPPING stands as a High Performance Company in the Paris MOU and maintains an excellent inspection record in USCG.

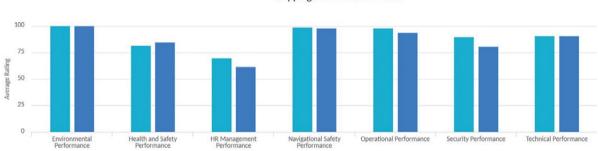
Auditing is an on-site verification process, such



as inspection or examination, to verify that the Company's activities and results comply with the planned arrangements and requirements. There are two categories of audits which are related to DANAOS SHIPPING activities: the internal and the external audits. Both are conducted

third party inspections, from accidents and hazardous occurrences, review of records or during routine operations. Timely corrective action is undertaken for both shore and shipboard deficiencies, which does not exceed 3 months. Audit findings, Non Conformities or Observation notes are collectively analyzed and evaluated during the management review process, so that any useful outcome can be utilized and incorporated in system revision and management of change.

Findings that pose a serious threat to the safety of personnel or the ship or a serious risk to the environment are analyzed with the



Shipping Performance Indexes

within the Company and onboard vessels to verify compliance with the established safety and environmental laws and regulations. The internal audits are scheduled on the basis of the status and importance of the system to be audited and are carried out by personnel who:

- Are independent from the person responsible for the area to be audited, and
- Have received appropriate training.

All systems of DANAOS SHIPPING Safety Management are audited at least to the minimum requirements (once per year in the Head Office and not exceeding 12 months on board each vessel) and at any greater frequency, as deemed necessary, in accordance with the status and importance of the activity. Audits are coordinated by the Safety Quality and Environmental Department. Unscheduled audits are performed if a serious deficiency in any part of the DSMS becomes evident during

RCA method and immediate corrective action is undertaken. Third party audits are performed by an RO member of IACS annually at the DANAOS SHIPPING Piraeus office and twice within a 5 year cycle on board. The main purpose of these third party audits is to maintain the validity of the Company D.O.C. and Vessel S.M.C. by verifying the effectiveness of the Company SMS. The results of these audits are also analyzed with the RCA method and the corrective actions are incorporated within our system. During 2016 we have performed 68 internal audits as well as 66 third party audits carried out by DNV-GL, KR and LR to ensure that our systems remain in compliance with the ISM/ISPS Code, the ISO 9001, ISO 14001, ISO 50001 standards and the MI C Convention

In 2017, we conducted 65 internal audits and we received 23 external (3rd party) audits.



#### **Anti- corruption**

#### **Anti-Fraud Policy**

The Company is committed to ethical behavior and values. Amongst its first priorities is to establish a corporate and working culture that enhances the value of ethics and promotes individual responsibility. To this effect the Company has established a Code of Business Conduct and Ethics. a Code of Conduct and Ethics for Corporate Officers and Directors and an Ethics and Compliance Policy, which set the highest standards for personnel conduct related to ethical behavior and alertness. The cornerstone in preventing fraud is the creation of an environment that fosters morality, integrity and business conduct. In developing the Code of Business Conduct and Ethics we have taken into account the ten principles of the United Nations Global Compact about labor, environment, anticorruption and human rights. During 2017 there were no confirmed incidents of corruptions nor any current public investigations or prosecutions for corruption against our Company.

## DANAOS SHIPPING crew discovers illegal substances and delivers to Authorities.

On September 2017, DANAOS SHIPPING reported that following its policy to make Company inspections on board its vessels, especially when the vessels call into ports suspected of drug trafficking, a quantity of drugs was found by the crew of the container vessel DIMITRIS C (DWT 40102) in the port of Ilo, Peru, which was carefully hidden in a void space on deck between two holds. The Master of the vessel was instructed immediately to inform authorities who boarded the vessel with a large team from the police force and trained dogs. A full search was conducted by the Authorities, escorted by the crew's safety committee, an office representative who flew from Greece and the representatives of the local P&I. No other drugs were found onboard.

In addition, the local prosecutor interrogated some crew members. The full procedure began on September 14th and ended on September 17th. The vessel and the crew were found to be innocent and released without any charges. The vessel sailed at 15:00 on September 17th.

Topics	Actions for 2017- 2018
Employees	<ul> <li>Maintain the high percentage of employees in volunteer actions</li> <li>Develop state of the art systems and -train employees accordingly.</li> <li>Stay up-to-date with all new technologies and regulations, continue our work and focus on better environmental performance.</li> </ul>
Crew	<ul> <li>Increase near misses &amp; reduce accidents onboard</li> <li>Develop state of the art systems and -train employees accordingly.</li> <li>Stay up-to-date with all new technologies and regulations, continue our work and focus on better environmental performance</li> </ul>
Society	<ul> <li>Keep up with the charity work towards organizations and institutions.</li> <li>Maintain the social programs and initiatives through which our employees can volunteer.</li> </ul>
Environment	<ul> <li>Increase of material recycling</li> <li>Include e-waste in our recycling process</li> <li>DANAOS SHIPPING long-term project of inventory of hazardous materials is in progress aiming to cover 20% of IHM for the total fleet by the end of 2018</li> <li>To preserve the "O" DG cargo accident concept.</li> <li>DANAOS SHIPPING aims to preserve the good records from the implementation of the Ballast Water Management Plan and by adopting new technology, improve the environmental footprint contributing towards a cleaner Marine environment.</li> </ul>
Marketplace	85% (from 70%) of our major suppliers and more than 70% (50%) of our medium and small suppliers to been characterized as "green suppliers" through the assessment of relevant certifications they hold     Improving procurement policies and procedures, all key elements which contribute to responsible practices. Special attention to the extensive use of environmentally responsible vendors



## Sustainable Development Goals

At DANAOS SHIPPING we have adopted the United Nations Agenda 2030, as expressed in the form of the Sustainable Development Goals for 2030. It is our decision to actively contribute to their achievement, through the promotion of environmental protection, health and safety and innovation.

We have made it our priority to contribute towards the Goals (SDGs) that are directly linked to our activities and all issues that are material to DANAOS, as well as those that are considered Sector challenges. Here below you can find a list that links our material issues and initiatives with the Sustainable Development Goals that are closely linked with our activities and operations.

SDG	ISSUE	OUR RESPONSE – REFERENCE
3 GOOD HEALTH AND WELL-BEING	<ul><li>Emergency Preparedness</li><li>Occupational Health and Safety</li></ul>	Our Employees
4 QUALITY EDUCATION	•Training & Education	Our Employees
5 GENDER EQUALITY	•Employment	Our Employees
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	•Service Quality	Responsibility for our Clients
13 CLIMATE ACTION	•Energy Emissions	Operations and Environmental Protection
14 LIFE BELOW WATER	Spills     Audits, Inspections, Surveys	Operations and Environmental Protection
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Anti-corruption     Environmental Compliance	Operations and Environmental Protection Responsibility for our Clients



### **GRI Index**

The present Corporate Responsibility Report of DANAOS SHIPPING is the Company's second attempt to communicate its sustainability performance, and covers our activities during 2017. It was evaluated by the Centre for Sustainability and Excellence (CSE) according to the reporting guidelines of GRI STANDARDS and was verified as an "in-accordance core" GRI Standards Report.

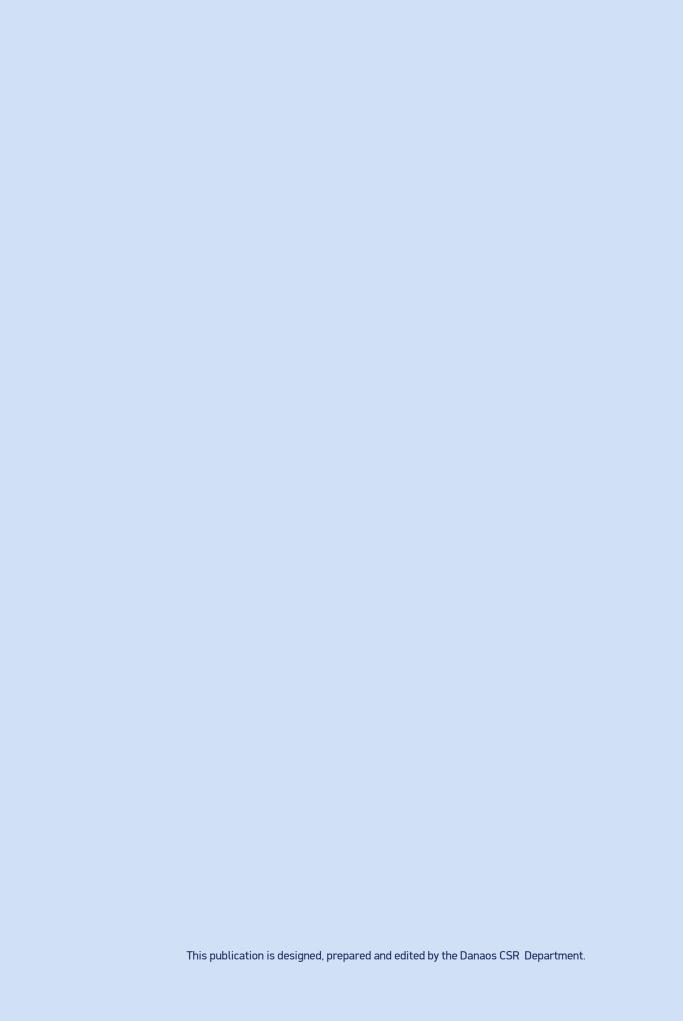
GRI STANDARDS	DISCLOSURE TITLE	REPORTING REQUIREMENTS
NUMBER		
	General Disclosures	
CDI 102 1	Company Profile	About the Commons
GRI 102-1	Name of the organization	About the Company
GRI 102-2	Activities, brands, products, and services	About the Company
GRI 102-3	Location of headquarters	3, Christaki Kombou Str., 3011, Limassol, Cyprus
		14, Akti Kondyli Str., 18545, Piraeus, Greece
GRI 102-4	Location of operations	About the Company
GRI 102-5	Ownership and legal form	Corporate Governance
GRI 102-6	Markets served	About the Company
GRI 102-7	Scale of the organization	About the Company
GRI 102-8	Information on employees and other workers	Our Employees
GRI 102-9	Supply chain	Responsibility for our Clients
GRI 102-10	Significant changes to the organization and its supply chain	No significant changes during the reporting period
GRI 102-11	Precautionary Principle or approach	About the Company
GRI 102-12	External initiatives	About the Company
		Community Engagement Strategy
GRI 102-13	Membership of associations	About the Company
Strategy		
GRI 102-14	Statement from senior decision-maker	Letter for the President and CEO
Ethics and Integrity		
GRI 102-16	Values, principles, standards, and norms of behavior	About the Company
Governance		
GRI 102-18	Governance structure	Corporate Governance



GRI STANDARDS	DISCLOSURE TITLE	REPORTING REQUIREMENTS
NUMBER	Stakeholder Engagement	
GRI 102-40	Stakeholder Engagement	Stakeholders
	List of stakeholder groups	+
GRI 102-41	Collective bargaining agreements	Our Employees
GRI 102-42	Identifying and selecting stakeholders	Stakeholders
GRI 102-43	Approach to stakeholder engagement	Stakeholders
GRI 102-44	Key topics and concerns raised	Stakeholders
	Report Profile	
GRI 102-45	Entities included in the consolidated financial statements	About the Company
GRI 102-46	Defining report content and topic Boundaries	Materiality Assessment
GRI 102-47	List of material topics	Materiality Assessment
GRI 102-48	Restatements of information	There are no restatements of information between this and the previous report
GRI 102-49	Changes in reporting	For the present report we conducted a materiality analysis. For issues that were included in this and the previous report there were no changes in their boundaries
GRI 102-50	Reporting period	Sustainability Report 2017
GRI 102-51	Date of most recent report	2016
GRI 102-52	Reporting cycle	Annual
GRI 102-53	Contact point for questions regarding the report	Sustainability Report 2017
GRI 102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option
GRI 102-55	GRI content index	GRI Index
GRI 102-56	External assurance	We have not sought external assurance for our sustainability report

GRI STANDARDS	DISCLOSURE TITLE	REPORTING REQUIREMENTS
NUMBER	Specific Disclosures	
Specific Disclosures		
Anti-corrupti	Economy	
GRI 103	Management Approach	Anti-corruption
GRI 205-3	Confirmed incidents of corruption and actions taken	Anti-corruption
OKI 203-3	Environment	And-corruption
Effluents and		
GRI 103	Management Approach	Waste and Spills
GRI 306-3	Significant Spills	Waste and Spills
Environmenta		
GRI 103	Management Approach	Operations and Environmental Protection
GRI 307-1	Non-compliance with environmental laws and regulations	Compliance with Environmental Laws and Regulations
	Employees- Society	
GRI 401	Employment	
GRI 103	Management Approach	Our Employees
GRI 401-1	New employee hires and employee turnover	Our Employees
Labor/ Manag	gement Relations	
GRI 103	Management Approach	Our Employees
GRI 402-1	Minimum notice periods regarding operational changes	Our Employees
Training and Education		
GRI 103	Management Approach	Training and Development
GRI 404-1	Average hours for training per year per employee	Training and Development
GRI 404-2	Programs for upgrading employee skills and transition assistance programs	Training and Development









#### World-Class Shipping, Leading-Edge Expertise

59 Ships

197 Staff Ashore

1284 Crew Onboard

1972 Year of Establishment

99% Fleet Utilization

0.6 **PSC Def Ratio** 

213

431 Trained Seafarers Training hours in Greece in Greece (2017)

2251 Trained Seafarers in Branches (2017)

Training hours in Branches (2017)

520

Seminar hours in 2017

Bridge Simulator Training Hours 2017

Seminar Attendances for Employees (2017)