A GUIDE TO MEETING KEY REQUIREMENTS OF

MLC-2006

Communications | Entertainment | Training | Telemedicine

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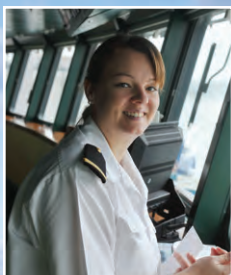
ABOUT THE AUTHOR

KVH Industries is the world's leading provider of mobile satellite communications and television antenna systems. Serving maritime and military customers since 1982, KVH's onboard terminals offer unmatched performance in all sea and weather conditions. KVH provides 24/7/365 global support for its mini-VSAT Broadband products, and is a publicly traded company (NASDAQ: KVHI). The KVH Media Group (formerly Headland Media) is the maritime industry's leading provider of rights-approved news, sports, music, and movies, as well as the Walport training video series. KVH is based in Middletown, RI, with facilities in Illinois, Denmark, Norway, the UK, Singapore, the Philippines, India, and Japan.

KVH

INTRODUCTION TO MLC-2006:
A Global Standard for Improved Lives at Sea

Seafarers and Vessels Covered by MLC-2006

Seafarers, defined as "all persons who are employed or are engaged or work in any capacity onboard a ship to which the Convention applies" are covered by MLC-2006. The Convention applies to all ships, whether publicly or privately owned, ordinarily engaged in commercial activities, except:

- ships that navigate exclusively in inland waters
- ships engaged in fishing or in similar pursuits
- ships of traditional build such as dhows and junks
- warships or naval auxiliaries

Enforcement of MLC-2006

To ensure compliance, MLC-2006 sets two major ways that vessels are held accountable for meeting regulations:

1. Flag State Requirements – A state must ensure that MLC-2006 rules are being implemented on the ships that fly its flag by conducting an inspection and issuing a Certificate of Maritime Compliance. The ship must carry a valid certificate at all times.

2. Port State Inspections – The inspection in port depends on whether a Certificate of Maritime Compliance is present on a ship; if present, compliance is assumed, and inspections only take place if there are indications of non-compliance. For ships with no certificate, inspections are much more detailed, making the Convention indirectly valid for ships of non-member countries if they plan to call in ports of a member state.

Meeting MLC-2006 Key Crew Welfare Requirements via Broadband Connectivity

Innovations in maritime satellite communications technology are making broadband connectivity one of the most important resources on a ship today, and this improved connectivity in turn can help maritime operators with MLC-2006 compliance. This guide explores three key requirements of MLC-2006 that maritime operators can meet via broadband connectivity: enhanced access to communications, news, and entertainment; training; and telemedicine.

Sometimes referred to as the Seafarers' Bill of Rights, the Maritime Labour Convention (MLC) 2006 is an International Labour Organization (ILO) convention established to standardize decent working conditions for seafarers around the world and create conditions of fair competition among ship owners. MLC-2006's effective date of August 20, 2013, was seven years in the making: The standard was created in 2006, but there was a requirement that at least 30 member states (representing in total a third of the world's gross tonnage of ships) needed to approve it before it could go into effect. The Convention is significant for many reasons including the fact that MLC-2006 consolidates and updates 70 previously existing maritime labour standards that date from the past 80 years. A set of standards with international reach was especially important given the truly global nature of the maritime industry.

Crew Communications & Entertainment

REQUIREMENT

[relevant excerpts]

Regulation 3.1
Accommodation and Recreational Facilities[1]

Purpose: To ensure that seafarers have decent accommodation and recreational facilities onboard

Guideline B3.1.11 – Recreational facilities, mail and ship visit arrangements

4. Consideration should also be given to including the following facilities at no cost to the seafarer, where practicable:

   b. television viewing and the reception of radio broadcasts;

   c. showing of films, the stock of which should be adequate for the duration of the voyage and, where necessary, changed at reasonable intervals;

   f. a library containing vocational and other books, the stock of which should be adequate for the duration of the voyage and changed at reasonable intervals;

   h. electronic equipment such as a radio, television, video recorders, DVD/CD player, personal computer and software and cassette recorder/player;

   j. reasonable access to ship-to-shore telephone communications, and e-mail and Internet facilities, where available, with any charges for the use of these services being reasonable in amount.

photo courtesy of the International Labour Organization

PROBLEM

In today's digital world, broadband connectivity is central to social life, and younger seafarers in particular are socially dependent on modern communications services such as social media and e-mail. However, providing Internet access to meet crew members' increasing demand for broadband becomes problematic if bandwidth is not prioritized for operational use, not to mention the budgetary factors that must be considered.

In addition, access to entertainment onboard has typically been limited in variety. Although vessels can provide access to standard satellite television services when they are traveling close to shore in limited geographic areas, this access requires local subscriptions and unique equipment provided by satellite television service companies. There is no coverage when vessels are traveling 100 miles or more offshore. Currently, many crew members bring their personal copies of movie DVDs onboard for viewing, but this practice is illegal due to copyright laws requiring commercially-licensed content to be used on commercial vessels. MLC-2006 provides the first regulations with oversight and enforcement of these international copyright laws. International copyright enforcement organizations will be working with flag and port authorities to enforce existing laws, which might cause expensive fines and delays if ignored.

SOLUTION

Broadband connectivity provided by a vessel's satellite communications system is the gateway for offering Voice over Internet Protocol (VoIP) voice services, Internet café, e-mail, and many other forms of social media. This access enables crew members to stay in touch with family and friends every day they are at sea. A recent survey[2] found that while many seafarers have access to communications services most of the time they are onboard, only 13% have free Internet access. Providing affordable onboard Internet access to crew members for socializing and entertainment can also be used as a recruitment tool, enabling a maritime operator to better attract the best talent.

In addition, licensed news and entertainment content can be provided to crew members in a number of ways via broadband connectivity, including new IPTV services that broadcast affordable, licensed news, sports, television programs, and the latest feature movies to ships at sea.

Controlling and managing the access to communications and entertainment content are critical to preventing large unexpected bills for the ship owner, and an onboard network management system is the key. With network management, maritime operators can:

- Ensure operational connectivity is prioritized
- Easily control access to communications and entertainment services
- Establish VPN connections for secure operations
- Ensure web caching and other bandwidth efficiency tools are in use
- Address the Bring Your Own Device (BYOD)[3] trend, in which crew members bring their smart phones, iPads®, laptops and tablets and want to use them via Wi-Fi connectivity onboard
- Ensure ship owner is not liable for illegal content use onboard

Crew Training

photo courtesy of the International Labour Organization

REQUIREMENT

[relevant excerpts]

Regulation 1.3
Training and Qualifications[1]

Purpose: To ensure that seafarers are trained or qualified to carry out their duties onboard ship

1. Seafarers shall not work on a ship unless they are trained or certified as competent or otherwise qualified to perform their duties.

2. Seafarers shall not be permitted to work on a ship unless they have successfully completed training for personal safety onboard ship.

3. Training and certification in accordance with the mandatory instruments adopted by the International Maritime Organization shall be considered as meeting the requirements of paragraphs 1 and 2 of this Regulation.

Regulation 2.8
Career and Skill Development and Opportunities for Seafarers' Employment[1]

Purpose: To promote career and skill development and employment opportunities for seafarers

3. Each Member shall, after consulting the ship owners' and seafarers' organizations concerned, establish clear objectives for the vocational guidance, education and training of seafarers whose duties onboard ship primarily relate to the safe operation and navigation of the ship, including ongoing training.

PROBLEM

Providing seafarers access to the desired training material in the appropriate language at a convenient time and place can be difficult. Requirements change with new courses needed to meet specific situations or regulations. Commercial vessels today are often manned by multinational crews, making it impractical to keep up-to-date instructional materials in any physical format (DVDs, CDs, manuals) that would meet all the language requirements of crew members onboard.

SOLUTION

With broadband connectivity, maritime operations can provide modern, computer-based learning programs and offer anytime/anywhere access to exactly the content their crew members need. Whether it is certification for another level of seamanship or vessel-specific training, seafarers can continue to advance by taking online courses. Modern training methodology, including distance learning and web-based learning, is recommended in the International Maritime Organization's Standards of Training, Certification and Watchkeeping (STCW) for seafarers, as well. Maritime training courses offered online cover all aspects of seafaring, from engineering to navigation and more; with online learning, course content is typically available for six months to a year from the time the seafarer registers for the course.

Telemedicine

REQUIREMENT

[relevant excerpts]

Regulation 4.1
Medical Care Onboard Ship and Ashore[1]
Purpose: To protect the health of seafarers and ensure their prompt access to medical care onboard ship and ashore.

Standard A4.1 – Medical care onboard ship and ashore

3. Each Member shall adopt laws and regulations establishing requirements for onboard hospital and medical care facilities and equipment and training on ships that fly its flag.

4. National laws and regulations shall as a minimum provide for the following requirements:

   d. the competent authority shall ensure by a prearranged system that medical advice by radio or satellite communications to ships at sea, including specialist advice, is available 24 hours a day; medical advice, including the onward transmission of medical messages by radio or satellite communication between a ship and those ashore giving the advice, shall be available free of charge to all ships irrespective of the flag that they fly.

PROBLEM

Onboard injuries, heart-related issues, and other medical problems that arise while at sea may tax the capabilities of a ship's captain or medical officer. Vessels must be prepared for telemedicine consultations with shore-side doctors or specialists at a moment's notice, and the more detailed the exchange of information is, the better chances to successful treatment for the mariner. Although ships have used phone, fax, or marine radio for receiving remote medical advice for years, those types of communication have limits to how much information can be conveyed.

SOLUTION

For the best chances of successful medical treatment onboard, maritime operators rely on telemedicine consultations that can be conducted via computer or dedicated videoconference equipment, for which broadband connectivity is a key. For telemedicine videoconferencing, suggested transmission speeds are 384 Kbps for standard resolution video systems. Having the right onboard equipment and reliable connectivity can become a life-or-death situation.

KVH mini-VSAT Broadband –
End-to-end Solution to Quickly and Affordably Address the Key Requirements of MLC-2006

Maritime industry experts predict a significant rise in data usage quotas in order for maritime operations to meet MLC-2006 requirements, retain crew, and boost morale. Ship managers and operators already struggling with today's difficult economic climate worry about the additional costs – particularly if they are still facing the high airtime costs associated with legacy satellite communications systems. Innovations in maritime satellite communications technology that enable fast and affordable broadband connectivity can help maritime operators meet the new requirements – and improve vessel operations in key areas as well.

A simple, easy-to-deploy satellite communications system saves time and money, and a solution from one provider increases reliability and ease of use. The end-to-end solution from KVH includes the TracPhone VIP-series onboard terminals, the mini-VSAT Broadband service, and offers many advantages:

- **Small, affordable hardware is fast and easy to install:** TracPhone V3IP, V7IP, and V11IP are compact, fully stabilized onboard terminals utilizing ViaSat's ArcLight® spread spectrum technology, which mitigates adjacent satellite interference and permits significantly smaller antennas ideal for mobile applications. The TracPhone VIP terminals are at least 85% smaller in volume than comparable VSAT products, making installation fast and easy.

- **Unique C/Ku-band network provides redundant, fully global coverage:** The mini-VSAT Broadband network was launched in 2007 and has quickly grown to become the maritime industry's No. 1 VSAT service[4] providing fully global coverage – multiple Ku-band beams cover 90% of the world's shipping routes and three C-band beams provide total global coverage and back up the Ku-band service for vessels using the dual-mode TracPhone V11IP.

- **Robust network powered by readily available broadband service from the world's leading satellite owners:** A proven solution, the mini-VSAT Broadband network delivered 200 terabytes of data and 20 million minutes of voice calls in 2012, with 99.5% uptime. The network utilizes optimal commercial satellite capacity provided by such leading satellite operators as Intelsat, Eutelsat, Telesat, SES, and SKY Perfect JSAT.

In Space
Multiple interconnected satellite transponders deliver KVH's mini-VSAT Broadband service globally, covering all shipping routes, offshore oil fields, and fishing grounds

Onboard
Fully integrated solution manufactured and backed by KVH
- Antenna
- Modem
- Antenna Control Unit
- Network Manager

Corporate Offices
Secure connections from onboard network to onshore hubs for vessel-critical operations

Any Time, Any Place
KVH 24/7/365 Call Center
One-call resolution for any hardware or service issue, with remote diagnostics and local technical support at every major port on Earth

All VIP-series products include KVH's new **Integrated CommBox Modem** with IP-enabled antenna control unit, CommBox™ Network Manager, ArcLight spread spectrum modem, Voice over IP, Ethernet switch, and Wi-Fi capabilities, all in one compact 2U unit. Systems also feature a browser-based user interface and convenient iPhone app for system status, updates, and support.
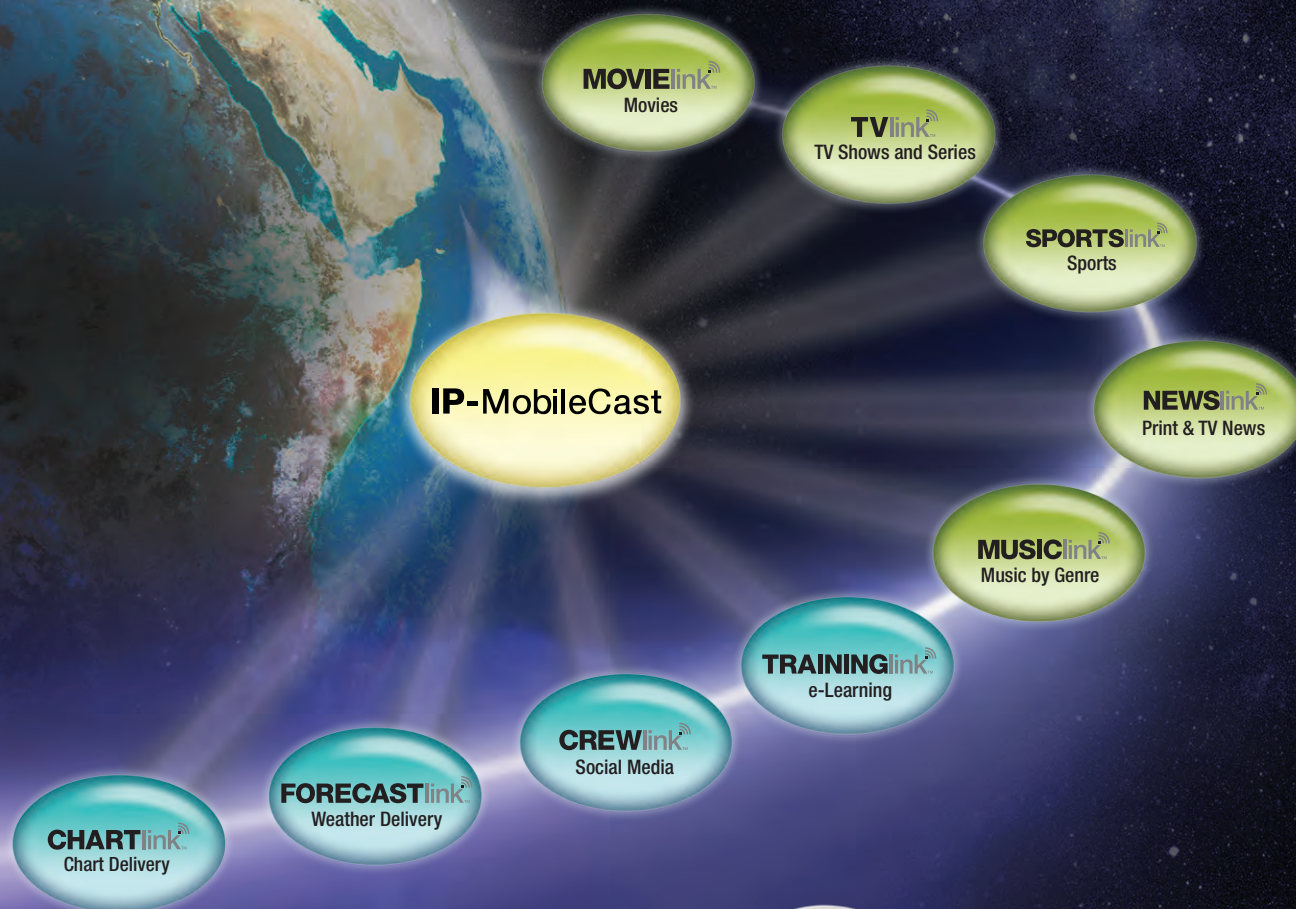
Standard TDMA VSAT dome

Standard C-band dome

The TracPhone onboard antennas, designed exclusively for mini-VSAT Broadband, are at least 85% smaller in volume than comparable TDMA VSAT products.

Introducing
IP-MobileCast™

Fast, affordable delivery of entertainment, news, sports, charts, and weather on top of your mini-VSAT Broadband connection.

MOVIElink
Movies

TVlink
TV Shows and Series

SPORTSlink
Sports

IP-MobileCast

NEWSlink
Print & TV News

MUSIClink
Music by Genre

TRAININGlink
e-Learning

CREWlink
Social Media

FORECASTlink
Weather Delivery

CHARTlink
Chart Delivery

ALL-NEW PRODUCT LINE!

New V_{IP}-series features powerful Integrated CommBox Modem (ICM) – the hub for IP-MobileCast content delivery services.

V11 IP
TRACPHONE
KVH

V7 IP
TRACPHONE
KVH

V3 IP
TRACPHONE
KVH

Provide Legal, Copyright-approved News, Sports, and Movie Entertainment Onboard

In addition to communicating with family and friends while onboard, crew members count on access to news, sports, and movie entertainment to keep morale high. Commercial vessels must abide by restrictions on the viewing of personal copies of movies and other copyrighted material, and therefore need a source of licensed content. KVH Media Group is the world's oldest and most capable supplier of licensed content for commercial applications, including NewsLink digital newspapers, Walport maritime training films, Hollywood movies, and more.

KVH Media Group

NL POLAND
NL AUTO BUZZ
YOUR CREWTOO
NL PUZZLE PAGE

América Latina Hoy
USA Times
Britain Today

Paramount
united international pictures
20th Century Fox
WB
BBC Worldwide
UNIVERSAL
DREAMWORKS
NEWS ON-BOARD SERVICES VIA SATELLITE
COLUMBIA

NewsLink

Walport

Update Files without Shipping DVDs and Physical Media around the Globe

Getting entertainment content for crew welfare to the vessel can be an expensive challenge if it requires physically shipping a DVD to foreign ports around the world, which is currently the practice among commercial vessels. KVH's IP-MobileCast service affordably broadcasts content to vessels eliminating the barrier of delivering large multimedia files by satellite to ships at sea. Advantages of IP-MobileCast include:

- Utilizes advanced multicasting technology, a technique for one-to-many communications over an IP infrastructure

- Does not use vessel's data plan and does not affect onboard speeds at all

- Delivers hundreds of gigabytes of content per month to the vessel with a separate datastream economically and automatically.

Secure the Crew's Communications and Internet Access from the Vessel's Network

Today, there is increased reliance on broadband connectivity for a vessel's day-to-day business, so the satellite communications solution must meet both operational and crew welfare needs. Onboard network management is the answer, and KVH's TracPhone Vip-series systems feature a built-in solution:

- **Onboard network manager standard part of every product:** the Integrated CommBox Modem (ICM) is a streamlined all-in-one belowdecks unit that is part of every Vip system. Unlike competing solutions with a full rack of components, the ICM contains an IP-enabled antenna control unit, CommBox Network Manager, ArcLight spread spectrum modem, Voice over IP (VoIP), Ethernet switch, and Wi-Fi capabilities, all in a 2U high unit.

- **Capability to set up isolated networks for ship, crew, and even passengers or vendors:** The ICM's built-in CommBox Network Manager facilitates a configuration where the ship network can be subdivided functionally into local area networks (LAN) – typically operations LAN, crew LAN, charter/lease/client LAN, and voice LAN, with priority always given to operations.

- **Immediate ability to add managed e-mail and other relevant CommBox features:** By simply activating a CommBox software bundle, the vessel's operators have all the capabilities of network management available, including dedicated e-mail applications and roaming crew accounts for e-mail and Internet access.

Control Your Costs with a Managed Solution

Providing Internet and phone services for crew members is a benefit that needs to be managed. In unmanaged maritime VSAT installations, it is very common to see crew use accounting for 85-90% of total consumption. Given that mobile traffic data worldwide grew 70% from 2011 to 2012, and the insatiable demand for mobile Internet access seems likely to continue unabated, maritime operators need a system for managing data usage onboard.

- **Internet Café and VoIP calling cards:** These services help the crew self-manage their use, by defining daily, weekly, or monthly megabyte allocations for each crew member. Heavy users can be limited or charged incrementally for the additional data they use above the company-financed portion.

Meet the Growing Demand for Future Connectivity

The need to deliver flexible and affordable crew communications is not going to diminish as new generations of seafarers accustomed to the "always-on" availability of Internet and voice communications make up more of the average crew. Planning today for the needs 10 years from now promises to reap rewards in terms of more successful crew recruitment and retention, as well as in business and operating efficiencies. KVH's mini-VSAT Broadband network and TracPhone Vip-series provide a future-ready solution. The network utilizes satellite capacity from the world's leading satellite owners, including Intelsat, Eutelsat, Telesat, SES, and SKY Perfect JSAT, who can provide abundant capacity as mini-VSAT Broadband's customer base continues to grow.

Whether the goal is to meet MLC-2006 requirements today or to anticipate an entire fleet's bandwidth demands for tomorrow, KVH's end-to-end solution provides the fast, affordable broadband connectivity every maritime operation needs. You can equip your vessels with fast, high quality, global VSAT service while offering managed connectivity and entertainment content to your crews at affordable prices. To discuss the possibilities, please contact our sales team.

Contact KVH for more information:

KVH Industries, Inc.
World Headquarters
Middletown, RI USA
Tel. +1 401.847.3327
E-mail: info@kvh.com

KVH Industries A/S
EMEA Headquarters
Kokkedal, Denmark
Tel. + 45 45 160 180
E-mail: info@emea.kvh.com

KVH Industries Pte Ltd.
Asia-Pacific Headquarters
Singapore 149544
Tel. +65 6513 0290
E-mail: info@apac.kvh.com

RESOURCES

Footnotes

[1]Maritime Labour Convention, 2006
[2]Crew Communications 2012, Stark Moore Macmillan
[3]OffComm News, Winter 2012
[4]Euroconsult Report, March 2012; NSR, May 2012; Comsys, December 2012

Additional Resources

International Labour Organization (ILO), www.ilo.org
Standards of Training, Certification & Watchkeeping Convention, www.stcw.org
International Maritime Organization (IMO), www.imo.org

photo courtesy of the International Labour Organization

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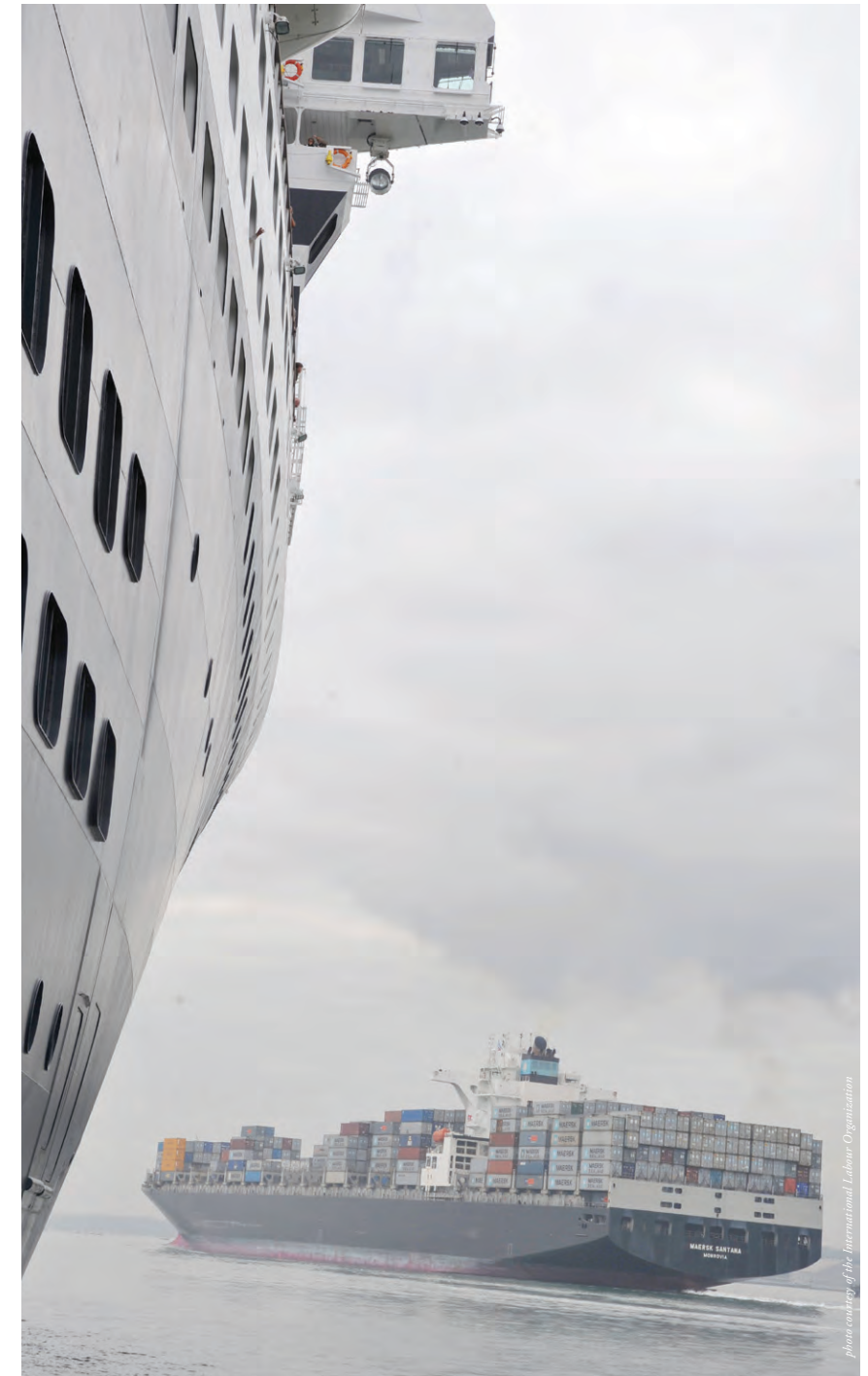
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