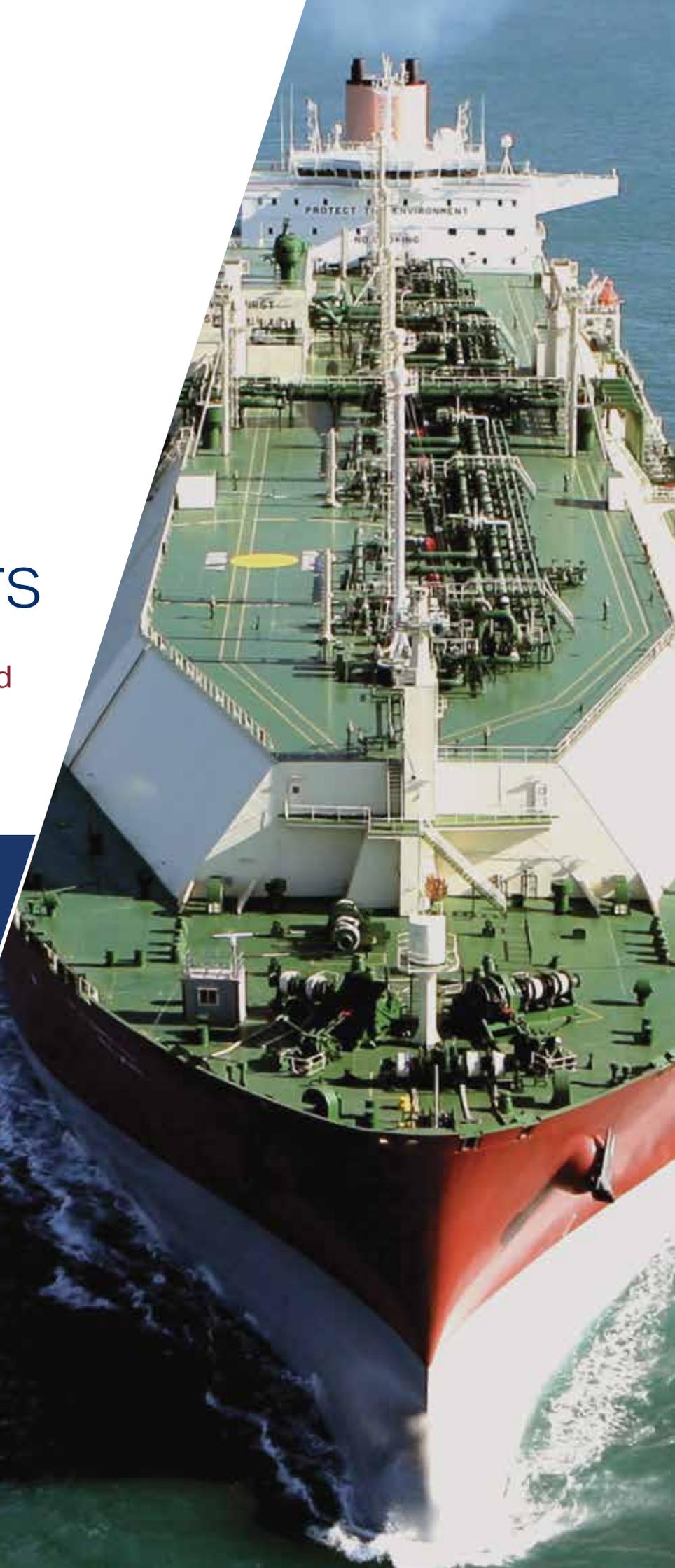


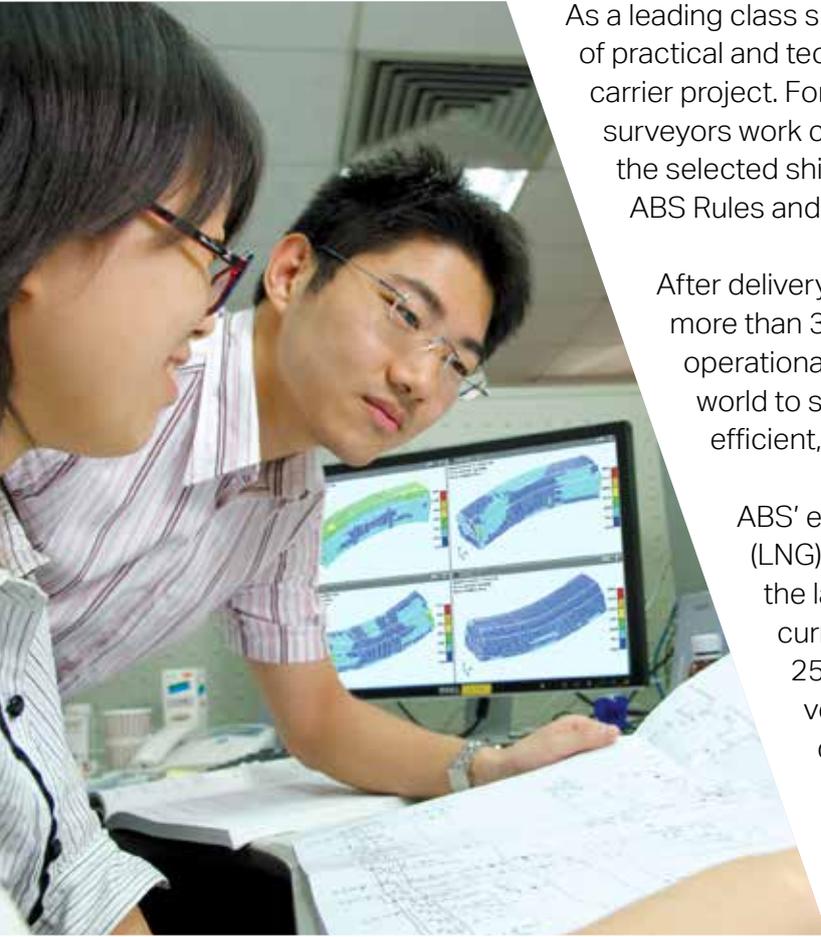


Gas Carriers

ABS: the Preferred
Choice for Class



Best in Class Service Delivery



As a leading class society, ABS is able to provide a wealth of practical and technical experience throughout a gas carrier project. For new construction, ABS engineers and surveyors work closely with an owner's technical staff and the selected shipyard to verify conformance with the ABS Rules and applicable regulatory standards.

After delivery and for existing vessels, a network of more than 3,000 ABS engineers, surveyors and operational support staff are located around the world to service the ABS-classed fleet and deliver efficient, practical and responsive assistance.

ABS' experience covers liquefied natural gas (LNG) carriers of all sizes up to and including the largest LNG carriers of 266,000 m³. ABS currently has the largest orderbook with over 25 percent of the new construction LNG vessels ordered and also classes nearly a quarter of the existing LNG carrier fleet.

In addition, ABS serves the liquefied petroleum gas (LPG) carrier market, classing both the smaller LPG ships up to the very large gas carrier (VLGCs). ABS has been at the forefront of setting standards for both LPG and LNG transportation and containment systems as well as providing guidance to the gas carrier sector for new and novel concepts.





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A History of Leadership

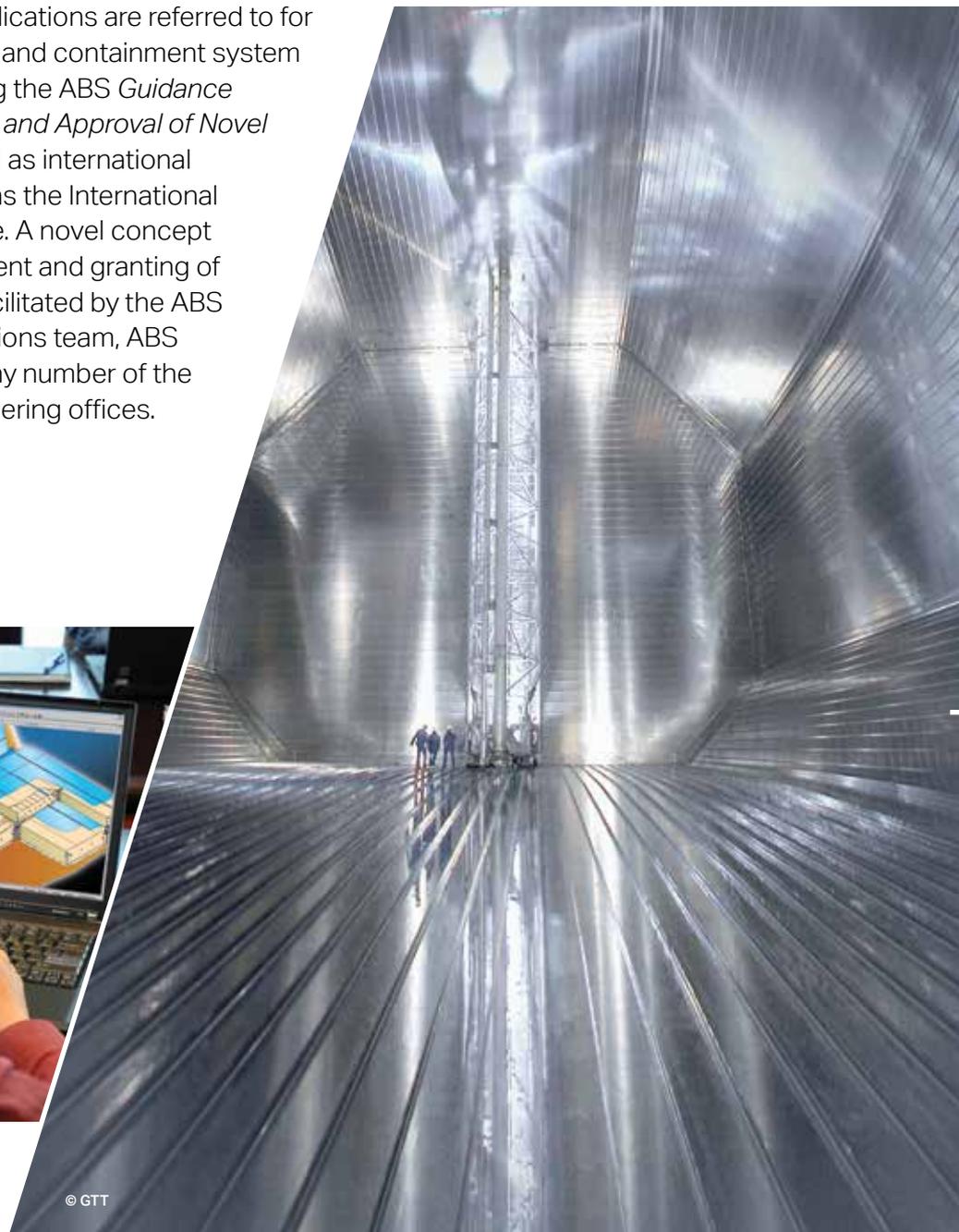
- Classed the world's first LNG carrier *M/V Methane Pioneer* in 1958
- Classed first ship with Gaz Transport (GTT) system, delivered 1969
- The only class society to class all types of containment systems employed in full-sized LNG carriers – membrane, moss, self-supporting prismatic Type B
- Classed first ice-classed LNG carrier
- The first class society to work with eight shipyards in six different countries while building their first LNG carriers
- Contributed to the development of the IMO Gas Code
- First class society to join the Society of International Gas Tanker and Terminal Operators (SIGTTO)

New & Novel Gas Concepts

In addition to traditional LNG and LPG fleets, industry looks to ABS to validate new and novel ship and gas containment transport designs. ABS has provided approval in principle (AIP) to numerous concepts for gas transport. ABS has approved several new containment systems and continues to work with shipyards and designers for new concepts that are being developed.

ABS' evaluation of a gas project is based on applicable Rules and regulations, seakeeping studies, structural strength and fatigue analysis and assessment of the containment system. Particularly for novel elements within a new gas project, the use of detailed risk analysis to verify compliance with accepted safety standards is often employed.

A number of publications are referred to for novel gas carrier and containment system designs including the ABS *Guidance Notes on Review and Approval of Novel Concepts* as well as international standards such as the International Gas Carrier Code. A novel concept design assessment and granting of an AIP can be facilitated by the ABS Global Gas Solutions team, ABS Technology or any number of the local ABS Engineering offices.



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A History of Leadership

ABS played a leading role among classification societies in contributing to the development of the IMO (then IMCO) Code for the construction and equipment of ships carrying liquefied gases in bulk (the International Gas Carrier Code). At the invitation of the Society of International Gas Tanker and Terminal Operators (SIGTTO), ABS was the first classification society to become an associate member. ABS is also a member of the Center for Liquefied Natural Gas and the Centre for Marine CNG.

The ABS Global Gas Solutions team brings together gas specialists with extensive knowledge of LNG floating structures and systems, gas fuel systems and equipment, gas carriers and regulatory and statutory requirements. Utilizing its global experience, the team also assists clients with specification reviews, risk and hazard assessments, new construction project management and training.

ABS Technology has a dedicated staff addressing technical issues surrounding the transport of gas, from guidance on propulsion issues for LNG and LPG carriers to undertaking some of the most advanced studies in the field of computational fluid dynamics (CFD). ABS remains at the forefront of technical solutions for gas transportation and also has developed several of the industries' comprehensive software packages for the development of gas carriers and containment designs.



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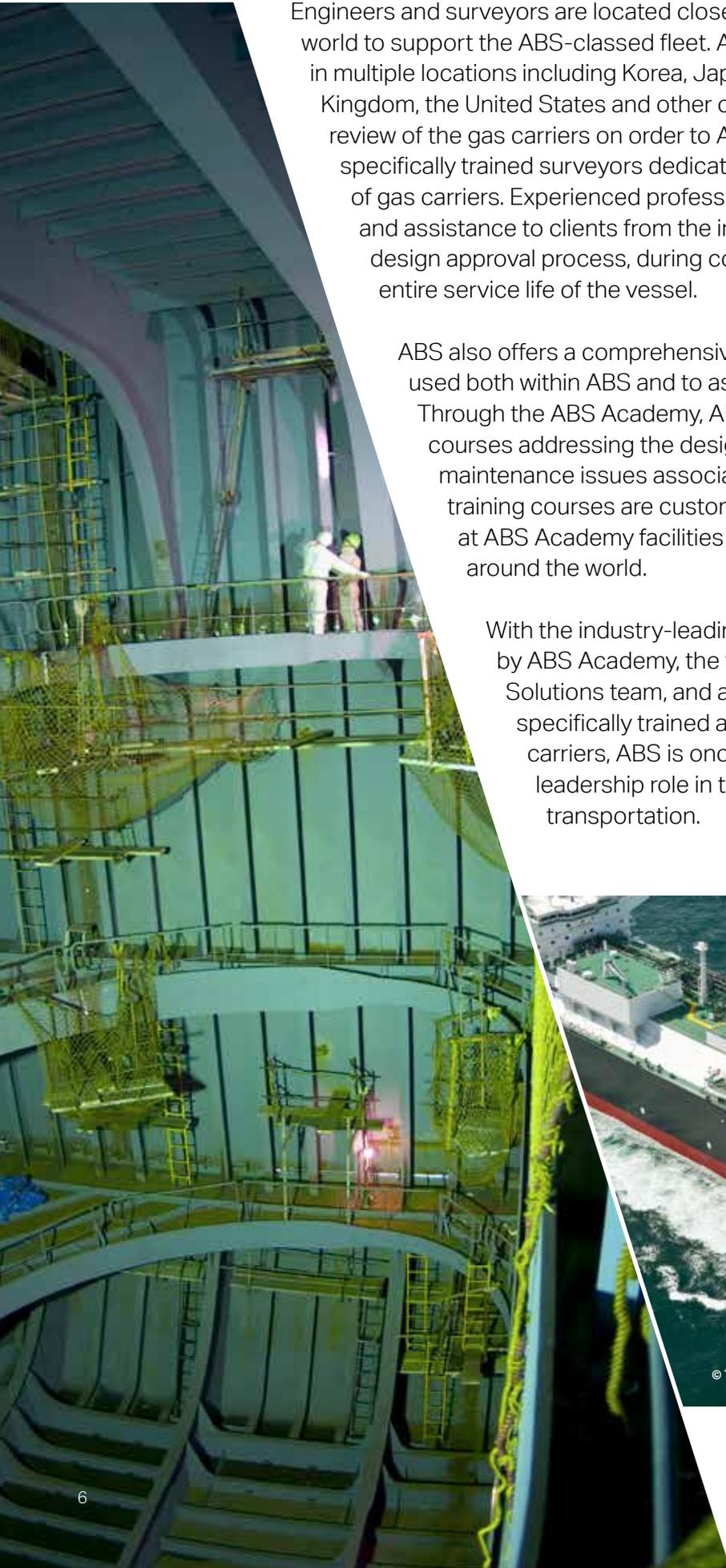


Global Reach, Local Touch

Engineers and surveyors are located close to client operations around the world to support the ABS-classed fleet. ABS maintains engineering offices in multiple locations including Korea, Japan, China, Greece, the United Kingdom, the United States and other centers to facilitate the design review of the gas carriers on order to ABS class as well as teams of specifically trained surveyors dedicated to the survey and inspection of gas carriers. Experienced professionals provide technical support and assistance to clients from the initial design concept, through the design approval process, during construction and throughout the entire service life of the vessel.

ABS also offers a comprehensive training program that is used both within ABS and to assist clients around the world. Through the ABS Academy, ABS offers specialized training courses addressing the design, construction and operational maintenance issues associated with gas carriers. These training courses are customizable and can be conducted at ABS Academy facilities or at client-specified locations around the world.

With the industry-leading training programs offered by ABS Academy, the formation of the Global Gas Solutions team, and a dedicated team of ABS surveyors specifically trained and qualified in surveying gas carriers, ABS is once again strengthening its leadership role in the classification of marine gas transportation.



© Teekay

A Multi-Level Approach to Service



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ABS provides a range of services associated with the issuance and maintenance of the classification and required statutory certificates as well as to assist an owner or operators throughout the operational life of the vessel by conducting periodic and damage surveys.

This also includes optional notations that may be used to demonstrate that the vessel has been designed or is being operated in accordance with standards beyond those required by mandatory classification and statutory certification.

ABS offers a range of additional products and services including elements as diverse as training, advanced structural analysis and fleet management software.





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ABS offers a comprehensive range of classification and related services to designers, builders, owners and operators of gas carriers. The principal elements of the ABS Gas Carrier program have been summarized. More complete details can be obtained from an account representative at the nearest ABS office.

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