

## **What's new in tankers**

### **A roundup of the latest developments in tanker design, construction, equipment and services**

#### **Great SCOT, a tanker design for Europe**

The series of six 8,000 dwt chemical/product tankers under construction at the Damen Galati yard in Romania to the so-called Safety Chemical Oil Tanker (SCOT 8000) design are on target for completion by the end of 2003. As of July, three of the ships were in service.

The design was originally laid down by the Lindenau GmbH shipyard in Kiel, Germany but the concept has been further developed to provide tankers with fully redundant propulsion systems (see report on Propulsion Systems elsewhere in this issue).

In progressing the design to provide charterers with what is claimed to be one of the safest tankers afloat, the shipowner Wappen Reederei in Hamburg has worked with the ships' classification society Germanischer Lloyd and engine builder MAN B&W to provide a ship that is not only safe but also cost-effective easy to operate, and one which provides a good working environment for seafarers.

The double-hull SCOT 8000 ships have two 1,800 kW MAN B&W main engines, each positioned in its own, independent engine room compartment, two propellers and two rudders. The arrangement ensures full engine and steering redundancy. Wappen Reederei is operating the ships in Northern Europe on a spot basis, and charterers have shown themselves pleased to be associated with such high-quality tonnage. Private investors have the opportunity to take an ownership stake in the newbuildings through investment fund manager Hamburg Hansa Shipping. Each vessel has quickly been subscribed following placement on the market.

The six ships are named after the German cities Hamburg, Berlin, Munchen, Dresden, Bremen and Leipzig in the style Wappen von Hamburg. The hulls have been designed with a life expectancy of 25 years.

#### **IMS teams up with Teekay for tanker lightering**

I M Skaugen ASA is to create a joint venture with Teekay Shipping Corp to expand its lightering business. Effective from October 1, Teekay is acquiring 50 per cent of Skaugen's wholly owned subsidiary, Skaugen PetroTrans (SPT).

SPT will continue to operate as an autonomous entity under the joint venture agreement with its own management and board of directors, but with the backing of Teekay, the world's largest owner and operator of mid-sized tankers.

SPT is the largest company engaged in ship-to-ship transfers of crude oil, and is primarily active in the US Gulf. SPT currently handles about 1.4 million barrels of oil a day, which equates to about 14 per cent of the US oil imports.

#### **Recognition for Prince William Sound ice detection**

The Pacific States/British Columbia Oil Spill Task Force has presented one of its four 2003 Legacy Awards for Oil Spill Prevention, Preparedness, and Response in recognition of the benefits accruing from the use of the Ice Detection Radar Project to protect oil tankers transiting Prince William Sound in Alaska. The award was made this summer to the Sound's Regional Citizens' Advisory Council (RCAC), the leader of the project.

Calving ice from the Columbia Glacier in upper Prince William Sound has been breaking off at an increasing rate, releasing icebergs into the shipping lanes approaching Valdez. These debris-laden, low-visibility icebergs pose an extreme all-season hazard for crude oil tankers which carry approximately 1 million barrels of oil a day through the Sound.

Ice was a causal factor in the Exxon Valdez oil spill in March 1989 and in 1994 caused over \$1 million in damage to the hull of the ballasted tanker Overseas Ohio. RCAC spearheaded efforts to address the iceberg risk by fostering cooperation amongst stakeholders and other concerned parties; raising cash; and contributing significant funds of its own to mount the project

Donated by the US Coast Guard, the ice radar is installed in facilities on Reef Island provided by Alyeska/SERVS. It became operational in December 2002, transmitting signals to both the SERVS duty office and the Coast Guard vessel traffic centre in Valdez where it is integrated into the Coast Guard's vessel traffic monitoring system.

The ice radar has proved its worth on numerous occasions, not least during the early morning hours of March 4, 2003 when it showed a heavy concentration of ice in the shipping lanes. The Coast Guard closed the waterway and two laden tankers were held at the Valdez loading terminal until the ice cleared. A tugboat skipper later confirmed that the shipping lanes were wall-to-wall ice.

### **ExxonMobil goes global with ISS**

Standard Tankers Bahamas Ltd (STB), an affiliate of Exxon Mobil, has selected Inchcape Shipping Services (ISS) to act as ship agent for its fleet on a global basis. This agreement will add an estimated 10,000 port calls per year worldwide to the ISS portfolio, putting the company well on the way towards its objective of doubling the size of its port agency business by 2005. The ISS network of 200 offices currently handles 40,000 port calls a year.

"In what many will see as a significant development in the role of the marine agent, ISS has extended, rather than changed, the scope of the service offered, from simply managing port activities to assisting with voyage management," says Claus Hyldager, managing director global services at ISS.

Fulfilment of the service agreement with STB will be facilitated by the marine management system recently introduced by ISS. The agency claims that it is the first in the industry to provide live updates on all key operational and financial information throughout the duration of the voyage, including special alerts to highlight any variation from previously agreed performance parameters.

"After an analysis of various options, it was decided that ISS provided the best competitive solution for enhancing the global management of STB's port-related operations," said John Bree, manager, scheduling and dispatch for ExxonMobil. Earlier this year ISS signed a global hub agency agreement with Copenhagen Tankers which added a further 1,200 calls per annum to its port call volume. Copenhagen Tankers manages a fleet of 24 chemical tankers employed in various parcel trades throughout the world.

### **Ukraine ends discriminatory port charges**

The Ukrainian government has cancelled its port charging system under which ships flying non-favoured flags were charged much higher tonnage dues tariffs than ships flying favoured flags. As the result of a rulemaking introduced on July 17, 2003 tonnage dues are now the same for vessels of all flags visiting Ukrainian ports.

The previous system had the effect of discouraging owners of Aframax and Suezmax tankers registered under non-favoured flags from trading to the Ukraine's Black Sea ports. It is estimated that port costs for a typical 80,000 dwt tanker under a flag that was previously out of favour will be cut by as much as 70 per cent under the new non-discriminatory regime.

### **First UK escort tug simulator for Merseyside**

THE UK's first full active escort tug simulator is to be installed at the Birkenhead-based Lairdsie Maritime Centre on Merseyside. The Polaris system, manufactured

by Kongsberg Maritime Ship Systems AS, allows tug captains to learn how to escort large ships in a completely safe, simulated environment.

Polaris is an enhancement of Lairdside's 360° ship's bridge simulator, which is the only one of its kind in the UK. The £50,000 escort tug project is jointly funded by Shell UK Ltd, Svitzer Marine and Wirral Waterfront, a single regeneration budget initiative funded by the UK's North West Development Agency.

The Lairdside Polaris package encompasses a 120° full mission ship's bridge simulator fitted with Z-drive controllers and detailed tug models linked to two further bridge simulators. This will allow complete communication and interaction between the tug, pilot and ship team and will enable tug captains to rehearse active escort towage and berthing of oil tankers in total safety.

According to Lairdside, the new system will enable the centre to further develop its bridge team management training by creating a realistic experience for the captain of the tug, the port control centre and the ship's master and pilot. The addition of the tug bridge will allow simultaneous training of ship/pilot and tug personnel complete with ship/tug human interaction and teamwork factors.

The facility makes escort tug training, including emergency response manoeuvres, available in the UK for the first time. Previously, this type of simulator training has only been available in the Netherlands.

### **MOL primed to tackle cargo tank corrosion**

In a series of tests and trials Mitsui OSK Lines (MOL), JFE Steel and Chugoku Marine Paints have shown that shop primer, when used as anti-corrosion paint, is effective in preventing corrosion in the cargo tanks of double-hull very large crude carriers (VLCCs).

Although the oldest double-hull VLCCs are still less than 10 years old, it has been found that some tankers of this type have already suffered greater levels of pitting corrosion in cargo tank bottom plating than might normally be expected. It is thought that one contributory factor is the inability of the flat bottom plating to form the protective film of cargo oil usually present on the steel surfaces in the cargo tanks of single-hull tankers.

To address this problem, MOL has experimented with the use of shop primer as a rust-preventive paint in the cargo tanks of double-hull VLCCs. A paint composed mainly of zinc, shop primer is widely used in shipyards to prevent surface rust on steel plating.

The MOL programme entailed lining the cargo tanks of some double-hull VLCC newbuilding with a 15 micron thick shop primer, while leaving the cargo tanks uncoated in other tankers of this type. The cargo tank plating in all the tankers studied is 20 mm thick.

After 30 months about 50 pitting corrossions, of 4 to 7 mm depth, were found in each cargo tank lined with shop primer. In contrast, in the uncoated double-hull VLCC cargo tanks more than 1,000 pits were found. Some 60 months (five years) after delivery of these ships some 2,000 pits were discovered.

During the testing a sample bottom plate lined with primer was cut out and analysed by JFE Steel. The results showed that the shop primer had chemically transformed into a fine, hard coating of iron and zinc oxide. In addition, the thickness of the coating had increased from the original 15 microns to 50 microns (1,000 microns equals 1 mm).

Shop primer not only results in VLCC tanks with fewer and shallower pits than uncoated tanks, it may also be a more suitable lining than the more costly epoxy coating systems. This is because once the epoxy coating is mechanically damaged, the steel will rapidly corrode in that specific location. MOL has noted examples of deep pits where such breaches in the epoxy coating have occurred.

Pitting in the cargo tanks of double-hull VLCCs was the focus of a research project chaired by Professor Yasumitsu Tomita of Osaka University and in which major

shipping, shipbuilding and steel companies participated. Although the theoretical background of the corrosion mechanism was explained during a press conference in July 2002, concrete countermeasures have yet to be established.