

What's new in tankers?

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

Tempera, first double-acting tanker, arrives in Finland

Following her recent delivery to Fortum Shipping by Japan's Sumitomo shipyard, the 105,000 dwt double-acting tanker (DAT) *Tempera* has arrived in home waters and her crew is preparing to put the ship, with its unique icebreaking capabilities, through its paces this coming winter season.

Tempera, like her sistership *Mastera*, which is still under construction, has been built to the highest ice class - IA Super Ice Class - and is able to maintain a speed of 17 knots in open sea with her 16 MW propulsion plant. The two ships will be able to navigate throughout the Baltic Sea, including the northern part of the Gulf of Bothnia, irrespective of the season and independent of icebreaker support. The ships' normal icebreaking mode is a stern-first approach to the ice.

The DAT pair have been built at Sumitomo under license to Kvaerner Masa-Yards (KMY), the Finnish shipbuilding group which has carried out extensive research into icebreaking technology, including for merchant ships, over many years. KMY is the world leader in winter traffic technology, and more than 60 per cent of all the world's icebreakers have been built at the company's Helsinki yard. KMY's Arctic Technology Centre (MARC) is the only one of five such facilities worldwide which is privately owned.

In the early 1990s KMY developed Azipod, a new electrical propulsion system for icebreakers, in partnership with the Finnish Maritime Administration and ABB Industry of Finland. The first ships equipped with the new system were the 16,000 dwt tankers *Uikku* and *Lunni* owned by Fortum and operated by Nemarc Shipping. The two ships combined have achieved nearly 100,000 hours of operational experience, including several successful transits of the North East Passage in extremely harsh conditions.

Since then, the Azipod propulsion system has been installed on 47 ships, including five icebreakers and a number of cruise liners and offshore vessels. Calculations, test programmes and operational experience have shown that vessels with a podded drive are capable of breaking ice with a considerably higher efficiency, when moving backwards with the propeller first, than is possible in the conventional bow-first icebreaking mode.

This has led to the development by KMY of the DAT approach, in which the vessel travels back to front in the most difficult ice conditions. This allows the bow to be optimised for conventional bow-first navigation in open water. The concept, which has been granted a patent in several countries, enables considerably improved operating economies for vessels engaged in winter ice operations. It also allows a ship to obtain a higher ice class with a propulsion system power output that is considerably lower than a conventionally powered ship would require.

"We are actively seeking new applications for the DAT approach, including on ice-strengthened tankers and cargo ships," says Mr Jorma Eloranta, president and ceo at KMY. "In this respect the new Russian oil production projects in the Pechora Sea and Sakhalin hold particular promise."

Upgraded radar gauges from Skarpenord

Scana Skarpenord Langesund (SSL) has launched an upgraded version of its tank level radar which is claimed to be able to pinpoint ullage measurements to within ± 0.01 per cent of the true level. The new BM70MP device, which is a development of

its BM70/50 radar technology introduced in 1992, is the end-result of a two-year collaboration with Krohne of Germany.

"Previously, ullage accuracy below ± 20 mm could not be assured, whereas BM70MP provides accuracy down to ± 2 mm, or ± 0.01 per cent," says Hasse Hogner, sales manager at SSL. "In addition, a higher resolution A/D board, coupled with a new microprocessor and firmware, increases BM70MP's total measurement range by 15 metres, i.e. from 20 to 35 metres.

"The BM70MP FMCW radar utilises a high-precision microwave board and a linear sweep controller. Its stand-alone operation, ease of servicing and component replacement, and limited radar beam angle make it an optimal solution for crude oil and other types of tankers."

World Lightering Organisation underway

The World Lightering Organisation has been established as a dedicated 24-hour, single point of contact service to assist all parties involved in a casualty situation to make an immediate risk assessment and, where appropriate, carry out prompt lightering of tanker cargoes or ship bunkers. The initiative has been taken by Fender Care Marine, a leading lightering company, and has the support of similar firms worldwide.

WLO is based on the premise that lightering is a specialised skill and, where prompt lightering is required to prevent or minimise environmental damage, it is essential to have immediate access to the highest levels of expertise and the best possible equipment.

One phone call provides access to WLO's Level 1 response, which provides a direct link to the most appropriate of 17 operational ship-to-ship transfer bases worldwide. If these bases are remote from the casualty, then that same phone call will automatically access the Level 2 response, which provides relevant information from a series of databases covering available lightering equipment and expertise.

Numerous agreements are in place with regional companies offering deployment and local support facilities

It is estimated that emergency response ship lightering activities carried out by the WLO participant organisations since 1988 have prevented over 3.5 million tonnes of crude oil and derivative products from polluting the environment. Four such operations, involving a total of 574,612 tonnes of oil cargo saved, have been carried out to date in 2002.

BP Shipping takes on Task Assistant

BP Shipping has chosen Task Assistant to re-engineer its information systems in order to support a proposed doubling of its tanker fleet. Developed by Ulysses Systems, Task Assistant is being used by BP to integrate documentation, manage risk and implement new procedures resulting from recent group mergers and new regulatory requirements stemming from the implementation of the ISM Code, the STCW 95 Convention and the ILO 180 Convention.

"The task-driven architecture and intuitive user interface of Task Assistant, as well as its maritime pedigree and clear commercial, operational and implementation benefits, were the deciding factors when we chose this system," said Capt Martin Shaw of BP Shipping.

"Its flexibility has enabled Task Assistant to be tailored to meet our requirements across the entire BP Shipping operational and quality management system and to provide the infrastructure for continuous improvement for the full company fleet of oil and gas tankers."

Ulysses Systems points out that, because relevant information is available quickly, without lengthy searches through paper documents or filing systems, seagoing and

office staff always have ready access to procedural documents, manuals and historical information.

Record-breaking rudder for Cap Diamant

The 160,000 dwt Suezmax tanker Cap Diamant, recently delivered by Hyundai Heavy Industries to Greek owner Ceres Hellenic, has been fitted with the world's largest high-lift rudder. Supplied by Schilling Mariner, the rudder measures approximately 100 sq. m.

The master of the Viken Tankers AS-owned 151,000 dwt tanker Erviken, fitted with the next largest Schilling Mariner high-lift rudder, states "The performance of the Schilling rudder is excellent, with manoeuvrability and directional control far exceeding that which we would expect from a conventional rudder type.

"Even the pilots - in the Bosphorus Straits, Philadelphia, Rotterdam, Wilhelmshaven, Donges and Sture, to name but a few - have been satisfied with the vessel's performance. On one occasion, when engine trouble reduced our speed to one knot, we still managed to steer until we reached the safe anchorage area."

Hamworthy KSE, parent of Schilling Mariner, reports that further high-lift rudder contracts have just been signed with Golar-Nor Offshore for two Aframax shuttle tankers building at Samsung and with Ugland Nordic Shipping and Mowinckels Rederi AS for two Suezmax shuttle tankers.

HI-FOG total pump and engine room flooding

The new HI-FOG MT3 fire protection system provides a total flooding water mist for larger ship machinery and cargo pumproom spaces than is possible with their existing water mist systems.

"HI-FOG water mist systems have been shown to be a viable alternative to existing fire protection systems," points out Stefan Gordin, vice president of Marioff Corporation's Marine Division. "For example, one of the key benefits of HI-FOG MT3 is that it is harmless to humans and can be activated as soon as the fire is detected and while it is still in its infancy.

"In contrast, before a CO2 system is activated, the space must be evacuated, the ventilation shut off and all openings properly closed. This takes, on average, 20 minutes, during which time the fire can freely expand. Our water mist also has a cooling effect, another important benefit."

The MT3 system has been successfully tested to IMO requirements and has received type approval from the classification society Registro Italiano Navale (Rina). Other class approvals are expected in the near future.