Integration for safety

Quite aside from the impact of Erika and Prestige, and the attendant need to accelerate the phaseout of single-hull tankers, many sectors of the product tanker fleet are comprised of large percentages of ageing ships in need of replacement.
The combination of the accelerated phaseout and natural ship replacement programmes has created one of the largest ever product tanker newbuilding efforts ever seen. Two shipyards in Korea - STX Shipbuilding and Hyundai Mipo Yard - have benefited from this demand for new tonnage more than any others, but yards in Japan, China and Croatia have been quick to capitalise on this current surge of activity.
In addition, a number of orders for smaller coastal tankers for work in European waters have gone to shipbuilders in Romania. For the first such tankers, only the hulls were built in Romania and the fitting out work was completed by established shipbuilders in Northern Europe. Increasingly, however, Romania is handling the full construction of the ships.

Rule pressures

Following the sinking of the tanker Prestige, the member states of the European Union have agreed a faster phaseout schedule for the three categories of single-hull tankers than the recently amended international timetable given in Regulation 13G of the Marine Pollution (MARPOL) Convention. Furthermore, the EU states have proposed that Regulation 13G be further amended now to align with their requirements.
Under the new EU regime, Category 1, or pre-MARPOL, tankers are to be removed from service by 2005 (currently by 2007 under MARPOL Regulation 13G); Category 2 (MARPOL) tankers by 2010 (currently by 2015); and Category 3 (smaller MARPOL) tankers by 2010 (currently by 2015).
The EU member states have also called on IMO to introduce an immediate prohibition on the carriage of heavy oil by single-hull tankers over 600 dwt, as they have done. However, the EU has allowed a period of grace until 2008 for tankers of less than 5,000 dwt, as the bunkering barge and power station fuel distribution sectors would not have been able to cope with an immediate ban on the carriage of heavy oil in small single-hull vessels.
The EU proposals are currently under discussion at IMO and agreement on the extent to which these proposals will be embraced in MARPOL Regulation 13G is expected at an extraordinary meeting of IMO's Marine Environment Protection Committee (MEPC) in December 2003.
IMO believes that elements of the new EU regime are somewhat simplistic. In advance of the December meeting IMO delegations are carrying out further work on the definition of "heavy oil", and considering the possibility of some relaxations to the 2010 phaseout date for certain Category 2 and 3 tankers.

Fleet in profile

Braemar Seascope's research department has investigated the age profiles of various sectors of the tanker fleet to determine the extent to which ageing ships would need to be replaced in the normal course of events and, on top of that, the likely impact of the accelerated phaseout requirements.
The Braemar Seascope study, published this spring, also showed the state of the product tanker orderbook, on a sector-by-sector basis, as of April 2003.
The sectors of interest in terms of the product tanker trades are the Aframax tankers of 80-125,000 dwt, Panamax ships of 50-80,000 dwt, Handymax ships of 38-50,000 dwt and Handysize ships of 27-38,000 dwt.

Whereas virtually all Handymax and Handysize tankers are constructed to carry clean petroleum products (cpp), not all Aframax and Panamax tankers are built with that capability. Many Panamax tankers are designed as simple crude oil carriers although they have the ability, and are often used, to carry large parcels of dirty petroleum products (dpp) such as fuel oil.
In product tanker jargon, purpose-built Aframax cpp carriers are called long range 2 (LR 2) ships and Panamaxes LR 1s, while Handymaxes are known as medium range (MR) product tankers.

LR 2s and LR 1s
The Aframax was not a particularly popular size of tanker before the 1990s, so relatively few single-hull Aframaxes are in service. Over the past decade the demand for Aframaxes has grown, with such ships constructed both as regional crude oil carriers and LR 2 product tankers with coated tanks capable of carrying large quantities of cargo such as naphtha. The carriage of naphtha from the Middle East to Korea and Japan for use as a petrochemical feedstock has become an important trade for LR 2s in recent years.
Even in the 1990s the pace of Aframax ordering was modest. The end result is that newbuilding orders now stand at record levels, as owners seek to maintain the fleet supply/demand balance in the face of the growing requirement for Aframaxes. A record 79 Aframaxes are due for delivery this year, followed by 51 in 2004 and 28 in 2005. The previous busiest year for Aframaxes was 1999 when 47 were built.
The heyday for Panamax tanker newbuildings was the first half of the 1980s when 120 such ships were delivered. Because relatively few new ships have been built since then, and the number of double-hull Panamaxes is minimal, the Panamax fleet is an ageing one in need of modernisation.
This requirement is reflected in the surge of new orders placed since the start of the new decade. Ship construction work is advancing, with the result that 26 new Panamaxes will be delivered in 2003, 41 in 2004 and 27 in 2005. The combined total of 94 ships will inject a much-needed breath of life into the ageing Panamax fleet.

Handymax and Handysize
Impressive as the combined LR 2 and LR 1 orderbook is, it is exceeded by the 300 product tankers of the Handysize and Handymax sizes due for delivery between now and 2005. This orderbook is equivalent to about 30 per cent of the existing medium range fleet in tonnage terms. Such ships are primarily engaged in regional balancing trades, transporting the refined products needed to meet short-term and traditional shortfalls in particular areas.
The Handymax product tanker fleet is only now becoming a recognisable sector in its own right. Up until the mid-1990s, a product tanker of 45,000 dwt was deemed to be too large for the balancing trades. However, in the latter half of the 1990s, tying in with the introduction of double hulls, about 25 such ships a year were built on average.
Many owners turned to the larger MR tanker because it offered a greater degree of flexibility, especially when regional disruptions required the delivery of cpp cargoes from new sources located much farther away from the customer than the original supplier.
The popularity of Handymaxes has now mushroomed, creating the largest-ever orderbook for such ships. Some 71 Handymaxes are due for delivery in 2003, 73 in 2004 and 45 in 2005. The previous highest annual total of Handymax deliveries was 1996 when 35 were handed over.
The Handysize product tanker has traditionally been the workhorse of the fleet. The largest single burst of Handysize tanker construction was concentrated in the late 1970s and early 1980s, when an average of 25 such ships were delivered each year. This activity created overtonnaging in the sector, as the product trades stagnated for

many years. Handysize tanker deliveries have averaged only about 10 ships per annum ever since, even into the double hull era.

The resultant ageing fleet needs replenishing and, as is the case in many other tanker sectors, the Handysize orderbook is now at record levels. A total of 48 ships of approximately 35,000 dwt will be delivered in 2003, 38 in 2004 and 20 in 2005. These numbers would have been even higher, were it not for the fact that many owners have opted to go for the larger Handymax-size ships.

Ageing coasters

The profile of the coastal product tanker fleet, i.e. ships in the 3-10,000 dwt range engaged in regional feeder, or distribution, trades, is similar to that of the ageing Panamax and Handysize fleets.

Of the 1,000 or so tankers of this size in service, 600 are single-hull vessels. Approximately 160 such ships will not be able to continue to carry oil after the end of this year under the new legislation. The current orderbook, as it stands, will not be able to provide enough tonnage to replace the ships due to be removed from service over the next few years.

One positive factor is that the new coastal product tankers currently being built not only have much better cubic capacity/deadweight ratios than the older ships they are replacing, but also more sophisticated cargo-handling plant and propulsion systems. These arrangements ensure that the modern ship is much more efficient and cost-effective than its predecessor.

Keeping the balance

The task of balancing fleet supply and demand and ensuring that newbuilding delivery schedules align with single-hull tanker phaseout timetables poses a stiff challenge for product tanker owners in the years ahead.

The job would be difficult enough if it was just a case of securing available building berth space when competing with owners of other types of ship needing to order new tonnage. However, it is the need to weigh up the many vagaries of the product tanker trades, not least the pace of world economic recovery, seasonal demand fluctuations, the fortunes of alternative energy sources and the impact of global geopolitics, that complicate the decision-making process more than anything else.

Product tanker owners are an astute and pragmatic lot, however, who have built upon their experience to provide additional layers of flexibility in their service networks through pooling arrangements, acquisitions and innovative financing arrangements for their newbuildings.

They are showing themselves more than capable of meeting the challenges of the next few years with a renewed fleet that matches the steadily increasing demand for movements of refined products by sea.