

## **Wärtsilä goes big in China**

Dalian New Shipyard (DNS) in China's northeastern Liaoning province is currently building a series of 300,000 dwt tankers for National Iranian Tanker Company (NITC), and the five-ship order represents a number of important milestones for China. The vessels are the first very large crude carriers to be built in China and the \$400 million contract represents the largest order ever received by a Chinese shipyard, both in terms of tonnage and value.

NITC chose Wärtsilä's Sulzer 7RTA84T-B engines to power the ships, and because Wärtsilä's Chinese licensees were not yet in a position to build such large-bore, two-stroke diesel engines at the time the VLCCs were ordered, the only alternative was to go to a licensee outside China. As a result, HSD Engine Co in Korea is supplying the five main engines. The third ship in the series was delivered in July 2003 and the remaining pair are due for handover before the end of the year.

Besides the Sulzer 7RTA84T-B main engine, each ship is being provided with three Wärtsilä 9L20C auxiliary engines and a Lips four-bladed, fixed pitch propeller 10 metres in diameter.

### **VLCC-specific**

The Sulzer 7RTA84T-B slow-speed diesel engine is designed specifically for the economical propulsion of very large and ultra-large crude carriers. To enable oil tankers of approximately 300,000 dwt to maintain a service speed of 15.5 knots, the average installed power needed is around 27,000 kW (36,000 bhp).

Also, in order to provide an "optimum propulsion" installation that complies with the widely accepted MARPOL recommendations governing propeller diameter, the propeller speed would need to be in the 70-79 rpm range.

These were the principal criteria driving the development of the Sulzer 7RTA84T-B engine. When the unit was launched in May 1991, it did not take the tanker owners, shipyards and engine builders long to decide that the 7-cylinder version was the optimum configuration for VLCCs and ULCCs. The 7-cylinder model has continued to be the most popular amongst Japanese and Korean shipyards and engine builder licensees ever since, although 8 and 9-cylinder versions are sometimes chosen.

This led to the emergence of standard tanker designs with a Sulzer prime mover in both countries. For example, when NITC ordered its five N-class VLCCs at Daewoo in 1994, Sulzer 7RTA84T-B engines were chosen. The same model was then chosen when NITC ordered a further five VLCCs at Hyundai Heavy Industries in 1999.

Thus, when NITC ordered their five latest VLCCs at DNS, the Sulzer 7RTA84T-B main engine was the natural choice.

### **Established auxiliaries**

In the same vein the choice of Wärtsilä 9L20C auxiliary engines was not a difficult one for NITC. All three units on each ship have an output of 1,530 kW at 900 rpm, and a 1,765 kVA alternator to cope with climatic conditions in the Gulf. The units run on heavy fuel oil.

The principal design characteristics that Wärtsilä has sought to bring to these auxiliaries is high reliability and trouble-free operation at low operating cost. More than 2,700 such engines have been sold so far and these engines have now accumulated over 15 million running hours, making it one of the Finnish manufacturer's most successful marine engines.

The company has sold or contracted for more than 265 Wärtsilä L20 engines during the past five years. NITC alone accounts for about 60 of this number in their tankers. Fleet integration, crew familiarisation and uniformity are major factors when specifying engine room equipment for new ships.

**Youthful fleet**

NITC is currently drawing to the end of an ambitious fleet renewal programme which is providing the company with one of the youngest tanker fleets in the world. This five-year programme, which should be complete by the end of this year, encompasses five Aframax tankers, five Suezmax ships, 10 VLCCs and five 35,000 dwt product tankers.

The newbuildings have provided NITC with a tanker fleet with an average age of four years. Wärtsilä has supplied the engine room primary and auxiliary drivers for all the newbuildings.