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Ferry Good – MaK power for biggest-ever series of passenger ships

Hamburg, Germany – When the passenger ship “Gunung Dempo” was handed over to the Directorate General of Sea Transportation in June, she became number 24 in a series of similar passenger/ferry vessels built for Indonesia by Germany’s Meyer Werft since 1982. In fact, this has become the biggest series of ocean-going passenger ships ever built for a single operator. And MaK engines have been aboard all of these vessels from the very beginning.

The state-owned shipping company Pelajaran Nasional Indonesia (PELNI), established in 1952, operates a dense network of passenger and freight services from Jakarta and Surabaya to all the country’s major ports and islands. Back in the 80s, transportation experts from universities in Germany and Indonesia jointly developed the concept of a modern, inter-island ferry service, which was implemented step-by-step starting in 1982, with the support of German foreign aid and a tailored vessel construction program at Meyer Werft.

The first ship in the program, “Kerinci”, was delivered in 1983. The “Type 2000” design, for 2,000 passengers and of 14,000 GT, proved a big success and was followed by six repeat orders up to 1993. Two resiliently mounted MaK 6 M 601/601C marine engines on each vessel provide up to 6,600 kW at 425 rpm. A second, modified series of six similar ships was delivered up to 2002, starting with “Bukit Siguntang” in 1996. They are of 14,800 GT and have improved container transport capacity. Four of them were fitted with more powerful twin MaK 8 M 601 C engines, rated 8,800 kW at 425 rpm, developing service speeds of 22.4 knots.

In addition to the Type 2000 series, Meyer Werft also built nine smaller “Type 1000” ships between 1986 and 1995. These are of 5,700 or 6,000 GT and can accommodate up to 1,000 passengers. Starting with “Kelimutu”, the ships deploy twin MaK 6 M 453 B/453 C engines with up to 2,000 kW at 600 rpm, providing a service speed of 15 knots. An even smaller “Type 500” passenger ship design was developed as a joint venture project between Meyer Werft and the domestic P. T. Pal yard in Surabaya, Indonesia. Three units for 500 passengers each, starting with “Pangrango”, were built from 1996 to 1999. Power is provided by twin MaK 8 M 20 engines, rated 1,240 kW at 900 rpm, developing service speeds of 14 knots.

Following on from this already outstanding success involving 25 MaK-powered passenger ships for Indonesia, Meyer Werft delivered another two newbuildings in 2004 and 2008, this time propelled by most-modern MaK M 43 marine engines. The first, “Labobar”, was based on the Type 2000 design, but was bigger at 15,200 GT with almost 3,100 passengers. Twin 9 M 43 engines, rated 8,400 kW at 500 rpm, provide a service speed of 22.4 knots. In addition, 4x MaK 6 M 20 marine generator sets, rated 1,140 kW at 1,000 rpm, supply on-board electricity. When “Labobar” commenced service, some of the older Type 2000 vessels were on call for service with the Indonesian Navy. The most-recent newbuilding for PELNI, “Gunung Dempo”, has again been modified to carry less passengers (1,600) but more containers (98 TEU). This 14,000 GT vessel is 146.5 metres long, 32.4 metres wide and draws 5.9 metres. Twin MaK 6 M 43 engines with 6,000 kW each provide a service speed of 20 knots.

The resultant fleet of 27 ships deploys a total of 58 MaK marine engines, providing more than 250 MW of combined power and has to date logged a wealth of operating hours. Since 1982, MaK long-stroke propulsion philosophy has continuously proven its worth, even under the harshest weather conditions. PELNI vessels offer nationwide transport for Indonesia’s 230 million population and act as a vital national link. Because of mature ship design and efficient engine operation, fares can be kept low to allow virtually everybody to ride the ferry.

Alexander Kohse, Territory Sales Manager Germany, Caterpillar Marine Power Systems, Hamburg, said “PELNI has been a loyal MaK customer for more than 25 years, which makes the company an excellent example of the long-term customer relationship CMPS is striving for.

We are proud to contribute to sustainable day-by-day transport and development in Indonesia. And, together with our long-standing partner Meyer Werft, we are looking forward to future business with PELNI, based on our well-established MaK marine engine design.”

The use of MaK M 43 propulsion in PELNI’s most-recent newbuilding, “Gunung Dempo”, is just one example for the huge success this engine design has enjoyed in ocean-going passenger ships. While the delivery of “AIDAdiva” in 2005 was highlighting CMPS' successful entry to the large cruise ship sector, the reference list for cruise ships already totalled 66 M 43 C series engines of some 700 MW total output, in both in-line and Vee-type configurations.

Apart from leisure cruising, powering huge passenger ferries has been part of the MaK legacy for decades. Earlier this year, the last of three double-ended ro-pax ferries for BC Ferries of British Columbia, Canada, left Flensburger Schiffbau-Gesellschaft (FSG) in Flensburg, Germany, on its maiden voyage. Each of the ships has 4x MaK 8 M 32 C generator sets, rated 4,000 kW at 500 rpm, in a diesel-electric configuration. In late 2007, Aker Yards of Finland delivered two huge ferries to customers Tallink, Estonia, and Brittany Ferries, France.

The “Tallink Star” uses 4x MaK 12 M 43 C engines providing a total 48,000 kW and enabling an increased service speed of 27 knots. In contrast, Brittany Ferries’ “Cotentin” is optimised for trailer transport at more economical speeds of 23 knots, provided by 2x MaK 12 M 43 C engines with 24,000 kW. A repeat order to be named “Armorique” is due in 2009. In 2006, Tianjin Xingang Shipyard in China delivered the first of a series of ro-pax train ferries for service on the domestic Bohai Strait route. “Zhong Tie Bo Hai 1 Hao” is of 22,000 GT and is powered by 4x MaK 9 M 25 engines, rated 3,000 kW at 750 rpm.

“In the same way as with these ‘lighthouse projects’, shipyards throughout Europe and Asia rely on MaK power when it comes to designing ro-pax workhorses for meticulous operation on a tight schedule!”, said Alexander Kohse. “Virtually all major ferry companies consider MaK engines a valuable option for their newbuildings, many of whom like Indonesia’s PELNI,

Canada's BC Ferries and Germany's Scandlines operate, almost exclusively, MaK engines in their ro-pax fleets. Having the right product to hand, close business ties with leading international shipyards and numerous customer support solutions dedicated to ferry operators, CMPS is well-prepared to increase its share in this demanding market!"

Characters: 6,736

Pictures available on request:

- 1.) PELNI Gunung Dempo with 2x MaK 6 M 43 Marine Engines**
- 2.) PELNI Labobar with 2x MaK 9 M 43 Marine Engines**
- 3.) BC Ferries Coastal Celebration with 4x MaK 8 M 32 C Marine Engines**
- 4.) Tallink Star with 4x MaK 12 M 43 C Marine Engines Copyright Akeryards**
- 5.) Train Ferry Zhong Tie Bo Hai 1 Hao with 4x MaK 9 M 25 Marine Engines**

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Caterpillar Marine Power Systems, with headquarters in Hamburg, Germany, brings together all the sales and service activities for Cat and MaK branded marine products within Caterpillar Inc. This organization provides premier marine power solutions (high and medium speed with outputs from 11 kW to 16,000 kW) and customer service from a single source for the global ocean-going, commercial and pleasure craft markets. The Caterpillar Marine Power Systems sales and service network includes more than 2,100 dealer locations world-wide and is well positioned to support customers wherever they are.

More information is available at www.cat-marine.com or www.mak-global.com.

About Caterpillar

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