

CASE REEDEREI JÜNGERHANS: PULSE JET SYSTEM ENSURES STABLE PISTON RUNNING



By changing the existing cylinder pulse feed lubrication system on three of their vessels to a more efficient pulse jet lubrication system, the shipping company, Reederei Jüngerhans, now have reliable low load piston running operation with low cylinder oil consumption.

– We can now see that it was absolutely the right decision to make, says Olrik Wöhlert, Technical Superintendent at Jüngerhans Heavy Lift Fleet Service.

The German shipping company, Reederei Jüngerhans, is one of the leading providers of container and heavy lift vessels in Germany and Europe. The owner-managed family company was founded 120 years ago and is based in Haren (Ems). The shipping group currently owns 41 modern vessels (21 container vessels and 20 multi-purpose/heavy lift vessels). Jüngerhans have about 50 employees on shore and 700 officers and sailors on board their ships.

REDUCING CYLINDER OIL CONSUMPTION

Wärtsilä's electronically-controlled pulse lubricating system lowers cylinder oil feed rates, without compromising piston running reliability. The basic principle is to deliver metered quantities of pressurised cylinder lubricating oil, at precise timing, exactly into the piston ring package from where it is

evenly distributed around the circumference of the cylinder liner.

Each cylinder has a lubricating module with integrated monitoring electronics. Compared to traditional specific oil consumption, a pulse feed lubricating system will result in a 30-50% reduction of oil consumption. With the new Wärtsilä patented pulse jet principle, however, it is now possible to achieve an even better and more efficient utilization of the cylinder oil.

The Pulse Lubricating System can be fitted while a vessel is in commercial operation and is available for all Wärtsilä RTA and RT-flex engines.



“The pulse jet system gives clear operational cost savings compared to a traditional system.”

MAKING THE RIGHT DECISION

For Jüngerhans it is important that all of their vessels are fully utilised and economically operational. The heavy-lift vessels are three 153.8 metre long sister vessels named “ERIS J”, “RAN J”, and “SENDA J”, each equipped with a Wärtsilä 6RT-Flex50-B. These vessels operate on a worldwide charter.

The engines in the vessels had an original pulse feed lubrication system. Jüngerhans, however, experienced some piston running problems with this system, which led to changes of piston rings, cylinder liners and piston crowns. After detailed discussions with Wärtsilä Switzerland, the solution was to change to the newer pulse jet lubrication system.

– The decision was not an easy one to take because the installation requires several modifications and there is a certain amount of finance involved. Fortunately, none of our three heavy-lift vessels were out of service because of the modifications. We can now see that it was absolutely the right decision to make. Our problems are over after changing the system and we are very satisfied with the new one, says Olrik Wöhlert.

LESS WEAR AND OPERATIONAL SAVINGS

The installations of the pulse jet system were made over a two month period in the years 2012-2013. The actual work was done by Wärtsilä together with the ships’ crews, where service engineers from Wärtsilä mostly supervised and instructed the crew on the installation.



Challenges	Solution	Benefits
<ul style="list-style-type: none"> – Reducing unnecessary wear on cylinder liners and piston rings – Reducing the cylinder lubricating oil consumption 	<ul style="list-style-type: none"> – Changing the existing pulse feed lubricating system on the main engines of three vessels to a state-of-the-art pulse jet system 	<ul style="list-style-type: none"> – Reliable piston running at low load operation over longer periods – Improved maintenance friendliness – Improved component reliability – Lower cylinder oil consumption for the benefit of operational costs and the environment

– The performance from Wärtsilä’s side was perfect, praises Wöhlert.

Mr. Wöhlert says that all in all it was a very smooth installation; the only challenge was to get the cylinder liners to the vessels just on time. So far the experiences with the pulse jet lubrication system have been excellent.

– The problems that existed before have gone and there is no abnormal component wear on liners or piston rings, so the change was definitely the right thing to do.

With prices for cylinder oil in the range of 1,200 euros/tonne, operational cost savings can easily grow to more than 20,000 euros per year.

– With a traditional cylinder lubricating system you can experience operational savings. However, with the pulse jet lubrication you can easily come down to 0.8 g/kWh. So the pulse jet system gives

clear operational cost savings compared to a traditional system, says Wöhlert.

For Jüngerhans the pulse jet lubrication system has functioned as intended making any immediate need for post-support unnecessary.

– Communication between Jüngerhans and Wärtsilä still remains in place, however, so that we feel that the support is there if we need it. Thanks to this installation we have also built up very valuable personal relations with Wärtsilä’s service people. I would absolutely recommend changing to the pulse jet system. To those who are still running older engines with traditional specific oil consumption I would definitely recommend making a retrofit, concludes Olrik Wöhlert.