

THE DOXFORD ENGINE

FRIENDS'

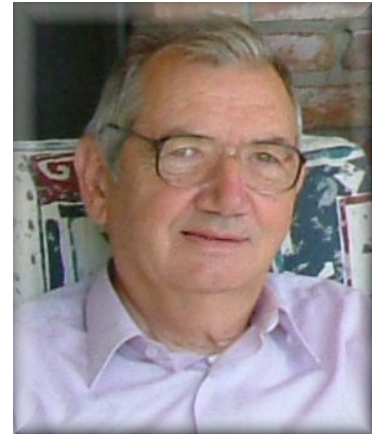
ASSOCIATION

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From Alfons Verheijden in Belgium:

[Alfons joined the Association after visiting our website. We asked him if he could write something of his engineering experiences with Doxford machinery, and he very kindly sent the following interesting account, which demonstrates the resourcefulness of marine engineers.]



Continuous Survey Machinery (CSM) of a scavenging air pump from a 6-cylinder Doxford Diesel engine

In the early sixties I was sailing as Chief Engineer on the mv *Loosdrecht* from Van Ommeren Shipping at Rotterdam. She was built in 1950 as *Langleecllyde* for the Medomsley Steam Ship Co. by the Blythswood Shipbuilding Co. of Glasgow (yard no. 94, IMO no. 5211707).

The engine room was equipped with a 6-cylinder Doxford Engine, 6,800 HP with the original common rail fuel oil system, injection valves mechanically operated, and rubber hoses for cooling the upper pistons. Three scavenging air pumps were attached to cylinders 4, 5 and 6.

The *Loosdrecht* was a common cargo ship sailing from Rotterdam via the Mediterranean ports to the Persian Gulf and the east coast of Africa and back to Europe. The ship was registered by Lloyd's Register of Shipping, and it was custom by our company that the Continuous Survey of Machinery (CSM) was done as much as possible by the engine room crew.

In one of the ports in the Persian Gulf, I believe it was Bahrain, we had several engine parts opened for CSM including scavenging pump No.4 of the main engine. From the scavenging pump we had only taken off the manhole door on the side for inspection, so in our opinion the surveyor could inspect the pump internally. These attached scavenging pumps on a Doxford had a large diameter; I do not remember the exact size, but I believe between 1.2 and 1.5 metres (4 to 5 feet).

The CSM was planned for 10 o'clock. The evening before, when I was not on board but on shore with the captain, the Lloyd's surveyor came on board just to check what he had to inspect the next day. The 2nd Engineer mentioned all the items, including of course also the scavenging pump. The surveyor asked if the top cover could be taken off and the piston taken out, because he had to

inspect the piston for cracks near the fixing on the piston rod. He said that in the past there had been cracks found on other pumps because these very thin pistons (plate pistons) are not only moving in the cylinder but also bending during operation. So he told the second that he would not agree with only the manhole door open!

When I came back from shore the second told me the story. After a while we had an idea, because taking off the top cover, with so many bolts, was a hell of a job. The next morning we started at six, turned the engine to put the scavenging pump piston to the bottom, took off the big crown nut, and moved the piston to the top position.

Then we made four wooden studs, 5 x 5 inches square and all of the same length, about 1½ feet. We put the studs under the piston and turned the piston rod to the bottom position. We waited for the Lloyd's surveyor and were curious what he should say. When he arrived he was a little surprised and had never seen this before, but he agreed!

So he inspected the piston with a crack finder on the bottom side and later also on top side after we had turned the piston rod back to the top, taken the wooden studs out and turned the piston to the bottom position so he could also inspect the piston on top.

No cracks were found, and the scavenging pump had passed the CSM.

A. Verheijden