

How I Outwitted an Engineering Professor

This incident happened while I was the 2nd Engineer on the Neptune Amber and the Chief Engineer was Gerzy Listewnik, an Associate Engineering Professor from the University of Szczecin, Poland.

We were at sea when suddenly the main engine stopped due to low jacket water pressure. The standby jacket water pump cut in but the pressure remained low. Everyone came down to investigate including the Chief Engineer. After some testing and even with 2 pumps running the jacket pressure stayed low. The Chief Engineer assumed a leak through the overhead by-pass gate valve. He felt that over the years the gate valve might be corroded or the valve might have dropped off from its spindle. He instructed us to open up the overhead gate valve to have a look. This overhead gate valve was huge, located about 12 feet above the floor plate and would need staging to open up the cover. I looked at this valve and found that it was almost new but since the Chief Engineer had given the order I told the crew to erect the staging first.

While they were getting the staging erected, I went up to the funnel housing to have a look. The jacket header tank was mounted in the funnel housing. On close examination, I discovered that the air breathing pipe was choked with a cotton rag. This pipe allowed water that might contain trapped air to "breathe" into a funnel. With the air pipe choked, the head pressure for the pump no longer existed and hence pressure could not build up. I guessed that the crew must have used a rag to cover the opened funnel to prevent water from spilling over onto the floor plate. Using a pair of tongs I managed to retrieve the cotton rag. I then re-started the jacket cooling pump and the pressure returned to normal. I then instructed the crew to remove the staging and to inform the bridge that the engine was ready to re-start and resume the voyage. The Chief Engineer rushed down, surprised, and asked me what happened. I did not tell him what I saw and did. I just said, 'Oh nothing wrong'.

He was not happy and kept on asking over the next few days what I actually did. I did not tell him till I signed off. That's how I outwitted a professor of engineering. Ha-ha!

Kan Seng Chut
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Seng Chut's account raised these 2 queries:

From Charles Foo:

Interesting, but I do not follow the logic. The jacket header tank is a fresh water system. The big bypass valve belongs to the sea water system. Low jacket pressure therefore has nothing to do with the bypass valve. The fresh water header tank is placed high up in the funnel so that the jacket water will not overflow the air pipe. From your description the fresh water pressure is too high rather than too low. That is why someone plugged the air pipe with a piece of cloth. Removing the piece of cloth allows the air to escape releasing the "air lock" of the fresh water system. If the jacket water pressure is low the first thing is to check the water level in the header tank and you would have noticed the plugged air pipe.

Vivek Desai asked for a more detail explanation.

To both queries, Seng Chut provided this reply:

I forgot to mention that the main engine was a RD Sulzer with cylinder inserts and each inserts had an air breather pipe leading up to the header tank. The 3 air pipes were bundled together to allow water/air to cascade into a funnel next to the header tank. The down line of the funnel was connected to the system to maintain head pressure. So when the funnel down line was choked by the rags there was no more head (from the header tank to the pump) so the low pressure cuts in and shut down the engine.

The bypass valve was for fresh water as the vessel was designed to trade into Canadian waters. She had a ice breaking propeller and a strong bow to cut into ice bound waters in winter with minus 20 and below C. She even had 2 double bottom tanks; port and starboard that could be used as cooling tanks should the sea suction freeze. However during NOL time we need not use them because the vessel was trading in tropical waters. I was briefed by the former English 2nd Engineer during handover that they had to partially bypass the jacket water from entering the coolers just to maintain the jacket water temperatures. So definitely this bypass valve is for fresh water and not sea water. I was on this vessel for almost a year and I personally have traced all piping from day one. Moreover the bypass valve flanges were painted light blue for fresh water and green for sea water.