Lloyd Werft Bremerhaven

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Kloster Cruise Limited
95, Merrick Way
Coral Gables, Fla. 33 134

USA

Attn.: Mr. Sopp

Your ref.: Your letter: Our ref.: KS/WB Bremerhaven, Jan. 25, 1991

Gentleman:

S/S "NORWAY"
Boilers and Burner Management

Please find enclosed a report by our Mr. Satow on the condition of the boilers and burner management, complete with Babcock's documentation for the repair and inspection of corrosion pittings inside the boiler drums.

We would recommend you to discuss the various problems concerned with our Mr. Satow.

Looking forward to receiving your reply in this matter, we also take this opportunity to thank you very much for the pleasant cooperation we have had with you.

Yours faithfully,

LLOYD WERFT BREMERHAVEN GmbH
Bremerhaven

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Lloyd Werft Bremerhaven

S/S NORWAY

Report on Work Performed to the Pneumatic System of the Burner Management during 1990's Drydock Refit in Bremerhaven

As agreed with the owner, all piston valves of boiler #23 were overhauled. These were in total

1 pc.	main quick-closing valve
10 pcs.	fuel oil quick-closing valves to burners
5 pcs.	steam blowdown valves
1 pc.	recirculation valve.

All other boilers had their piston valves overhauled only in cases where misfunction was found on cold check. For reasons of time this procedure was also applied to the Marton air control valves of the burner management. Check was also done to the movable components of all registers, such as flaps, igniters etc., with overhaul as found necessary.

On all boiler forced draft fans the suction control flap valves were overhauled and fitted with new leather joints.

The cold and hot checks as performed for the burner management throughout, as well as test of the safety equipment, did not reveal any condition to be objected to.

Some problems appeared upon setting of the boiler management and optimization of the fuel/air ratio. Boiler #24 had a leak in its 3-valve block which led to some incorrect measurement of the fuel oil rate; in the case of the other boilers it became noticeable that the lack of time had not allowed for correct settings of the minimum flow rates.

General

A full overhaul of all piston valves, along with the Marton air control valves, for all of the four boilers was done by Lloyd Werft in 1982. Thereafter, starting in 1985, the control devices for one of the boilers were overhauled at cyclic intervals which was last performed for boilers #22 and #24 in wet docking 1986.

In 1990, all four boilers showed a very poor general condition of their burner management, e.g. hammered Marton air control valves, frequently blocked fuel oil valves to burners, clogged and non-easily operable igniters, no indication of correct furnace & wind box pressures, etc.

It is therefore suggested to have an overhaul of the burner management control devices at intervals between the 3-annual shipyard refits, commencing with boilers #21 and #22, then followed by boilers #23 and #24, in order to re-enter into a regular overhaul cycle. Also a general boiler setting should be done in order to re-gain the possibility of arranging for fully automatical ignition from the boiler room or control room, without any manual intervention. This would include exact setting of the ignition fuel oil and air rates and satisfactory operation of the control devices. It is also required for such settings that the fuel flow meters work correctly.

Further recommendations would be to replace the triple valve blocks (most of them have been in service for more than 10 years) on the fuel and feedwater control circuits and on the Hartmann & Braun transmitters by new ones. These sensitive needle valves are likely to have small leakages due to contaminations which then cause excessive deviations in control or indication functions.

cont'd...

With reference to the trial installation of a Simovert actuator for one of the boiler blowers of boiler #24, it should be recommended to try the installation of smaller swirlers (kept available onboard from the test in 1984). The result of such test should be to run through all load stages of the boiler using one blower unit, with stable flame and five burners in operation.

Regarding the increased occurrence of corrosion pittings inside the boiler drums and Babcock's report on this matter, we hereby point out to you again that the preservation of the boilers in shutoff condition should be given utmost attention. It would be recommended to make a provision for transfer pumping of the boiler water from the smaller side drums to the upper drum. Maybe, there should also be discussions with Drew Chemical about the dosage of hydrazine in boiler water and condensate.

As boiler #24 was not checked for corrosion pittings, this should be done afterwards now. So a chip sample could be taken once more and examined under analysis.

SATOW

Bremerhaven, January 25, 1991

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