

July 22, 2015

M/V Hermes Leader Follow-Up Report

Client

Ray Car Carriers Ltd.

Stamco Ship Management Ltd., Piraeus, Greece

Purpose of installation

Investigation of HM technology's abilities to fully replace and take over the function and operation of the existing UV sterilizer.

Further to demonstrate that the HM system in addition to treating the fresh water against bacteria and any possible kind of bio growth also protects the calorifier and the internal piping system from settlement of lime scale, an ability that exceeds the capabilities of the existing UV sterilizer.

Systems installed

The HydroPath Marine sterilizing system consisting of two HM45 units that were installed on the fresh water unit prior to launching the vessel at Busan, South Korea.

One HM45 unit has the duty to treat the cold consumption water supplied to the entire accommodation. The second HM45 unit treats the separate hot water circulation line leading to the calorifier.

Date of installation

January 20, 2015, Busan, South Korea

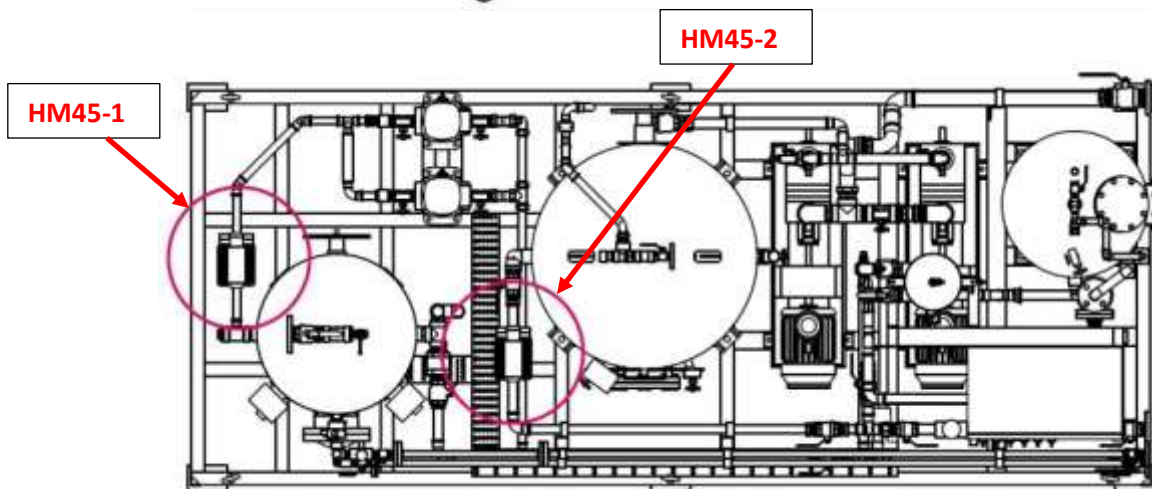
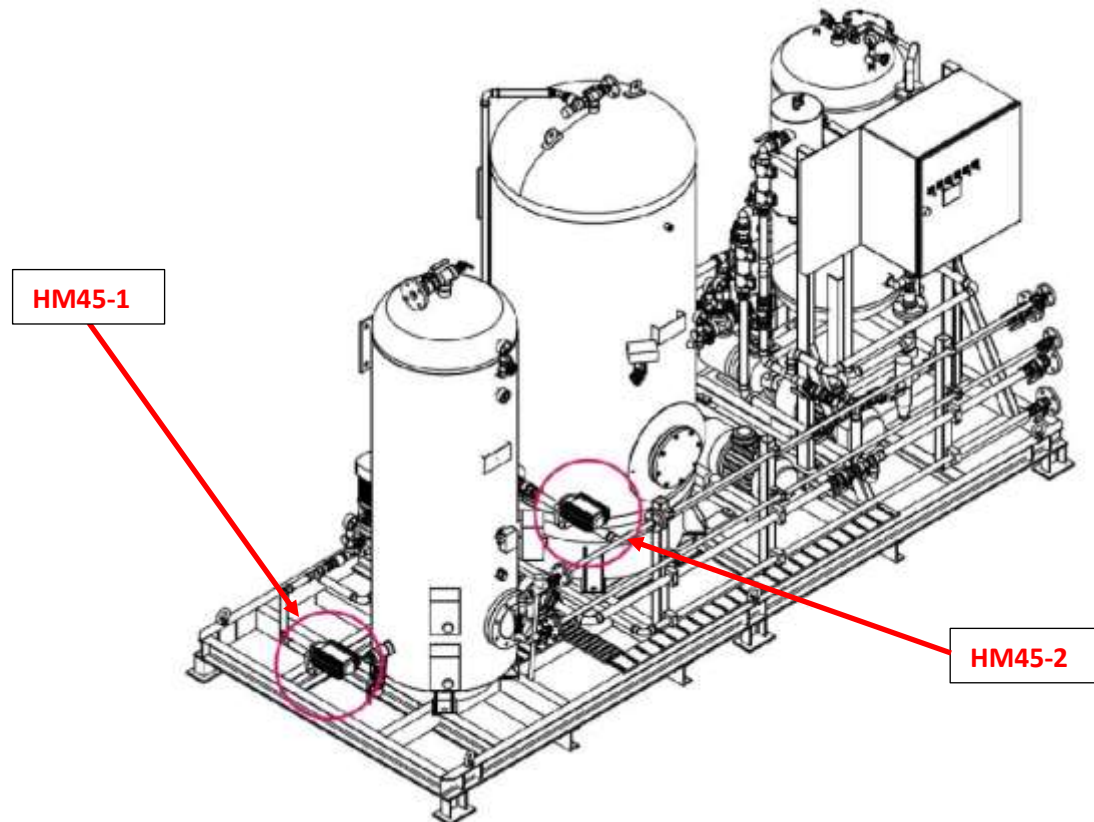


M/V Hermes Leader

Installation Location

Two HM45 units were installed on board the vessel:

First unit was installed on the cold water outlet to the accommodation and before the split to the calorifier (see the exact positioning in the below schedule marked "HM45-1"). The second unit was installed on the hot water return line to the calorifier (see the exact positioning in the below schedule marked "HM45-2").



HM45-2



HM45-1



The two HM45 installed

Findings

In order to determine the actual quality of the freshwater that is consumed in all areas of the vessel's accommodation the water samples for the various tests were taken directly from a water tap in the vessel's galley leaving no doubt whatsoever that the water reaching the consumer is sterilized.

First water test was carried out on the day of launching the vessel back in January 2015 showing no traces of bacteria.

Immediately after the samples for the above test were taken, and without any additional treatment, the HM45 systems were put to work.

Following up on the performance of the HM45 system additional water tests were carried out in April and June this year with results showing no traces of any of the bacteria it was tested for and consequently attesting continuous non-hazardous drinking water quality.

In conclusion:

Please see the below latest laboratory result.

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TEST REPORT NO: ASL-W056-15

Company Name : Sinoda Shipping Agency Pte Ltd
 Company Address : 10, Anson Road, #15-01/02/023, International Plaza, Singapore 079903
 Date Received : 15 June 2015 Date Reported : 17 June 2015
 Date Tested : 15 June 2015 to 17 June 2015
 Sample Description : One (1) sample said to be drinking water was labelled as M.V. Hermes Leader - Galley

On analysis, the following results were obtained:

Test	Method	Result	WHO Guidelines for Drinking Water Quality
Appearance	APHA 2110	Clear	-
Odour	SOP-WAT-002	Unobjectionable	Unobjectionable
pH value	APHA 4500-H B	7.8	-
Colour, Hazen Unit	HI 83099	<5	-
Turbidity, NTU	APHA 2130 B	0.26	5
Total Dissolved Solids, mg/l	APHA 2540 C	17	1000
Residual Chlorine (Cl ₂), mg/l	APHA 4500-Cl G	0.03	5
Total Alkalinity, mg CaCO ₃ /L	APHA 2320 B	15.7	-
Total Hardness, mg CaCO ₃ /L	APHA 3120 B	21.4	-
Fluoride (F), mg/L	HI 83099	<1	1.5
Chloride (Cl), mg/L	HI 83099	2.5	-
Nitrate (NO ₃), mg/L	HI 83099	<0.2	50
Phosphate (PO ₄), mg/L	HI 83099	<0.5	-
Sulphate (SO ₄), mg/L	HI 83099	<5	-
Iron (Fe), mg/l	APHA 3120 B	<0.01	-
Copper (Cu), mg/l	APHA 3120 B	<0.01	2
Silica (SiO ₂), mg/l	APHA 3120 B	0.13	-
Manganese (Mn), mg/l	APHA 3120 B	<0.01	-
Aluminum (Al), mg/l	APHA 3120 B	<0.10	-
Total Coliform (m-endo, 35C, 24hrs), cfu/100ml	APHA 9222 B	<1	-
E.Coli (EC-MUG, 44.5C, 24hs), cfu/100ml	APHA 9222 D & 9225	<1	<1

Remarks: The above results were tested as per sample submitted with reference to WHO Guidelines for Drinking Water Quality (2011), the results are physically, chemically satisfactory and bacteriologically satisfactory

Note: < Less than


 Roselle Monteloyola
 Laboratory Manager

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