

REPORT ON MACHINERY.

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REC'D NEW YORK *S. J. M. M. M.*
Date of writing Report Nov 10 1918 When handed in at Local Office 10 Port of SAN FRANCISCO, CALIFORNIA

No. in Survey held at Oakland, California Date, First Survey August 27th Last Survey November 7 1918
Reg. Book. (Number of Visits 10)

on the Twin Set Diesel Oil Engines #3500 and 3501 *Cap Horn*
Master Built at *North Vancouver* By whom built *William Lyall, Shipbuilding Co.* When built *1918*
Tons } Gross *1468.10*
 } Net *1183.94*

Engines made at Oakland, California By whom made Atlas Imperial Engine Co when made 1918

Boilers made at *Winnipeg* By whom made *Dominion Bridge Co.* when made 1918

Registered Horse Power 175 each Owners *Societe d'Armement, Van Heinekyck* Port belonging to *Vancouver, B.C.*

Nom. Horse Power as per Section 2836, 17 each Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines 2 Four cylinder 4 cycle Diesel Eng. No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 11.5" Length of Stroke 15" Revs. per minute 250 Dia. of Screw shaft as per rule 6.45" Material of screw shaft as fitted 6.5" *Steel*

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made water tight

in the propeller boss *Yes* If the liner is in more than one length are the joints burned If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush

Dia. of Tunnel shaft as per rule 6.5 7" Dia. of Crank shaft journals as per rule 6.625" Dia. of Crank pin 6.625" Size of Crank webs 8.5" x 3.75" Dia. of thrust shaft under

collars 6.5" Dia. of screw 6.6 Pitch of Screw No. of Blades 3 State whether moveable *Yes* Total surface

No. of Feed pumps 4 to Diameter of ditto 3" Stroke 4" Can one be overhauled while the other is at work

No. of Bilge pumps 4, Diameter of ditto 3" Stroke 4" Can one be overhauled while the other is at work *Yes* 16 B.H.P. distillate engine.

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room In Holds, &c.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Dates of examination of completion of fitting of Sea Connections of Stern Tube Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

OILERS, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers

Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to

each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

ATLAS IMPERIAL ENGINE CO. A. Wareskjold Manufacturer.

Dates of Survey while building: During progress of work in shops, Aug. 27 - Sept. 4-9-13-28, Oct. 2-11-22-29, Nov. 7. During erection on board vessel, Total No. of visits 10.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts: Cylinders Oct. 11, Sept. 28, Slides, Covers Oct. 29, Pistons Oct. 2, Rods, Connecting rods Oct. 29, Crank shaft Sept. 4, Thrust shaft Sept. 28, Tunnel shafts, Screw shaft, Propeller, Stern tube, Steam pipes tested, Engine and boiler seatings, Engines holding down bolts, Completion of pumping arrangements, Boilers fixed, Engines tried under power Oct. 22 & Nov.

Main boiler safety valves adjusted, Thickness of adjusting washers, Material of Crank shaft steel, Identification Mark on Do., Material of Thrust shaft steel, Identification Mark on Do., Material of Tunnel shafts steel, Identification Marks on Do., Material of Screw shafts steel, Identification Marks on Do., Material of Steam Pipes, 2100# hydrostatic, Test pressure applied to air and spray bottles.

Is an installation fitted for burning oil fuel, Is the flash point of the oil to be used over 150°F., Have the requirements of Section 49 of the Rules been complied with, Is this machinery duplicate of a previous case, Yes, If so, state name of vessel 'Cap Nord'.

General Remarks (State quality of workmanship, opinions as to class, &c.)

This twin set of oil engines and Aux. 16 B.H.P. distillate engine with pumps, have been built under special survey of materials tested in accordance with the rules and the workmanship was found good throughout. On completion both engines and Aux. distillate engine were tried out under working conditions on the test stand and found satisfactory.

These engines have now been shipped to the Lyall Shipbuilding Co. of Vancouver B.C. for installation in the vessel and to complete the survey it remains to test same under various work conditions and spare gear as per Rules to be supplied and placed aboard. For identification the shafts were marked as follows:

Table with columns for Engine No. 3500 and Engine No. 3501, listing components like Crank, Thrust, and Comp. with their respective Lloyd's numbers and A.W.L. dates.

Table of fees: The amount of Entry Fee \$ 10.00, Special \$ 75.00, Donkey Boiler Fee £, Travelling Expenses (if any) £, Forging \$70.00.

Signature of M. Lawson, Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Assigned, See Ver. fe. rpt. No. 701



Certificate (if required) to be sent to: The Surveyors are requested not to write on or below the space for Committee's Minute.