

Rpt. 4.

REPORT ON MACHINERY.

No. 701.

THU.-6 MAR 1919

REC'D NEW YORK

Received at London Office

Date of writing Report 30-1-1919 When handed in at Local Office 31-1-1919 Port of Vancouver B.C.

No. in Survey held at Vancouver B.C. Date, First Survey Nov 1st 1918 Last Survey Jan 22nd 1919

Reg. Book. on the Twin Screw Auxiliary Wood Schooner, "Cap Horn" (Number of Visits 18) Tons Gross 1468.10 Net 1183.94

Master Not appointed Built at North Vancouver By whom built Lyalls Shipbuilding Co Ltd When built 1918

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

Brake Registered Horse Power 175 each Owners Societe D Armerment Van Heinechryck Port belonging to Vancouver B.C.

Nom. Horse Power as per Section 28 3647 each Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Description of Engines 2 Four cylinder 4 cycle Diesel Engines No. of Cylinders 8 No. of Cranks 8

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

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 3 lengths 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 tight fit If two

liners are fitted, is the shaft lapped or protected between the liners Yes Anti Corrosive paint Length of stern bush 24

Dia. of Tunnel shaft as per rule 6.57 as fitted 6.57 Dia. of Crank shaft journals as per rule 6.625 as fitted 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 66 Pitch of Screw 45 No. of Blades 3 State whether moveable No Total surface 1300 sq in.

No. of Bilge pumps 4 to each eng Diameter of ditto 3 Stroke 4 Can one be overhauled while the other is at work Yes Bilge pump connected to independent

No. of Donkey Engines 2 Sizes of Pumps 4 1/2 x 2 3/4 x 4 1/2 Can one be overhauled while the other is at work Yes Distillate Engine

In Engine Room 2 3" suction to manifold In Holds, &c. 1- 5 1/2 x 3 5/8

Donkey pump with 3" suction to bilge manifold connected to all bilge connections

No. of Bilge Injection 1 sizes 4 Connected to condenser, or to circulating pump 6 x 5 3/4 x 6 Is a separate Donkey Suction fitted in Engine room & size Yes 3"

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

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

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

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

What pipes are carried through the bunkers None How are they protected

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

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

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

Donkey BOILERS, &c. (Letter for record) Manufacturers of Steel Carnegie, Pittsburg

Total Heating Surface of Boilers 1070 Is Forced Draft fitted No No. and Description of Boilers One vertical donkey boiler

Working Pressure 125 lbs Tested by hydraulic pressure to 188 lbs Date of test 16-1-19 No. of Certificate 35

Can each boiler be worked separately Area of fire grate in boiler 23-2 No. and Description of Safety Valves to

boiler Twin Marine Area of each valve 3.2 Pressure to which they are adjusted 125 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4 1/2 Mean dia. of boilers 72 Length 120 Material of shell plates Steel

Thickness 1/2 Range of tensile strength 60,000 Are the shell plates welded or flanged flgd Descrip. of riveting: cir. seams SR 2 7/8 lap

long. seams S+DR Diameter of rivet holes in long. seams 16 Pitch of rivets 2 3/8 Lap of plates or width of butt straps 11/4 x 5 5/8

Per centages of strength of longitudinal joint rivets 96 Working pressure of shell by rules 140 Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in boiler 1- 5' x 5' Dia Material Steel Outside diameter 5'-5"

Length of plain part top 3'-6" Thickness of plates crown 5/8 Description of longitudinal joint D.R. Lap 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 Area 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

Area 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 2" Pitch of tubes 2 7/8 Material of tube plates Steel Thickness: Front 5/8 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 Steam dome: description of joint to shell % of strength of joint

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

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

W1523-0022

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

SPARE GEAR.

State the articles supplied:—Chrome nickel steel coupling bolts for bolting fly wheel to crank, Chrome nickel steel coupling bolts for bolting compressor shaft to crank shaft, Marine steel bolts for connecting intermediate shaft to thrust shaft.

Low pressure inlet & outlet valve interchangeable, Intermediate compressor valves, High stage compressor inlet valve with cages, HP outlet valves with cages, 1 cylinder cover complete for main engines with all valves, valve seat springs fitted, 1 cylinder head machined, tested, ground & fitted with studs ready to receive other parts, one exhaust valve with stem, 1 exhaust valve nut, 1 exhaust valve spring, 1 exhaust valve lashing, 1 inlet valve with stem, 1 inlet valve with nut & valve with spring, 1 spray valve, 1 piston, 1 connecting rod, main bearing bolts & nuts, 1 set piston rings for each engine, 1 set valves for daily fuel supply, 1 set pistons for fuel pump, 1 set valves for water circulating pump, 1 set valves for bilge pumps, 1 set valve for scavenger pump.

The foregoing is a correct description, for bilge pumps, 1 set valve for scavenger pump.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- }
{ During erection on board vessel -- }
Total No. of visits 15

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Yes

Dates of Examination of principal parts—Cylinders 9-12-18 Slides 9-12-18 Covers 9-12-18 Pistons 9-12-18 Rods 9-12-18

Connecting rods 9-12-18 Crank shaft 8-12-18 Thrust shaft 6-12-19 Tunnel shafts — Screw shaft 2-11-18 Propeller 2-11-18

Stern tube 1-11-18 Steam pipes tested 13-1-19 Engine and boiler seatings 20-12-18 Engines holding down bolts 6-1-19

Completion of pumping arrangements 20-12-18 Boilers fixed 18-12-18 Engines tried under steam 16-1-19

Completion of fitting sea connections 2-11-18 Stern tube 2-11-18 Screw shaft and propeller 2-11-18

Main boiler safety valves adjusted 16-1-19 Thickness of adjusting washers for 3/4 off 3/4

Material of Crank shaft Steel Identification Mark on Do. Engine #3500 44-215-8-18 Material of Thrust shaft Steel Identification Mark on Do. Engine #3501 44-215-8-18

Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts Steel Identification Marks on Do. 44-215-8-18

Material of Steam Pipes 2100 # Hydrostatic Test pressure applied to air & spray bottles.

Is an installation fitted for burning oil fuel no 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 Yes

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.)

The engines and boiler were installed under special survey and according to the rules. The vessel was tried under full power on light draft and attained the speed of 8 knots with revolutions at 250 per minute. There are six separate oil fuel tanks installed and these with all fittings were tested by water pressure to 15 feet above the tank tops. Tanks are fitted with metal lined trays below and all pipes fitted according to the Rules. A metal lined tray is fitted below the engines. The shaft struts were made according to the approved plans and tested by the Society's Surveyors. The intermediate & screw shafts were also tested by the Society's Surveyors. Two air bottles are supplied and these also were tested by the Society's Surveyors.

The machinery is eligible in my opinion to have the record of I.M.C 1-19 made in the Register Book in the case of this vessel.

(San Francisco Report No 2919 on the Engines, and Duluth Report No 28 on the Donkey Boiler is herewith attached.)

The amount of Entry Fee ... £ : : When applied for, Feb 6th 1919.
Special ... \$ 50 : :
Donkey Boiler Fee ... \$ 15 : :
Travelling Expenses (if any) £ : : When received, 10/10 1919

Committee's Minute
Assigned + L.M.C. 1-19 (Oil Engines)

James Murdoch
Engineer Surveyor to Lloyd's Register of Shipping
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