

## REPORT ON MACHINERY.

No. 845

Received at London Office

REC'D NEW YORK July 2, 1919.

Date of writing Report June 21 1919 When handed in at Local Office June 26 1919 Port of Seattle Wash. U.S.A

o. in Survey held at Seattle Date, First Survey Sept. 19 1918 Last Survey May 17 1919

Reg. Book.

ENTRY on the Nord Twin Screw S. TROLLTIND (Builders Yard No. 1)

(Number of Visits 13)

Gross 2174.6

Tons Net 1590.5

When built 1919

when made 1918-9

when made 1919

Makers. Chester Plaster &amp; Teilmann Built at Seattle

By whom built Elliott Bay Shipbuilding Co.

Engines made at Cleveland O.

By whom made Winton Engine Works.

Boilers made at Seattle

By whom made Seattle Boiler Works

Brake registered Horse Power 1000

Owners Anglo Norwegian Shipping Corp.

Port belonging to New York

om. Horse Power as per Section 28 142

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## HAWSERS AND WAGINES, &amp;c.—Description of Engines

Twin 4 Cycle SA Diesel

No. of Cylinders 8

Each

No. of Cranks 8

Material.

Fathoms.

Size.

Bore.

Stroke.

Diameter.

Length.

Pitch.

Diameter.

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the screw shaft fitted with a continuous liner the whole length of the stern tube Yes

the propeller boss Yes If the liner is in more than one length are the joints burned Yes

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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners liner continuous

Length of stern bush 27"

Diameter of Tunnel shaft as per rule None

Diameter of Crank shaft journals as per rule 7.597"

Diameter of Crank pin 8"

Size of Crank webs 11 x 4 1/2"

Diameter of thrust shaft under bars 7.75"

Diameter of screw 7.3"

Pitch of Screw 5.2"

No. of Blades 3

State whether moveable No

Total surface Each 14.25 sq

No. of Feed pumps None

Diameter of ditto -

Stroke -

Can one be overhauled while the other is at work

No. of Bilge pumps 1 Triplex

Diameter of ditto 3"

Stroke 4"

Can one be overhauled while the other is at work Yes

No. of Donkey pumps 1 Triplex

Sizes of Pumps 6" x 8"

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

In Holds, &amp;c. 3-3"

No. of Bilge Injections - sizes -

Connected to condenser, or to circulating pump -

Is a separate Donkey Suction fitted in Engine room &amp; 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 None

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 hatch 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

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 None

Is it fitted with a watertight door -

worked from -

MANUFACTURERS, &amp;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

Are they fitted with easing gear

Area of each valve

Pressure to which they are adjusted

Material of shell plates

Length

Material of shell plates

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Size of manhole in shell

No. and Description of Furnaces in each boiler

Material

Outside diameter

No. of strengthening rings

Length of plain part

Thickness of plates

Description of longitudinal joint

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Working pressure by rules

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

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

Steam dome: description of joint to shell

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

W695-0160

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Foundation



IS A DONKEY BOILER FITTED?

yes

If so, is a report now forwarded? yes

SPARE GEAR. State the articles supplied:-

- 1 Cylinder head for main engines complete with all valves, springs etc.
- and one complete set of valves, springs etc. for one cylinder of the main engines and fuel valve needles for 8 main engine cylinders.
- 1 Complete set of cylinder head gaskets.
- 2 Main engine pistons with rings and bushings and in addition one set of piston rings for one piston.
- 1 Piston pin complete with oil cleave.
- 1 Piston pin bushing.
- 2 Connecting rod tip and bolts and nuts for main and auxiliary engines.
- 2 Main bearing bolts and nuts for main and auxiliary engines.
- 1 Complete set of main bearing bushings for each different size of bearing.
- 1 Set Coupling bolts for crank shaft.
- 1 Set piston rings for each piston of the main and auxiliary compressors.
- 1 Engine relief valve complete.

The foregoing is a correct description,

- 1 Fuel Bleeder complete
- 1 Complete set of working parts for fuel pump
- 8 Heads for injection valves etc.
- 8 Water manifold struts
- 1 Complete set Copper asbestos gaskets for air Compressor
- 1 Complete set Copper asbestos gaskets for air Compressor
- 1 Complete set Copper asbestos gaskets for main
- 1 Set valves for fuel supply pump
- 1 Set valves for each water circulating pump - main
- 1 Set valves for lubricating pump
- 1 Set cylinder head studs and nuts including quantity of washers
- 1 Complete pump drive chain and tools
- Lengths of pipe suitable for the fuel delivery
- Compressors to receivers with unions
- 1 Tail shaft.
- 2 Propellers (1 right, 1 left)

W. H. Bay Shipbuilding Co. Comorow <sup>Manufacturer.</sup>

Dates of Survey while building  
During progress of work in shops - - - Sep. 19  
During erection on board vessel - - - Jan 10 - Feb 28 March 15-26 April 11-23-28 May 2-10-15-16-17  
Total No. of visits 13

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders

Slides

Covers

Pistons

Rods

Connecting rods

Crank shaft

Thrust shaft

Tunnel shafts

Screw shafts

Propeller

Stern tube Sep 19

Steam pipes tested

Engine and boiler seatings April 11

Engines holding down bolts May

Completion of pumping arrangements May 2

Boilers fixed

Engines tried under power May 15

Completion of fitting sea connections May 10

Stern tube

Sep 19

Screw shaft and propeller

Sep 19

Main boiler safety valves adjusted

Thickness of adjusting washers

Material of Crank shaft

Identification Mark on Do.

Material of Thrust shaft

Identification Mark on Do.

Material of Tunnel shafts

Identification Marks on Do.

Material of Screw shafts Steel

Identification Marks on Do.

Material of Steam Pipes

Test pressure

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 No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. The above Diesel Engines N° 375-376

built at Cleveland Ohio, under special survey by the Society's Surveyor, have been installed on vessel together with shafts, struts, stern tubes, sea connections, pipes, auxiliaries and comm under special survey and the material of tail shafts and struts tested in accordance with the rules of The Society.

In addition to the air compressors on the main engines an auxiliary air compressor is installed driven by a 40 HP Atlas distillate engine which also drives 1 triple 6" x 6" bilge and general service pump. A 20 HP Fairbanks Morse distillate engine installed drives 1 triple 3" x 4" bilge and general service pump and a 12½ KW electric generator, additional 10 KW electric generator is driven by a belt from a flywheel on the forward end of the port engine crank shaft. On completion the machinery tried under working conditions full and slow speeds ahead and astern and the working and maneuvering found satisfactory. The machinery eligible in my opinion to be classed and to be entered in the record of + LMC 5.19 Oil Engine 4 S.C.S.A made in the Register Book in the case of the vessel. The Cleveland Report N° 7 of the above engines herewith forwarded.

The amount of Entry Fee ... \$ 10 : 00 :

When applied for,

Installation fee ... \$ 50 : 00 :

June 26<sup>th</sup> 1919

Donkey Boiler Fee ... \$ 35 : 00 :

When received,

Travelling Expenses (if any) \$ 17 : 00 :

28/8/19 RBN

Committee's Minute New York JUL 8 - 1919

Assigned + LMC 5.19

Subject

James Fowler  
Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation