Rpt. 4.

REPORT ON MACHINERY.

No. 21

Port of Cleveland O. Received at London Office Tues. March. 11. 1913.

No. in Reg. Book. ✓ on the Vessel not yet named Yard No 6 Survey held at Cleveland O. Date, first Survey July 6 Last Survey Nov. 13. 1912 (Number of Visits 8)

Master ✓ Built at Port Arthur, Ont By whom built Western Dry Dock & S.B. Co Ltd Tons Gross ✓ Net When built not yet launched.

Engines made at Cleveland By whom made American Shipbuilding Co. when made 1912.

Boilers made at Port Arthur, Ont. By whom made Western Dry Dock & S.B. Co when made ✓

Registered Horse Power ✓ Owners Northern Navigation Co. Port belonging to ✓

Nom. Horse Power as per Section 28 805. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes.

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 29½"-44½"-58"-58" Length of Stroke 42" Revs. per minute 120 Dia. of Screw shaft as per rule 15.43" as fitted 15-3/4" Material of screw shaft steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight in the propeller boss ✓ 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 5'-4"

Dia. of Tunnel shaft as per rule 14" as fitted none Dia. of Crank shaft journals as per rule 14 3/4" as fitted 14 3/4" Dia. of Crank pin 14 3/4" Size of Crank webs 9¼"x26½" Dia. of thrust shaft under collars 14 3/4" Dia. of screw 16'-6" Pitch of Screw 14'0" No. of Blades 4 State whether moveable yes Total surface 87 1/4 sq ft.

No. of Feed pumps 2 independent Diameter of ditto 12" Stroke 24" Can one be overhauled while the other is at work yes

No. of Bilge pumps 1 Diameter of ditto 5" Stroke 13 1/4" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 8. Sizes of Pumps See back. No. and size of Suctions connected to Bilge and Donkey pumps In Engine Room Bilge pump 1-3½ 2-3" Ballast pumps 2-6" In Holds, &c. Steam ejector will be fitted
Water pump 1-3" fire pump 1-[redacted]

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

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 ✓

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

Total Heating Surface of Boilers 13128 Is Forced Draft fitted yes No. and Description of Boilers 4 main & Auxiliary Scotch type.

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 plate 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 bottom Thickness of plates crown bottom 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

Rpt. 4.

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment

If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length

Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams

Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets Plates

Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays

Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint

Working pressure of furnace by rules Thickness of furnace crown plates Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,

The American Shipbuilding Co Manufacturer.
(Signed) Jass.

Dates of Survey while building — During progress of work in shops - - July 6, 13, Sept 3 24, Oct 1 24, 28, Nov 13.
During erection on board vessel - - ✓
Total No. of visits 8.

Is the approved plan of main boiler forwarded herewith no
" " " donkey " " " no

Dates of Examination of principal parts—Cylinders Sept 24 Slides Sept 24 Covers Sept 24 Pistons Sept 24 Rods Oct 24
Connecting rods Oct 24 Crank shaft Sept 24 Thrust shaft Oct 24 Tunnel shafts ✓ Screw shaft Sept 3 Propeller
Stern tube ✓ Steam pipes tested ✓ Engine and boiler seatings ✓ Engines holding down bolts ✓
Completion of pumping arrangements ✓ Boilers fixed — Engines tried under steam ✓
Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓
Material of Crank shaft Steel Identification Mark on Do. F 90 Material of Thrust shaft Steel Identification Mark on Do. F 90
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. F 90
Material of Steam Pipes — Test pressure ✓

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

These engines have been built under special survey in accordance with the Rules & approved plans. The workmanship & material are good & the engines will be eligible in my opinion, to receive the notation + L M C (with date) when fitted aboard the vessel to the satisfaction of the Surveyor at Port Arthur.

List & Sizes of Donkey Engines that will be fitted on board.
Fire & ash Feed pump 12" × 6" × 12", 2 Ballast pumps, 12 × 16 × 18, Mates pump 6 × 4
Cold-water pump. Hot water pump. Fresh water pump, all 5¼ × 5 × 6, Sanitary 7½ × 8

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee.. £ ⅓ of Special Survey Fee ($100) to be credited to Cleveland Office When applied for,
Special .. .. .. £ : : ..... 19.....
Donkey Boiler Fee .. .. £ : : When received,
Travelling Expenses (if any) £ ✓ : : ..... 19.....

Committee's Minute FRI. MAY. 15. 1914 TUE. MAY. 19. 1914

Assigned

(Signed) John L Steck
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

ENGINES, &c

Dia. of Cylinders
Is the screw shaft
in the propeller b
between the bearing
liners are fitted, is
Dia. of Tunnel shaft
collars 14¾" D
No. of Feed pumps
No. of Bilge pumps
No. of Donkey Eng
In Engine Room

BOILERS, &c

Total Heating Su
Working Pressu
Can each boiler be
each boiler
Smallest distance be
Thickness
long. seams
Per centages of str
Size of compensatin
Length of plain pe
Working pressure o
Pitch of stays to d
Material of stays
Material
Diameter at smal
Thickness M
Diameter of tubes
Pitch across wi
thickness of girde
Working pressur
separately
holes Pit
If stiffened with ri
Working pressure