

# REPORT ON MACHINERY.

No. 4645

WED SEP 19 1920

Received at London Office

Report made at MANCHESTER When handed in at Local Office 7. Sept 1920 Port of MANCHESTER

Traffic held at MANCHESTER & HUDDERSFIELD Date, First Survey 18. June 1918 Last Survey 13. August 1920

The STEAM TURBINES and DOUBLEREDUCTION GEAR for "NI" (Number of Visits 25) Gross Tons 176 Net Tons 176 STANDARD VESSEL

Built at CHEPSTON By whom built NATIONAL SHIPYARD When built

made at MANCHESTER By whom made METROPOLITAN VICKERS E.C. when made 1920-8  
made at HUDDERSFIELD By whom made D. BROWN & SONS when made 1920-8

Horse Power 2900 Owners Is Refrigerating Machinery fitted for cargo purposes Port belonging to Is Electric Light fitted

Engines, &c.—Description of Engines RATEAU TURBINES + D.R. GEAR No. of Turbines 2

Rotor Shaft Journals, H.P. 4 1/2" L.P. 4 1/2" Diameter of Pinion Shaft 1 1/2" 4 1/2" 2 1/4" 9"

Journal Shafts 1 1/2" 4 1/2" 2 1/4" 9" Distance between Centres of Bearings 1 1/2" 27" 2 1/4" 46 1/2" Diameter of Pitch Circle 1 1/2" 6.302" 2 1/4" 13.379"

Wheel Shaft 1 1/2" 9" 2 1/4" 14 3/4" Distance between Centres of Bearings 1 1/2" 26" 2 1/4" 45 1/2" Diameter of Pitch Circle of Wheel 1 1/2" 49.656" 2 1/4" 76.765"

Thrust Shaft 1 1/2" 18" 2 1/4" 33 1/2" Diameter of Thrust Shaft under Collars 15" Diameter of Tunnel Shaft as per rule

Shafts as fitted Diameter of same as fitted Diameter of Propeller as fitted Pitch of Propeller as fitted

State whether Moveable Total Surface as fitted Diameter of Rotor Drum, H.P. as fitted L.P. as fitted Astern as fitted

Bottom of Groove, H.P. as fitted L.P. as fitted Astern as fitted Revs. per Minute at Full Power, Turbine as fitted Propeller as fitted

## PLATES OF BLADING.

H.P.			L.P.			ASTERN.		
HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
<u>5 1/8" x 1 1/8"</u>	<u>3 1/2" x 3 3/4"</u>	<u>2</u>	<u>1 1/8"</u>	<u>3 3 3/8"</u>	<u>1</u>	<u>1 1/8" x 2 1/4"</u>	<u>3 2 5/8" x 3 3 3/4"</u>	<u>2</u>
<u>1 3/16"</u>	<u>3 2 3/16"</u>	<u>1</u>	<u>1 1/8"</u>	<u>3 3 3/8"</u>	<u>1</u>	<u>1 1/8"</u>	<u>3 2 5/8"</u>	<u>1</u>
<u>1"</u>	<u>3 3"</u>	<u>1</u>	<u>2 1/2"</u>	<u>3 4 1/2"</u>	<u>1</u>	<u>1 1/8"</u>	<u>3 2 5/8"</u>	<u>1</u>
<u>5/8"</u>	<u>3 2 5/16"</u>	<u>1</u>	<u>3 7/16"</u>	<u>3 5 7/16"</u>	<u>1</u>	<u>1 1/8"</u>	<u>3 2 5/8"</u>	<u>1</u>
<u>1 1/8"</u>	<u>3 3 1/8"</u>	<u>1</u>	<u>4 3/4"</u>	<u>3 6 3/4"</u>	<u>1</u>	<u>2 1/16"</u>	<u>3 4 1/16"</u>	<u>1</u>
			<u>6 1/8"</u>	<u>3 8 1/8"</u>	<u>1</u>	<u>4"</u>	<u>3 6"</u>	<u>1</u>
			<u>7"</u>	<u>3 9"</u>	<u>1</u>			

of Feed pumps

of Bilge pumps

of Bilge suction in Engine Room

In Holds, &c.

Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size

Bilge suction pipes fitted with roses Are the roses in Engine room always accessible

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

Discharge pipes 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

Discharge pipes 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

Discharge pipes are carried through the bunkers How are they protected

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

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

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

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

Working Surface of Boilers Is Forced Draft fitted No. and Description of Boilers

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

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

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

Distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 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

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

Working pressure of shell by rules Size of manhole in shell

006749-006759-0190



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

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:

for turbines:- two bearing bushes for turbine spindles, four diaphragm packing rings, gland casing for spindles, one thrust shaft bearing, assorted bolts, studs and nuts, assorted spanners, wear down gauges for O.R. gear:- 2 bearing bushes for slow speed wheel shaft, 2 bearing bushes for slow speed pinion shaft, 2 bearing bushes for high speed wheel shaft, 2 bearing bushes for high speed pinion shaft, white metal lining fixtures for bearings, wear down gauges, assorted bolts and nuts, overhauling gear.

The foregoing is a correct description.

DAVID BROWN & SONS (HUDDLE) LTD.

METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Manufacturer.

W. H. Child

Director

H. A. Mudge

Dates of Survey while building	During progress of work in shops --	During erection on board vessel --	Total No. of visits	
	18-16-19 June 5-11-17-24 July 28 Aug. 3-9-20-30 Sept. 6 Oct. 11-29 Nov. 10-24 Dec. 6 Jan. 22-27 Feb. Mar 10. 5-12-13 Aug			
				(25 visits)

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts-Casings June 1918 Rotors July 1918 Blading July 1918 Gearing Jan 1919

Rotor shaft July 1918 Thrust shaft 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 steam

Main boiler safety valves adjusted Thickness of adjusting washers

Material and tensile strength of Rotor shaft FORGED MILD STEEL 34.4 tons U460 32.9 tons U482 Identification Mark on Do. U4601 U482

Material and tensile strength of Pinion shaft 6 NICKEL CHROME STEEL 52.4 tons 2.3 Identification Mark on Do. 2.3

Material of Wheel shaft mild steel forged Identification Mark on Do. 112 Material of Thrust shaft mild steel forged Identification Mark on Do. N° 154

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts 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.

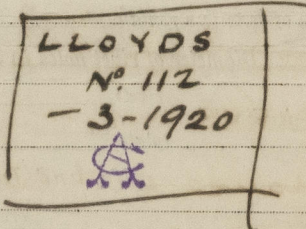
Have the requirements of Section 49 of the Rules been complied with

Is this machinery a duplicate of a previous case Yes If so, state name of vessel "N1" class. Standard.

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

These Steam turbines and double reduction gear have been built under Special Survey and the materials tested in accordance with the rules of this Society. The materials and workmanship so far as could be seen are sound and good and eligible in my opinion to be classed with record of Survey & L.M.C.

Mark on coupling of slow speed shaft



The amount of Entry Fee ... £	:	:	When applied for,
Special ... £	73	0 : 8	18/1/21
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	10-3-21

A. Campbell  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

TUE. JAN. 18 1921

Assigned

See Rpt rpt 20056



© 2021

Lloyd's Register Foundation