

4a.

REPORT ON MACHINERY.

No. 4413

Received at London Office

When handed in at Local Office 1-10-19 Port of Manchester

Survey held at Huddersfield Date, First Survey 10 May 1918 Last Survey 17 Sept 1919

on the DOUBLE REDUCTION GEAR for STEAM TURBINES N.I. VESSEL Tons { Gross _____ Net _____

Built at _____ By whom built _____ When built _____

Engines made at W. HARTLEPOOL By whom made RICHARDSONS WESTGARTH & CO. N° 189 when made 1919

Boilers made at HUDDERSFIELD By whom made DAVID BROWN & SONS when made 1919

Registered Horse Power _____ Owners _____ Port belonging to _____

Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

TURBINE ENGINES, &c.—Description of Engines

No. of Turbines _____

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

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

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

Width of Face 1" 18" 2" 33 1/2" Diameter of Thrust Shaft under Collars _____ Diameter of Tunnel Shaft _____ as per rule _____ as fitted _____

No. of Screw Shafts _____ Diameter of same _____ as per rule _____ as fitted _____ Diameter of Propeller _____ Pitch of Propeller _____

No. of Blades _____ State whether Moveable _____ Total Surface _____ Diameter of Rotor Drum, H.P. _____ L.P. _____ Astern _____

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

PARTICULARS 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.
EXPANSION									
1st									
2nd									
3rd									
4th									
5th									
6th									
7th									
8th									

No. and size of Feed pumps _____

No. and size of Bilge pumps _____

No. and size of Bilge suction 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 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 _____

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 _____

plates _____

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 _____

bottom _____

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 _____ Steam dome: description of joint to shell _____ % of strength of joint _____ Diameter _____

Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diameter of rivet holes _____ Pitch of rivets _____

Working pressure of shell by rules _____ Crown plates: Thickness _____ How stayed _____

SUPERHEATER.

Type

Date of Approval of Plan

Date of Test

Tested by Hydraulic Pressure to

Diameter of Safety Valve

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

Two bearing bushes each for Slow Speed wheel shaft
Slow Speed Pinion Shaft, high speed wheel shaft and high speed pinion shaft
Set of wear down gauges. While installing fixtures for bearings
Overhauling gear and bolts, studs and nuts for bearings and casing

The foregoing is a correct description,
DAVID BROWN & SONS, (HUDDLE) LTD.

W. H. Child

Director.

Manufacturer.

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

May 1918 to September 1919 12 visits.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Casings

Rotor shaft July to Sept 18 Thrust shaft

Tunnel shafts

Rotors July 18

Blading July to Nov 18

Gearing as above

Stern tube

Steam pipes tested

Engine and boiler seatings

Screw shaft

Propeller

Completion of pumping arrangements

Boilers fixed

Engines holding down bolts

Main boiler safety valves adjusted

Thickness of adjusting washers

Engines tried under steam

Material and tensile strength of Rotor shaft

Material and tensile strength of Pinion shaft High Speed. Nickel Steel 48.56 tons

Identification Mark on Do.

Material of Wheel shaft Mild Steel Identification Mark on Do. 19 P

Chromed
LLOYDS
N^o 108
7-1919

Material of Thrust shaft

Identification Mark on Do.

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

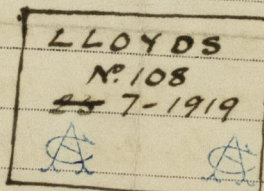
Is this machinery a duplicate of a previous case Yes

If so, state name of vessel Standard N.1

General Remarks

(State quality of workmanship, opinions as to class, etc.)

This double reduction gear has been built under survey and the materials tested in accordance with the Rules of the Society. The materials and workmanship so far as could be seen are sound and good and eligible in my opinion to be classed with the record of L.M.S. This gear is to be fitted to steam turbines building by Messrs. Richardson & Westgarth & Co. of West Hartlepool.
Mark on coupling of Slow Speed shaft.



The amount of Entry Fee ... £

Special

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When applied for,

When received,

A. Campbell

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. AUG. 13 1920

Assigned

See note to 104/63



© 2020

Lloyd's Register Foundation