

REPORT ON MACHINERY

No. 15642

Writing Report 24th May 1919 When handed in at Local Office 25/6/19 Port of West Hartlepool
 Survey held at Hartlepool Date, First Survey 27th June/18 Last Survey 29th May 1919
 on the Sumers No. 13 S/S Roana (Number of Visits)
 Tons } Gross
 Net
 Built at By whom built When built
 es made at Hartlepool By whom made Messrs. Richardson, Westgarth & Co. Ltd. when made 1919
 s made at By whom made No. 188 when made
 ered Horse Power Owners Port belonging to
 Horse Power at Full Power Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

INE ENGINES, &c.—Description of Engines Double Geared Impulse Turbines No. of Turbines Two
 of Rotor Shaft Journals, H.P. 4 1/2 L.P. 5 3/4 Diameter of Pinion Shaft { 1st Pinion 5 1/2 between Helices.
 of Journals { 2nd Pinion 12 1/2 between Helices.
 of Wheel Shaft { 1st Pinion 9 Distance between Centres of Bearings { 1st Pinion 2-3 Diameter of Pitch Circle { 1st Pinion 6.302
 of Face { 2nd Pinion 14 1/2 Distance between Centres of Bearings { 2nd Pinion 3-10 1/2 Diameter of Pitch Circle of Wheel { 2nd Pinion 13.379
 Diameter of Thrust Shaft under Collars 14 3/4 Diameter of Tunnel Shaft as per rule 13.125
 Diameter of same as fitted Diameter of Propeller Pitch of Propeller
 State whether Moveable Total Surface Diameter of Rotor Drum, H.P. 21 5/8 L.P. 2 1/4 size astern
 ss at Bottom of Groove, H.P. solid L.P. solid Astern size Revs. per Minute at Full Power, Turbine 3184 Propeller 1/1 size

ICULARS OF BLADING.

| | H.P. (P.C.D. = 24) | | | L.P. (P.C.D. = 36) | | | ASTERN. (P.C.D. = 30 (H.P.) P.C.D. = 39 (L.P.)) | | |
|--------|--------------------|----------------------|--------------|--------------------|------------------|--------------|----------------------------------------------------|-----------------------------------|--------------|
| | 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. |
| ANSION | 3 and 1 1/4 | 24 13/16 and 25 7/16 | 2 | 2 3/4 | 38 3/4 | 1 | 7 1/8 and 1 1/4 + 2 3/4 | 30 8 3/16 and 32 1/2 | 4 |
| " | 4 1/8 and 1 1/2 | 24 15/16 and 25 5/16 | 2 | 3" | 39 | 1 | (is four rows of blades on one disc) | (one end left for H.P. shaft) | |
| " | 1 1/2 | 25 1/2 | 1 | 3 7/8 | 39 7/8 | 1 | | | |
| " | 1 3/4 | 25 3/4 | 1 | 4 3/4 | 40 3/4 | 1 | | | |
| " | 2 | 26 | 1 | 6 1/8 | 42 1/8 | 1 | 1 5/16 + 3 7/16 + 4 15/16 | 40 1/2 + 42 7/16 + 43 1/16 | 3 |
| " | 2 5/16 | 26 5/16 | 1 | 7 1/4 | 43 1/4 | 1 | (is three rows of blades on one disc) | (one of each disc for L.P. shaft) | |
| " | 2 1/2 | 26 1/2 | 1 | 7 1/2 | 43 1/2 | 1 | | | |
| " | 2 1/2 | 26 1/2 | 1 | 7 3/4 | 43 3/4 | 1 | | | |

size of Feed pumps
 size of Bilge pumps
 size of Bilge suction in Engine Room
 In Holds, &c.
 Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size
 the 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
 sized 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
 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
 es are carried through the bunkers How are they protected
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times.
 Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 crew Shaft Tunnel watertight Is it fitted with a watertight door worked from

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

Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
 g Pressure 190 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
 rges of strength of longitudinal joint Working pressure of shell by rules Size of manhole in shell
 mpensating ring No. and Description of Furnaces in each Boiler Material Outside diameter
 f plain part top crown Thickness of plates Description of longitudinal joint No. of strengthening rings
 bottom bottom
 pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
 of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space
 Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
 at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
 Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
 oss wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
 of girder at centre Length as per rule Distance apart Number and pitch of stays in each
 pressure by rules Steam dome: description of joint to shell % of strength of joint Diameter
 ss of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets
 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

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description.

HUMPHREYS & CO. LIMITED

Steel

Manufacturer.

of Turbines.

Dates of Survey while building
During progress of work in shops -- 1918 June 27 July 5 Aug 16 26 Sep 6 11 13 19 Oct 7 8 14 16 18 22 25 26 Nov 2 7 16 21 27 Dec 2 9 16 18
During erection on board vessel --- 1919 Jan 7 14 15 22 25 27 Feb 11 13 18 26 Mar 6 13 20 28 31 Apr 9 23 25 May 1 6 7 12 17 19 21 22 29
Total No. of visits 52

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Casings 5/4/18 to 22/1/19 Rotors 6/9/18 to 20/3/19 Blading 6/9/18 to 9/4/19 Gearing

Rotor shaft 6/9/18 to 20/3/19 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 Identification Mark on Do.

Material and tensile strength of Pinion shaft Identification Mark on Do.

Material of Wheel shaft steel Identification Mark on Do. Lloyd's 104 3/19/20 Material of Thrust shaft steel Identification Mark on Do. Lloyd's 107 6/12/18 JN

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 NI 187 Engines

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

These turbine Engines have been constructed under special survey, the material and workmanship are sound & good. The High pressure casing has been tested by Hydraulic pressure to 190 lbs; the Low pressure casing to 40 lbs; all the Eduction pipes between the Casings tested to 50 lbs; the H.P. Controlling Valve to 400 lbs, the ahead & astern Separators to 400 lbs, and the nozzle steam pipes to 500 lbs. The turbines & reduction gearing were erected & tried at full speed without loss & worked satisfactorily and are eligible in my opinion to be fitted in a classed Vessel & have the Notation *LMC with date

The amount of Entry Fee ... £

Special ... £ 48.00

Donkey Boiler Fee ... £

Travelling Expenses (if any) £

When applied for,

When received,

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 12 MAR. 1920

Signed

La Roche No 10610



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