

REPORT ON MACHINERY.

No. 4572.

Received at London Office

Date of writing Report

10

When handed in at Local Office

6 May 1920

Port of

MANCHESTER

No. in Survey held at

MANCHESTER

Date, First Survey

11 Jan 1918

Last Survey

4 May 1920

Reg. Book.

on the

STEAM TURBINES for VESSEL N° 368
of WAR FIOHP N° 1652
LP N° 1653

(Number of Visits 37)

Gross

Tons

Net

Master

Built at

Chepstow

By whom built

S. Finch & Co.

When built

Boilers made at

MANCHESTER

By whom made

METROPOLITAN VICKERS & CO.

when made

1920-5.

Boilers made at

WEST DRAYTON

By whom made

POWER PLANT CO.

when made

Registered Horse Power

Owners

Port belonging to

Shaft Horse Power at Full Power 1000

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

TURBINE ENGINES, &c.

Description of Engines

RATEAU IMPULSE HP and LP

No. of Turbines 2.

Diameter of Rotor Shaft Journals, H.P. 4"

L.P. 4"

Diameter of Pinion Shaft

Diameter of Journals

Distance between Centres of Bearings

Diameter of Pitch Circle

Diameter of Wheel Shaft

Distance between Centres of Bearings

Diameter of Pitch Circle of Wheel

Width of Face

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

ARTICULARS 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.
1ST EXPANSION	1/2" and 1 1/2"	27 1/2" and 28 1/2"	2	1 1/2"	28 1/2"	1	H.P.		
2ND	7/8"	27 5/8"	1	1 5/8"	28 5/8"	1	1 1/2" and 1 3/4"	28 1/2" and 29 1/2"	2
3RD	7/8"	27 5/8"	1	2 1/8"	29 5/8"	1			
4TH	5/8"	27 5/8"	1	4 3/4"	31 3/4"	1	L.P.		
5TH				6 1/4"	33 1/4"	1	1 1/2"	28 1/2"	1
6TH							3 1/2"	30 1/2"	1
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

BOILERS, &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

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

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

W291-0209

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:— One set pads for turbine thrust block, one set bearings for turbine rotor, one escape valve of each size fitted, 5% condenser tubes and ferrules, one impeller and shaft for circulating pump, one air pump and bucket and valves, Assorted bolts, studs and nuts.

The foregoing is a correct description,
METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Manufacturer.
P. H. Richards
SUPERINTENDENT,
ENGINE DEPT. 4/5/20.

Dates of Survey while building { During progress of work in shops -- } 11. January 1918 various dates to 4. May 1920 = total visits 37.
{ During erection on board vessel --- }
Total No. of visits 37.

Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings June 1918 Rotors Aug 1918 Blading Sept 1918 Gearing _____

Rotor shaft _____ 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 shafts mild steel 32.8 tons and 30.7 tons 0" Identification Mark on Do. U401 & U414

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

Material of Wheel 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 _____ 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 Messrs. S. Finch & Co. 367.

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

The Steam turbines have been built under Special Survey and the materials tested in accordance with the Rules. 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 "A" L.M.C.
These steam turbines and a set of D.R. gear made by Messrs. Power Plant have been coupled up and tried under steam, apparently working satisfactorily.

The amount of Entry Fee ... £ : :
Special ... £ 19 : 0 :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 27/11/1920
When received, 12.1.21/1921

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

Committee's Minute

Assigned



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