

REPORT ON MACHINERY.

No. 84631

Received at London Office 8 - SEP 1921

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Port of London

Writing Report on the Turbine No. 1031 *"GEMMA"* Date, First Survey 22nd June 1920 Last Survey 8th August 1921
 Survey held at London & Rugby Book. on the Turbine No. 1031 *"GEMMA"* (Number of Visits 17) Tons Gross 8420 Net 5364

Built at Schiedam By whom built New Waterway L.B. & Co. When built
 By whom made The British Thomson Houston Co. Ld. when made
 By whom made New Waterway Shipbuilding Co. Ld. when made 1912
 Owners Newell, Goudriaan & Hamelkott Port belonging to Rotterdam
 Registered Horse Power 915 N.H.P. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Net Horse Power at Full Power 4000

TURBINE ENGINES, &c. Description of Engines *Butis impulse Turbine* No. of Turbines 2
 Diameter of Rotor Shaft Journals, H.P. 5" L.P. 5" Diameter of Pinion Shaft *High Speed 5.75" Low Speed 20.75"*
 Diameter of Journals *48.5-75-10"* Distance between Centres of Bearings *436.5-281.0"* Diameter of Pitch Circle *H 7.75" L 18.0"*
 Diameter of Wheel Shaft 16" Distance between Centres of Bearings 81" Diameter of Pitch Circle of Wheel *152.25 L 112"*
 Diameter of Thrust Shaft under Collars *H 23" L 34"* Diameter of Tunnel Shaft as per rule as fitted
 Diameter of Propeller Pitch of Propeller
 Diameter of Rotor Drum, H.P. L.P. Astern
 Revs. per Minute at Full Power, Turbine 3600 Propeller 85

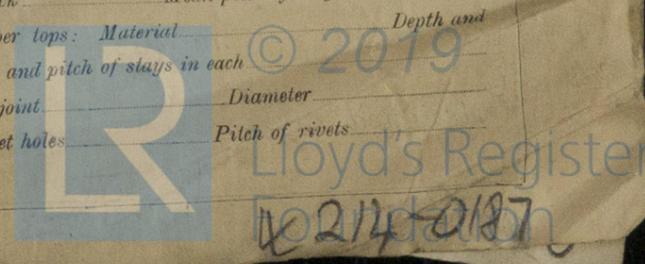
PARTICULARS OF BLADING.

	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	1.87 - 1.35	2-7.4 - 2-7.8	2	2.46	3-1.55	1	1.25 - 3.53	2-11.31 - 3-5.68	Two (2)
"	1.19	2-3.23	1	3.06	3-4.14	1	2.39 - 6.18	3-0.81 - 3-8.58	Two (2)
"	1.24	2-4.78	1	4.62	3-7.75	1			
"	1.37	2-6.93	1	6.15	3-11.76	1			
"	1.48	2-8.78	1	8.24	4-4.88	1			
"	1.83	2-11.16	1						

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

BOILERS, &c. (Letter for record)

Manufacturers of Steel
 Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
 Working Pressure 180 lbs Tested by hydraulic pressure to Date of test No. of Certificate
 in each 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
 Mean dia. of boilers Length Material of shell plates
 Are the shell plates welded or flanged Descrip. of riveting: cir. seams
 Range of tensile strength Pitch of rivets Lap of plates or width of butt straps
 Diameter of rivet holes in long. seams
 Working pressure of shell by rules Size of manhole in shell
 No. and Description of Furnaces in each Boiler Material Outside diameter
 Thickness of plates Description of longitudinal joint No. of strengthening rings
 Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
 Working pressure by rules End plates in steam space
 Diameter at smallest part Area supported by each stay Working pressure by rules Material of stays
 How are stays secured Working pressure by rules Material of Front plates at bottom
 Working pressure of plate by rules
 Material of Lower back plate Thickness of plates Greatest pitch of stays
 Material of tube plates Thickness: Front Back Mean pitch of stays
 Working pressures by rules Girders to Chamber tops: Material
 Distance apart Number and pitch of stays in each
 Diameter of rivet holes
 Description of longitudinal joint
 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,

THE BRITISH THOMSON-HOUSTON CO. LIMITED,

per *R.F. Halliwell*

Manufacturer of Turbines only

Dates of Survey while building
 During progress of work in shops --
 During erection on board vessel ---
 Total No. of visits *17*

At Rugby: - (1920) June 22. Sep. 23. ~~Oct. 15~~ Dec. 16 ¹⁹²¹ Jan. 5. 10. 28 Feb. 10. Mar. 9. 23 June
 At West Drayton: - ¹⁹²⁰ Sep. 22. Oct. 15. Dec. 16. ¹⁹²¹ Jan. 10

Dates of Examination of principal parts—Casings *1.6.21* Rotors *1.6.21* Blading *1.6.21* Gearing *25.2.21*

Rotor shaft *1.6.21* 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 fired _____ Engines tried under steam _____

Main boiler safety valves adjusted _____ Thickness of adjusting washers _____

Material and tensile strength of Rotor shaft *Steel* *44/46 tons* Identification Mark on Do. *TRB*

Material and tensile strength of Pinion shaft *"* *45 tons* Identification Mark on Do. *444-445 JF*

Material of Wheel shaft *Steel 45 tons* Identification Mark on Do. *3 1/2 WGH* 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 _____ If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c.) *Turbines constructed under survey*
Material tested as required & approved, workmanship good.
bearings tested to 123 lbs, passages & nozzles to 360 lbs & stop valves to 360 lbs & all found tight & sound. Oil pump examined & satisfactory
Turbines examined under steam & working satisfactorily.
only Turbines made - no gearing or shafting made by this firm
Reduction gearing made by Power Plant Eng Co. West Drayton
same examined during construction by W. H. Cornish & also on
Hot bench running & satisfactory - forwarding to Rotterdam for fitting

The amount of Entry Fee ... £ *10 - 11 - 4* When applied for. *8/9/1921*

Special *letter 27.3.20* £ *10 - 11 - 4*

Donkey Boiler Fee ... £ _____ When received. *21.4.9 paid 12/10/21*

Travelling Expenses (if any) £ *10 - 13 - 5* *14.11.19* *paid 22/12/21*

Committee's Minute *19-9*

Assigned

Thomas Blackie W. H. Cornish
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. TOMAR. 1922

Rpt. 13.
RE
Port of _____
No. in Reg. Book _____ on the _____
Build _____
Owners _____
Yard No. *111*

DESCRIPTION
2 Dyn
single
Capacity of Dyn _____
Where is Dyn _____
Position of Main _____
Positions of au _____
2 in San
If fuses are fi _____
circuits _____
If vessel is wi _____
Are the fuses _____
Are all fuses j _____
are perma _____
Are all switche _____
Total number e _____
A *Fore*
B *Char*
C *Salon*
D *Misc*
E _____
2 Mas
2
If arc lights, _____
Where are t _____

DESCRIPTION
Main cable ea _____
Branch cable _____
Branch cable _____
Leads to lamp _____
Cargo light ca _____
DESCRIPTION
Joints in cab _____
Are all the j _____
position _____
Are there a _____
How are th _____
protecte _____
To 2
9. En
of
J.

Certificate (if required) to be sent to _____
(The Surveyors are not to write on or below the space for Committee's Minute.)

