Rpt. 4.

REPORT ON MACHINERY.

No. 22885

MON. SEP 24 1906

Port of Sunderland Received at London Office 19

No. in Reg. Book. Survey held at Sunderland Date, first Survey 24th April 06 Last Survey 4th July 1906 (Number of Visits 29)

Surveyed on the Machinery for Antwerp OBlt No 31 "Henri Gerlinger" Tons Gross 1213 Net 920

Master Johansen Built at Antwerp By whom built Antwerp O.B.C. When built 1906

Engines made at Sunderland By whom made North Eastern Marine Engg Co. Ltd. when made 1906

Boilers made at Sunderland By whom made North Eastern Marine Engg Co. Ltd. when made 1906

Registered Horse Power — Owners Adolf Deppe Port belonging to Antwerp

Nom. Horse Power as per Section 28 133 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion, Inverted No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 17-28-46 Length of Stroke 33" Revs. per minute 75 Dia. of Screw shaft as per rule 9.93" as fitted 10¼" Material of screw shaft Iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes. Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes. If two liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 3'-6"

Dia. of Tunnel shaft as per rule 8.32 as fitted 8½" Dia. of Crank shaft journals as per rule 8.94 as fitted 9" Dia. of Crank pin 9" Size of Crank webs 5⅝ x 13¼ Dia. of thrust shaft under collars 9" Dia. of screw 13'-0" Pitch of Screw 13'-6" No. of Blades four State whether moveable no Total surface 53 ☐F

No. of Feed pumps Two Diameter of ditto 2¾" Stroke 15" Can one be overhauled while the other is at work yes.

No. of Bilge pumps Two Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes.

No. of Donkey Engines Two duplex Sizes of Pumps 6"x7"x9" bilge & 5"x3"x4½" fire No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 2½" In Holds, &c. Two in each hold 2½" One in tunnel well 2½" Suctions to all ballast tanks 3½"

No. of Bilge Injections one sizes 3½" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2½"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers none How are they protected —

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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

Dates of examination of completion of fitting of Sea Connections 15/8/06 of Stern Tube 15/8/06 Screw shaft and Propeller 15/8/06

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Engine Room

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons Ltd. & Deighton's Flue & Tube Co. Ltd.

Total Heating Surface of Boilers 2159 ☐F Is Forced Draft fitted no No. and Description of Boilers One single ended, Cyl. Multi

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs. Date of test 30/6/06 No. of Certificate 2500

Can each boiler be worked separately — Area of fire grate in each boiler 54 ☐F No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 7.06 ☐" Pressure to which they are adjusted 165 lbs ☐" Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" (Rule) Mean dia. of boilers 14'-9 15/16" Length 10'-6" Material of shell plates steel

Thickness 1/32" Range of tensile strength 29 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap D.R. long. seams D.B.S. - T.R. Diameter of rivet holes in long. seams 1 4/32" Pitch of rivets 9 4/16" ~~Lap of plates or~~ width of butt straps 18 4/8"

Per centages of strength of longitudinal joint rivets 89.15 plate 84.08 Working pressure of shell by rules 160 lbs. Size of manhole in shell end 16"x12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler Three, Deighton Material steel Outside diameter 47"

Length of plain part top — bottom — Thickness of plates crown 1" bottom 1/2" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 160.7 lbs Combustion chamber plates: Material steel Thickness: Sides ¾" Back 25/32" Top ¾" Bottom 4/8"

Pitch of stays to ditto: Sides 8¾ x 12 4/8 Back 11 x 11 4/8 Top 8¾ x 12 4/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 160.4 lbs

Material of stays steel Diameter at smallest part 1.89, 1.76, 1.6 Area supported by each stay 150, 130, 113 ☐" Working pressure by rules 167 lbs End plates in steam space:

Material steel Thickness 1⅜" Pitch of stays 24" x 19½" How are stays secured D.N.T.W. Working pressure by rules 161.4 lbs Material of stays steel

Diameter at smallest part 3.28 Area supported by each stay 528 ☐" Working pressure by rules 161.6 lbs Material of Front plates at bottom steel

Thickness ¾" Material of Lower back plate steel Thickness 29/32" Greatest pitch of stays 14¾" x 11" Working pressure of plate by rules 167.6 lbs

Diameter of tubes 3¼" Pitch of tubes 4⅝" x 4⅜" Material of tube plates steel Thickness: Front ¾" Back ¾" Mean pitch of stays 10 5/32"

Pitch across wide water spaces 14½" Working pressures by rules 164.9 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8⅝" x 1¾" Length as per rule 29½" Distance apart 12 4/8" Number and pitch of stays in each Two 8¼"

Working pressure by rules 163.5 lbs Superheater or Steam chest; how connected to boiler — Can the superheater be shut off and the boiler worked separately — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet holes — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

If stiffened with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed —

Working pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear —

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Safety Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment

If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length

Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams

Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets Plates

Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays

Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint

Working pressure of furnace by rules Thickness of furnace crown plates Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied :— One set of connecting rod top end bolts nuts 2 bottom end bolts nuts, 2 main bearing bolts, 1 set coupling bolts. 1 set of feed & bilge pump valves. NORTH EASTERN MARINE ENGINEERING CO LTD propeller, safety valve springs.

Walter Beattie Secy pro d.W.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops— 1906 Apl 24. 25. 26. May 1. 3. 4. 7. 9. 11. 14. 17. 22. 24. 25. 28. 31. June 1. 2. 6. 11. 13. 14. 18. 19. 21. 25. 29. 30. July 2.

During erection on board vessel — Aug. 24, 31 Sept. 5, 6, 7, 8, 12, 14

Total No. of visits 29 + 8 = 37

Is the approved plan of main boiler forwarded herewith no

" " " donkey " " " no

Dates of Examination of principal parts— Cylinders 24/4 3/5 29/5 31/5 14/6 18/6 Slides 22/5 Covers 11/6 Pistons 7/5 14/6 19/6 Rods 22/6

Connecting rods 10/5 13/5 14/6 Crank shaft 1/5 6/6 11/6 Thrust shaft 3/5 4/5 7/5 9/5 14/5 Tunnel shafts 3/5 14/5 Screw shaft 3/5 14/6 19/6 Propeller 14/5 21/5

Stern tube 7/5 29/5 Steam pipes tested 5/9/06 Engine and boiler seatings 13/7/06 Engines holding down bolts 31/8/06

Completion of pumping arrangements 6/9/06 Boilers fixed 6/9/06 Engines tried under steam Sept 6th 1906

Main boiler safety valves adjusted 6/9/06 Thickness of adjusting washers P 11/32 — S. 3/8.

Material of Crank shaft steel Identification Mark on Do. 310D AB Material of Thrust shaft steel Identification Mark on Do. R 129 3-HL-06

Material of Tunnel shafts steel Identification Marks on Do. R PA 130 3-HL-06 PA 131 3-HL-06 Material of Screw shafts Iron Identification Marks on Do. R TM 5118 3-HL-06 TM 5119 3-HL-06 301D AB

Material of Steam Pipes Copper Test pressure 320 lbs per sq in

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

The Engines & Boilers of this Vessel have been constructed under special survey, the material & workmanship sound & good, the Boiler has been tested by Hydraulic pressure in accordance with the Rules.

It is submitted that this vessel is eligible for THE RECORD. +LMC 9.06.

CM. 25.9.06

This Vessel is Eligible in our Opinion to have the Notation ✱LMC 9.06 in the Register Book

The machinery and boilers have been fitted on board in accordance with the Rules. The safety valves have been adjusted under steam to blow off at 165 lbs per sq in The Engines worked well under steam For the report upon the donkey Boiler see other Form.

The amount of Entry Fee.. £ 2 : :

Special " £ 13 . 6 :

Donkey Boiler Fee £ 6 : 13 :

Travelling Expenses (if any) £ : :

When applied for, 31.7.1906.

When received, 4/8 1906

A Lloyd & H.L. Cornish

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute P 25 1906 TUES. SEP 25 1906

Assigned +LMC 9.06

MACHINERY CERTIFICATE WRITTEN

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Certificate (if required) to be sent to Shipbuilder

Write 'Sheer Strake' opposite its corresponding letter.

If a Report also sent on the Hull of the Ship?