Rpt. 4.

REPORT ON MACHINERY.

No. 21715

Port of Hull

SAT. 25 SEP 1909 Received at London Office 19

No. in Reg. Book. 11 Supp. Survey held at Hull. Date, first Survey June 8th. Last Survey Sep. 17th 1909 (Number of Visits 32)

on the S. Trawler LOMBARD. Tons Gross 272, Net 122

Master. Built at Selby. By whom built Cochrane & Sons. When built 1909

Engines made at Hull. By whom made Amos & Smith Ld. when made 〃

Boilers made at 〃. By whom made 〃. when made 〃

Registered Horse Power. Owners Lindsey Steam Fishing Co Ld. Port belonging to Grimsby

Nom. Horse Power as per Section 28: 91. Is Refrigerating Machinery fitted for cargo purposes: No. Is Electric Light fitted: No

ENGINES, &c.—Description of Engines: Inverted triple expansion. No. of Cylinders 3. No. of Cranks 3

Dia. of Cylinders 12½. 21. 34. Length of Stroke 24. Revs. per minute 114. Dia. of Screw shaft as per rule 7.13, as fitted 7⅜. 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: —. If two liners are fitted, is the shaft lapped or protected between the liners: —. Length of stern bush 36.

Dia. of Tunnel shaft as per rule 6.31, as fitted 6⅜. Dia. of Crank shaft journals as per rule 6.62, as fitted 6⅞. Dia. of Crank pin 6⅞. Size of Crank webs 13½ × 4⅜. Dia. of thrust shaft under collars 6⅞. Dia. of screw 8'9". Pitch of Screw 10'9". No. of Blades 4. State whether moveable No. Total surface 29 ft

No. of Feed pumps 1. Diameter of ditto 2⅝. Stroke 13. Can one be overhauled while the other is at work: —

No. of Bilge pumps 1. Diameter of ditto 2⅝. Stroke 13. Can one be overhauled while the other is at work: —

No. of Donkey Engines One. Sizes of Pumps 6 × 3 × 6. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 1-2" (Eng Room fwd). In Holds, &c. 3-2" (Fore hold, 2 to Shaftwell)

2" Ejector suction connected to all bilges with discharge on deck.

No. of Bilge Injections 1. sizes 3". Connected to condenser or to circulating pump. Is a separate Donkey Suction fitted in Engine room & size 2" Ejector

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: None

Are all connections with the sea direct on the skin of the ship: Yes. Are they Valves or Cocks: Both

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: Hold suction. How are they protected: Wood casing

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 23.7.09. of Stern Tube 23.7.09. Screw shaft and Propeller 23.7.09.

Is the Screw Shaft Tunnel watertight: None. Is it fitted with a watertight door: —. worked from —

BOILERS, &c.—Letter for record: S. Manufacturers of Steel: Phoenix & Hoerde, Westphalia.

Total Heating Surface of Boilers 1230 ft. Is Forced Draft fitted: No. No. and Description of Boilers: 1 SE Multitubular

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 28-8-09. No. of Certificate 1719

Can each boiler be worked separately: —. Area of fire grate in each boiler 36 ft. No. and Description of Safety Valves to each boiler: 2 Spring loaded. Area of each valve 3.97. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear: Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 6½ ins. Mean dia. of boilers 12'6". Length 10'2". Material of shell plates Steel.

Thickness 1⅛. Range of tensile strength 28-32. Are the shell plates welded or flanged: No. Descrip. of riveting: cir. seams DR Lap. long. seams TDBS Rivet. Diameter of rivet holes in long. seams 1⅛. Pitch of rivets 7.63. width of butt straps 16½

Per centages of strength of longitudinal joint: rivets 94, plate 85. Working pressure of shell by rules 185. Size of manhole in shell 16 × 12.

Size of compensating ring 40 × 30 × 1⅛. No. and Description of Furnaces in each boiler: 2 plain. Material Steel. Outside diameter 3'7½".

Length of plain part top 72, bottom 69. Thickness of plates crown 39/64, bottom 39/64. Description of longitudinal joint: welded. No. of strengthening rings: one

Working pressure of furnace by the rules 181. Combustion chamber plates: Material Steel. Thickness: Sides 9/16. Back 9/16. Top 5/8. Bottom 9/16

Pitch of stays to ditto: Sides 7 × 9¼. Back 8¼ × 9. Top 7 × 8½. If stays are fitted with nuts or riveted heads: Nuts. Working pressure by rules 207

Material of stays Steel. Diameter at smallest part 1⅜ × 2.01. Area supported by each stay 78.75. Working pressure by rules 235. End plates in steam space: Material Steel. Thickness 1 1/16. Pitch of stays 16½ × 16½. How are stays secured: Nuts & washers, lock nuts on plate. Working pressure by rules 195. Material of stays Steel.

Diameter at smallest part area 5.05. Area supported by each stay 268.0. Working pressure by rules 196. Material of Front plates at bottom Steel.

Thickness 27/32. Material of Lower back plate Steel. Thickness 15/16. Greatest pitch of stays 14 × 8½. Working pressure of plate by rules 222

Diameter of tubes 3¼. Pitch of tubes 4¼ × 4⅝. Material of tube plates Steel. Thickness: Front 27/32. Back 27/32. Mean pitch of stays 9¼ × 9¾

Pitch across wide water spaces 14. Working pressures by rules 182. Girders to Chamber tops: Material Steel. Depth and thickness of girder at centre 8¾ × 1¾. Length as per rule 2'9". Distance apart 8½. Number and pitch of stays in each 3 @ 7.

Working pressure by rules 252. Superheater or Steam chest; how connected to boiler: None. 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 :— Two top & two bottom end connecting rod bolts & nuts two main bearing bolts, one set of coupling bolts & nuts, one set of feed & bilge pump valves, one main & one donkey feed check valve, one set of air pump valves, as worked bolts & nuts etc.

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

Manufacturer. Managing Director.

Dates of Survey while building — During progress of work in shops— 1909.- Jun 8.10.16.19.22,25.28.30. Jul 3.6.10.16.17.20.22,23,24,30 Aug 4.6.11.

During erection on board vessel — Aug 14,20.26.28,31. Sep 2.7.9.13.14.17.

Total No. of visits 32.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts— Cylinders 30.7.09. Slides 28.8.09 Covers 30.7.09 Pistons 11.8.09 Rods 14.8.09

Connecting rods 14.8.09 Crank shaft 26.8.09 Thrust shaft 17.7.09 Tunnel shafts ✓ Screw shaft 17.7.09 Propeller 17.7.09

Stern tube 17.7.09 Steam pipes tested 13.9.09. Engine and boiler seatings 23.7.09 Engines holding down bolts 9.9.09

Completion of pumping arrangements 17.9.09. Boilers fixed 9.9.09. Engines tried under steam 14.9.09

Main boiler safety valves adjusted 14.9.09 Thickness of adjusting washers S 4/22 P 2/22.

Material of Crank shaft Steel. Identification Mark on Do. 583 26.8.09 LMC Material of Thrust shaft Steel. Identification Mark on Do. 583 17.7.09 LMC

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 583 17.7.09 LMC

Material of Steam Pipes Solid drawn copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery & boiler of this vessel have been constructed under Special Survey, are of good material & workmanship & have been fitted & secured on board in accordance with the Rules. They are now in good working condition & eligible in my opinion to have mark of +L.M.C 9.09 in the Register Book.

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

It is submitted that this vessel is eligible for THE RECORD. +LMC.9.09.

JWG 27/9/09

The amount of Entry Fee £ 7 : 0 : 0 When applied for, 24.9.1909

Special £ 10 : 13 : 0

Donkey Boiler Fee £ : : —

Travelling Expenses (if any) £ : 8 : 2 When received, 30.9.1909

Cost

John W. Gloyne

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

Committee's Minute TUES. 28 SEP 1909

Assigned +LMC.9.09

MACHINERY CERTIFICATE WRITTEN.