Rpt. 4.

REPORT ON MACHINERY.

No. 18285

Port of Hull

Received at London Office WED. 29 AUG. 1906

No. in Reg. Book. 12uff Survey held at Selby & Hull Date, first Survey Mar. 8th Last Survey 2nd Aug 1906 (Number of Visits 22)

on the Screw Trawler "Liberia" Tons Gross 250 Net 101

Master Built at Selby By whom built Cochrane & Sons When built 1906

Engines made at Hull By whom made Amos & Smith when made 1906

Boilers made at do By whom made do when made 1906

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

Nom. Horse Power as per Section 28 68.8 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 12", 21", 34" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 7" as fitted 7 3/8" Material of screw shaft Steel

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 2'-11"

Dia. of Tunnel shaft as per rule 6.26" as fitted 6 3/4" Dia. of Crank shaft journals as per rule 6.5" as fitted 6 7/8" Dia. of Crank pin 6 7/8" Size of Crank webs 10 1/2" x 4 3/8" Dia. of thrust shaft under collars 6 7/8" Dia. of screw 8'-8" Pitch of Screw 10'-4 3/4" No. of Blades 4 State whether moveable No Total surface 27 sq. ft

No. of Feed pumps 1 Diameter of ditto 2 5/8" Stroke 13" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 3" Stroke 13" Can one be overhauled while the other is at work ✓

No. of Donkey Engines One Sizes of Pumps 6" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One 2" dia. In Holds, &c. Three 2" dia

Ejector suction from Engine room Bilges & discharge on deck.

No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump 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 suctions 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 5/6/06 of Stern Tube 5/6/06 Screw shaft and Propeller 5/6/06

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 The Steel Company of Scotland Ltd.

Total Heating Surface of Boilers 1164 sq ft Is Forced Draft fitted No No. and Description of Boilers One S.E. Cyl. Multr.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 9.7.06 No. of Certificate 1486

Can each boiler be worked separately ✓ Area of fire grate in each boiler 34 sq. ft No. and Description of Safety Valves to each boiler Two direct Spring Area of each valve 3.97 sq" 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 8" ~~Mean~~ Int dia. of boilers 12'-0" Length 10'-0" Material of shell plates Steel

Thickness 1" Range of tensile strength 28-32 Tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. Lap long. seams D.B.S.S. Rivets Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7.63" ~~Lap of plates or~~ width of butt straps 16 1/4"

Per centages of strength of longitudinal joint rivets 96.5 plate 85.2 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 40" x 30" x 1" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 42 34/64"

Length of plain part top 5'-8" bottom 5'-2 1/2" Thickness of plates crown bottom 49/64" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 188 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 11/16" Top 5/8" Bottom 23/32"

Pitch of stays to ditto: Sides 9 1/4" x 7" Back 9 1/4" x 8 1/2" Top 7 1/2" x 8" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 207 lbs

Material of stays Steel Diameter at smallest part 1 3/4" Area supported by each stay 104 sq" Working pressure by rules 207 lbs End plates in steam space:

Material Steel Thickness 31/32" Pitch of stays 16" x 15 1/4" How are stays secured S. Nut & W Working pressure by rules 181 lbs Material of stays Steel

Diameter at smallest part 2 3/4" Area supported by each stay 244 sq" Working pressure by rules 206 lbs Material of Front plates at bottom Steel

Thickness 29/32" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14" Working pressure of plate by rules 180 lbs.

Diameter of tubes 3 1/2" Pitch of tubes 5" x 4 3/4" Material of tube plates Steel Thickness: Front 29/32" Back 27/32" Mean pitch of stays 9 3/4"

Pitch across wide water spaces 14" Working pressures by rules 182 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 3/4" x 2" Length as per rule 2'-9" Distance apart 8" Number and pitch of stays in each 3 @ 7 1/2"

Working pressure by rules 180 lbs 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 ✓

If not, state whether, and when, one will be sent ?

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

3m.2.6.—L.

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 & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Main & donkey feed check valves. Assorted bolts & nuts &c.

The foregoing is a correct description,

FOR AMOS & SMITH

Manufacturer.

W. Hill MANAGER

Dates of Survey while building — *During progress of work in shops* — 1906:- Mar 8. 22. Apr 2. 19. May 3. 24. 30. Jun 5. 18. 19. 21. 26 Jun 30

During erection on board vessel — July 7. 9. 14. 20. 25. 26. 27. 28. Aug 2.

Total No. of visits 22.

Is the approved plan of main boiler forwarded herewith Yes

" " " *donkey* " " " ✓

***Dates of Examination of principal parts*—** *Cylinders* 18/6/06 *Slides* 30/5/06 *Covers* 30/5/06 *Pistons* 21/6/06 *Rods* 21/6/06

Connecting rods 21/6/06 *Crank shaft* 18/6/06 *Thrust shaft* 30/5/06 *Tunnel shafts* ✓ *Screw shaft* 30/5/06 *Propeller* 5/6/06

Stern tube 5/6/06 *Steam pipes tested* 26/7/06 *Engine and boiler seatings* 5/6/06 *Engines holding down bolts* 20/7/06

Completion of pumping arrangements 28/7/06 *Boilers fixed* 25/7/06 *Engines tried under steam* 28/7/06

Main boiler safety valves adjusted 28/7/06 *Thickness of adjusting washers* P $\frac{5}{16}$" S $\frac{5}{16}$"

Material of Crank shaft Steel *Identification Mark on Do.* LLOYDS 5097 TM 3.06 *Material of Thrust shaft* Steel *Identification Mark on Do.* LLOYDS 229 P.A. 4.06

Material of Tunnel shafts ✓ *Identification Marks on Do.* ✓ *Material of Screw shafts* Steel *Identification Marks on Do.* LLOYDS 230 P.A. 4.06

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

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

The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in my opinion eligible to have the notation of + LMC 8.06 in the Register Book.

Hull

It is submitted that this vessel is eligible for THE RECORD + LMC 8.06.

29.8.06

The amount of Entry Fee..	£ 1 : . : .	When applied for,	28/8/ 1906
Special	£ 10 . 7 : .		
Donkey Boiler Fee . ..	£ . : . : .	When received,	31.8.06 1906
Travelling Expenses (if any)	£ . : . : .		

29.8.06

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

Committee's Minute FRI. 31 AUG 1906

Assigned + LMC 8.06

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to Hull

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