Hull No 19901 Nwc. No 5H399

Rpt. 4.

REPORT ON MACHINERY

Gr. No. 26279

Received at London Office TUES. 25 FEB 1908 SAT. 21 MAR 1908

Date of writing Report 13th Feb. 1908. When handed in at Local Office 19/2/ 1908. Port of Glasgow & Newcastle on Tyne

Hull. 13/3/08

No. in Reg. Book. Survey held at Coatbridge N.B. Date, First Survey 21st Octr 1907 Last Survey 11th Febry 1908 (Number of Visits 16.) Nwc. 13th Feb. 1908

Q4 Suff on the Steel Screw Trawler "Arfon" Tons Gross 228 Net 63

Master Built at Goole By whom built Goole S.B. Co (No 113) When built 1908.

Engines made at Coatbridge N.B. By whom made W. V. Ridgewood. Esq: (No 283) when made 1907 & 1908.

Boilers made at West Hartlepool. By whom made Richardson Westgarth (No 3190) when made 1908

Registered Horse Power Owners Gates S. Trawling Co Ld Port belonging to Milford.

Nom. Horse Power as per Section 28 ~~180~~ 70 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

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

Dia. of Cylinders 12" + 20" + 33" Length of Stroke 24" Revs. per minute Dia. of Screw shaft as per rule 6.97" as fitted 7 1/4" 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 2'-6"

Dia. of Tunnel shaft as per rule ✓ as fitted None Dia. of Crank shaft journals as per rule 6.5-7 as fitted 6 3/4" Dia. of Crank pin 6 3/4" Size of Crank webs 24 3/4" × 12 3/4" × 4 1/4" Dia. of thrust shaft under collars 6 3/4" Dia. of screw 8'-6" Pitch of Screw 11'-6" No. of Blades 4 State whether moveable No Total surface 31 ☐ft

No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 2 Sizes of Pumps 5 1/4" × 3 1/2" × 5" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 - 2" and 4 to all parts In Holds, &c. 2 - 2 1/2"

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 yes. 2"

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 ✓

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

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 24.2.08 of Stern Tube 24.2.08 Screw shaft and Propeller 24.2.08

Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel particulars of boiler appended—

Total Heating Surface of Boilers 1245 ☐ft Is Forced Draft fitted No No. and Description of Boilers 1 Single Ended Marine

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs. Date of test 16.12.07 No. of Certificate 4067

Can each boiler be worked separately ✓ Area of fire grate in each boiler 41 ☐ft No. and Description of Safety Valves to each boiler Double Spring loaded Area of each valve 4.9 ☐" 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 9" 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 plate 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 bottom Thickness of plates crown bottom 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 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

W 48-0136

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 Connecting rod top end & 2 bottom end bolts & nuts, 2 Main bearing bolts & nuts, 1 set of coupling bolts, 1 set each of fuel & bilge pump Valves, a quantity of assorted bolts & nuts, & iron of various sizes.

The foregoing is a correct description,

for W. Y. Y. Ridgewood Manufacturer.

Dates of Survey while building — During progress of work in shops— 1907. Oct 21. 31. Nov 12. 14. 21. 29. Dec. 4. 9. 18. 29. 1908. Jan 9. 16. 20 30 Feb-3. 11.

During erection on board vessel — Nwc. 1908 Feb 20 21 22 24.

Total No. of visits 16

Is the approved plan of main boiler forwarded herewith No

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 14.11.07. Slides 12.11.07 Covers 21.11.07 Pistons 21.10.07 Rods 21.10.07.

Connecting rods 21.11.07 Crank shaft 9.1.08 Thrust shaft 9.1.08 Tunnel shafts ✓ Screw shaft 11.2.08 Propeller 11.2.08

Stern tube 11.2.08 Steam pipes tested 24.2.08 Engine and boiler seatings 11.2.08 Engines holding down bolts 20.2.08

Completion of pumping arrangements 13.3.08 Boilers fixed 20.2.08 Engines tried under steam 24 Feby 08

Main boiler safety valves adjusted 27.2.08 Thickness of adjusting washers 5/16 & 7/32

Material of Crank shaft Steel Identification Mark on Do. 283 Material of Thrust shaft Steel Identification Mark on Do. 283.

Material of Tunnel shafts None Identification Marks on Do. ✓ Material of Screw shafts iron Identification Marks on Do. 283.

Material of Steam Pipes Copper Test pressure 360 lbs per □". at Billingham. v. S

General Remarks (State quality of workmanship, opinions as to class, &c. The engines of this vessel have been built under Special Survey. The workmanship & materials are of good quality, & when they have been satisfactorily fitted on board & tried under steam, they will be eligible in my opinion for the L.M.C. Notation with date of completion. The engines are being forwarded to Goole to be fitted on board.

The machinery placed on board at Middlesbro & subsequently fitted up and tested under Steam at North Shields and found efficient—pr H L M C 2.08 as recommended. When the hold suction pipes have been fitted and tested this is understood will be done at Grimsby which place the Vessel has sailed- Surveyors at Grimsby advised—

Leonard & Challoner

Fee £1.0.0 due Glo. £3.10.0 due Glo. 3.10.0 due ~~Hull~~ Nwc 3.10.0 due recharged Mdb. £11.10.0

Hold suction pipes fitted tested at Goole.

James Barclay.

It is submitted that this vessel is eligible for THE RECORD ✠ L.M.C. 2.08.

The amount of Entry Fee.. £ 1 : 0 : 0 When applied for, 20/2/1908

Special .. .. .. £ ~~10 : 10 :~~

Donkey Boiler Fee .. .. £ 7 : 0 : When received, 21/3/1908

Travelling Expenses (if any) £ : :

C. H. L. Pilditch.

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

Certificate (if required) to be sent to Glasgow

(The Surveyors are requested to write on or below the space for Committee's Minute.)

Committee's Minute Glasgow 24 FEB 1908

Assigned Deferred for compl.

+ L.M.C. 2.08

MACHINERY CERTIFICATE WRITTEN.

TUES. 24 MAR 1908

21.3.08

23.3.08