Rpt. 4.

REPORT ON MACHINERY.

No. 24410

Received at London Office TUE. NOV. 21. 1911

Date of writing Report ____ 19__ When handed in at Local Office 20. 11 - 1911 Port of Hull

No. in Reg. Book. 29 Supp. Survey held at Hull. Date, First Survey Apr 12th Last Survey Nov 4th 1911 (Number of Visits 42)

on the S/Trawler CHALCEDONY Tons Gross 333 Net 134

Master ____ Built at Selby. By whom built Cochrane & Sons When built 1911

Engines made at Hull. By whom made Amos & Smith Ltd when made 5.

Boilers made at 5 By whom made 5 when made 5

Registered Horse Power ✓ Owners Kingston Steam Trawling Co Ltd Port belonging to Hull

Nom. Horse Power as per Section 28 84. ✓ 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 13 - 22½ - 37 ✓ Length of Stroke 26" ✓ Revs. per minute 118. ✓ Dia. of Screw shaft as per rule 7.83 as fitted 8½. ✓ 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 42"

Dia. of Tunnel shaft as per rule 7.01. ✓ as fitted 7⅜ - 7½ Dia. of Crank shaft journals as per rule 7.86 ✓ as fitted 7⅝ Dia. of Crank pin 7⅝ ✓ Size of Crank webs 4⅜ × 4½ ✓ Dia. of thrust shaft under collars 7⅝ ✓ Dia. of screw 9'-6" ✓ Pitch of Screw 11'-3" ✓ No. of Blades 4 ✓ State whether moveable No. ✓ Total surface 334 ✓

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

No. of Bilge pumps one ✓ 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" × 3" × 6" ✓ No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 - 2½" ✓ (Fwd & Aft) In Holds, &c. 4 - 2½" ✓ (Forehold, Stokehold, Fwd shaft well, Aft shaft well) 2½" Gun suction to all bilges with discharge on deck ✓

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" Gun ✓

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 29. 7. 11 of Stern Tube 29. 7. 11 Screw shaft and Propeller 29. 7. 11

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 Gewerkschaft Grillo Funke & Co. ✓

Total Heating Surface of Boilers 1340 ft ✓ Is Forced Draft fitted No ✓ No. and Description of Boilers 1. S.E. Multitubular ✓

Working Pressure 200 lbs. ✓ Tested by hydraulic pressure to 400 lbs. ✓ Date of test 3.10.11 No. of Certificate 1843

Can each boiler be worked separately ✓ Area of fire grate in each boiler 46.25 ✓ No. and Description of Safety Valves to each boiler 2 Spring loaded ✓ Area of each valve 4.9 sq" ✓ Pressure to which they are adjusted 205 lbs. ✓ Are they fitted with easing gear Yes. ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 8" ✓ Mean dia. of boilers 13'-6" ✓ Length 10'-6" ✓ Material of shell plates Steel ✓

Thickness 1 7/32" ✓ Range of tensile strength 29·33 tons ✓ Are the shell plates welded or flanged No. ✓ Descrip. of riveting: cir. seams Double Lap ✓ long. seams Double butt straps with ✓ Diameter of rivet holes in long. seams 1 7/32" ✓ Pitch of rivets 8¼" ✓ ~~Lap of plates or~~ width of butt straps 18½" ✓

Per centages of strength of longitudinal joint rivets 86·3 plate 85·2 Working pressure of shell by rules 207 Size of manhole in shell 16" × 12" ✓

Size of compensating ring 40 × 30 × 1 7/32" ✓ No. and Description of Furnaces in each boiler 3 plain ✓ Material Steel. ✓ Outside diameter 3'-2 47/32" ✓

Length of plain part top 68 bottom 61 Thickness of plates crown 25/32" ✓ bottom 25/32 Description of longitudinal joint welded. ✓ No. of strengthening rings ✓

Working pressure of furnace by the rules 215 Combustion chamber plates: Material Steel. ✓ Thickness: Sides 23/32" ✓ Back 11/16" ✓ Top 11/16" ✓ Bottom 23/32" ✓

Pitch of stays to ditto: Sides 9" × 8¼" ✓ Back 8 3/8" × 8 7/8" ✓ Top 8¼" × 9¼" ✓ If stays are fitted with nuts or riveted heads Nuts ✓ Working pressure by rules 213

Material of stays Steel. ✓ Diameter at smallest part 2" = 2.66 (⅜" = 2.06") ✓ Area supported by each stay 76·3 sq" Working pressure by rules 243 End plates in steam space: Stayed with stay tubes ✓

Material Steel. ✓ Thickness 1 5/16" ✓ Pitch of stays 10½" × 18½" ✓ How are stays secured Nuts & washers ✓ Working pressure by rules 217 Material of stays Steel. ✓

Diameter at smallest part 8·46 ✓ Area supported by each stay 376 sq" ✓ Working pressure by rules 234 Material of Front plates at bottom Steel ✓

Thickness 1" ✓ Material of Lower back plate Steel. ✓ Thickness 29/32" ✓ Greatest pitch of stays 13½" × 8 7/8" ✓ Working pressure of plate by rules 211

Diameter of tubes 3½" ✓ Pitch of tubes 4¾" × 5" ✓ Material of tube plates Steel. ✓ Thickness: Front 1" ✓ Back ⅞" ✓ Mean pitch of stays 9 3/16"

Pitch across wide water spaces 13¾" ✓ Working pressures by rules 203 Girders to Chamber tops: Material Steel. ✓ Depth and thickness of girder at centre 10" × 1¾" ✓ Length as per rule 3'-0 11/16" ✓ Distance apart 9¼" ✓ Number and pitch of stays in each 3 @ 8¼" ✓

Working pressure by rules 195 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 Radius of do. Stayed by

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

SPARE GEAR. State the articles supplied :— Two bottom ✓ end top end connecting rod bolts + nuts ✓, two main bearing bolts + nuts ✓, one set of coupling bolts + nuts ✓, one set of feed + bilge pump valves ✓, one set of air pump valves, one main + one donkey feed check valve, assorted bolts + nuts ✓ etc.

The foregoing is a correct description, FOR AMOS & SMITH LTD.

Manufacturer. E. F. Robinson Secretary.

Dates of Survey while building — During progress of work in shops: 1911:- Apr 12. 27. May 2. 11. 25. 31. June 13. 16. 30. July 3. 7. 14. 15. 25. 26. 27. 29 Aug 3. 8. 12.

During erection on board vessel: Aug 14. 17. Sep 5. 12. 14. 15. 19. 21. 26. 27. 30. Oct 3. 5. 9. 12. 13. 16. 17. 18. 23. 24. Nov 4.

Total No. of visits 42. Is the approved plan of main boiler forwarded herewith yes ✓

" " " ~~donkey~~ " " " —

Dates of Examination of principal parts— Cylinders 14. 9. 11 Slides 26. 9. 11 Covers 14. 9. 11 Pistons 14. 9. 11 Rods 15. 9. 11

Connecting rods 12. 9. 11 Crank shaft 15. 9. 11 Thrust shaft 15. 9. 11 Tunnel shafts ✓ Screw shaft 27. 7. 11 Propeller 27. 7. 11

Stern tube 25. 7. 11 Steam pipes tested 17. 10. 11 Engine and boiler seatings 5. 10. 11. Engines holding down bolts 9. 10. 11

Completion of pumping arrangements 24. 10. 11. Boilers fixed 9. 10. 11. Engines tried under steam 18. 10. 11

Main boiler safety valves adjusted 18. 10. 11. Thickness of adjusting washers $5\frac{3}{8}$ + $P\frac{1}{2}$

Material of Crank shaft Steel Identification Mark on Do. 811. 15 9 11 J.W.G Material of Thrust shaft Steel Identification Mark on Do. 811. 15. 9. 11 J.W.G

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 811 27. 7. 11 J.W.G

Material of Steam Pipes Solid drawn copper ✓ Test pressure 400lbs.

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 + tested on board in accordance with the rules. They are now in good working condition and are respectfully submitted as being eligible in my opinion to have mention of +/- L.M.C. 11.11 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD +LMC 11.11.

J.W.G. 23/11/11

Certificate (if required) to be sent to Hull

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

The amount of Entry Fee .. £ 1 : 0 : 0 When applied for, 16.11.1911

Special .. .. .. £ 12 . 12 : 0

Donkey Boiler Fee .. .. £ : :

Travelling Expenses (if any) £ 8 : 2 When received, 30.11.1911

John. W. Gwynne.

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

Committee's Minute FRI. NOV. 24. 1911

Assigned +LMC. 11.11

CERTIFICATE WRITTEN