Rpt. 4.

REPORT ON MACHINERY.

No. 23875

Received at London Office FRI. 30 JUN 1911

Date of writing Report June 19 1911 When handed in at Local Office 28.6.1911 Port of Hull

No. in Survey held at Hull Date, First Survey Nov 15th Last Survey Jun 13th 1911.
Reg. Book. (Number of Visits 56)

on the S/ Trawler ORCADES Tons Gross 270 Net 121.

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

Engines made at Hull By whom made Amos & Smith Ld when made "

Boilers made at " By whom made " when made "

Registered Horse Power — Owners Dolphin Stm Fishing Co Ld Port belonging to Grimsby

Nom. Horse Power as per Section 28 71 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 12¼" 21" 34" Length of Stroke 24 Revs. per minute 117 Dia. of Screw shaft as per rule 7.13 as fitted 7¾ 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 6¾ Dia. of Crank shaft journals as per rule 6.62 as fitted 6⅞ Dia. of Crank pin 6⅞" Size of Crank webs 13¾×4¾" 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 One Diameter of ditto 2⅝" Stroke 12" Can one be overhauled while the other is at work —

No. of Bilge pumps one. Diameter of ditto 3" Stroke 12 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" Ford In Holds, &c. 3-2" Fore hold & stokeholds

2" Ejector suction to all bilges with 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 28.4.11 of Stern Tube 28.4.11 Screw shaft and Propeller 28.4.11

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. Schalke Westphalia

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

Working Pressure 180. Tested by hydraulic pressure to 360 lbs. Date of test 26.4.11. No. of Certificate 1806.

Can each boiler be worked separately — Area of fire grate in each boiler 35 ft No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 3.976" 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 2½" Mean dia. of boilers Ins. 12'6" Length 10'2 Material of shell plates Steel

Thickness 1⅜" Range of tensile strength 28-32 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams DR Lap. long. seams TRBS rivets Diameter of rivet holes in long. seams 1⅛" Pitch of rivets 7.63 ~~Lap of plates or~~ width of butt straps 16¼"

Per centages of strength of longitudinal joint rivets 94 plate 85.2 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 3'7 17/32

Length of plain part top 72" bottom 69" Thickness of plates crown 5/8 bottom 9/16 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 11/16" Top 5/8" Bottom 11/16

Pitch of stays to ditto: Sides 9¼×7" Back 9×8¾" Top 8¾×7 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 207

Material of stays Steel Diameter at smallest part 1⅝" 2.06 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 Screwed into end plates, Nuts & washers Working pressure by rules 199. Material of stays Steel.

Diameter at smallest part Area 5.05 Area supported by each stay 268" Working pressure by rules 196 Material of Front plates at bottom Steel.

Thickness 29/32 Material of Lower back plate Steel Thickness 15/16 Greatest pitch of stays 14×8¾ Working pressure of plate by rules 222

Diameter of tubes 3¼" Pitch of tubes 4¼×4 15/16 Material of tube plates Steel. Thickness: Front 29/32 Back 27/32 Mean pitch of stays 9½×9⅝

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 8¾ 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 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 top ✓ & two bottom end connecting rod bolts & nuts ✓, two main bearing bolt nuts ✓, one set of coupling bolt nuts ✓, one set of feed & bilge pump valves ✓, one main & one donkey feed check valve assorted bolts & nuts ✓.

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

Manufacturer. W S Wade Managing Director

Dates of Survey while building — During progress of work in shops: 1910:- Nov 15. 22. 24. 29. Dec 2. 8. 13. 16. 20. 22 per SS 1911:- Jan 5. 10. 17. 21. 23. 25. 27. Feb 4

During erection on board vessel: Feb 6. 7. 8. 9. 15. 17. 20. 24. Mar 2, 8. 11. 13. 21. 23. 24, 27. 29. Apr 4. 10. 12, 13, 24. 26. 27. 28 May 2. 8. 11. 19. 26. 27. 30. 31. Jun 1. 6. 7. 8. 13.

Total No. of visits 56

Is the approved plan of main boiler forwarded herewith Yes ✓

" " " donkey " " " ✓

Dates of Examination of principal parts— Cylinders 27. 3. 11 Slides 4. 4. 11 Covers 27. 3. 11 Pistons 4. 4. 11 Rods 2. 5. 11

Connecting rods 2. 5. 11 Crank shaft 19. 5. 11 Thrust shaft 8. 3. 11 Tunnel shafts — Screw shaft 13. 3. 11 Propeller 21. 3. 11

Stern tube 21. 3. 11 Steam pipes tested 1. 6. 11 Engine and boiler seatings 28. 4. 11 Engines holding down bolts 30. 5. 11

Completion of pumping arrangements 13. 6. 11 Boilers fixed 30. 5. 11 Engines tried under steam 7. 6. 11

Main boiler safety valves adjusted 7. 6. 11 Thickness of adjusting washers $5\frac{5}{16}$ $P\frac{5}{16}$

Material of Crank shaft Steel Identification Mark on Do. 692 19. 5. 11 J.W.G Material of Thrust shaft Steel Identification Mark on Do. 692 8. 3. 11 J.W.G

Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts Iron Identification Marks on Do. 692 13. 3. 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 & secured 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 record of ✠ L.M.C. 6. 11 in the Register Book.

It is submitted that the vessel is eligible for ✠LMC 6.11 in the REGISTER BOOK

✠LMC.6.11.

J.W.G. 30/6/11

The amount of Entry Fee	£ 1 : 0 0	When applied for,	
Special	£ 10 : 13 0	28. 6.	19 11
Donkey Boiler Fee	£ : :	When received,	
Travelling Expenses (if any)	£ : 10 10	30. 6	19 11

John. W. Gwynne

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

1. 7. 11

Committee's Minute

RECD. 4 JUL 1911

Assigned ✠LMC 6. 11

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.)