

# REPORT ON MACHINERY

No. 29769

MON. 29. APR. 1917

Received at London Office

Date of writing Report 19-1-17 19 When handed in at Local Office 27-1-17 19 Port of Hull

No. in Survey held at Hull Date, First Survey 11-4-16 Last Survey 18-1-17 19

Reg. Book. 15-16 on the steel screw trawler Balmoral. (Number of Visits 37)

Master Built at Selby By whom built Cochrane Bros Ltd Tons Gross 222 Net 97 When built 1917-1

Engines made at Hull By whom made C. D. Holmes & Co Ltd (No 1132) when made 1917-1

Boilers made at Hull By whom made C. D. Holmes & Co Ltd when made 1917-1

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

Nom. Horse Power as per Section 28 66 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 12"-21"-34" Length of Stroke 24" Revs. per minute Dia. of Screw shaft as per rule 6.99" 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 Yes 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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 30 1/2"

Dia. of Tunnel shaft as per rule 6.26" Dia. of Crank shaft journals as per rule 6.57" Dia. of Crank pin 6 3/4" Size of Crank webs 3"x4 1/2" Dia. of thrust shaft under

collars 6 3/4" Dia. of screw 8'-6" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable No Total surface 28 1/2 sq ft

No. of Feed pumps one Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps one Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines two 2 1/2" dia. Sizes of Pumps 5 1/4", 3 1/2" x 5" dip 5", 2 1/4" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room two 2" dia. In Holds, &c. one 2" in each compartment

a 2 1/2" dia suction also fitted in stowage

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

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 Forward suction How are they protected strong wooden 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

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

## BOILERS, &c.—(Letter for record S) Manufacturers of Steel Stewarts & Lloyds

Total Heating Surface of Boilers 10700 sq ft Is Forced Draft fitted No No. and Description of Boilers one single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 28-11-16 No. of Certificate 3178

Can each boiler be worked separately Yes Area of fire grate in each boiler 33 sq ft No. and Description of Safety Valves to

each boiler two spring loaded Area of each valve 3.98 sq in 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 6" Bl lagged Mean dia. of boilers 14 7/16" Length 10'-0" Material of shell plates Steel

Thickness 1 1/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams double

long. seams J.R.D.B. Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 7 1/2" Top of plates or width of butt straps 15"

Per centages of strength of longitudinal joint rivets 85.6 Working pressure of shell by rules 184 lbs Size of manhole in shell 12" x 16"

Size of compensating ring 7" x 1 1/32" No. and Description of Furnaces in each boiler two plain Material Steel Outside diameter 43"

Length of plain part top 76" Thickness of plates crown 7 1/32" Description of longitudinal joint welded No. of strengthening rings

bottom 67" Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 2/32" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9" x 10" Back 9 3/8" x 9 1/2" Top 10" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Area at smallest part 2.07 sq in Area supported by each stay 90 sq in Working pressure by rules 207 End plates in steam space:

Material steel Thickness 1 7/16" Pitch of stays 17" x 17" How are stays secured J. T. & W. Working pressure by rules 185 Material of stays steel

Area at smallest part 5.79 sq in Area supported by each stay 289 sq in Working pressure by rules 206 Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 29/32" Greatest pitch of stays 19" double Working pressure of plate by rules 180

Diameter of tubes 3 1/2" Pitch of tubes 5" Material of tube plates steel Thickness: Front 7/8" double Back 7/8" Mean pitch of stays 10"

Pitch across wide water spaces 15" Working pressures by rules 249 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8" x 1 3/4" Length as per rule 32.43" Distance apart 8 1/2" Number and pitch of stays in each two 10"

Working pressure by rules 193 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

## SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Material of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of air circulating feed charge pump valves, one set of donkey pump valves, one main & one donkey check valve, 6 junking studs & nuts, 3 Boiler tubes, one escape valve spring each size, two safety valve springs, & a quantity of iron bolts & nuts of various sizes.*

The foregoing is a correct description,

per *CHARLES D. HOLMES & CO. LTD.*

*Harold E Sheard* Manufacturer.

Dates of Survey while building: During progress of work in shops -- *1916: - Apr 11, 13, 17, 18, 19, Jul 14, Aug 19, 23, Sep 5, 19, 27, Oct 5, 14, 20, 23, 25, 27, 31.*  
During erection on board vessel -- *Nov 3, 7, 9, 13, 15, 18, 20, 21, 24, 28, Dec 28, 29, 1917: - Jan 1, 6, 10, 11, 13, 17, 18.*  
Total No. of visits *37*

Is the approved plan of main boiler forwarded herewith *yes please return for submission*  
" " " donkey " " "

Dates of Examination of principal parts—Cylinders *27-9-16* Slides *7-11-16* Covers *31-10-16* Pistons *27-10-16* Rods *27-10-16*  
Connecting rods *31-10-16* Crank shaft *27-10-16* Thrust shaft *14-7-16* Tunnel shafts  Screw shaft *18-4-16* Propeller *18-4-16*  
Stern tube *18-4-16* Steam pipes tested *11-1-17* Engine and boiler seatings *19-4-16* Engines holding down bolts *1-1-17*  
Completion of pumping arrangements *18-1-17* Boilers fixed *1-1-17* Engines tried under steam *18-1-17*  
Completion of fitting sea connections *19-4-16* Stern tube *19-4-16* Screw shaft and propeller *19-4-16*  
Main boiler safety valves adjusted *18-1-17* Thickness of adjusting washers *7/16 & 3/8*  
Material of Crank shaft *Iron* Identification Mark on Do. *1748 FLS* Material of Thrust shaft *Iron* Identification Mark on Do. *1703 FLS*  
Material of Tunnel shafts  Identification Marks on Do.  Material of Screw shafts *Iron* Identification Marks on Do. *1576 FLS*  
Material of Steam Pipes *solid drawn copper* Test pressure *400 lbs*  
Is an installation fitted for burning oil fuel  Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with   
Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Windsor*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey in accordance with the approved plan & the rules of this society. The materials & workmanship are good. The Boiler & steam pipes have been tested as above & found sound & good. The machinery has been properly fitted & secured on board the vessel & on completion was tried under steam & found satisfactory. The safety valves have been adjusted & tested for accumulation which did not exceed 190 lbs. In my opinion the vessel is eligible for the record + L.M.C. 1-17.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1.17.

*APR 30/1/17*

*Frank L. Sturgeon*  
Engineer/Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ...	£ 1 : 0 :	When applied for, <i>27/1/1917</i>
Special ...	£ 9 : 10 :	
Donkey Boiler Fee ...	£ : : :	When received, <i>31-1-1917</i>
Travelling Expenses (if any) £	: : <i>8/2</i> :	<i>2/19</i>

Committee's Minute *TUE 30 JAN. 1917*  
Assigned *+ L.M.C. 1.17*



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