

# REPORT ON MACHINERY.

Port of Sunderland

Received at London Office

JUN 6 JUN 1911

No. in Survey held at Sunderland Date, first Survey 10 Feb 1911 Last Survey Aug 6th 1911  
 Reg. Book. on the Steel Screw Steamer "Tolly" (Number of Visits 25)  
 Master L. P. Larsen Built at Antwerp By whom built Antwerp Dry Co. Ld (1853) When built  
 Engines made at Sunderland By whom made H. P. Marine Dry Co. Ld when made 1911  
 Boilers made at " By whom made " when made 1911  
 Registered Horse Power \_\_\_\_\_ Owners Dampskibsselskabet Vesterhavet Port belonging to Esbjerg  
 Nom. Horse Power as per Section 28 82 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Vertical Triple No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 13 - 21 - 35 Length of Stroke 27 Revs. per minute 99 Dia. of Screw shaft as per rule 8 3/8 Material of screw shaft Steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight in the propeller boss — 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 - 10 1/2  
 Dia. of Tunnel shaft as per rule 6 7/8 Dia. of Crank shaft journals as per rule 4 1/2 Dia. of Crank pin 4 1/2 Size of Crank webs 4 5/8 x 10 1/2 Dia. of thrust shaft under collars 7 1/4 Dia. of screw 10 - 0 Pitch of Screw 10 - 6 No. of Blades 4 State whether moveable No Total surface 34 1/2 sq ft  
 No. of Feed pumps 2 Diameter of ditto 2 1/4 Stroke 15 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/4 Stroke 15 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 4 1/2 x 2 3/4 x 4 Duplex 6 x 6 x 6 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three of 2" In Holds, &c. Four of 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 1/4"  
 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 fitted  
 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 engine room 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 None How are they protected —  
 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 13-7-11 of Stern Tube 13-7-11 Screw shaft and Propeller 13-7-11  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Platform in Engine room above main deck.

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel J. Spencer & Co. Ltd. Newcastle  
 Total Heating Surface of Boilers 4284 Is Forced Draft fitted No No. and Description of Boilers 2 S.P. multitubular  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 25-4-11 No. of Certificate 2907  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 22 sq ft No. and Description of Safety Valves to each boiler 2 Over-Pressure Area of each valve 3.14 sq ft 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 18" Mean dia. of boilers 9 - 4 1/16 Length 9 - 0 Material of shell plates Steel  
 Thickness 3/32 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams St Lap  
 long. seams St Lap Diameter of rivet holes in long. seams 1" Pitch of rivets 7" Lap of plates or width of butt straps 16 1/4"  
 Per centages of strength of longitudinal joint rivets 85.46 Working pressure of shell by rules 180.2 Size of manhole in shell End 16 x 12  
 plate 85.71 No. and Description of Furnaces in each boiler 2 Morrison Material — Outside diameter 32 1/4"  
 Length of plain part top — Thickness of plates crown 7/16 Description of longitudinal joint weld No. of strengthening rings —  
 bottom — Working pressure of furnace by the rules 182.26 Combustion chamber plates: Material S Thickness: Sides 3/4 Back 3/8 Top 3/4 Bottom 3/4  
 Pitch of stays to ditto: Sides 12 5/8 x 7 1/2 Back 11 x 10 5/8 Top 7 1/2 x 12 5/8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 199  
 Material of stays S Diameter at smallest part 1.63 Area supported by each stay 94.6 Working pressure by rules 200 End plates in steam space: Material S Thickness 15/16 Pitch of stays 12 x 17 1/4 How are stays secured St Nut Working pressure by rules 181 Material of stays S  
 Diameter at smallest part 2.28 Area supported by each stay 213.0 Working pressure by rules 200 Material of Front plates at bottom S  
 Thickness 15/16 Material of Lower back plate Steel Thickness 15/16 Greatest pitch of stays 4 1/2 x 10 5/8 Working pressure of plate by rules 88  
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 7/16 Material of tube plates S Thickness: Front 15/16 Back 3/4 Mean pitch of stays 10 5/8  
 Pitch across wide water spaces 14" Working pressures by rules 183 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 5/8 x 1 1/8 Length as per rule 26 1/2 Distance apart 12 5/8 Number and pitch of stays in each 2 7 1/2"  
 Working pressure by rules 183 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 \_\_\_\_\_

**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
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
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:— 1 propeller 2 each of main bearing + top + bottom end bolts, 6 main shaft coupling bolts, 1 slide valve rod, 1 air pp rod, set of valves for air + circulating pumps, 1 set of rings for the H.P. piston, 2 span feed + bilge pump valves, 1 set of safety valve springs, 5 boiler tubes, 12 condenser tubes + a quantity of bolts + nuts + plates + bars of various sizes

The foregoing is a correct description,  
**NORTH EASTERN MARINE ENGINEERING CO LTD** Manufacturer.  
 Walnut Tree Lane

Dates of Survey while building	During progress of work in shops - -	1911 Feb. 10. Mar. 6. 9. 14. 27. 30. Apr. 4. 10. 20. 24. 25. May 1. 9. 15. 22. 25. 29.	= 17
	During erection on board vessel - -	1911 June 23. 28, July 6-13-19-26 Aug 4-6	= 8
	Total No. of visits	25.	

Is the approved plan of main boiler forwarded herewith **Yes**  
 " " " donkey " " "

Dates of Examination of principal parts—Cylinders 9-3-11 Slides 9-5-11 Covers 1-5-11 Pistons 1-5-11 Rods					
Connecting rods	9-5-11	Crank shaft	24-3-11	Thrust shaft	3-4-11
Tunnel shafts	22-5-11	Screw shaft	25-5-11	Propeller	29-5-11
Steam pipes tested	4-8-11	Engine and boiler seatings	19-7-11	Engines holding down bolts	26-7-11
Completion of pumping arrangements	6-8-11	Boilers fixed	19-7-11	Engines tried under steam	6-8-11
Main boiler safety valves adjusted	6-8-11	Thickness of adjusting washers	F 0 1/2" Part boiler 3" F 0 1/2" Part boiler 3"		
Material of Crank shaft	Ident. Mark on Do. 7870N R.D.C.	Material of Thrust shaft	Ident. Mark on Do. 57B		
Material of Tunnel shafts	6 { 3020HK 64MB 2964HK 39MB	Material of Screw shafts	4 { 3021HK		
Material of Steam Pipes	Copper	Test pressure	360 lbs per sq inch.		

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

The machinery of this vessel has been constructed under special survey, the material and workmanship found good and efficient, and the boiler tested in accordance with the rules.

The machinery has been shipped to Antwerp where the survey will be completed.

The fitting of the engines + boilers examined, + together with the auxiliary machinery tried under working conditions, + found satisfactory + is now eligible in my opinion for the record of + L.M.C. 7-11 in the Register Book

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 8. 11.

J.M. J.W.D. 25/8/11

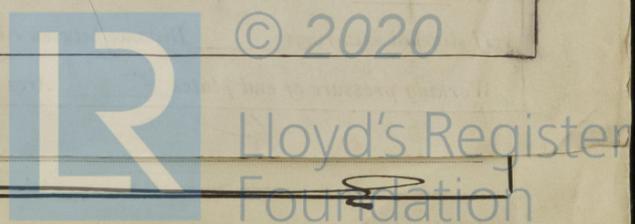
The amount of Entry Fee..	£ 1 : 0 :	When applied for,
Special .. .. .	£ *12 : 6 :	3.6.1911
Donkey Boiler Fee .. .	£ : :	When received,
Travelling Expenses (if any)	£ : :	16/6/1911

**E. J. Stoddart + A. G. Larminier**  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

**E. J. Wilvers.**

Committee's Minute  
 Assigned  
 FRI. AUG. 25. 1911  
 Thmc 8. 11

MACHINERY CERTIFICATE  
 WRITTEN.



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