

# REPORT ON MACHINERY.

Port of Belfast

Received at London Office **MON. 15 NOV 1909**

No. in Survey held at Belfast  
Reg. Book. Y.S. Anvieto  
on the

Date, first Survey 28 July 1908 Last Survey 6 Nov 1909  
(Number of Visits 122)

Master Trukman Clark Bayl Built at Belfast By whom built Trukman Clark Bayl When built 1909

Engines made at Belfast By whom made Trukman Clark Bayl when made 1909

Boilers made at Belfast By whom made Trukman Clark Bayl when made 1909

Registered Horse Power 1944 Owner Agent S. Navigators Co Ltd belonging to Belfast

Nom. Horse Power as per Section 28 1944 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Quadruple Expansion of Cylinders 8 No. of Cranks 8

Dia. of Cylinders 29-41-59-84 Length of Stroke 60 Revs. per minute 80 Dia. of Screw shaft as per rule 16.9 Material of screw shaft as fitted 18.72 Steel

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 Yes Length of stern bush 6'-0"

Dia. of Tunnel shaft as per rule 16.82 Dia. of Crank shaft journals as per rule 16.81 Dia. of Crank pin 18 Size of Crank web 24 1/2 x 12 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 18-0 Pitch of Screw 23-3 No. of Blades 4 State whether moveable Yes Total surface 95 sq ft.

No. of Feed pumps 2 Diameter of ditto 3 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 Stroke 12 Can one be overhauled while the other is at work Yes

No. of Donkey Engines See other sheet No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 12-3 1/2" In Holds, &c. 12-3 1/2"

No. of Bilge Injections 2 sizes 12" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 5-5 1/2"

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 Yes

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 Both

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 Five Hotk suction How are they protected Wood casings

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 2-7-09 of Stern Tube 21-6-09 Screw shaft and Propeller 2-7-09

Is the Screw Shaft Tunnel watertight States when it fitted with a watertight door worked from Engine Room Top Platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Wendover & Co

Total Heating Surface of Boilers 24708 sq ft Draft fitted Yes No. and Description of Boilers 4 Double End Cylinders

Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 28-6-09 No. of Certificate 419

Can each boiler be worked separately Yes Area of fire grate in each boiler 1468 sq ft No. and Description of Safety Valves to each boiler 3 Direct Spring

Area of each valve 12.56 sq ft Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18 Mean dia. of boilers 16-4 1/2 Length 20-2 1/2 Material of shell plates Steel

Thickness 1 1/8 Range of tensile strength 3 1/2 to 35 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam L.P.S.

long. seams Butt Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 10 Gap of plates or width of butt straps 23 1/2

Per centages of strength of longitudinal joint rivets 102.5 Working pressure of shell by rules 251 lbs Size of manhole in shell 16 x 12

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 8 Wrighton Material Steel Outside diameter 44 1/2

Length of plain part top 2 bottom 2 Thickness of plates crown 3 1/2 bottom 3 1/4 Description of longitudinal joint Weld No. of strengthening rings 27

Working pressure of furnace by the rules 234 lbs Combustion chamber plates: Material Steel Thickness: Sides 3 1/2 Back 3 1/2 Top 3 1/2 Bottom 1

Pitch of stays to ditto: Side 8 1/2 x 7 1/8 Back 8 1/2 x 6 1/2 Top 8 1/2 x 6 1/2 If stays are fitted with nuts or riveted heads Nuts in Working pressure by rules 233 lbs

Material of stay Steel Diameter at smallest part 1 1/2 Area supported by each stay 62 1/16 Working pressure by rules 251 lbs End plates in steam space:

Material Steel Thickness 1 1/4 Pitch of stays 20 1/8 x 16 How are stays secured Nuts Working pressure by rules 217 lbs Material of stays Steel

Diameter at smallest part 1 1/8 supported by each stay 330 sq Working pressure by rules 247 lbs Material of Front plates at bottom Steel

Thickness 1 Material of Lower back plate Steel Thickness 1 Greatest pitch of stays 1 1/2 Working pressure of plate by rules 227 lbs

Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 5/8 Material of tube plates Steel Thickness: Front 29 Back 13 Mean pitch of stays 7 1/2 x 4 1/2

Pitch across wide water spaces 13 1/2 Working pressures by rules 259 lbs with 330 lbs to Chamber tops: Material Steel Depth and thickness of girder at centre 14 x (3 x 2) Length as per rule 53 1/8 Distance apart 8 1/2 x 7 1/2 Number and pitch of stays in each 6-6 1/2

Working pressure by rules 227 lbs Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked separately

Diameter 12 Length 12 Thickness of shell plates 1 1/2 Material Steel Description of longitudinal joint Butt Diam. of rivet holes 1 1/16

Pitch of rivets 10 Working pressure of shell by rules 251 lbs Diameter of flue 16 Material of flue plates Steel Thickness 1 1/2

If stiffened with rings Yes Distance between rings 12 Working pressure by rules 251 lbs End plates: Thickness 1 1/2 How stayed By stays

Working pressure of end plates 227 lbs Area of safety valves to superheater 12 Are they fitted with easing gear Yes



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:—

*2 Pistons with nuts; 2 pairs bottom sub masses; 4 pairs top sub masses; pair guides bars; 2 screws & traps; rods; 2 sets valves & spindles; sets packing rings & springs for 4 pistons; set packing rings for 2 piston valves; 4 thrust block shoes; 2 propeller keys; 2 fine gear for pumps & all gear to Lloyd's Rules Extra.*

The foregoing is a correct description,  
**FOR WORKMAN, CLARK & CO., LIMITED**  
*W. H. Bell* Manufacturer.

Dates of Survey while building: During progress of work in shops— 1908 - July 28, 30, Aug. 22, Oct. 9, 13, 16, 20, 27, 30, Nov. 3, 6, 11, 13, 16, 18, 23, 24, 26, 30, Dec. 1, 7, 10, 14 up to 6<sup>th</sup> Nov. 1909

During erection on board vessel —

Total No. of visits 122

Is the approved plan of main boiler forwarded herewith *No Duplicate of S.S. Stranto*

Dates of Examination of principal parts—Cylinders 9-6-09 Covers \_\_\_\_\_ Rods \_\_\_\_\_

Connecting rods 7-4-09 Crank shaft 20-6-09 Tunnel shafts \_\_\_\_\_ Screw shafts 14-6-09 Propeller 14-6-09

Stern tube 14-6-09 Steam pipes tested 24-2-09 Engines and boiler seatings 21-4-09 Engines holding down bolts 6-9-09

Completion of pumping arrangements 11-10-09 Boilers fixed 21-4-09 Engines tried under steam 17-9-09

Main boiler safety valves adjusted 17-25-09 Thickness of adjusting washers 9-14-09

Material of Crank shaft *S. Steel* Identification Mark on Do. *R.J.B.* Material of Thrust shaft *Do* Identification Mark on Do. *Do*

Material of Tunnel shafts *Do* Identification Marks on Do. *Do* Material of Screw shafts *Do* Identification Marks on Do. *Do*

Material of Steam Pipes *W. Shaw* Test pressure 650 lbs

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

*The machinery of this vessel, which is a duplicate of that fitted in the S.S. Stranto, has been constructed under Special Survey, and in accordance with the Rules. The materials and the workmanship are of good description, and on trial under steam, the machinery worked satisfactorily. In my opinion, it is eligible for record + L.M.C. 11-09 with notation "Fused Draft & Electric Light & Refrigerating Machine"*

*It is submitted that this vessel is eligible for RECORD. + L.M.C. 11-09. F.D. Ref. Mach.*

*W. H. Bell*  
 16/11/09

The amount of Entry Fee.	£ 3 : 0	When applied for.
Special ..	£ 94 : 8 6	9-11-09
Donkey Boiler Fee ..	£ :	When received,
Travelling Expenses (if any) £	:	12-11-09

Committee's Minute **11.16.1909**

Assigned *+ L.M.C. 11-09*

*R. F. Reynolds*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to the office

Date of survey while building  
 No. in Reg. Boilers  
 Master  
 Engines  
 Boilers  
 Registered  
 MULT  
 (Letter for)  
 Boilers  
 No. of safety valves  
 Are they  
 Smallest  
 Material  
 Descrip.  
 Lap of plates  
 rules 2  
 boiler 4  
 Descrip.  
 plates  
 To  
 smallest  
 Pitch of  
 Area sup  
 Lower ba  
 Pitch of  
 water spa  
 girder at  
 Working  
 separately  
 holes  
 If stiffene  
 Working  
 Dates of Survey while building  
 GENE

