

# REPORT ON BOILERS.

No. 8672

Received at London Office

FEB. 14 1922

Date of writing Report 9-2-22 When handed in at Local Office 1922 Port of Belfast  
 No. in Survey held at Belfast Date, First Survey 16 Jan 1920 Last Survey 2 Feb 1922  
 Reg. Book. 31393 on the T.S.S. Sophocles (Number of Visits 128) Gross 12361 Tons Net 7366  
 Master T. Gilroy Built at Belfast By whom built Hauland & Wolff Ltd When built 1922  
 Engines made at Belfast By whom made - When made -  
 Boilers made at - By whom made - When made -  
 Registered Horse Power ✓ Owners Geo. Thompson & Co. Ltd Port belonging to Aberdeen

## MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY. Manufacturers of Steel D. Colville & Sons Ltd

(Letter for record S) Total Heating Surface of Boilers 2788 sq ft Is forced draft fitted No No. and Description of Boilers One, by line? Single Tube Working Pressure 215 lbs Tested by hydraulic pressure to 375 lbs of test 31-8-21

No. of Certificate 810 Can each boiler be worked separately ✓ Area of fire grate in each boiler 65 sq ft No. and Description of safety valves to each boiler Two - Direct Springs of each valve 9.62 sq Pressure to which they are adjusted 215 lbs

Are they fitted with easing gear Yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓

Smallest distance between boilers or uptakes and bunkers or woodwork About 20" diam dia. of boilers 15'-9" Length 11'-9"

Material of shell plates Steel Thickness 1 1/2" Range of tensile strength 29-33 tons Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams Lap Bolt long. seams D.B. Double Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 10"

Top of plates or width of butt straps 23 1/2" Per centages of strength of longitudinal joint rivets 98.8 plate 84.07 Working pressure of shell by rules 221 lbs

Size of manhole in shell 16" x 12" Size of compensating ring 11" dia No. and Description of Furnaces in each boiler 3 - Mansour Material Steel Outside diameter 49 1/2" Length of plain part top 2" bottom 9" Thickness of plates crown 3/16" bottom 1/16"

Description of longitudinal joint Weld No. of strengthening rings ✓ Working pressure of furnace by the rules 228 lbs Combustion chamber plates: Material Steel Thickness: Sides 27/32" Back 4/16" Top 21/32" Bottom 15/16" Pitch of stays to ditto: Sides 8 3/4" x 7 1/2" Back 7 1/2" x 9 1/2"

Top 9" x 7 1/2" If stays are fitted with nuts or riveted heads sets inside Working pressure by rules 219 lbs Material of stays Steel Area at smallest part 768 sq in supported by one stay 73 1/2" Working pressure by rule 224 lbs plates in steam space: Material Steel Thickness 1 5/16"

Pitch of stay 8 1/2" x 15 1/2" How are stays secured Nuts & screws into plates Working pressure by rules 215 lbs Material of stays Steel Area at smallest part 593 sq in

Area supported by each stay 291 sq in Working pressure by rules 251 lbs Material of Front plates at bottom Steel Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 13" x 7 3/8" Working pressure of plate by rules 231 lbs Diameter of tubes 2 1/4"

Pitch of tubes 4" x 4" Material of tube plate Steel Thickness: Front 7/8" Back 13/16" Mean pitch of stays 8" x 8" Pitch across wide water spaces 14" Working pressures by rules 321 lbs with 1 1/2" double Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x (7/8" x 2) Length as per rule 36" Distance apart 9" Number and pitch of Stays in each 4 - 7 1/2"

Working pressure by rules 224 lbs 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 Schmidt Date of Approval of Plan ✓ Tested by Hydraulic Pressure to 430 + 645 lbs

Date of Test 26-9-21 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes

Diameter of Safety Valve 2" Pressure to which each is adjusted 220 lbs Is Easing Gear fitted Yes

The foregoing is a correct description, FOR HAILAND & WOLFF Ltd

J.D. Ray Manufacturer.

Dates of Survey: During progress of work in shops See other sheet Is the approved plan of boiler forwarded herewith Yes  
 while building: During erection on board vessel - Total No. of visits 128

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
See other sheet

Survey Fee ... £ : : When applied for, ... 191  
 Travelling Expenses (if any) £ : : When received, ... 191

Committee's Minute  
Assigned

THE 21 FEB. 1922

R. J. D. Bayly Engineer Surveyor to Lloyd's Register of Shipping.  
 FRI. 3 NOV. 1922  
 FRI. MAR. 10 1922  
 FRI. AUG. 4 1922

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Belfast

T.S.S. "Sophocles"List of Principal items in Spare Gear

- ✓ 1 Propeller Shaft & 6 blades, studs & nuts
- ✓ Sets coupling bolts & nuts for each size used
- 50 Condenser tubes & 100 flanges
- 1 Safety Valve spring for every four pumps of each size
- 2 Boiler feed check valves & 15 plain tubes & 5 stay tubes
- ✓ Sets escape valve springs
- ✓ Sets spare gear for all pumps, oil & feed filters.

Lubrication Gear

- ✓ Escape valve spring of each size
- ✓ 2 Bolts & nuts each size rotor bearing
- ✓ - - - main gear wheel bearing
- ✓ - - - Pinion bearing each size
- 5% blanking material
- ✓ 5% total number bolts & nuts each gear case joint
- ✓ Complete set thermometers oil circulating system
- ✓ Set bearing bushes one gear wheel shaft
- ✓ - - - H.P. rotor & for L.P. rotor
- ✓ - - - H.P. 1<sup>st</sup> Reduction pinion shaft
- ✓ - - - L.P. - - -
- ✓ 1 bearing bush for for<sup>2</sup> end 1<sup>st</sup> Red<sup>n</sup> pinion shaft
- Set bearing bushes - 2<sup>nd</sup> Red<sup>n</sup> pinion shaft
- ✓  $\frac{1}{2}$  Set packing rings & springs rotor gland
- ✓ Set pads for adjusting block & liners
- ✓ - - - main thrust block

Pumps

2	Main Feed Pumps	16 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " x 24"
2	- Main Air	13 $\frac{1}{2}$ " x 22" x 15"
1	- Hotwell	70" x 10" x 31"
1	- Fresh Water	5 $\frac{1}{2}$ " x 5" x 5"
1	- Aux <sup>y</sup> Air	12" x 18" x 10"
1	- Feed	7 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 12"
3	- Oil Lubric <sup>n</sup>	8" x 9" x 18"
1	- Ballast	9" x 10" x 12"
2	- Bilge	8" x 9" x 9"
1	- General	10 $\frac{1}{2}$ " x 7" x 12"
1	- Sanitary	10 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " x 15"
2	- Main Circulating	16" bore
1	- Emergency Bilge	9" -

R. L. Bennett



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