

REPORT ON BOILERS.

Received at London Office 15 JUL 1931

Date of writing report 13 July 1931 When handed in at Local Office 13 July 1931 Port of Belfast.

No. in Reg. Book. Survey held at Belfast. Date, First Survey Sept. 10th 1930 Last Survey 8th July 1931

71202. on the Steel Yarn S. "KOSMOS II". (Number of Visits 90) Gross Tons 14800. Net Tons 8800.

Master Built at Belfast. By whom built Workman, Black (1928) Ltd. Yard No. 522. When built 1931.

Engines made at Belfast. By whom made Workman, Black (1928) Ltd. Engine No. 522. When made 1931.

Boilers made at Belfast. By whom made Workman, Black (1928) Ltd. Boiler No. 522. When made 1931.

Nominal Horse Power 938. Owners Hvalfangerselsk. "Kosmos II" A/S. Port belonging to Sandefjord. (A. Jahre)

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Witkowitz Bergbau et. Balduins. (Letter for Record S.)

Total Heating Surface of Boilers 14320 sq ft. Is forced draught fitted Yes. Coal or Oil fired Oil.

No. and Description of Boilers 5 S.E. Multitub. Working Pressure 250 lbs.

Tested by hydraulic pressure to 425 lbs. Date of test 19/3/31. No. of Certificate 960. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler. No. and Description of safety valves to each boiler 2 1/2 Rockburn's Double Improved High Lift.

Area of each set of valves per boiler. Pressure to which they are adjusted 250 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 2'-0". Is oil fuel carried in the double bottom under boilers Yes.

Smallest distance between shell of boiler and tank top plating 2'-0". Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 16 feet. Length 12'-3". Shell plates: Material Steel. Tensile strength 31/35 tons.

Thickness 1 21/32". Are the shell plates welded or flanged No. Description of riveting: circ. seams Double.

long. seams Tubo riveted D.B. Straps. Diameter of rivet holes in circ. seams 1 1/16". Pitch of rivets 4-1107.

Percentage of strength of circ. end seams. Percentage of strength of circ. intermediate seam.

Percentage of strength of longitudinal joint. Working pressure of shell by Rules 253.5 lbs. d.

Thickness of butt straps. No. and Description of Furnaces in each Boiler 4 - Deighton. 4 f.

Material Steel. Tensile strength 26 tons. Smallest outside diameter 41 13/32".

Length of plain part. Thickness of plates. Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.e. bottom. Working pressure of furnace by Rules 250 lbs. d.

End plates in steam space: Material Steel. Tensile strength 26/30 tons. Thickness 1 5/16". Pitch of stays 20 x 15 1/2".

How are stays secured Double nuts. Working pressure by Rules 252 lbs. d.

Tube plates: Material Steel. Tensile strength 26/30 tons. Thickness 1 1/32".

Mean pitch of stay tubes in nests 11 1/4 x 7 1/4". Pitch across wide water spaces 13 1/2". Working pressure 257 lbs. d. front. 300 lbs. d. back.

Girders to combustion chamber tops: Material Steel. Tensile strength 28/32 tons. Depth and thickness of girder.

at centre 11 1/4 x 1 5/8". Length as per Rule 39.453". Distance apart 8 5/8". No. and pitch of stays.

in each 4 - 7". Working pressure by Rules 259 lbs. d. Combustion chamber plates: Material Steel.

Tensile strength 26/30 tons. Thickness: Sides 23/32". Back 45/64". Top 23/32". Bottom 29/32".

Pitch of stays to ditto: Sides 8 x 9". Back 7 1/2 x 8 3/4". Top 7 x 8 5/8". Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 261 lbs. d. Front plate at bottom: Material Steel. Tensile strength 26/30 tons.

Thickness 1". Lower back plate: Material Steel. Tensile strength 26/30 tons. Thickness 1 5/16".

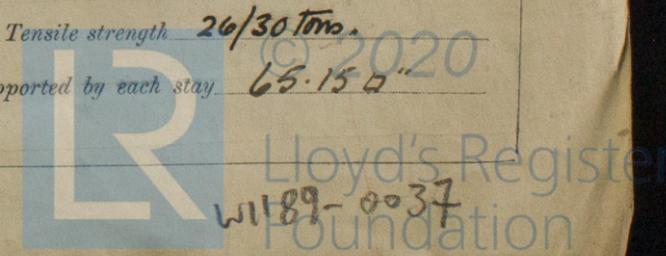
Pitch of stays at wide water space 13 1/2". Are stays fitted with nuts or riveted over nuts.

Working Pressure 287 lbs. d. Main stays: Material Steel. Tensile strength 28/32 tons.

Diameter. At body of stay, 3 1/4". No. of threads per inch 6. Area supported by each stay 310 sq in.

Over threads. Working pressure by Rules 260 lbs. d. Screw stays: Material Steel. Tensile strength 26/30 tons.

Diameter. At turned off part, 1 1/2 to 1 3/4" dia. No. of threads per inch 9. Area supported by each stay 65.15 sq in.



Working pressure by Rules **267 lbs.** Are the stays drilled at the outer ends **No** Margin stays: Diameter { At turned off part, or Over threads **1 7/8"**

No. of threads per inch **9** Area supported by each stay **37.030"** Working pressure by Rules **256 lbs.**

Tubes: Material **Plain, iron stay, steel.** External diameter { Plain **2 1/2"** Stay **2 3/4", 2 1/2"** Thickness { **8 WG.** **5" 3/8"** No. of threads per inch **9.**

Pitch of tubes **3 3/4" x 3 5/8"** Working pressure by Rules **283 lbs.** Manhole compensation: Size of opening in shell plate **15 1/4" x 19 1/4"** Section of compensating ring **3'-0" x 1 5/8"** No. of rivets and diameter of rivet holes **36 - 1 1/8"**

Outer row rivet pitch at ends **11"** Depth of flange if manhole flanged **Doubling Flange 3 1/4"** Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown Working pressure by Rules

Size of doubling plate under dome Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell

Type of Superheater **Sugdens** Manufacturers of { Tubes Steel castings

Number of elements **120** Material of tubes **SD steel.** Internal diameter and thickness of tubes **1" x 10 WG.**

Material of headers **Mild steel.** Tensile strength **24/29 tons.** Thickness **3/4"** Can the superheater be shut off and the boiler be worked separately **yes.** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **yes.**

Area of each safety valve **3.14 sq"** Are the safety valves fitted with easing gear **yes.** Working pressure as per Rules **250 lbs.** Pressure to which the safety valves are adjusted **250 lbs.** Hydraulic test pressure: tubes **750 lbs.** and after assembly in place **750 lbs.** Are drain cocks or valves fitted to free the superheater from water where necessary **yes.**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **yes.**

The foregoing is a correct description,
pro WORKMAN CLARK (1928) LIMITED,
Birmingham Manufacturer.
Secretary.

Dates of Survey { During progress of work in shops - - } **See S.S. Mach. Report** Are the approved plans of boiler and superheater forwarded herewith **Yes.** (If not state date of approval.)
 while building { During erection on board vessel - - - }
 Total No. of visits

Is this Boiler a duplicate of a previous case **No.** If so, state Vessel's name and Report No.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These boilers were constructed under special survey to an approved design. The materials and workmanship are good. They were subjected to hydraulic test in accordance with the rules and were efficiently fastened in the vessel. The safety valves were adjusted to 250 lbs. under steam.

Survey Fee £ **See mech report.** When applied for, 19
 Travelling Expenses (if any) £ When received, 19

John K. Williams.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **WED. 5 AUG 1930**

Assigned *See F.C. Rpt.*

