

REPORT ON BOILERS.

Received at London Office 2 NOV 1930

Date of writing Report 1930 When handed in at Local Office 1-11-1930 Port of Belfast

No. in Reg. Book. Survey held at Belfast Date, First Survey Last Survey 1930

91489 on the Steel sc "MAVIS" (Number of Visits) Gross Tons 900 Net

Master Built at Belfast By whom built Workman, Lelank (1928) Ltd Yard No. 520 When built 1930.

Engines made at Belfast By whom made Workman, Lelank (1928) Ltd Engine No. 520 When made 1930.

Boilers made at Belfast By whom made Workman, Lelank (1928) Ltd Boiler No. 520 When made 1930.

Nominal Horse Power 189.2 Owners General Steam Navigation Co Ltd Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Baldwins Ltd (Letter for Record S)

Total Heating Surface of Boilers 3400 sq ft Is forced draught fitted No Coal or Oil fired Coal.

No. and Description of Boilers Two, 58, cyl, Multa Working Pressure 200 lbs sq in.

Tested by hydraulic pressure to 350 lbs sq in Date of test 28/8/30 No. of Certificate 952 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 51.25 No. and Description of safety valves to each boiler 2 - Lockburns Improved High Lift

Area of each set of valves per boiler 1/2 of 9.880 sq in as fitted 6.282 sq in Pressure to which they are adjusted 200 lbs sq in Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating 15 in Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 13'-9" Mean Length 10'-6" Shell plates: Material Steel Tensile strength 28/32

Thickness 1 1/4 in Are the shell plates welded or flanged No Description of riveting: circ. seams end double

long. seams Triple rivetted DBS Diameter of rivet holes in circ. seams 1 3/32 in long. seams 1 1/4 in Pitch of rivets 3.627 in

Percentage of strength of circ. end seams plate 63.9% rivets 46.7% Percentage of strength of circ. intermediate seam plate 85.8% rivets 85.9% combined 88.8%

Percentage of strength of longitudinal joint plate 85.8% rivets 85.9% combined 88.8% Working pressure of shell by Rules 201.1 lbs sq in.

Thickness of butt straps outer 3 1/32 in inner 1 3/32 in No. and Description of Furnaces in each Boiler Three, Deighton

Material Steel Tensile strength 26/30 Smallest outside diameter 4 1/32 in

Length of plain part top bottom Thickness of plates crown 3 1/32 in bottom 6/64 in Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 204.4 lbs sq in.

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 5/16 in Pitch of stays 20 x 19 1/2 in

How are stays secured Double nuts Working pressure by Rules 206.8 lbs sq in.

Tube plates: Material front Steel back Steel Tensile strength 26/30 Thickness 1 3/4 in

Mean pitch of stay tubes in nests 9 3/8 in Pitch across wide water spaces 14 1/2 in Working pressure front 248.6 lbs sq in back 210 lbs sq in (comp)

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

at centre 8 1/4 x 1 1/2 in Length as per Rule 31 19/32 in Distance apart 8 in No. and pitch of stays

in each 2 - 9 in Working pressure by Rules 200 lbs sq in Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 2 1/32 in Back 2 1/32 in Top 2 1/32 in Bottom 2 1/32 in

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

Working pressure by Rules 210.7 lbs sq in Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 1 in Lower back plate: Material Steel Tensile strength 26/30 Thickness 1 1/8 in

Pitch of stays at wide water space 14 1/4 x 8 1/2 in Are stays fitted with nuts or riveted over nuts.

Working Pressure 290 lbs sq in Main stays: Material Steel Tensile strength 28/32

Diameter At body of stay, or Over threads 3 1/4 in No. of threads per inch 6 Area supported by each stay 390 sq in

Working pressure by Rules 206.3 lbs sq in Screw stays: Material Steel Tensile strength 26/30

Diameter At turned off part, or Over threads 1 5/8 in No. of threads per inch 9 Area supported by each stay 71.20 sq in



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Working pressure by Rules 215.7 lbs Are the stays drilled at the outer ends No. Margin stays: Diameter ^{At turned off part,} 1 3/4" & 1 7/8"
 No. of threads per inch 9 Area supported by each stay 102 sq" Working pressure by Rules 209 lbs
 Tubes: Material Iron External diameter ^{Plain} 3 1/2" Thickness ^{No. 8 WG} 5/16" No. of threads per inch 9
 Pitch of tubes 4 5/8" x 4 3/4" Working pressure by Rules 215 lbs Manhole compensation: Size of opening in shell plate 15 x 9" Section of compensating ring 30 3/8" x 33 3/4" x 1 1/4" No. of rivets and diameter of rivet holes 36 - 1 1/4"
 Outer row rivet pitch at ends 8 7/8" Depth of flange if manhole flanged 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} _____
 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

Number of elements _____ Material of tubes _____ Manufacturers of ^{Tubes} _____
 Material of headers _____ Tensile strength _____ ^{Steel castings} _____
 Internal diameter and thickness of tubes _____
 Can the superheater be shut off and the boiler be worked separately _____
 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____
 Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Working pressure as per Rules _____
 Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: _____
 tubes _____, castings _____ and after assembly in place _____ Are drain cocks or valves fitted to free the superheater from water where necessary _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

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

Dates of Survey ^{During progress of work in shops - -} _____
 while building ^{During erection on board vessel - - -} _____

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) _____
 Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been 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 on board the vessel. The safety valves were adjusted to 200 lbs under steam.*

Survey Fee	£	<u>See machinery report</u>	When applied for,	192
Travelling Expenses (if any)	£	<u>report</u>	When received,	192

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

Committee's Minute 106. 11 NOV 1930

Assigned See other report

