

REPORT ON BOILERS.

No. 30455

Received at London Office

13 SEP 1930

Date of writing Report 12. 9. 1930 When handed in at Local Office 12. 9. 1930 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND.
Reg. Book.

Date First Survey 15/4/30

Last Survey 10/9/30. 192

on the S.S. "HARPENDEN."

(Number of Visits 39) Gross Tons 4,648
Net Tons 2,774

Master Built at SUNDERLAND. By whom built BARTRAM & SONS. LD. Yard No. 270. When built 1930.

Engines made at SUNDERLAND. By whom made N.E. MARINE ENGINEERING CO. LD. Engine No. 2748 When made 1930.

Boilers made at SUNDERLAND. By whom made N.E. MARINE ENGINEERING CO. LD. Boiler No. 2748 When made 1930.

Nominal Horse Power 408 Owners J. C. HARRISON LTD. Port belonging to LONDON.

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.

Manufacturers of Steel VÍTKOVICE MINES, STEEL & IRON CORP. ČESKO SLOVACIA—STEEL CO. OF SCOTLAND. (Letter for Record (r) ✓)

Total Heating Surface of Boilers 5704 sq. ft. Is forced draught fitted No. Coal or Oil fired COAL.

No. and Description of Boilers 2 CYLINDRICAL MARINE TYPE. Working Pressure 180 lbs.

Tested by hydraulic pressure to 320 Date of test 7-8-30 No. of Certificate 4112 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 65 sq. ft. No. and Description of safety valves to each boiler 2 SPRING LOADED.Area of each set of valves per boiler { per Rule 18.26 sq. ft. as fitted 19.24 sq. ft. Pressure to which they are adjusted 185 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' 9" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 2' 6" Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 16' 9 3/4" Length 11' 6" Shell plates: Material STEEL Tensile strength 29/33 T.M.

Thickness 1 1/4" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D. R. LAP inter. ✓

long. seams T. R. D. B. STRAP. Diameter of rivet holes in { circ. seams 1 3/8" long. seams 1 3/8" Pitch of rivets { 4" 9 1/16"

Percentage of strength of circ. end seams { plate 65.6 rivets 44.3. Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 85.62 rivets 86.88 combined 88.6. Working pressure of shell by Rules 181.5 lbs.

Thickness of butt straps { outer 1" inner 1 1/4" No. and Description of Furnaces in each Boiler 3 CORRUGATED, DEIGHTON SECTION.

Material STEEL Tensile strength 24/30 T.M. Smallest outside diameter 3' 11 1/16"

Length of plain part { top 21 1/2" bottom 32" Thickness of plates { crown 21 1/2" bottom 32" Description of longitudinal joint WELD.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 201 lbs.

End plates in steam space: Material STEEL Tensile strength 26/30 T.M. Thickness 1 1/2" Pitch of stays 24 1/2" x 18 1/2"

How are stays secured D. NUTS. Working pressure by Rules 180 lbs.

Tube plates: Material { front STEEL back STEEL Tensile strength { 26/30 T.M. Thickness { 7/8" 25 1/2"

Mean pitch of stay tubes in nests 11" Pitch across wide water spaces 14 1/2" x 9 1/2" Working pressure { front 183 lbs back 181 lbs.

Girders to combustion chamber tops: Material STEEL Tensile strength 28/32 T.M. Depth and thickness of girder

at centre 8 1/2" x 2" Length as per Rule 31 1/2" Distance apart 12 3/16" No. and pitch of stays

in each 3 at 7 1/4" Working pressure by Rules 183.5 lbs. Combustion chamber plates: Material STEEL

Tensile strength 26/30 T.M. Thickness: Sides 23 1/2" Back 23 1/2" Top 23 1/2" Bottom 23 1/2"

Pitch of stays to ditto: Sides 10 3/16" x 9 7/8" Back 10 3/8" x 9 7/8" Top 12 3/16" x 7 1/4" Are stays fitted with nuts or riveted over NUTS.

Working pressure by Rules 180.5 lbs. Front plate at bottom: Material STEEL Tensile strength 26/30 T.M.

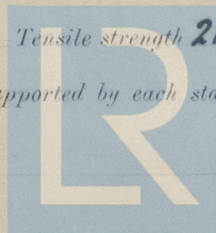
Thickness 7/8" Lower back plate: Material STEEL Tensile strength 26/30 T.M. Thickness 2 9/32"

Pitch of stays at wide water space 14 1/2" x 10 1/4" Are stays fitted with nuts or riveted over NUTS.

Working Pressure 181 lbs. Main stays: Material STEEL Tensile strength 28/32 T.M.

Diameter { At body of stay, 3 1/8" or 3 1/2" No. of threads per inch 6 Area supported by each stay 454.7 sq. in.

Working pressure by Rules 180 lbs. Screw stays: Material TESTED IRON. Tensile strength 21 1/2 T.M. MINIMUM.

Diameter { At turned off part, 1 7/8" or 1 3/4" No. of threads per inch 9 Area supported by each stay 100.6 sq. in. Lloyd's Register
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Working pressure by Rules 211 1/2. Are the stays drilled at the outer ends 1/6. Margin stays: Diameter ^{At turned off part,} 2" or Over threads
No. of threads per inch 9 Area supported by each stay 118.3 sq Working pressure by Rules 209 1/2.
Tubes: Material STEEL External diameter ^{Plain} 3 1/2" Thickness ^{Stay} 5/16" No. of threads per inch 9.
Pitch of tubes 4 3/4" x 4 3/4" Working pressure by Rules 230, 180, 189 1/2. Manhole compensation: Size of opening 32 at 1 7/16"
shell plate 20 1/4" x 16 1/4" Section of compensating ring 20 1/4" x 1 3/8" No. of rivets and diameter of rivet holes 32 at 1 7/16"
Outer row rivet pitch at ends 10" Depth of flange if ring flanged 4 1/16" Steam Dome: Material
Tensile strength 290 Thickness of shell 1/2" Description of longitudinal joint
Diameter of rivet holes 3/16" Pitch of rivets 1 1/2" Percentage of strength of joint 80%
Internal diameter 20" Working pressure by Rules 209 1/2 Thickness of crown 1/2" No. and diameter of stays 14 at 1 1/2"
How connected to shell by 2 rivets Size of doubling plate under dome 1/2" x 16" Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1 1/2" x 1 1/2"

Type of Superheater

Number of elements 1 Material of tubes Steel Manufacturers of Steel castings Internal diameter and thickness of tubes 3 1/2" x 1/16"
Material of headers Steel Tensile strength 290 Thickness 1/16" Can the superheater be shut off and the boiler be worked separately Yes
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 1 sq in Are the safety valves fitted with raising gear Yes Working pressure as per Rules 209 1/2
Rules 209 1/2 Pressure to which the safety valves are adjusted 211 1/2 Hydraulic test pressure 230
tubes castings and after assembly in place 230 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,

John Neill

Dates of Survey During progress of work in shops - -
while building During erection on board vessel - -

Please see Machy. Rpt.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits 1

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

The Boilers of this vessel have been built under Special Survey, and the materials & workmanship are good. On completion they were satisfactorily fitted in the vessel and examined under a full head of steam. The Safety Valves were adjusted under steam and accumulation test carried out satisfactorily. For Notation see Machinery Report.

Survey Fee £ 192 When applied for, 192

Travelling Expenses (if any) £ 192 When received, 192

Charged on Machinery Report.

J. D. Scott

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 23 SEP 1930

Assigned

See F. E. Rpt.



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