

REPORT ON BOILERS.

No. 51671.

Received at London Office 9 JUL 1942

Date of writing Report 24-4-1942 When handed in at Local Office 9 JUL 1942 Port of HULL.

No. in Survey held at HULL. Date, First Survey 2.1.42. Last Survey 25.6.1942.

on the STEAM TUG. **EMPIRE SPRITE.** (Number of Visits 46) Gross 329 Tons Net 118.

built at HESSLE. By whom built Richard Dunstan & Co. Ltd. Yard No. 422. When built 1942.

Engines made at HULL. By whom made Chas. D. Holmes & Co. Ltd. Engine No. 1603. When made "

Boilers made at HULL. By whom made Chas. D. Holmes & Co. Ltd. Boiler No. 1595. When made "

nominal Horse Power 177. Owners The Ministry of War Transport. Port belonging to ✓

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland Ltd. (Letter for Record 8.)

Total Heating Surface of Boilers 2778 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

No. and Description of Boilers One S.B. Working Pressure 210 lbs/sq. in.

Tested by hydraulic pressure to 365 lbs/sq. in. Date of test 31-3-42. No. of Certificate 4139. Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 64 sq. ft. No. and Description of safety valves to each boiler 2 Spring loaded. ✓

Area of each set of valves per boiler { per Rule 18.6 sq. ft. X 15.4 ✓ as fitted 19.24 sq. ft. Pressure to which they are adjusted 210 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 ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-4 1/2" ✓ Is oil fuel carried in the double bottom under boilers None.

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated No.

Largest internal dia. of boilers 15'-9 1/4" Length 11'-6" ✓ Shell plates: Material Steel. ✓ Tensile strength 31-35 tons/sq. in. ✓

Thickness 1 3/8" Are the shell plates welded or flanged No. ✓ Description of riveting: circ. seams { end D.R. Lap. ✓ inter. ✓

Long. seams T.R., D.B.S. ✓ Diameter of rivet holes in { circ. seams 1 13/32" ✓ long. seams 1 13/32" ✓ Pitch of rivets { 3 3/8" ✓ 9 1/8" ✓

Percentage of strength of circ. end seams { plate 63-7% ✓ rivets 43-3% ✓ Percentage of strength of circ. intermediate seam { plate - ✓ rivets - ✓

Percentage of strength of longitudinal joint { plate 84-6% ✓ rivets 85-5% ✓ combined 86-3% ✓

Thickness of butt straps { outer 1 1/16" ✓ inner 1 3/16" ✓ No. and Description of Furnaces in each Boiler 3 cf. Deighton Section. ✓

Material Steel. ✓ Tensile strength 26-30 tons/sq. in. ✓ Smallest outside diameter 3'-10" ✓

Length of plain part { top - ✓ bottom - ✓ Thickness of plates { crown 1 1/16" ✓ bottom 1 1/16" ✓ Description of longitudinal joint Weld. ✓

Dimensions of stiffening rings on furnace or c.c. bottom None. ✓

End plates in steam space: Material Steel. ✓ Tensile strength 26-30 tons/sq. in. ✓ Thickness 1 7/32" ✓ Pitch of stays 18 5/8" x 19 1/4" ✓

How are stays secured Nuts & Washers inside and out. ✓

Tube plates: Material { front Steel. ✓ back Steel. ✓ Tensile strength { 26-30 tons/sq. in. ✓ 26-30 tons/sq. in. ✓ Thickness { 15/16" ✓ 7/8" ✓

Mean pitch of stay tubes in nests 9 13/16" ✓ Pitch across wide water spaces 13 1/2" x 8 1/2" ✓

Girders to combustion chamber tops: Material Steel. ✓ Tensile strength 29-33 tons/sq. in. ✓ Depth and thickness of girder

at centre 9 1/2" x 7 3/8" I-Beam. ✓ Length as per Rule 2'-8 29/32" ✓ Distance apart 9 1/2" ✓ No. and pitch of stays

in each 3 @ 7 1/2" ✓ Combustion chamber plates: Material Steel. ✓

Tensile strength 26-30 tons/sq. in. ✓ Thickness: Sides 23/32" ✓ Back 23/32" ✓ Top 1/16" ✓ Bottom 7/8" ✓

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

Front plate at bottom: Material Steel. ✓ Tensile strength 26-30 tons/sq. in. ✓ Thickness 15/16" ✓

Lower back plate: Material Steel. ✓ Tensile strength 26-30 tons/sq. in. ✓ Thickness 7/8" ✓

Pitch of stays at wide water space 13 3/4" x 9 3/8" ✓ Are stays fitted with nuts or riveted over Nuts. ✓

Main stays: Material Steel. ✓ Tensile strength 28-32 tons/sq. in. ✓

Diameter { At body of stay, 3 1/4" ✓ or Over threads No. of threads per inch 8 ✓

Screw stays: Material Steel. ✓ Tensile strength 26-30 tons/sq. in. ✓

Diameter { At turned off part, 1 3/4" ✓ or Over threads No. of threads per inch 10. ✓

Are the stays drilled at the outer ends No. ✓
Margin stays: Diameter { At turned off part, 2 1/8" or Over threads 2 1/8"
No. of threads per inch 10. ✓
Tubes: Material L.W. Iron External diameter { Plain 3" Stay 3" ✓ Thickness { 8.w.g. 5/16", 3/8", 7/16" No. of threads per inch 9. ✓
Pitch of tubes 4 1/4" x 4 1/4" ✓ Manhole compensation: Size of opening in shell plate 12" (x 16") ✓ Section of compensating ring 12 3/16" x 1 3/8" ✓ No. of rivets and diameter of rivet holes 46 @ 1 3/32" ✓
Outer row rivet pitch at ends 9 1/8" ✓ Depth of flange if manhole flanged 3 3/8" ✓ 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 _____ Thickness of crown _____ No. and diameter of stays _____
How connected to shell _____ Inner radius of crown _____
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 _____ Manufacturers of { Tubes _____ Steel forgings _____ Steel castings _____
Number of elements _____ Material of tubes _____ Internal diameter and thickness of tubes _____
Material of headers _____ Tensile strength _____ Thickness _____ 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 _____
Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: _____
tubes _____ forgings and 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 Yes. ✓

The foregoing is a correct description,
FOR CHARLES D. HOLMES & CO., LTD.
W.R. Evans Manufacturer.

Dates of Survey { During progress of work in shops - - - } See machinery report ✓
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 ✓

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This Boiler has been constructed under Special Survey in accordance with the approved plans and the Rule
The Workmanship and material are good and when subjected to a hydraulic test of 365 lbs 10" it was found satisfactory in every respect.

Survey Fee ... £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

W. R. Evans
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 17 JUL 1942
Assigned See Hul. 26. 51671