

REPORT ON BOILERS.

No. 18079.

OCT 21 1940

Received at London Office

Date of writing Report 18/10/1940 When attended in at Local Office 18/10/1940 Port of West Hartlepool

No. in Survey held at West Hartlepool H. Hill Date First Survey 14th February Last Survey 16th October 1940

87985 on the Steel SE EMPIRE GOLD (Number of Visits 99) Tons Gross 8027.54 Net 4677.81

Built at Haverton Hill By whom built Furness Shipbuilding Co. Yard No. 325 When built 1940

Engines made at Hartlepool By whom made Richardson, Westgarth & Co. Ltd. Engine No. H2700 When made 1940

Boilers made at Hartlepool By whom made Richardson, Westgarth & Co. Ltd. Boiler No. H2700 When made 1940

Nominal Horse Power 668 Owners Ministry of Shipping Port belonging to Middlesbrough

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co. of Scotland (Letter for Record S)

Total Heating Surface of Boilers 10020 Sq. ft. Is forced draught fitted Yes Coal or Oil fired oil

No. and Description of Boilers 3 Single ended multitubular Working Pressure 220 LBS.

Tested by hydraulic pressure to 380 LBS. Date of test 4/9/40 No. of Certificate 3919 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2-2 1/2 "Spring loaded high lift.

Area of each set of valves per boiler (per Rule 8.65 sq. in. as fitted 9.8 sq. in. Pressure to which they are adjusted 220 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 3'-9" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'-2 3/4" Length 12'-6" Shell plates: Material Steel Tensile strength 30-34 LBS/sq. in.

Thickness 1 3/4" Are the shell plates welded or flanged no Description of riveting: circ. seams end D.R. lap

long. seams D.B. strips treble riveted Diameter of rivet holes in (circ. seams 1 1/2" (long. seams 1 3/4" Pitch of rivets 4" 10 1/2"

Percentage of strength of circ. end seams (plate 62.5% rivets 44.7% combined 85.1% Percentage of strength of circ. intermediate seam (plate 86.7% rivets 87.5% combined 87.5%

Percentage of strength of longitudinal joint (plate 15% rivets 12% combined 13.5% W.P. OF SHELL BY RULES - 221 LBS/sq. in.

Thickness of butt straps (outer 1 5/8" inner 1 3/4" No. and Description of Furnaces in each Boiler 3-Deighton Section. Gourlay back ends.

Material Steel Tensile strength 26/30 LBS/sq. in. Smallest outside diameter 3'-11 1/2"

Length of plain part (top 47" bottom 64" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace on c.e. bottom W.P. OF FURNACE BY RULES 226 LBS/sq. in.

End plates in steam space: Material Steel Tensile strength 26/30 LBS/sq. in. Thickness 1 1/2" Pitch of stays 22 1/4" x 18 1/2"

How are stays secured double nuts W.P. BY RULES 221 LBS/sq. in.

Tube plates: Material (front Steel (back Steel Tensile strength 26/30 LBS/sq. in. Thickness 15/16" 7/8"

Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14 1/2" x 8" W.P. FRONT 344 LBS/sq. in. BACK 298 LBS/sq. in.

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

at centre 2 plates each 11 3/4" x 1" Length as per Rule 3'-10 1/2" Distance apart 9" No. and pitch of stays

in each 3 @ 11 1/8" W.P. BY RULES 229 LBS/sq. in. Combustion chamber plates: Material Steel

Tensile strength 26/30 LBS/sq. in. Thickness: Sides 13/16" Back 23/32" Top 13/16" Bottom 29/32"

Pitch of stays to ditto: Sides 9" x 11 1/8" Back 9 1/4" x 8 1/4" Top 9 x 11 1/8" Are stays fitted with nuts or riveted over nuts

Front plate at bottom: Material Steel Tensile strength 26/30 LBS/sq. in.

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 LBS/sq. in. Thickness 15/16"

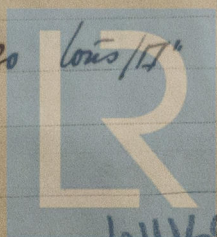
Pitch of stays at wide water space 15 3/8" x 8" Are stays fitted with nuts or riveted over nuts

Main stays: Material Steel Tensile strength 28/32 LBS/sq. in.

Diameter (At body of stay, or Over threads 3 1/2" No. of threads per inch 6

Screw stays: Material Steel Tensile strength 26/30 LBS/sq. in.

Diameter (At turned off part, or Over threads 2" & 1 3/4" No. of threads per inch 9



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Are the stays drilled at the outer ends No Margin stays: Diameter 2" x 1 1/2"
 No. of threads per inch 9 Over threads
 Tubes: Material Steel External diameter 2 1/2" Thickness 8 LWC No. of threads per inch 9
 Pitch of tubes 4" x 3 5/8" Manhole compensation: Size of opening in
 shell plate 16 1/2" x 20 1/2" Section of compensating ring 18 3/8" x 1 33/64" nett No. of rivets and diameter of rivet holes 34 - 1 9/16"
 Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material not fitted
 Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓
 Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint ✓
 Internal diameter ✓ Thickness of crown ✓ No. and diameter of
 stays ✓ Inner radius of crown ✓
 How connected to shell ✓ 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 Combustion Chamber type Manufacturers of Messrs Talbot Stead
Supplied by N.E. Harrie (1938) Ltd., Wallend. Stewart & Lloyd.
 Number of elements 36 Material of tubes S.D. Steel Internal diameter and thickness of tubes 1.273" x 7wg
 Material of headers S.D. Steel Tensile strength 26-28 tons Thickness 1" Can the superheater be shut off and
 the boiler be worked separately No 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 3.1416 sq" Are the safety valves fitted with easing gear yes
 Pressure to which the safety valves are adjusted 220 lbs/sq" Hydraulic test pressure:
 tubes 1500 lbs/sq" HEADERS 660 lbs/sq" and after assembly in place 660 lbs/sq" Are drain cocks ✓
✓ 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,
 for RICHARDSON, WEAVER & CO. LIMITED!
R. J. Easthope 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

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.)

This boiler has been constructed
under Special Survey & in accordance with the approved plan for a
working pressure of 220 lbs. per Sq. inch.
The materials & workmanship have been found good.
Upon completion the boiler was tested in the presence of the undersigned
with hydraulic pressure of 380 lbs. per Sq. inch & found tight & sound.
This boiler has been forwarded to Haverton Hill to be fitted on board
by Messrs Furness Shipbuilding Co. in their yard No 325.
The boiler securely fitted on board & found in order. Safety
valves adjusted under steam to 220 lbs/sq" on completion.

Survey Fee £ See: Rpt 4

Travelling Expenses (if any) £ : :

When applied for, 19

When received, 19

R. J. Easthope
Arthur W. Osford & Clive Bell
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 21 FEB 1941

Assigned

See Mdb. No 16969



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