

## REPORT ON BOILERS.

No. 48511

Received at London Office

DEC 30 1937

Date of writing Report 28.12.37 When landed in at Local Office 28.12.37 Port of HULL

No. in Reg. Book. 17915 Survey held at Hull Date, First Survey 28th Sept 1937 Last Survey 22nd Dec. 1937

on the Steam Trawler "KINGSTON AGATE" (Number of Visits ✓) Gross Tons 463.67 Net Tons 167.91

Master ✓ Built at Beverley By whom built book, Welton & Gemmell Ltd Yard No. 640 When built 1937

Engines made at Hull By whom made B. D. Holmes & Co., Ltd Engine No. 1530 When made 1937

Boilers made at Hull By whom made B. D. Holmes & Co., Ltd Boiler No. 1530 When made 1937

Nominal Horse Power 155 Owners Kingston Steam Trawling Co., Ltd Port belonging to Hull

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

Manufacturers of Steel The Steel Company of Scotland Ltd (Letter for Record "S")

Total Heating Surface of Boilers 2440 square feet Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One Single Ended Return Tube Working Pressure 225 lbs/sq"

Tested by hydraulic pressure to 388 lbs/sq" Date of test 19.11.37 No. of Certificate 3988 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 62 1/4 sq ft. No. and Description of safety valves to each boiler Two 3 1/2" Dia Spring Loaded.

Area of each set of valves per boiler {per Rule 14.4 sq ins. as fitted 19.242 sq ins. Pressure to which they are adjusted 225 lbs/sq" 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 9" Is oil fuel carried in the double bottom under boilers ✓

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated ✓

Largest internal dia. of boilers 15'6" Length 11'0" Shell plates: Material Steel Tensile strength 31-35 Tons/sq"

Thickness 1 7/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {end Double riveted inner. ✓

long. seams Double riveted D.B.S. Diameter of rivet holes in {circ. seams 1 13/32" long. seams 1 15/32" Pitch of rivets { 3 3/4" 9 9/16"

Percentage of strength of circ. end seams {plate 62.5 rivets 42.7 Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 84.64 rivets 85.5 combined 86.3 Working pressure of shell by Rules 225 lbs/sq"

Thickness of butt straps {outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler Three Dighton Corrugated.

Material Steel Tensile strength 26-30 Tons/sq" Smallest outside diameter 3'9 3/16"

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 23/32" bottom 23/32" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 233 lbs/sq"

End plates in steam space: Material Steel Tensile strength 26-30 Tons/sq" Thickness 1 7/32" Pitch of stays 18 1/4" x 18 3/4"

How are stays secured Double nuts & washers. Working pressure by Rules 230 lbs/sq"

Tube plates: Material {front Steel back Steel Tensile strength { 26-30 Tons/sq" 26-30 Tons/sq" Thickness { 23/32" 23/32"

Mean pitch of stay tubes in nests 9 5/8" Pitch across wide water spaces 14 1/4" Working pressure {front 236 lbs/sq" back 260 lbs/sq"

Girders to combustion chamber tops: Material Steel Tensile strength 29.33 Tons/sq" Depth and thickness of girder at centre 9 1/2" x 7/8" thick double Length as per Rule 2'-9 1/4" Distance apart 8" Centre. 9 1/4" Max Wings. No. and pitch of stays in each 3 at 7 3/4" pitch. Working pressure by Rules 249 lbs/sq" Combustion chamber plates: Material Steel

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

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

Working pressure by Rules 227 lbs/sq" Front plate at bottom: Material Steel Tensile strength 26-30 Tons/sq"

Thickness 31/32" Lower back plate: Material Steel Tensile strength 26-30 Tons/sq" Thickness 29/32"

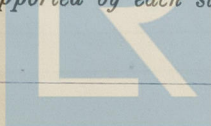
Pitch of stays at wide water space 14 1/4" x 8" Are stays fitted with nuts or riveted over Auto.

Working Pressure 248 lbs/sq" Main stays: Material Steel Tensile strength 28-32 Tons/sq"

Diameter {At body of stay, 3 1/4" or Over threads ✓ No. of threads per inch 8 Area supported by each stay 342 square inches

Working pressure by Rules 233 lbs/sq" Screw stays: Material Steel Tensile strength 26-30 Tons/sq"

Diameter {At turned off part, 1 3/4" or Over threads ✓ No. of threads per inch 10 Area supported by each stay 78 square inches

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Working pressure by Rules 232 lbs/p Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 7/8", 2" & 2 1/4"  
No. of threads per inch 10 Area supported by each stay 92 square inches Working pressure by Rules 229 lbs/p  
Tubes: Material 4 1/2 Iron External diameter { Plain 3 1/2" Thickness { 7/16", 1/2" & 5/8" No. of threads per inch 9  
Pitch of tubes 4 7/8" x 4 3/4" Working pressure by Rules 260 lbs/p Manhole compensation: Size of opening in  
shell plate 16" x 12" Section of compensating ring 4' 11 1/4" x 1 7/16" thick No. of rivets and diameter of rivet holes 118 at 1 5/32" dia.  
Outer row rivet pitch at ends 4' 6 3/4" p.c.d. Depth of flange if manhole flanged ✓ Steam Dome: Material Steel  
Tensile strength 26-30 Tons/p Thickness of shell 3/4" Description of longitudinal joint Single riveted lap.  
Diameter of rivet holes 1 1/32" Pitch of rivets 2 1/4" Percentage of strength of joint { Plate 54  
Internal diameter 2'-9" Working pressure by Rules 230 lbs/p Thickness of crown 1 5/16" No. and diameter of  
stays 2 at 2 3/8" dia. Inner radius of crown ✓ Working pressure by Rules ✓  
How connected to shell Double riveted Size of doubling plate under dome 4' 11 1/4" dia x 1 7/16" dia. Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell 1 15/32" dia x 3'-5" p.c.d.

Type of Superheater Smoke tube Manufacturers of { Tubes Please see Manchester  
Steel forgings report n° F6119.  
Steel castings Blackett Hutton & Co. Ltd.  
Number of elements 48 Material of tubes S. D. Steel Internal diameter and thickness of tubes 20 m/m 2 1/2 m/m.  
Material of headers Steel Tensile strength 26-30 Tons/p Thickness 5/8" 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 3.1416 square inches Are the safety valves fitted with easing gear Yes. Working pressure as per  
Rules Approved for 225 lbs/p Pressure to which the safety valves are adjusted 227 lbs/p Hydraulic test pressure:  
tubes 1000 lbs/p forgings and castings 675 lbs/p and after assembly in place 675 lbs/p 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,  
FOR CHARLES D. HOLMES & CO., LTD. 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.) Yes.  
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.) The boiler has been built under Special Survey & in accordance with the approved plan, The materials & workmanship being sound & good.

Charged on engine report herewith.  
Survey Fee ... £ : :  
Travelling Expenses (if any) £ ✓ : :  
When applied for, 19\_\_  
When received, 19\_\_

J. A. Orde  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
Assigned See Hul F.E. 48571