

REPORT ON BOILERS.

No. 99549

23 JUN 1941

Received at London Office

Date of writing Report

19

When handed in at Local Office

6/6/1941 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Newcastle on Tyne

Date, First Survey 3 June 1940 Last Survey 31/5/1941

on the *S/S "EMPIRE FOAM."*

(Number of Visits)

Gross 7047
Tons Net 5178

Master ☒ Built at *Newcastle* By whom built *Swan, Hunter & Wigham Richardson Ltd* Yard No. *1694* When built *1941-*
Engines made at *Newcastle* By whom made *ditto.* Engine No. *1694* When made *do*
Boilers made at *do* By whom made *ditto.* Boiler No. *1694* When made *do*
Nominal Horse Power _____ Owners _____ Port belonging to *Newcastle*

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

Manufacturers of Steel *Steel Coy of Scotland, & Colvilles Ltd* (Letter for Record *S.*)
Total Heating Surface of Boilers *6080 sq ft.* Is forced draught fitted *Yes* Coal or Oil fired *Coal*
No. and Description of Boilers *Two Single ended.* Working Pressure *220 lbs*
Tested by hydraulic pressure to *380 lbs* Date of test *18/4/41* No. of Certificate *N°890* Can each boiler be worked separately *Yes*
Area of Firegrate in each Boiler *77 sq ft.* No. and Description of safety valves to each boiler *Two 2½ dia Cockburn's Imp. high lift.*
Area of each set of valves per boiler {per Rule *8.65 sq in* as fitted *9.8 " "* Pressure to which they are adjusted *220* Are they fitted with easing gear *Yes*
In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *No donkey boiler*
Smallest distance between boilers or uptakes and bunkers or woodwork *17"* Is oil fuel carried in the double bottom under boilers *No*
Smallest distance between shell of boiler and tank top plating *23½"* Is the bottom of the boiler insulated *Yes*
Largest internal dia. of boilers *16'3"* Length *12'0"* Shell plates: Material *Steel* Tensile strength *30 to 34 tons*
Thickness *1 33/64* Are the shell plates welded or flanged *No* Description of riveting: circ. seams {end *D.R. lap* inter. _____
long. seams *T.R. Dble butt straps* Diameter of rivet holes in {circ. seams *19/16* Pitch of rivets {4.60
long. seams *19/16* 10.50
Percentage of strength of circ. end seams {plate *66.03* rivets *42.17* Percentage of strength of circ. intermediate seam {plate _____ rivets _____
Percentage of strength of longitudinal joint {plate *85.11* rivets *86.0* combined *87.55* Working pressure of shell by Rules *221 lbs*
Thickness of butt straps {outer *1 5/32* inner *1 9/32* No. and Description of Furnaces in each Boiler *Four - Dighton corrugated.*
Material *Steel* Tensile strength *26 to 30 tons* Smallest outside diameter *41"*
Length of plain part {top *5½"* bottom *c.c. bottom 32"* Thickness of plates {crown *5/8"* bottom _____ Description of longitudinal joint *Fire weld.*
Dimensions of stiffening rings on furnace or c.c. bottom *None* Working pressure of furnace by Rules *222 lbs.*
End plates in steam space: Material *Steel* Tensile strength *26 to 30 tons* Thickness *1 1/32"* Pitch of stays *20½" x 14"*
How are stays secured *Nuts inside & outside* Working pressure by Rules *225 lbs*
Tube plates: Material {front *Steel* back _____ Tensile strength {26 to 30 tons Thickness {1 1/32" 27/32"
Mean pitch of stay tubes in nests *10 7/8"* Pitch across wide water spaces *14"* Working pressure {front *274 lbs* back *227 lbs.*
Girders to combustion chamber tops: Material *Steel* Tensile strength *28 to 32 tons* Depth and thickness of girder
at centre *10½" x 25/32" x two* Length as per Rule *34 7/16"* Distance apart *10"* No. and pitch of stays
in each *Three @ 8"* Working pressure by Rules *224 lbs* Combustion chamber plates: Material *Steel*
Tensile strength *26 to 30 tons* Thickness: Sides *3/4"* Back *23/32"* Top *3/4"* Bottom *3/4"*
Pitch of stays to ditto: Sides *8" x 10"* Back *8½" x 9"* Top *8" x 10"* Are stays fitted with nuts or riveted over *Nuts*
Working pressure by Rules *221 lbs min.* Front plate at bottom: Material *Steel* Tensile strength *26 to 30 tons*
Thickness *1 1/32"* Lower back plate: Material *Steel* Tensile strength *26 to 30 tons* Thickness *15/16"*
Pitch of stays at wide water space *14" x 9½"* Are stays fitted with nuts or riveted over *Nuts*
Working Pressure *256 lbs.* Main stays: Material *Steel* Tensile strength *28 to 32 tons*
Diameter {At body of stay, *2 1/8"* or Over threads _____ No. of threads per inch *6* Area supported by each stay *275 sq in*
Working pressure by Rules *221 lbs* Screw stays: Material *Steel* Tensile strength *26 to 30 tons*
Diameter {At turned off part, *1 3/4"* or Over threads _____ No. of threads per inch *9* Area supported by each stay *78 sq in*

CONT'D. OVER

003434-003443-0043

Working pressure by Rules 232 Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part 1 3/4" + 2"
Over threads
No. of threads per inch 9 Area supported by each stay 107.2 sq in Working pressure by Rules 230
Tubes: Material Steel External diameter { Plain 3" Thickness { 8 W.S. 7/16" 3/8" 5/16" No. of threads per inch 9
Pitch of tubes 4 1/4" x 4 1/4" Working pressure by Rules 225 Manhole compensation: Size of opening in
shell plate 20" x 16" Section of compensating ring (13 5/16 - 1 9/16) x 2 x 1 33/64" No. of rivets and diameter of rivet holes 38 of 1 9/16"
Outer row rivet pitch at ends 10 1/2" Depth of flange if manhole flanged 3" Steam Dome: Material None

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 Working pressure by Rules Thickness of crown No. and diameter of
stays Inner radius of crown Working pressure by Rules
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

None

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

Working pressure as per

Rules

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, LTD.

Manufacturers

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

See Mchly Report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 15/5/40

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.)

These Boilers have been constructed under Special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Boilers have been satisfactorily installed on board the vessel and tested under working conditions with satisfactory results.

See also Mchly Rpt H.

Survey Fee ... See Mchly Rpt 4 When applied for, See Mchly Report
Travelling Expenses (if any) £ : : When received, 19

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 1 JUL 1941

Assigned

See Inv. No. 99549



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Foundation