

REPORT ON BOILERS.

No. 28782

MON. APR. 7 1924

Received at London Office

Date of writing Report

192

When handed in at Local Office - 3 APR 1924

Port of Sunderland

No. in Survey held at Sunderland

Date, First Survey

Last Survey 1st April 1924

on the new steel S/S "GOATHLAND"

(Number of Visits)

Gross 3821
Net 2273

Builder Sunderland By whom built R. Thompson & Sons Yard No. 320 When built 1924

Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd Engine No. 2540 When made 1924

Donkey boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd Boiler No. 2548 When made 1924

Nominal Horse Power 340 Owners Rowland & Marwood S.S. Co Ltd Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel John Spencer & Sons Limited (Letter for Record (S))

Total Heating Surface of Boilers 930 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers one single ended marine Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 25-2-24 No. of Certificate 3865 Can each boiler be worked separately no

Area of Firegrate in each Boiler 28 sq ft No. and Description of safety valves to each boiler two direct spring

Area of each set of valves per boiler { per Rule 5.9610" as fitted 6.28" Pressure to which they are adjusted 180 Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no

Smallest distance between boilers or uptakes and bunkers or woodwork 15 1/2" Is oil fuel carried in the double bottom under boilers no tanks

Smallest distance between shell of boiler and tank top plating no Is the bottom of the boiler insulated no

Largest internal dia. of boilers 10'-4 3/4" Length 10'-6" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 55" Are the shell plates welded or flanged no Description of riveting: circ. seams { end WR inter. WR

Long. seams WR & TR Diameter of rivet holes in { circ. seams 15" long. seams 15" Pitch of rivets { 3" 6 3/4"

Percentage of strength of circ. end seams { plate 68.75 rivets 44 Percentage of strength of circ. intermediate seam { plate 86.11 rivets 91.75

Percentage of strength of longitudinal joint { plate 86.11 rivets 91.75 combined 90.5 Working pressure of shell by Rules 180

Thickness of butt straps { outer 2 1/2" inner 2 5/8" No. and Description of Furnaces in each Boiler two Dighton

Material steel Tensile strength 26-30 tons Smallest outside diameter 2'-9 5/8"

Length of plain part { top no bottom no Thickness of plates { crown 7 1/16" bottom 7 1/16" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom no Working pressure of furnace by Rules 185

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 15" Pitch of stays 18 1/2" x 14 3/8"

How are stays secured WN & Washers Working pressure by Rules 180

Tube plates: Material { front steel back no Tensile strength { 26-30 tons Thickness { 15" 2 5/8"

Mean pitch of stay tubes in nests 10.75" Pitch across wide water spaces 14 1/2" (23/32 OP) Working pressure { front 189 back 189

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 8" x 2 3/32" Length as per Rule 29 1/4" Distance apart 9 1/2" No. and pitch of stays

in each 2 @ 9 1/2" Working pressure by Rules 190 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32"

Pitch of stays to ditto: Sides 10 1/2" x 9 1/2" Back 10 1/4" x 9 3/4" Top 9 1/2" x 9 1/2" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 181 Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 15" Lower back plate: Material steel Tensile strength 26-30 tons Thickness 15"

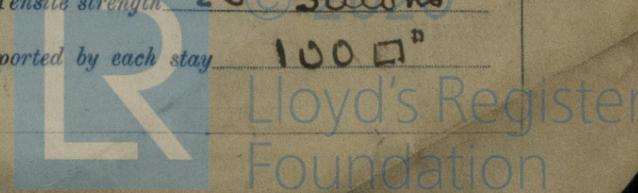
Pitch of stays at wide water space 14 1/2" x 10 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 235 Main stays: Material steel Tensile strength 28-32 tons

Diameter { At body of stay, 2 3/8" No. of threads per inch 6 Area supported by each stay 262 sq"

Working pressure by Rules 184 Screw stays: Material steel Tensile strength 26-30 tons

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 100 sq"



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REPORT ON BOILERS

Working pressure by Rules 203 lbs Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 17/8" or _{Over threads}

No. of threads per inch 9 Area supported by each stay 117 sq" Working pressure by Rules 181

Tubes: Material Wm. Iron External diameter ^{Plain} 3 1/4" _{Stay} 3 1/2" Thickness 8 BWS 5/16 & 1/4" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 180 Manhole compensation: Size of opening in shell plate 16" x 20" Section of compensating ring 9" x 1/8" flanged No. of rivets and diameter of rivet holes 32 @ 15/16"

Outer row rivet pitch at ends 6 3/4" Depth of flange if manhole flanged 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 _____

How connected to shell _____ Inner radius of crown _____ Working pressure by Rules _____

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 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 _____, 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 23 inclusive for boilers been complied with _____

FOR THE NORTH EASTERN MARINE ENGINEERS

The foregoing is a correct description,
C. I. Adams Manufacturer.

Dates of Survey ^{During progress of work in shops - -} Please see Report on Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) _____

_{while building} ^{During erection on board vessel - - -} Machinery Total No. of visits _____

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

The materials and workmanship are good
The boiler has been constructed under special survey, satisfactorily fitted in vessel (upper deck) and its safety valves adjusted under steam.

Survey Fee £ 6 : 4 : When applied for. - 1 APR 1924

Travelling Expenses (if any) £ : : When received. 1. 5. 1924

S. C. Davis
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 11 APR 1924

Assigned _____