

REPORT ON BOILERS.

No. 12108

Received at London Office 11 OCT 1924

Date of writing Report 192 When handed in at Local Office 9.10.24 Port of Middlesbrough

No. in Survey held at Stockton-on-Tees Date, First Survey Last Survey 192

on the Steel Arrow steamer SOUTHBOROUGH (Number of Visits) Tons {Gross Net}

Master Built at Stockton By whom built Richardson & Co Yard No. 689 When built 1924

Engines made at Stockton By whom made Messrs Blair & Co Ltd Engine No 1954 When made 1924

Boilers made at Stockton By whom made Messrs Blair & Co Ltd Boiler No. 1954 When made 1924

Nominal Horse Power 417 Owners Messrs Hazardwood Shipping Co Ltd Port belonging to Cardiff

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs D. Colville & Sons Ltd (Letter for Record (3))

Total Heating Surface of Boilers 7080 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers 3 single ended Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 18.9.24 No. of Certificate 6393 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 59.9 sq ft No. and Description of safety valves to each boiler 2 direct spring "High lift"

Area of each set of valves per boiler {per Rule 10.08 as fitted 11.88 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

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers no

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 15'-3 7/16 Length 11'-0" Shell plates: Material 11'-0" steel Tensile strength 28-32

Thickness 1 9/32 Are the shell plates welded or flanged no Description of riveting: circ. seams {end 2 Riv. lap inter.}

Long. seams 2 Butt - 3 Riveted Diameter of rivet holes in {circ. seams 1 3/8 long. seams 1 5/16 Pitch of rivets {4 1/4 8 3/4}

Percentage of strength of circ. end seams {plate 67.6 rivets 44.6 Percentage of strength of circ. intermediate seam {plate rivets}

Percentage of strength of longitudinal joint {plate 85.02 rivets 93.1 combined 88.67 Working pressure of shell by Rules 183 lbs

Thickness of butt straps {outer 1 9/16 x 1 inner 1 9/16 x 1 1/8 No. and Description of Furnaces in each Boiler 3 Saighton

Material steel Tensile strength 26-30 tons Smallest outside diameter 43 1/8

Length of plain part {top bottom Thickness of plates {crown 9/16 bottom 7/16 Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 189 lbs

Diagonal plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 7/32 Pitch of stays 19 {20 17}

How are stays secured nuts & 1 1/2 x 1 cone washers Working pressure by Rules 190 lbs

Diagonal plates: Material {front steel back steel Tensile strength {26-30 tons Thickness {1 1/16 1 9/16

Can pitch of stay tubes in nests 1 1/16 Pitch across wide water spaces 14 1/2 x 9 3/4 Working pressure {front 185 lb back 190 "

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

centre 8" x 1 5/8 Length as per Rule 29 Distance apart 9 3/4 No. and pitch of stays

each 2 @ 9 Working pressure by Rules 284 lbs Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 1/4 Back 1/16 Top 1/16 Bottom 7/8

Pitch of stays to ditto: Sides 8 3/8 x 10 1/4 Back 9 3/8 x 9 3/8 Top 9 3/4 x 9 Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 188 lbs Front plate at bottom: Material steel Tensile strength 26-30 tons

Thickness 1 1/16 Lower back plate: Material steel Tensile strength 26-30 tons Thickness 3/32

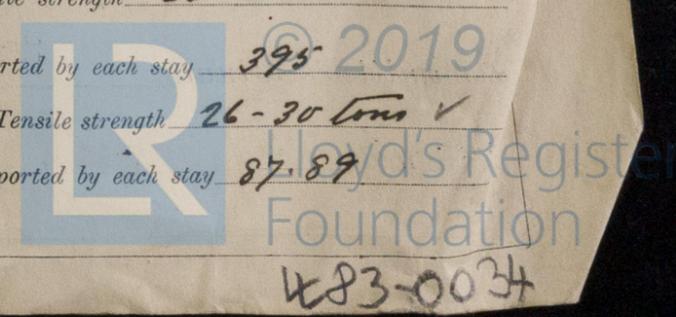
Pitch of stays at wide water space 14 x 9 3/8 Are stays fitted with nuts or riveted over nuts

Working Pressure 273 lbs Main stays: Material steel Tensile strength 28-32 tons

Diameter {At body of stay, or Over threads 3 1/4 3 1/4 No. of threads per inch 6 Area supported by each stay 395

Working pressure by Rules 203 Screw stays: Material steel Tensile strength 26-30 tons

Diameter {At turned off part, or Over threads 1 3/4 1 3/4 No. of threads per inch 8 Area supported by each stay 87.89



483-0034

80151

Working pressure by Rules 204 ✓ Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 1/2 or Over threads }
 No. of threads per inch 8 ✓ Area supported by each stay 103.12 Working pressure by Rules 201 lbs
 Tubes; Material iron ✓ External diameter { Plain 3 1/2 Stay 3 1/2 } Thickness { Nº 8 - 4.5.9 } No. of threads per inch 9 ✓
 Pitch of tubes 4 3/4" x 4 7/8" ✓ Working pressure by Rules 215 + 200 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8" x 1 1/4" No. of rivets and diameter of rivet holes 27 @ 1 1/2"
 Outer row rivet pitch at ends 9" ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material iron
 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 _____ 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 yes

The foregoing is a correct description,
N. P. Navullov Manufacturer.

Dates of Survey { During progress of work in shops - - } see report on Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
 { During erection on board vessel - - } see report on Total No. of visits _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey: are of good material and workmanship and on completion were tested by hydraulic pressure with satisfactory results
The boilers have been satisfactorily secured on board, examined under steam and safety valves adjusted

Survey Fee see my acct £ _____ When applied for, _____ 192 _____
 Travelling Expenses (if any) £ _____ When received, _____ 192 _____

Wm Morrison
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 14 OCT. 1924

Assigned _____

