

# REPORT ON BOILERS.

No. 95130

Received at London Office JUN 11 1937

Date of writing Report 19 7/6/37 When handed in at Local Office 7/6/37 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book Survey held at Wallsend Date, First Survey 30 July 1936 Last Survey 3<sup>rd</sup> June 1937

on the Steamer "INKOSI" (Number of Visits         ) Tons { Gross 6618 Net 4055

Master          Built at Wallsend By whom built Swan Hunter & Wigham Richardson Yard No. 1525 When built 1937

Engines made at Wallsend By whom made Wallsend Slipway & Engineering Co. Ltd. Engine No. 921 When made 1937

Boilers made at Wallsend By whom made Wallsend Slipway & Engineering Co. Ltd. Boiler No. 921 When made 1937

Nominal Horse Power 835 Owners Charante S. S. Co. Ltd. Port belonging to Liverpool

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

Manufacturers of Steel Steel Company of Scotland: Rutherford Iron Works (Letter for Record         )

Total Heating Surface of Boilers 12000 sq ft Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers Four single ended multitubular Working Pressure 235 lbs

Tested by hydraulic pressure to 403 lbs Date of test 11-12-36 No. of Certificate 699+702 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 15 sq ft No. and Description of safety valves to each boiler Two spring loaded

Area of each set of valves per boiler { per Rule 15 sq ft as fitted 16.5 sq ft Pressure to which they are adjusted 240 lbs Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 30" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'-6" Length 12'-6" Shell plates: Material Steel Tensile strength 31-35 tons

Thickness 1 19/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end Lap S.R. inter.         

long. seams Triple Riveted Oil Straps Diameter of rivet holes in { circ. seams 1 21/32" long. seams 1 21/32" Pitch of rivets { 4-7/8" 11"

Percentage of strength of circ. end seams { plate 65 rivets 42.5 Percentage of strength of circ. intermediate seam { plate          rivets         

Percentage of strength of longitudinal joint { plate 84.9 rivets 85.2 combined 87.1 Working pressure of shell by Rules 236 lbs

Thickness of butt straps { outer 1 7/32" inner 1 11/32" No. and Description of Furnaces in each Boiler 4 Brighton

Material Steel Tensile strength 26-30 tons Smallest outside diameter 42 1/4"

Length of plain part { top          bottom          Thickness of plates { crown 11/16" bottom          Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom          Working pressure of furnace by Rules 239 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 7/16" Pitch of stays 22" x 18"

How are stays secured double nuts Working pressure by Rules 240 lbs

Tube plates: Material { front Steel back Steel Tensile strength { 26-30 tons Thickness { 7/8"

Mean pitch of stay tubes in nests 10 3/8" Pitch across wide water spaces 13 3/4" Working pressure { front 239 lbs back 258 lbs

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons Depth and thickness of girder         

at centre 1 1/4 x 2 @ 3/4" Length as per Rule 40 13/32" Distance apart 7 3/4" No. and pitch of stays         

in each 3 @ 9 5/8" Working pressure by Rules 242 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 23 3/32" Back 23 3/32" Top 23 3/32" Bottom 7/8"

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

Working pressure by Rules 239 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1"

Pitch of stays at wide water space 14 1/4" x 9 3/8" Are stays fitted with nuts or riveted over nuts

Working Pressure 285 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter { At body of stay          or 3 1/2" No. of threads per inch 6 Area supported by each stay 396 sq in

Working pressure by Rules 240 lbs Screw stays: Material Iron Tensile strength 21.5 tons (mins)

Diameter { At turned off part          or 1 3/4" No. of threads per inch 9 Area supported by each stay 75 sq in

Working pressure by Rules 242 lbs Are the stays drilled at the outer ends no Margin stays: Diameter  At turned off part, 2" or  Over threads

No. of threads per inch 9 Area supported by each stay 104 sq" Working pressure by Rules 237 lbs

Tubes: Material Iron External diameter  Plain 3"  Stay 3" Thickness 3/8" + 5/16" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 277 lbs Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 24" x 1 19/32" No. of rivets and diameter of rivet holes 36 @ 1 21/32"

Outer row rivet pitch at ends 11" Depth of flange if manhole flanged 3 19/32" 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 Sugden's Smoke Tube Type Manufacturers of  Tubes Tubes Ld.  Steel castings Babcock & Wilcox Lt.

Number of elements 58 Material of tubes Cold drawn steel Internal diameter and thickness of tubes 16 7/16" : 3 7/16"

Material of headers Mild steel Tensile strength 28-30 tons Thickness 3/4" 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 4.71 sq" Are the safety valves fitted with easing gear  Working pressure as per Rules 235 lbs Pressure to which the safety valves are adjusted 240 lbs Hydraulic test pressure: tubes 1000 lbs 705 lbs and after assembly in place 470 lbs 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

The foregoing is a correct description,  
FOR THE WALLS AND STEELWORKS ENGINEERING CO. LIMITED  
J. W. PHIPSON DIRECTOR, Manufacturer.

Dates of Survey  During progress of work in shops - -  while building  During erection on board vessel - - - See Machinery Report

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 boilers have been built under Special Survey, in accordance with the Rules and approved plan, the materials and workmanship are good; they have been fitted on board in an efficient manner, tried under working conditions and found satisfactory.

Survey Fee ... .. £ : : } When applied for, 19

Travelling Expenses (if any) £  : : } When received, 19

J. W. Phipson  
Engineer Surveyor to Lloyd's Register of Shipping.

TUE 15 JUN 1937

Committee's Minute

Assigned

See Nwc. S.E. 95730

