

REPORT ON BOILERS.

No. 89776

Received at London Office

7 FEB 1933

Writing Report

19

When handed in at Local Office

6 Feb 1933 Port of Newcastle

Survey held at

Newcastle

Date, First Survey

8 June 1932

Last Survey

6 Feb 1933

on the

Steel Twin Screw "CHANG KIANG"

(Number of Visits)

Gross

Tons

Net

Built at

Newcastle

By whom built

Swan Hunter & Wigham

Engine No.

1422 When built 1933

made at

Newcastle

By whom made

Swan Hunter & Wigham Richardson

Engine No.

1422 When made 1933

made at

ditto

By whom made

ditto

Boiler No.

1422 When made

Horse Power

246

Owners

Ministry of Railways of the Republic of China

Port belonging to

TITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Co of Scotland. Thos Figgott & Co (furnaces) (Letter for Record S)

Heating Surface of Boilers 4480 sq ft. Is forced draught fitted Yes. Coal or Oil fired Coal.

Description of Boilers Two Single ended, cylindrical (2 S.B.) Working Pressure 180 lbs/sq in

by hydraulic pressure to 320 lbs/sq in Date of test 9.9.32 No. of Certificate 586 Can each boiler be worked separately Yes.

of Firegrate in each Boiler 59 sq ft. No. and Description of safety valves to each boiler Two - Cockburns Improved High Lift 2 1/4 dia

of each set of valves per boiler per Rule 7.18 sq in Pressure to which they are adjusted 180 lbs/sq in Are they fitted with easing gear Yes.

of donkey boilers, state whether steam from main boilers can enter the donkey boiler No. donkey boiler

distance between boilers or uptakes and bunkers or woodwork 2'-6" Is oil fuel carried in the double bottom under boilers No.

distance between shell of boiler and tank top plating Open floors. Is the bottom of the boiler insulated No.

st internal dia. of boilers 14'-3 3/4" (17.75") Length 11'-6" Shell plates: Material Steel Tensile strength 30-34 tons/sq in

Are the shell plates welded or flanged No. Description of riveting: circ. seams end D.P. lap. inter.

seams T.R. Double butt Straps. Diameter of rivet holes in circ. seams 1.3125" Pitch of rivets 4.379" 8.3125"

Percentage of strength of circ. end seams plate 70.0 rivets 42.0 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.7 rivets 85.1 combined 88.4 Working pressure of shell by Rules 183 lbs/sq in

ness of butt straps outer 27/32 inner 31/32 No. and Description of Furnaces in each Boiler Three Doughtons Corrugated.

Material Steel Tensile strength 26-30 tons/sq in Smallest outside diameter 42.125"

h of plain part top Thickness of plates crown 17/32 Description of longitudinal joint Weld.

nsions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 182 lbs/sq in

plates in steam space: Material Steel Tensile strength 26-30 tons/sq in Thickness 38/32 Pitch of stays 19.5" x 18.5"

are stays secured No. inside and out. Working pressure by Rules 181 lbs/sq in

plates: Material front Steel Tensile strength 26-30 tons/sq in Thickness 31/32 back Steel 26-30 tons/sq in 24/32

pitch of stay tubes in nests 9.375" Pitch across wide water spaces 13.5" x 7.5" Working pressure front 196 lbs/sq in back 228 lbs/sq in

ers to combustion chamber tops: Material Steel Tensile strength 28-32 tons/sq in Depth and thickness of girder

entre 9.125" x 20/32 x 2" Length as per Rule 32.6" Distance apart 9.125" No. and pitch of stays

ch Two - 10" Working pressure by Rules 184 lbs/sq in Combustion chamber plates: Material Steel

ile strength 26-30 tons/sq in Thickness: Sides 22/32 Back 21/32 Top 22/32 Bottom 22/32

h of stays to ditto: Sides 10" x 8.25" Back 9.125" x 9.125" Top 10" x 9.125" Are stays fitted with nuts or riveted over No.

king pressure by Rules 180 lbs/sq in Front plate at bottom: Material Steel Tensile strength 26-30 tons/sq in

hness 31/32 Lower back plate: Material Steel Tensile strength 26-30 tons/sq in Thickness 29/32

h of stays at wide water space 14.5625" x 9.125" Are stays fitted with nuts or riveted over No.

king Pressure 228 lbs/sq in Main stays: Material Steel Tensile strength 28-32 tons/sq in

meter At body of stay, 3" No. of threads per inch 6 Area supported by each stay 369 sq in

king pressure by Rules 181 lbs/sq in Screw stays: Material Steel Tensile strength 26-30 tons/sq in

meter At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 81.6 sq in

Working pressure by Rules 186 1/2 Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part, 1 3/4 or Over threads 1 3/4 }

No. of threads per inch 9 Area supported by each stay 100.6 Working pressure by Rules 182 1/2

Tubes: Material lap welded iron External diameter { Plain 2 1/2 Stay 2 1/2 } Thickness { 9. w.g. 1/4" x 5/16 } No. of threads per inch 9

Pitch of tubes 3.75 Working pressure by Rules 200 1/2 Manhole compensation: Size of opening in shell plate 16" (x 1 1/2") Section of compensating ring 20" x 1 1/8" No. of rivets and diameter of rivet holes 15 1 1/16"

Outer row rivet pitch at ends 9.75 Depth of flange if manhole flanged Top 2.75; Bolts 3.4375 Steam Dome: Material _____

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 _____

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 face 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, G. J. Macdonald Manufacturer

Dates of Survey { During progress of work in shops - - - } See Machinery Report Are the approved plans of boiler and superheater forwarded herewith Yes (If not state date of approval.)

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

Is this Boiler a duplicate of a previous case Yes 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. The materials & workmanship are good, and when tested under hydraulic pressure the boilers were found tight & satisfactory in every respect. They have been satisfactorily fitted on board; see Report on Machinery—

Survey Fee £ : : When applied for, 19

Travelling Expenses (if any) £ 1 : : When received, 19

G. J. Macdonald
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 10 FEB 1933

Assigned See other Rpt
Nwc. 89776

Rpt. 13

R

Date of ...

No. in Reg. Bo. 91215

Built at _____

Owners _____

Electric _____

Is the Ve _____

System of _____

Pressure _____

Direct or _____

If alternat _____

Has the A _____

Generator _____

are they ov _____

Where more _____

series with e _____

Are all term _____

short circuit _____

Position of _____

is the ventil _____

if situated _____

are their az _____

Earthing, _____

their respect _____

Main Switch _____

a fuse on eac _____

Switchboard _____

are they prot _____

woodwork or _____

are they cons _____

permanently _____

with mica or _____

and is the fra _____

bars _____

Main Switch _____

switches _____

circuit _____

Instruments _____

Earth Testin _____

connecte _____

Switches, Ci _____

Joint Boxes _____