

REPORT ON BOILERS.

No. 11,136

Received at London Office 11 OCT 1933

of writing Report 19 When handed in at Local Office 17th Aug 1933 Port of *Belfast*
see T.E. mch report
No. in Survey held at *Belfast* Date, First Survey Last Survey 19
Book.
on the *T.S.S. "PRABHAVATI"* (Number of Visits) Gross *556*
Tons Net *205*
Built at *Glasgow* By whom built *Harland & Wolff Ltd.* Yard No. *929* When built *1933*
Engines made at *Belfast* By whom made *Harland & Wolff Ltd.* Engine No. *9299* When made *1933*
Boilers made at *Belfast* By whom made *Harland & Wolff Ltd.* Boiler No. *9299* When made *1933*
Nominal Horse Power *260* Owners *Bombay Steam Nav. Co.* Port belonging to *Bombay*

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Colvilles Ltd.* (Letter for Record *5*)
Total Heating Surface of Boilers *4563* sq ft Is forced draught fitted *Yes* Coal or Oil fired
No. and Description of Boilers *One D.L. cylindrical multitubular* Working Pressure *200 lb.*
Tested by hydraulic pressure to *350 lb.* Date of test *9.8.33* No. of Certificate *971* Can each boiler be worked separately
Area of Firegrate in each Boiler *120.75* sq ft No. and Description of safety valves to each boiler *2 Direct Spring Improved High Lift*
Area of each set of valves per boiler { per Rule *15-9* sq in^2 as fitted *16-6* sq in^2 Pressure to which they are adjusted *200 lb/2* 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 *Well clear* Is oil fuel carried in the double bottom under boilers *No 28 inch boiler*
Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated *Yes*
Largest internal dia. of boilers *14'-3" mean* Length *19'-6"* Shell plates: Material *Steel* Tensile strength *29/33 2msd*
Thickness *1 3/32"* Are the shell plates welded or flanged *No.* Description of riveting: circ. seams { end *double* inter *hettle*
Long. seams *hettle d.b.s.* Diameter of rivet holes in { circ. seams *3/16"* Pitch of rivets *3.882" x 4.228"*
Percentage of strength of circ. end seams { plate *59.3* rivets *54.1* Percentage of strength of circ. intermediate seam { plate *67.4* rivets *65.0*
Percentage of strength of longitudinal joint { plate *85.23* rivets *92.22* combined *88.84* Working pressure of shell by Rules *205 lb.*
Thickness of butt straps { outer *1 3/32"* inner *1 5/32"* No. and Description of Furnaces in each Boiler *Six - Doughton*
Material *Steel* Tensile strength *26-30 2msd* Smallest outside diameter *43 1/4"*
Length of plain part { top Thickness of plates { crown *3/8"* bottom *3/8"* Description of longitudinal joint *weld.*
Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules *210 lb.*
End plates in steam space: Material *Steel* Tensile strength *26-30 2msd* Thickness *1 3/32"* Pitch of stays *19" x 15"*
How are stays secured *double nuts, screwed into end plates, and washers* Working pressure by Rules *217 lb.*
Tube plates: Material { front *Steel* back *Steel* Tensile strength { *26-30 2msd* Thickness { *3/8"*
Mean pitch of stay tubes in nests *7.94"* Pitch across wide water spaces *13 1/4" x 7"* Working pressure { front *233 lb.* back *318 lb.*
Girders to combustion chamber tops: Material *Steel* Tensile strength *28-32 2msd* Depth and thickness of girder
at centre *8 1/2" - 1 1/2"* Length as per Rule *28 3/32"* Distance apart *10 1/4"* No. and pitch of stays
in each *three - 7 1/4"* Working pressure by Rules *257 lb.* Combustion chamber plates: Material *Steel*
Tensile strength *26-30 2msd* Thickness: Sides *1/16"* Back *2 1/32"* Top *1/16"* Bottom *1/16"*
Pitch of stays to ditto: Sides *10 1/4" x 7 1/4"* Back *9" x 8"* Top *10 1/4" x 7 1/4"* Are stays fitted with nuts or riveted over *nuts*
Working pressure by Rules *206 lb.* Front plate at bottom: Material *Steel* Tensile strength *26-30 2msd*
Thickness *3/8"* Lower back plate: Material *Steel* Tensile strength *26-30 2msd* Thickness *7/8"*
Pitch of stays at wide water space Are stays fitted with nuts or riveted over
Working Pressure Main stays: Material *Steel* Tensile strength *28-32 2msd*
Diameter { At body of stay, or Over threads *3" - 3 1/8"* No. of threads per inch *14* Area supported by each stay *3200"*
Working pressure by Rules *204 lb.* Screw stays: Material *Steel* Tensile strength *26-30 2msd*
Diameter { At turned off part, or Over threads *1 3/4"* No. of threads per inch *20* Area supported by each stay *7.43"*

Working pressure by Rules *24 4/16* Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part; or Over threads *1 7/8" 2"* ✓
No. of threads per inch *20* Area supported by each stay *100 0"* Working pressure by Rules *213 1/16*
Tubes: Material *Iron* External diameter { Plain *2 1/2"* Stay *2 1/2"* Thickness { *7/8" 7/16" 9/16"* No. of threads per inch *20* ✓
Pitch of tubes *3 1/2" x 3 3/4"* Working pressure by Rules *plain 300 lb stay 155 lb* Manhole compensation: Size of opening in
shell plate *16" x 12"* Section of compensating ring *36" 32" 1 1/2" double* No. of rivets and diameter of rivet holes *21 - 1 3/8"* ✓
Outer row rivet pitch at ends *10 1/2"* Depth of flange if manhole flanged *thickened* 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 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 22 inclusive for boilers been complied with

The foregoing is a correct description,
For HARLAND AND WOLFF, LIMITED, Manufacturer.

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

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

Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *No. 9269 Bel. Rpt. 11099*

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

This boiler has been constructed under special survey and to an approved plan. The workmanship and materials are good. It has been satisfactorily tested by hydraulic pressure and forwarded to Glasgow to be installed.

*This boiler has been properly fitted in the vessel, examined under steam & safety valves adjusted as above
(Glasgow Report 53862)*
J. Doyle Glasgow 29/9/33

Survey Fee ... *See Memo. Report* When applied for, 19
Travelling Expenses (if any) : : When received, 19

R. Lee Amess

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW

30 OCT 1933

Assigned *See Gls. Rpt. No 53862*



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