

# REPORT ON BOILERS.

No. 123669.

Received at London Office 6 FEB 1945

Date of writing Report.....19..... When handed in at Local Office.....19..... Port of.....  
 No. in Survey held at *Sydam, Preston & Fleetwood* Date, First Survey *17/3/44* Last Survey *20/12/45*  
 Reg. Book..... (Number of Visits.....50.....) Tons { Gross *282.91*  
 on the *Star Screw FRESHPOND* Net *92.82*  
 Laster..... Built at *Sydam* By whom built *Sydam S.B. & Co. Ltd.* Yard No. *878* When built *1945*  
 Engines made at *Sydam* By whom made *Sydam S.B. & Co. Ltd.* Engine No. *556* When made *1945*  
 Boilers made at *- do -* By whom made *- do -* Boiler No. *555* When made *1945*  
 Nominal Horse Power *90* Owners *The Admiralty* Port belonging to *London*

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

Manufacturers of Steel *Shear Steel Co. of Scotland, FMS - Balvaird, Ltd. INTERNALS - Benson Iron Co.* (Letter for Record *"SB"*)  
 Total Heating Surface of Boilers *1600 sq. ft.* Is forced draught fitted *yes* Coal or Oil fired *Coal*  
 No. and Description of Boilers *One single ended multitubular cylindrical (scotch) type* Working Pressure *180 lb./sq. in.*  
 Tested by hydraulic pressure to *320 lb./sq. in.* Date of test *9-3-45* No. of Certificate *2664* Can each boiler be worked separately *yes*  
 Area of Firegrate in each Boiler *46.5 sq. ft.* No. and Description of safety valves to each boiler *Two - 2 1/2" dia. Spring Loaded*  
 Area of each set of valves per boiler { per Rule *10.25 sq. in.* as fitted *11.87 sq. in.* Pressure to which they are adjusted *180 lb./sq. in.* 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 *8 1/2"* Is oil fuel carried in the double bottom under boilers *no*  
 Smallest distance between shell of boiler and tank top plating *yes* Is the bottom of the boiler insulated *no*  
 Largest internal dia. of boilers *12'-9 1/8"* Length *10'-6"* Shell plates: Material *steel* Tensile strength *20-33 tons/sq. in.*  
 Thickness *1 1/2"* Are the shell plates welded or flanged *no* Description of riveting: circ. seams { end *DR* inter *yes*  
 long. seams *T.R. D.R.S.* Diameter of rivet holes in { circ. seams *1 3/32"* long. seams *1 3/32"* Pitch of rivets { *3 3/8"* *7 3/4"*  
 Percentage of strength of circ. end seams { plate *67%* rivets *42.8%* Percentage of strength of circ. intermediate seam { plate *85.8%* rivets *87.0%*  
 Percentage of strength of longitudinal joint { plate *85.8%* rivets *87.0%* combined *89%* Working pressure of shell by Rules *182.2 lb./sq. in.*  
 Thickness of butt straps { outer *25/32"* inner *29/32"* No. and Description of Furnaces in each Boiler *Daughton Type 3 Little Bourne back ends*  
 Material *steel* Tensile strength *26-30 tons* Smallest outside diameter *35 3/8"*  
 Length of plain part { top *yes* bottom *yes* Thickness of plates { crown *7/16"* bottom *7/16"* Description of longitudinal joint *Welded*  
 Dimensions of stiffening rings on furnace or c.c. bottom *yes* Working pressure of furnace by Rules *yes*  
 End plates in steam space: Material *steel* Tensile strength *26-30 tons* Thickness *1 3/32"* Pitch of stays *1 1/4" x 17 3/4"*  
 How are stays secured *Double nuts* Working pressure by Rules *Approved*  
 Tube plates: Material { front *steel* back *- do -* Tensile strength { *26-30 tons/sq. in.* Thickness { *7/8"* *25/32"*  
 Lean pitch of stay tubes in nests *9 x 11 3/32"* Pitch across wide water spaces *14 1/2"* Working pressure { front *Approved* back *- do -*  
 Girders to combustion chamber tops: Material *steel* Tensile strength *28-32 tons/sq. in.* Depth and thickness of girder  
 at centre *8 3/8" x 15 1/8" (Double Plate)* Length as per Rule *31 1/2"* Distance apart *11"* No. and pitch of stays  
 in each *Two at 9 1/4"* Working pressure by Rules *Approved* Combustion chamber plates: Material *steel*  
 Tensile strength *26-30 tons/sq. in.* Thickness: Sides *3/4"* Back *3/4"* Top *3/4"* Bottom *3/4"*  
 Pitch of stays to ditto: Sides *10 3/4" x 9 1/8"* Back *10 x 9 1/8"* Top *11 x 9 1/8"* Are stays fitted with nuts or riveted over *nuts*  
 Working pressure by Rules *Approved* Front plate at bottom: Material *steel* Tensile strength *26-30 tons/sq. in.*  
 Thickness *7/8"* Lower back plate: Material *steel* Tensile strength *26-30 tons/sq. in.* Thickness *7/8"*  
 Pitch of stays at wide water space *14 3/4" x 10"* Are stays fitted with nuts or riveted over *nuts*  
 Working pressure *Approved* Main stays: Material *steel* Tensile strength *28-32 tons/sq. in.*  
 Diameter { At body of stay *2 3/8"* No. of threads per inch *6* Area supported by each stay *289 sq. in.*  
 { Over threads *3"*  
 Working pressure by Rules *Approved* Screw stays: Material *steel* Tensile strength *26-30 tons/sq. in.*  
 Diameter { At turned off part *1 7/8"* No. of threads per inch *9* Area supported by each stay *107.8 sq. in.*  
 { Over threads *1 7/8"*

Working pressure by Rules *Approved*. Are the stays drilled at the outer ends *Yes* Margin stays: Diameter { At turned off part, *1.86"* or *2"* Over threads. *Approved*.  
No. of threads per inch *9* Area supported by each stay *128.75 sq in* Working pressure by Rules *Approved*.  
Tubes: Material *chromium steel* External diameter { Plain *3 1/4"* Stay *3 1/4"* Thickness { *8 WR* *1/4"* *3/16"* *3/8"* No. of threads per inch *9*  
Pitch of tubes *4 1/2" x 4 1/6"* Working pressure by Rules *Approved* Manhole compensation: Size of opening  
shell plate *20" x 16"* Section of compensating ring *2 1/2" x 2 1/2" x 1 1/4"* No. of rivets and diameter of rivet holes *32 @ 1 1/2"*  
Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *3 1/2"* 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  
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 forgings *✓* 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  
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  
Rules *✓* Pressure to which the safety valves are adjusted *✓* Hydraulic test pressure  
tubes *✓* forgings and castings *✓* and after assembly in place *✓* Are drain cocks  
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 *Yes*

The foregoing is a correct description,  
**THE LUTHER ENGINEERING COMPANY, LIMITED**  
*A. J. Hendrick* Manufacturer

Dates of Survey while building { During progress of work in shops - - *See Melby rpt* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
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. *"FRESH TARN" LIV REPORT N° 12*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
*This boiler has been constructed under special survey and in accordance with the approved plan and the Society's Rules. The materials and workmanship are sound and good.*  
*The boiler has been satisfactorily fitted on board, examined under steam and the safety valves adjusted under steam to the approved working pressure.*  
*It is eligible in my opinion to be classed in the Register Book under notation :-*  
*1 SB. FD - 3 CF - 180 LB/H*

Survey Fee ... £ : : } When applied for, ..... 19.....  
Travelling Expenses (if any) £ : : } When received ..... 19.....

*J. A. Hendley*  
Engineer Surveyor to Lloyd's Register of Shipping  
Committee's Minute *LIVERPOOL - 5 FEB 1946*  
Assigned *Transmit to London.* *See F.E. machy. rpt.*  
FRI. 22 FEB 1946

