

REPORT ON BOILERS.

Received at London Office 13 JUL 1936.

Date of writing Report 7/7/36 When handed in at Local Office 9/7/36 Port of Oslo
 Survey held at Oslo Date, First Survey 7th May Last Survey 3rd July 1936
 (Number of Visits 3)
 on the whale oil factory S/S "FRATERNITAS" Tons {Gross 8179 Net 5066
 Built at Belfast By whom built Harland & Wolff Ltd Yard No. _____ When built 1905-8
 Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. _____ When made 1905
 Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. _____ When made 1905
Oslo Kramer Brug #15
 Nominal Horse Power 658 Owners Fraternitaskompagniet Port belonging to Copenhagen.

whale oil boilers
MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR DONKEY.~~

Manufacturers of Steel _____ (Letter for Record _____)
 Total Heating Surface of Boilers _____ Is forced draught fitted Coal or Oil fired
 and Description of Boilers Two horizontal boilers with internal rotating drum. Working Pressure 60 lb/in²
 Tested by hydraulic pressure to 120 lb/in² Date of test 29/6/36 No. of Certificate _____ Can each boiler be worked separately
 Area of Firegrate in each Boiler No. and Description of safety valves to each boiler one, single spring loaded.
 Area of each set of valves per boiler {per Rule _____ as fitted 2.24 in² Pressure to which they are adjusted Are they fitted with easing gear
 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 _____ Is oil fuel carried in the double bottom under boilers
 Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated
 Largest internal dia. of boilers 2600 mm Length 7015 mm Shell plates: Material S.M. steel Tensile strength 44-55 kg/mm²
 Thickness 13 mm Are the shell plates welded or flanged Description of riveting: circ. seams {end S.R. lap inter S.R. single strap
 Long. seams S.R. single strap Diameter of rivet holes in {circ. seams 23.5 mm long. seams 23.5 Pitch of rivets {61 mm 75.2
 Percentage of strength of circ. end seams {plate 61.0 rivets 41.5 Percentage of strength of circ. intermediate seam {plate 61.0 rivets 41.5
 Percentage of strength of longitudinal joint {plate 68.6 rivets 66.4 combined _____ Working pressure of shell by Rules 6.3 kg./cm²
 Thickness of butt straps {outer 15 mm inner _____
 No. and Description of Furnaces in each Boiler _____
 Material _____ Tensile strength _____ Smallest outside diameter _____
 Length of plain part {top _____ bottom _____ Thickness of plates {crown _____ bottom _____ Description of longitudinal joint _____
 Dimensions of stiffening rings on furnace or c.c. bottom _____ Working pressure of furnace by Rules _____
 Plates in steam space: Material S.M. steel Tensile strength 41-47 kg/mm² Thickness 25-30 mm Pitch of stays disks ends
 How are stays secured Radius of disks ends 330 mm Working pressure by Rules 6.43 kg./cm²
 Front plates: Material {front _____ back _____ Tensile strength { _____ Thickness { _____
 Pitch of stay tubes in nests _____ Pitch across wide water spaces _____ Working pressure {front _____ back _____
 Girders to combustion chamber tops: Material _____ Tensile strength _____ Depth and thickness of girder _____
 Centre _____ Length as per Rule _____ Distance apart _____ No. and pitch of stays _____
 Working pressure by Rules _____ Combustion chamber plates: Material _____
 Tensile strength _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
 Pitch of stays to ditto: Sides _____ Back _____ Top _____ Are stays fitted with nuts or riveted over _____
 Working pressure by Rules _____ Front plate at bottom: Material _____ Tensile strength _____
 Thickness _____ Lower back plate: Material _____ Tensile strength _____ Thickness _____
 Pitch of stays at wide water space _____ Are stays fitted with nuts or riveted over _____
 Working Pressure _____ Main stays: Material _____ Tensile strength _____
 Diameter {At body of stay, _____ or _____ No. of threads per inch _____ Area supported by each stay _____
 Working pressure by Rules _____ Screw stays: Material _____ Tensile strength _____
 Diameter {At turned off part, _____ or _____ No. of threads per inch _____ Area supported by each stay _____

Working pressure by Rules _____ Are the stays drilled at the outer ends _____ Margin stays: Diameter { At turned off part, or Over threads _____

No. of threads per inch _____ Area supported by each stay _____ Working pressure by Rules _____

Tubes: Material _____ External diameter { Plain _____ Stay _____ Thickness { _____ No. of threads per inch _____

Pitch of tubes _____ Working pressure by Rules _____ **Manhole compensation:** Size of opening in shell plate _____ Section of compensating ring _____ No. of rivets and diameter of rivet holes _____

Outer row rivet pitch at ends _____ Depth of flange if manhole flanged _____ **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 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,
J. O. Ousey Manufacturer

Dates of Survey { During progress of work in shops - - } 7/5, 11/5, 29/6, 3/7/1936 Are the approved plans of boiler and superheater forwarded here with E 22/12/36 (If not state date of approval.)
 while building { During erection on board vessel - - - } ✓ Total No. of visits four
 See Rpts (Nos 450) N.T. Nelson

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Torje Viken, 4743

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

These boilers were constructed in accordance with the approved plan. The boilers were examined during construction and on completion were tested by hydraulic pressure to 20 lb/in², and were found tight and sound. The steel materials used were made at approved works and have been tested by the Society's Surveyors.

The boilers will be fitted on board the vessel at Gothenburg; a copy of our Rpt. 10 (attached herewith) has been forwarded to the Gothenburg Surveyors. The examination of the apparatus under steam will be done at Gothenburg.

The boilers were marked: -
 P Lloyd's Test 120 lbs.
 NP. 60 lbs
 29.6.36. P.E.

Survey Fee £1.80 - : When applied for, 7/9/1936
 Travelling Expenses (if any) 9 - : When received, 28.7 1936
 3017

Stude
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 4 DEC 1936
 Assigned See Lot. Rpt. 10953

