

WHALE OIL
REPORT ON BOILERS.

No. 4754

Received at London Office 13 JUL 1936
Date of writing Report 7/7/36 When handed in at Local Office 7/7/36 Port of Oslo
Survey held at Oslo Date, First Survey 7/5 Last Survey 3/7/1936
on the whale oil factory S/S "FRATERNITAS" (Number of Visits 3) Gross 8179 Tons 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
Nominal Horse Power 658 Owners Fraternitaskompaniet Port belonging to Copenhagen

whale oil extractors :
MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Vitolonice Kuni, Stal Iron Works, Cop.; Colville, Glasgow; Strömme, Kristiania
Total Heating Surface of Boilers Is forced draught fitted Coal or Oil fired
Description of Boilers Two vertical whale oil extractors Working Pressure 60 lb/in²
Tested by hydraulic pressure to 120 lb/in² Date of test 3/7/36 No. of Certificate Can each boiler be worked separately Yes
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 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 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 2250 mm Length 3400 mm Shell plates: Material S.M. steel Tensile strength 44-55 lb/mm²
Thickness 10 mm Are the shell plates welded or flanged Description of riveting: circ. seams end S.R. lap inter. 52.2 mm
Long. seams D.R. lap Diameter of rivet holes in circ. seams 20 mm long. seams 20 mm Pitch of rivets 66.7 mm
Percentage of strength of circ. end seams plate 61.6 rivets 41.4 Percentage of strength of circ. intermediate seam plate rivets
Percentage of strength of longitudinal joint plate 70 rivets 69.5 combined Working pressure of shell by Rules 5.6 lb/cm²
Thickness of butt straps outer inner
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
Furnace plates in steam space: Material S.M. steel Tensile strength 41-47 lb/mm² Thickness 20 mm Pitch of stays dished ends
How are stays secured Rods of dished ends 3300 mm Working pressure by Rules 4.3 lb/cm²
Furnace plates: Material front back Tensile strength Thickness
Span pitch of stay tubes in nests Pitch across wide water spaces Working pressure front back
Orders to combustion chamber tops: Material Tensile strength Depth and thickness of girder
Centre Length as per Rule Distance apart No. and pitch of stays
Each 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
At body of stay, No. of threads per inch Area supported by each stay
Over threads
Working pressure by Rules Screw stays: Material Tensile strength
At turned off part, No. of threads per inch Area supported by each stay
Over threads

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 _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____

Rules _____ Are the safety valves fitted with easing gear _____ Working pressure as per _____

tubes _____, castings _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure: _____

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. W. Jones Manufacturer.

Dates of Survey { During progress of work in shops - - 7/5, 29/6, 3/7/1936
 while building { During erection on board vessel - - - ✓

Are the approved plans of boiler and superheater forwarded herewith **DIRECTOR** E. 22/12/36
 (If not state date of approval.)
 Total No. of visits *Three*

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

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

These boilers were examined during construction and on completion were tested by hydraulic pressure to 120 lbs. per sq. inch.

The boilers were constructed in accordance with the approved plan. The steel materials employed in the construction were made at approved works and were tested by the Society's Surveyors. The workmanship is good.

The boilers will be fitted onboard at Löttenburg. A copy of our Lpt. 10 (attached herewith) has been forwarded to the Löttenburg Surveyors.

The boilers (extractors) were marked

R. Torje Viking
Lloyd's Tank 120 lbs.
N.P. 60 lbs.
23.7.36. P.E.

Survey Fee ... *£ 80.-* When applied for, *7/7/1936*
 Travelling Expenses (if any) *9.-* When received, *28.7.1936*

Phide
 Engineer Surveyor to Lloyd's Register of Shipping.

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