

PILLARS, No. of R

in 'twice

in Hold

Five Long.
Centre Line Bu
Stiffeners and S

Plating, thicknes

STRINGERS AND
Uppermost Cont
Stringer Plate, f

Angle i

Thickness of P
in way of WeThickness of P
in way of Be

Thickness of Pl

If Sheathed, m

Second Deck,
Stringer Plate, l

STRAKES.

FLAT PLATE KEEL
A B C STR

DBLG. (if

BOTTOM PLATING, I
of StrakesBILGE PLATING, No.
StrakesSIDE PLATING, No.
StrakesUPPER DECK, She
strake in Wells...UPPER DECK, She
strake in BridgeSTRAKE BELOW She
strake in Wells...STRAKE BELOW She
strake in Bridge

POOP SIDE PLATING

BRIDGE SIDE PLATING

FORECASTLE SIDE PLATING

Total No. of W.T.

Extend

As per

MIDSHIP BULK

COLLISION

AFTER PEAK

STEEL.

Manufact

Has the

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned *Yes.* Is a drain fitted at the lowest part of each receiver *Yes.*

High Pressure Air Receivers, No. *None* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *✓*

Starting Air Receivers, No. *Two* Total cubic capacity *1000 Cu ft* Internal diameter *5' - 3"* thickness *1/8"*

Seamless, lap welded or riveted longitudinal joint *T.R.A.S.* Material *Steel* Range of tensile strength *26-30 tons* Working pressure *by Rules 358 lb. Actual 350 lb.*

IS A DONKEY BOILER FITTED? *Yes Two* If so, is a report now forwarded? *Yes.*

Is the donkey boiler intended to be used for domestic purposes only *No* For Steam Auxiliaries etc. *Yes.*

PLANS. Are approved plans forwarded herewith for Shaffling (If not, state date of approval) *Yes* Receivers *Yes* Separate Fuel Tanks *Yes.*

Donkey Boilers *Yes* General Pumping Arrangements *Yes.* Pumping Arrangements in Machinery Space *Yes.*

Oil Fuel Burning Arrangements *Yes.* SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *As per attached list.*

The foregoing is a correct description.

L. P. Peck + A. Watt

Manufacturer.

Dates of Survey while building

1938	1939
During progress of work in shops: April 22, June 9, July 15, 18, Aug. 24, Oct. 10, Nov. 16, 21, 30, Dec. 14, Jan. 10, 18, 24, 26, 28, Feb. 1, 2, 6, 8, 10, 13, 20, 21, 23, 27, March 3, 6, 9, 11, 14, 16, 17, 18, 21, 23, 27, 28, April 1, 3, 5, 6, 12, 14, 24, May 1, 3, 5, 8, 9, 10, 12, 15, 17, 19, 26, 28, June 1, 2, 7, 8, 12, 13, 14, 15, 26, 27, 29, July 3, 7, 10, 11, 12, 13, 17, 21, 28, Aug. 3, 14, 18, 22, 25, Sep. 1, 7, 8, 12, 13, 22, 23, 25, 26, 27, 29, Oct. 2, 3.	During progress of work in shops: April 22, June 9, July 15, 18, Aug. 24, Oct. 10, Nov. 16, 21, 30, Dec. 14, Jan. 10, 18, 24, 26, 28, Feb. 1, 2, 6, 8, 10, 13, 20, 21, 23, 27, March 3, 6, 9, 11, 14, 16, 17, 18, 21, 23, 27, 28, April 1, 3, 5, 6, 12, 14, 24, May 1, 3, 5, 8, 9, 10, 12, 15, 17, 19, 26, 28, June 1, 2, 7, 8, 12, 13, 14, 15, 26, 27, 29, July 3, 7, 10, 11, 12, 13, 17, 21, 28, Aug. 3, 14, 18, 22, 25, Sep. 1, 7, 8, 12, 13, 22, 23, 25, 26, 27, 29, Oct. 2, 3.

Total No. of visits *105*

Dates of Examination of principal parts—Cylinders *8-5-39* Covers *8-5-39* Pistons *8-5-39* Rods *14-2-39* Connecting rods *28-5-39*

Crank shaft *1-6-39* Flywheel shaft *✓* Thrust shaft *3-8-39* Intermediate shafts *22-5-39* Tube shaft *✓*

Screw shaft *15-5-39* Propeller *15-5-39* Stern tube *12-6-39* Engine seatings *14/6/39* Engines holding down bolts *1/9/39*

Completion of fitting sea connections *28/7/39* Completion of pumping arrangements *22-9-39* Engines tried under working conditions *2-10-*

Crank shaft, Material *Steel* Identification Mark *14289 & 14288* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *Steel* Identification Mark *14634* Intermediate shafts, Material *Steel* Identification Marks *5725*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *5724* Spare *5740*

Is the flash point of the oil to be used over 150° F. *Yes.*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes.*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Oil Tanker* If so, have the requirements of the Rules been complied with *✓*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *✓*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *M.V. TORINIA. New Reg No 97701.*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery has been constructed under Special Survey in accordance with the Society's Rules and approved plans. The materials & workmanship are sound and good. The machinery was efficiently installed on board, tested and manoeuvred on completion under working conditions and found satisfactory. The machinery of this vessel is, in our opinion to be classed and to have the notation "Oil Tanker" and records of T.M.C. 10,39 and T.S. C.L.

The amount of Entry Fee .. £ *6 - -* When applied for, *9 OCT 1939*

Special *106 - 8*

2 Starting Air Receivers *8 - 8*

2 Donkey Boilers Fee *17 - 16*

Travelling Expenses (if any) £ *13 OCT 1939*

Committee's Minute *Assigned + L.M.C. 10,39 Oil Tanker*

Assigned *2 D.B. - 150th*

L. Peck + A. Watt

Engineer Surveyors to Lloyd's Register of Shipping

pt. 5a.

REPORT ON BOILERS.

No. 97941

Received at London Office 19 OCT 1939

When reported in at Local Office *6/10/39* Port of *NEWCASTLE-ON-TYNE*

Survey held at *Newcastle-on-Tyne* Date, First Survey *22 April 1938* Last Survey *3/10/1939*

M.V. "THIARA"

(Number of Visits) *10364* Gross Tons *6178* Net Tons *6178*

Built at *Wallsend* By whom built *Wigham Richardson Ltd* Yard No. *1563* When built *1939*

Engines made at *Newcastle (St Peter)* By whom made *R.W. Hawthorn Leslie & Co Ltd* Engine No. *3957* When made *1939*

Boilers made at *Newcastle (St Peter)* By whom made *R.W. Hawthorn Leslie & Co Ltd* Boiler No. *3957* When made *1939*

Indicated Horse Power *138.7 each* Owners *Anglo Saxon Petroleum Co Ltd* Port belonging to *London*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *The Steel Company of Scotland (Plaza) Broomside Boiler Works (Glasgow)* (Letter for Record *5*)

Heating Surface of Boilers *4160 sq ft.* Is forced draught fitted *Yes* Coal or Oil fired *Oil and/or Gas*

Description of Boilers *2. Single Ended.* Working Pressure *180 lb/sq in*

Tested by hydraulic pressure to *320 lb.* Date of test *13-6-39* No. of Certificate *819* Can each boiler be worked separately *Yes.*

Area of Firegrate in each Boiler *✓* No. and Description of safety valves to each boiler *2 Double Spring Loaded*

Area of each set of valves per boiler (per Rule *13.30"* as fitted *14.130"* Pressure to which they are adjusted *180 lb* Are they fitted with easing gear *Yes.*

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *✓*

Least distance between boilers or uptakes and bunkers or woodwork *Boiler fitted on flat* Is oil fuel carried in the double bottom under boilers *No.*

Least distance between shell of boiler and tank top plating *19'-6" above Tank Top* Is the bottom of the boiler insulated *Yes.*

Greatest internal dia. of boilers *13'-0"* Length *12'-3"* Shell plates: Material *Steel* Tensile strength *28-32 tons*

Thickness *1 3/32"* Are the shell plates welded or flanged *neither* Description of riveting: circ. seams *1 3/16"* end *D.A. Lap.* inter. *3.47"*

g. seams *T.R. Double Butt Shape* Diameter of rivet holes in circ. seams *1 3/16"* Pitch of rivets *8"*

Percentage of strength of circ. end seams {plate *65.7%* rivets *47.8%* Percentage of strength of circ. intermediate seam {plate *85.2%* rivets *97.2%*

Percentage of strength of longitudinal joint {plate *89.8%* rivets *97.2%* Working pressure of shell by Rules *183 lb/sq in*

No. and Description of Furnaces in each Boiler *Two Monsoon Corrugated.*

Material *Steel* Tensile strength *26-30 tons* Smallest outside diameter *3'-8 3/8"*

Length of plain part {top *27 1/32"* inner *3 1/32"* Thickness of plates {crown *9/16"* bottom *1 1/8"* Description of longitudinal joint *Welded.*

Dimensions of stiffening rings on furnace or c.c. bottom *None* Working pressure of furnace by Rules *182.5 lb/sq in*

Plates in steam space: Material *Steel* Tensile strength *26-30 tons* Thickness *1 1/8"* Pitch of stays *19" x 17"*

Are stays secured *Tubs inside & outside* Working pressure by Rules *181 lb/sq in*

Stays: Material {front *Steel* Tensile strength *26-30 tons* Thickness *1 1/8"* Working pressure {front *198 lb/sq in* back *255 lb/sq in*

Pitch of stay tubes in nests *9 1/4"* Pitch across wide water spaces *13 3/4"* Working pressure *198 lb/sq in*

Centres to combustion chamber tops: Material *Steel* Tensile strength *28-32 tons* Depth and thickness of girder *✓*

Centres *2 @ 10" x 1 3/16"* Length as per Rule *3'-1 1/2"* Distance apart *10"* No. and pitch of stays *✓*

Each *3 @ 9"* Working pressure by Rules *180.5 lb/sq in* Combustion chamber plates: Material *Steel*

Stays: Material {sides *26 to 30 tons* Thickness: Sides *4 7/8"* Back *4 5/8"* Top *4 5/8"* Bottom *1"*

Stays to ditto: Sides *9" x 6 7/8"* Back *8 3/8" x 7 1/4"* Top *10" x 9"* Are stays fitted with nuts or riveted over *Remainder riveted.*

Working pressure by Rules *180 lb/sq in* Front plate at bottom: Material *Steel* Tensile strength *26 to 30 tons*

Thickness *1"* Lower back plate: Material *Steel* Tensile strength *26 to 30 tons* Thickness *2 1/32"*

Stays at wide water space *15" x 8 3/4"* Are stays fitted with nuts or riveted over *Tubs.*

Working Pressure *190 lb/sq in* Main stays: Material *Steel* Tensile strength *28 to 32 tons.*

At body of stay, meter *3" at back and 3 3/8" at front.* No. of threads per inch *6* Area supported by each stay *316 sq in.*

Working pressure by Rules *212 lb/sq in* Screw stays: Material *Steel* Tensile strength *26 to 30 tons.*

At turned off part, meter *1 1/2" cc sides & back* No. of threads per inch *9* Area supported by each stay *60 sq in cc sides 87.6 cc top*

Over threads *1 3/4" cc top*

Working pressure by Rules 208 lb/p Are the stays drilled at the outer ends no 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 90.9 sq ins Working pressure by Rules 200 lb/p
Tubes: Material Iron External diameter { Plain 2 3/4" Thickness { 3/8" + 5/16" } No. of threads per inch 9
Pitch of tubes 4" x 3 7/8" Working pressure by Rules Plain 215 lb/p Stay 217 lb/p Manhole compensation: Size of opening 14"
shell plate 21" x 17" Section of compensating ring 21" x 1 1/2" No. of rivets and diameter of rivet holes 38 @ 1 1/4"
Outer row rivet pitch at ends 8 3/8" Depth of flange if manhole flanged 3 5/8" Steam Dome: Material None
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 rivets _____
stays _____ Inner radius of crown _____ Working pressure by Rules _____
How connected to shell _____ Size of doubling plate under dome _____ Diameter of rivet holes _____
of rivets in outer row in dome connection to shell _____

Type of Superheater None 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 from the boiler _____
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 _____
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,
R. & W. HAWTHORN, LEBLIE & CO. LIMITED
173/175, Abchurch Lane, London, E.C. 4

Dates of Survey { During progress of work in shops - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes
while building { During erection on board vessel - - } Total No. of visits _____
See Machinery Report

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. M.V. TORINIA Nue RN 977

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

The boilers have been constructed under special survey in accordance with the Society's Rules and approved plan. The materials and workmanship are sound and good. The boilers have been efficiently installed on a flat at the after side of Engine Room and their safety valves were adjusted under steam to the approved working pressure.

Survey Fee ... £ See Fee When applied for, 19
Travelling Expenses (if any) £ See Machinery Report When received, 19

L. P. Skellern & A. Watt
Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute FRI 13 OCT 1939

Assigned See Nue JE 97941