

PORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

(Received at London Office)

Writing Report 31st March 1945 When handed in at Local Office 31st March 1945 Port of Port Said

Survey held at Port Said - Haifa - Port Said Date 2-4-43 First Survey 13-11-1944 Last Survey 13-11-1944 (No. of Visits 20)

on the Machinery of the Wood Iron Steel S/S "TRIPOLITANIA"

Gross 2353 Vessel built at Glasgow By whom Swan, Hunter & Wigham Richardson When 1918 Month 10

Net 1343 Engines made at Newcastle By whom Swan, Hunter & Wigham Richardson When 1918

Boilers, when made (Main) 1918 (Donkey) 1918

Owners Ministry of War Transport Owners' Address 1

Managers British India Steam Nav Co. Ltd. Port LONDON Voyage ✓

If Surveyed Afloat or in Dry Dock afloat (State name of Dock.)

Particulars of Classification which must be inserted precisely as in Register Book & Supplements.

Report No. Port

Particulars of Examination and Repairs (if any) *LMC (For re-instatement to Class)

Special Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the cause of Repairs, if any, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides being detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case.

Ingham's telegram 27/3/43. Secy's letter "S" 30/10/43.

In cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined.

Has a special damage report been made by anyone else? If so, by whom? ✓

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes

Did the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? Yes

State for what reasons ✓ What parts of the Boilers could not be thus thoroughly examined? None

Were special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler? ✓

State the latest date of internal examination of each boiler PORT 8/10/44 STARR 14/10/44 AUX. 14/10/44

Did the Surveyor examine the Safety Valves of the Main Boilers? Yes To what pressure were they afterwards adjusted under steam? 180 lbs/sq. inch.

Did the Surveyor examine the Safety Valves of the Donkey Boilers? Yes To what pressure were they afterwards adjusted under steam? 180 lbs/sq. inch.

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes and of the Donkey Boilers? Yes

Did the Surveyor examine the drain plugs of the Main Boilers? None fitted and of the Donkey Boilers? Yes

Did the Surveyor examine all the mountings of the Main Boilers? Yes and of the Donkey Boilers? Yes

Has the screw shaft now been drawn and examined? No Has it a continuous liner? ✓ Is an approved oil retaining appliance fitted at the after end? ✓

Has the shaft now been changed? ✓ If so, state reasons ✓ Has the shaft now fitted been previously used? ✓ Has it a continuous liner? ✓

Is an approved oil retaining appliance fitted at the after end? ✓ State date of examination of Screw Shaft ✓ State the wear down in the bush ✓

Is electric light and/or power fitted? Yes If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? Yes

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? Yes

Engine parts, when referred to by numbers, should be counted from forward.

If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done To complete the Survey the following remains to be done:-

Shaft to be placed in drydock, propeller, stern tube and outside sea fastenings to be examined; sea cocks and valves to be opened up and examined; tailshaft to be drawn in and examined.

Spare gear to be placed in accordance with the Rule requirements.

Repairs to be completed as follows:-

Renewal of pitted plain tubes in both main boilers to be completed.

Steam pipes from Auxiliary Boiler to be fitted with drain cocks and pipes.

Port Fuel Oil Pressure Pump shuttle valve to be renewed or repaired and pump to be tested under working conditions.

Both fuel oil heaters to be re-tubed.

Bitling tank oil level gauge glass columns to be fitted with self closing cocks.

Independent Ballast Pump steam valve chest to be bored out, mechanical and puff valves to be renewed and pump to be tested under working conditions.

(P.T. Overleaf)

General Observations, Opinion, and Recommendation: The machinery of this vessel is in good condition.

(State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c.; thus, for example, BS 9.11, B&MS 9.11, *LMC 9.11 or *LMC 140 lb., FD, &c.)

and eligible in my opinion to be re-instated to class in the Society's Register Book

and to have the record of *LMC 11.44 when the survey has been completed as above,

and with notations "Fitted for oil fuel" (with date) and "New Auxiliary Boiler" (with date).

Survey Fee (per Section 29) Port LMC ££ 55.000

Special Damage or Repair Fee (if any) ££ 50.000

Electrical Equipment Repairs (per Section 29.) ££ 12.000

Travelling expenses (if chargeable) Subs. ££ 61.000

Half Sunday fee ££ 6.150

Committee's Minute FRI. 29 JUN 1945

signed Lee Alex 3327

Fees applied for

14. 11. 1944

Received by me,

24. 11. 1944

Engineer Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register Foundation

006749-006759-0207/4

Insert Character of Ship and Machinery precisely as in the Register Book.

Is a Certificate required? If so, to be sent to YES, PORT SAID OFFICE.

Steel S.S. Steamer "Tripolitania"

Outboard Dynamo engine governor to be placed in working order.
Electric cables for lights under boilers and stokehold platform to be placed in order.
The vessel has proceeded to Alexandria for drydocking and completion of the survey and repairs and the Alexandria Surveyor has been informed accordingly.

NOW DONE:-

Main Engine (25" x 41" x 68" - 45" stroke) Completely opened up and examined as follows:
H.P. I.P. & L.P. cylinders, covers, pistons, piston rods, crossheads, guides, connecting rods, top and bottom end bearings and pins, valves and valve casings, valve spindles, eccentric rods, sheaves, straps, link motion, crankshaft (lifted) with its main bearings and journals, column soleplate and holding down bolts, thrust shaft (lifted) with its main bearings and thrust intermediate shafts and bearings; attached air, feed (2), and bilge (2) pumps with levers, links, reversing engine, weigh shaft and bearings.

Diameter of shafting checked and found as follows:-

Crankshaft 13 $\frac{1}{8}$ ". Thrust shaft 13 $\frac{1}{4}$ " (between collars). Intermediate shaft 12 $\frac{3}{8}$ ".

I.P. crank found marked

LLOYDS
3220 N
W.C.

The Main Engine was placed in good condition and on completion of repairs a large trial under steam was carried out and all found in order.

Main Condenser and Auxiliary Condenser: Opened up, examined, tested under head of water and found satisfactory.

Surface Feed Heater (Weir's type). Opened up, examined, tested under hydraulic pressure and found in good order.

Fan Engine. Completely opened up, examined, placed in good order and tested under working conditions.

Independent Pumps. Completely opened up, overhauled and examined as follows:-

Main Centrifugal circulating pump and engine.

Main Feed Pump (discharge also to Auxiliary Boiler) Vertical Simplex Clarke Chapman type 9 $\frac{5}{8}$ " x 18" stroke.

General Service and Feed Pump, Vertical Simplex Clarke Chapman type 9 $\frac{5}{8}$ " x 7 $\frac{1}{4}$ " x 18" stroke.

Ballast Pump, Vertical Simplex Clarke Chapman type 10 $\frac{3}{4}$ " x 12 $\frac{3}{8}$ " x 16" stroke.

Sanitary Pump, Vertical Duplex, 6" x 6" x 8" stroke.

Auxiliary Boiler Feed Pump (in stokehold).

All the pumps were tested under working conditions on completion of repairs and found satisfactory with the exception of the Ballast Pump.

It is recommended that the Ballast Pump steam valve chest be bored out and the mechanical valve and the puff valve be renewed, on the vessel's arrival at Alexandria.

Pumping Arrangements. Completely opened up and examined all valves, cocks, pipes and strainers and pipe lines traced. All found or placed in good condition in accordance with the requirements of the Rules and all tested under working conditions.

It was found that a cross connection had been made from the main ballast pipe line, in the stokehold, to the No 1 Hold bilge suction pipes, connected to the bilge pipes below the non-return valves on the bilge suction distribution chest. This cross connection pipe was found fitted with a sluice valve, which, if opened, would permit flooding of No 1 Hold (presumably with the object of scuttling the ship). The cross-connection pipe was now removed from the ship and the connecting branches on ballast and bilge pipes were fitted with blank flanges.

(P.T.O.)

Steel S.S. Steamer "Tripolitania"

Pumping Arrangement: (Contd)

It was also found that a branch had been fitted to the main injection pipe, located between the ship side main injection valve chest and the circulating pump (entirely separate from the bilge injection); this branch was fitted with a screw lift valve and a tail pipe (6" dia) opening to the engine room tank top (presumably with the object of flooding the engine room). The valve chest and tail pipe were now removed from the ship and the branch was fitted with a blank flange.

Steering Engine. Completely opened up, examined, placed in good order and tested under working conditions.

Windlass. Completely opened up, examined, placed in good order and tested under working conditions.

Main Boilers (Two) Fitted for oil fuel and forced draught. (No superheaters).

Both Main Boilers were completely opened up and examined internally and externally; insulation was removed in way of butt straps, parts of shell and end plates, as necessary for the examination, and later re-fitted.

All the mountings, safety valves and manhole doors were opened up and examined. The funnel dampers were entirely removed from the ship. Insulation of the boilers was found satisfactory and sufficient clearance found between the boilers and the double bottom tank top for free circulation of air. (Fresh water in D.B. Tank under) Smoke box doors found shielded, well fitted, and the uptake joints were made air tight.

Both boilers, on completion of repairs at Haifa, were tested under hydraulic pressure to 270 lbs per sq. inch, examined under steam, the safety valves adjusted to the safe working pressure of 180 lbs per sq. inch and a test carried out for accumulation of pressure.

All found or placed in good condition except the plain tubes of both boilers, found generally pitted with corrosion, were renewed only in the three upper rows and the three lower rows in each nest at Haifa on account of lack of facilities.

It is recommended that the remainder of the pitted plain tubes in both boilers be renewed on the vessel's arrival at Alexandria.

Auxiliary Boiler. Fitted for oil fuel and forced draught.

This boiler has been installed onboard in the stokehold, in a recess between the Deep Tanks, subsequent to withdrawal of the vessel's class from the Register Book.

The boiler was found satisfactorily installed, insulation satisfactory, sufficient clearance between bottom of boiler and D.B. Tank top, also from bunker deep tank. Smoke box doors shielded, air tight and well fitting.

The scantlings of the boiler were measured and Rpt 5a is herewith attached.

No reliable plan of the boiler could be obtained or made.

The boiler was placed in good condition and in accordance with the Rule requirements.

Steam & Feed Pipes. All main steam pipes (steel) and all auxiliary steam pipes (copper) of 3" bore and over, were removed to the shop, all insulation removed, examined, and tested under hydraulic pressure to 360 lbs per sq. inch; the auxiliary pipes were annealed.

All feed pipes (copper) were removed to the shop, annealed, examined, and tested under hydraulic pressure to 450 lbs per sq. inch.

Blow down pipes and gauge pipes were dismantled, examined and tested.

All found or placed in good condition, except Aux. boiler steam pipes not fitted with drains and it has been arranged for this to be done at Alexandria. (P.T. Overleaf)

Steel S.S. Steamer "Tripolitania"

Oil Fuel Burning Installation.

Installed on board in the stokehold subsequent to withdrawal of the vessel's class from the Register Book.

The installation consisting of two complete units, is arranged as shown on the enclosed sketch.

Each unit as detailed below, was completely opened up, overhauled, and examined as follows:-

One suction filter.

One suction manifold.

One pressure pump; motive power controlled from weather deck as well as at pump; relief valve set at 125 lbs per sq. inch discharging to the suction side of the pump. Weir's vertical simplex type $5\frac{3}{8} \times 2\frac{3}{4} \times$ approx 6" stroke.

Two cold pressure filters.

One steam heater; oil side tested to 400 lbs per sq. inch, observation glass (on steam side) discharging to an observation tank (common to both units).

Two hot pressure filters.

One distribution chest.

Pressure pipes of solid drawn steel.

Suction pipes of solid drawn steel.

The pressure appliances, valves cocks and fittings were tested after jointing to an hydraulic pressure of 400 lbs per sq. inch and the suction appliances after jointing to 50 lbs per sq. inch and all found tight.

All pressure appliances, pipes, fittings valves and cocks found or placed in accessible positions above the platform and in well lighted and ventilated parts of the stokehold; no wood bearers or fittings are in this compartment.

Valves found fitted on all suction pipes at the bulkheads where these enter the machinery or boiler space and all suction valves for the oil fuel deep tanks are secured to the tanks and were fitted with extended spindles with control arranged in accessible positions on the weather deck.

Slavealls are fitted at the furnace mouths.

All bilge suction and water pipes in the stokehold are made of steel.

Fire extinguishing arrangements consist of perforated steam pipes below each boiler with control arranged from an accessible position on the weather deck and water service pipes and hoses are fitted for flushing platform, tank top, and apparatus.

The installation was tested under working conditions and all found satisfactory and in accordance with the Rule requirements, except the port pressure pump shuttle valve was found to be by-passing steam and it is recommended that this valve be renewed or repaired on the vessel's arrival at Alexandria; also the fuel heater tubes were found pitted and it is recommended that the tubes of both heaters be renewed at the first opportunity; the tubes are considered efficient meantime.

The steam smothering installation was tested and found to operate satisfactorily.

(P.T.O.)

W.M.

Port Said

Continuation of Report No. 3156 dated 31st March 1945 on the

Steel S.S. Steamer "Tripolitania"

Fuel Settling Tanks (Two)

These separate tanks are placed in a compartment in the Awaiting Tween Deck space (on main deck) and a plan of the tanks is herewith attached showing the scantlings.

Air pipes, fitted to the top of the tanks, are led to the open air and are fitted with gauge wire at the openings.

Over flow pipes, of equal sectional area to the filling pipes, discharge overboard through non-return valves.

Gauges for indicating the oil level are oil tight and strongly made of brass and have flat plate glasses. The gauges are fitted with ordinary screw down valves. Self closing cocks could not be obtained at Haifa and it is recommended that these be fitted at the first opportunity.

Drainage of water is arranged through a valve fitted to the bottom of each tank and connected to the drain pump.

Suction valves are fitted to the tank end and have extended spindles with control in an accessible position on the weather deck.

The compartment is well lighted and there are no wood bearers or fittings.

Ventilation was found to be inadequate. Only one small ventilator is fitted and it is recommended that further ventilation be arranged on the vessel's arrival at Alexandria.

Both settling tanks were opened up, examined internally and externally, tested under head of water to Rule requirements and found satisfactory.

Oil Fuel Transfer Pump.

Vertical duplex pump with 5" dia suction; arranged as shown in the enclosed sketch; steam to pump controlled from weather deck in addition to stokehold. The pump is connected to the fuel oil system only.

The pump was completely opened up, examined, overhauled, tested under working conditions and found in good order.

Oil Fuel Drain Pump.

Horizontal duplex pump, steam cylinders $5\frac{3}{8}$ " dia, chamber $3\frac{3}{4}$ " dia, stroke 4".

This pump is installed in the stokehold and discharges overboard from ten suction points as follows:- Settling tanks, Deep tanks, Forward and after cofferdams, and stokehold flat boxes.

The pump was completely opened up, overhauled, examined, tested under working conditions and found in good order.

Electrical Installation.

The installation (for lighting, de-gaussing and domestic re-frigerator) was examined throughout. The fittings on the main and all sub-distribution switch boards, all fuses and boxes were examined, and the cables were examined so far as practicable without dismantling except as found necessary for repairs.

The three generator sets were completely opened up and examined as follows:-

Steam driven 25 K.W. (Inboard). Compound steam engine completely opened up overhauled and examined.

The dynamo armature and field coils were re-wound, the commutator skimmed up and the brushes renewed.

L. J. Methuen

(P.T. Overleaf)

Steel S.S. Steamer "Tripolitania"

Electrical Installation (Contd.).

Steam driven 24 K.W. Set (Outboard). Compound steam engine completely opened up, overhauled and examined. The governor gear was found to be out of order and it is recommended that this be overhauled on the vessel's arrival at Alexandria.

The dynamo armature and field coils were re-wound, the commutator skimmed up and brushes renewed.

Steam driven 10 K.W. Set (Forward). Single cylinder steam engine completely opened up, overhauled and examined. The dynamo armature and field coils were re-wound, the commutator skimmed up and the brushes renewed.

Electric cables, switches, instruments and fittings were retained or renewed as required.

On completion of the repairs at Haifa the whole installation, including generators, cables and fittings, was megger tested and the insulation resistance found over 100,000 ohms throughout, the installation was tested under working conditions and all found satisfactory with the exception of the outboard dynamo engine governor.

The arrangement of cables for lighting under boilers was not completed.

It is recommended that outboard dynamo engine governor and the arrangement of cables for lighting under boilers be placed in order, on the vessel's arrival at Alexandria.

REPAIRS EFFECTED.

Main Engine. H.P., I.P. & L.P. cylinders dressed up with hand tools internally, where found pitted with corrosion, piston rods skimmed up in the lathe on account of pitting and new gland and neck ring bushes fitted, H.P. metallic packing renewed.

H.P. piston rings renewed.

H.P., I.P. & L.P. top and bottom end pins dressed up by hand tools on account of corrosion, brasses scraped and re-bedded.

H.P., I.P. & L.P. valve spindles skimmed up in the lathe, gland and neck ring bushes renewed, quadrants dressed up and slippers re-fitted.

Crankshaft lifted, journals dressed up with hand tools on account of pitting by corrosion, main bearings scraped and shaft re-bedded. All the pitting marks were not removed but the shaft is considered efficient.

Thrust shaft lifted and skimmed up in the lathe, bearings scraped up and shaft re-bedded and lined up; one thrust shoe re-metalled.

Two lengths of intermediate shafting lifted out and skimmed up in the lathe, turnul bearings scraped up and shafts re-bedded. The remaining lengths of intermediate shafting were dressed up with hand tools in way of pitting caused by corrosion at the journals. All the pitting marks were not removed but the shafts are considered efficient.

Main engine driven bilge and feed pump rams were skimmed up and the gland and neck ring bushes were renewed.

Main Circulating Pump. Impeller shaft skimmed up and the bearings renewed; fitting rings on impeller renewed. Engine crankshaft, piston rod and valve spindle polished and all bearings re-fitted.

Independent, Feed Pump, General Service Pump, Ballast Pump and Sanitary Pump, piston and bucket rods skimmed up, gland and neck ring bushes renewed, rings renewed, and suction and delivery valves and seats overhauled and skimmed up.

Wm. P.T.O.

Port Said

Steel S.S. Steamer "Tripolitania"

REPAIRS EFFECTED.

Pumping Arrangements. All valve chests mud boxes and pipe lines cleaned and pipes renewed as found necessary. All valves and seats skimmed up and ground in; all mud box strainers and suction strums renewed.

Steering Engine. Piston rings renewed; rods skimmed up and gland and neck ring bushes renewed, crankshaft polished and bearings re-fitted; one valve spindle renewed.

Bridge control standard renewed, hand wheel with shaft and bowl wheel renewed; one length of control shafting renewed.

Windlass. Piston rods renewed, gland and neck bushes renewed; crankpins skimmed up and brasses renewed, journals polished and main brasses renewed. Gypsy shaft bearings renewed.

Steam and exhaust pipes removed to the shop, tested under hydraulic pressure and repaired as found necessary.

Port Main Boiler. Upper three rows and lower three rows of plain tubes in each nest renewed (pitted on fire side due to immersion). 185 air heater tubes renewed.

Fracture in port low furnace vud out 6" in length and electric welded. Boiler back end plate built up with electric welding in way of wasted parts at port and starboard manhole door flanging, at main check valve chest fastening and at blow down valve chest fastening. Main check and blow down valve chests removed and re-fastened with new studs and nuts and manhole doors re-fitted.

aft collision check renewed.

Smoke box doors removed, repaired and re-fitted.

Boiler insulation renewed as necessary.

Minor repairs were effected to all the mountings.

Starboard Main Boiler. Upper three rows and lower three rows of plain tubes in each nest renewed (pitted on fire side due to immersion). 25 air heater tubes renewed.

Boiler back end plate built up with electric welding in way of bottom centre manhole door flanging on account of wasting and door re-fitted.

Smoke box doors removed, repaired and re-fitted.

Boiler insulation renewed as necessary.

Minor repairs were effected to all the mountings.

Auxiliary Boiler. All plain tubes were renewed on account of pitting on fire side (due to immersion). Starboard combustion chamber wrapper plate built up with electric welding on the fire side at bottom on account of local pitting (due to immersion).

Boiler front end plate built up with electric welding in way of flanging to three hand hole doors, on account of excessive clearance at door spigots, and doors re-fitted.

Drain plug renewed.

Uptake plating cropped and part renewed.

Smoke box doors removed, repaired and re-fitted.

Test holes drilled throughout were efficiently closed and insulation was renewed as necessary. Minor repairs were effected to the mountings.

Main Funnel. The base structure of the inner funnel was part renewed on account of wasting and stiffening brackets were fitted. The damper was removed from the ship.

(P.T. Overleaf)

Steel S.S. Steamer "Tripolitania"

REPAIRS EFFECTED.

Oil Fuel Burning Installation. Six lengths of pressure pipe (thin) were renewed with solid drawn steel pipe to Rule requirements. New flanges were fitted and the pipes were tested under hydraulic pressure to 600 lbs per sq inch in the shop before fitting in place; crushing, bending and flattening check tests of the pipe were made and found good. One length of this pipe, formerly fitted below the stokehold platform, was placed above the platform when refitted.

All bolts throughout the pressure pipe line were renewed.

Both pressure pumps were completely overhauled, rods skimmed up, bushes renewed and piston rings renewed.

The port pressure pump shuttle valve was found to be worn, the valve was machined and a steel sleeve was shrunk on which later proved to be unsatisfactory on test (please see report).

All extended spindles for deck control of the pumps were repaired or renewed as found necessary.

Savealls were made and fitted at all the furnace mouths.

Oil Fuel Transfer Pump. Piston rods skimmed up, gland and neck ring bushes renewed, piston and bucket rings renewed.

L. H. Matheson.