

Report of Survey for Repairs, &c., of Engines and Boilers.

(Received at London Office. - 2 AUG 1945)

Date of writing Report 9th. May 1945. - When handed in at Local Office 9th. May 1945. Port of BUENOS AIRES.

No. in Survey held at BUENOS AIRES. Date, First Survey 6-10-44. Last Survey 22-3-1945.
(No. of Visits 47.)

6416. on the Machinery of the ~~XXXXXX~~ Steel Trawler. S.S. "CORVINA".

Gross 261. Vessel built at Hamburg, By whom H. Bradenburg. When 1906.
Net 109. Engines made at Hamburg, By whom H. Bradenburg. When 1906.

Nominal Horse Power 180 lbs. Boilers, when made (Main) 1906. (Donkey) --

No. of Main Boilers 1 SB. Owners José Maria Castagnino. Owners' Address Bernardo de Irigoyen 1248, B.As.
(if not already recorded in Appendix to Register Book.)

No. of Donkey Boilers -- Managers -- Port Buenos Aires. Voyage Brasil.
Working Pressure 180 lbs. If Surveyed Afloat & in Dry Dock Gov. Dry Dock. Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

No. of Donkey Boilers -- (State name of Dock.)

Last Report No. -- Port Full L.M.C., T.S. Repairs and Alterations.

Particulars of Examination and Repairs (if any) See Secretary Letter S 4.1.45.-
Periodical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly the cause of Repairs, if any, and, 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.

Damage 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.

Is a damage report 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.

Donkey --

What parts of the Boilers could not be thus thoroughly examined? --

What 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? --

Latest date of internal examination of each boiler 9-3-45, Main boiler. Present condition of funnel(s) Good. (New).

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

Did the Surveyor examine the Safety Valves of Donkey Boiler? -- To what pressure were they afterwards adjusted under steam? --

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

Did the Surveyor examine the drain plugs of the Main Boilers? Yes. and of the Donkey Boilers? --

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

Has the screw shaft now been drawn and examined? Yes. Is it fitted with continuous liner? No. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No.

Has the shaft now been changed? No. If so, state reasons -- Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? -- Good fit

Has the shaft now fitted been previously used? Yes. Has it a continuous liner? -- Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? -- Good fit

Date of examination of Screw Shaft 7-11-44. State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft rewooded.

Engine parts, when referred to by numbers, should be counted from forward. Is electric light and/or power fitted? Yes.

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.

Is the Survey complete, state what arrangements have been made for its completion and what remains to be done. COMPLETE.

Survey is not complete, state what arrangements have been made for its completion and what remains to be done. COMPLETE.

Survey done for full L.M.C. with a view to classification, also alterations, repairs, etc.

EXAMINED:- propeller (new, cast iron), stern bush (rewooded), screw shaft (machined), all sea connections, overboard discharge valves and their fastenings, the cylinders, pistons, valves and slides, rods and spindles, crank, thrust and intermediate shafting (all machined in shop), all main and auxiliary pumps and their valves, main condenser (retubed) and auxiliary condenser new (both tested), feed water heater and filter (new tested), main and auxiliary steam piping, new (tested), pumping and piping arrangements (new), electric light installation and oil burning installation (new- examined and tested) and the funnel (new). ALL the foregoing found or now placed in order.

(please see follower)

General Observations, Opinion, and Recommendation:— This vessel's machinery, is in a good and safe 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, B.S. 9.11, B.F.M.S. 9.11, + L.M.C. 9.11 or + LMC 140lb., F.D., &c.)

CS 3,34, eligible in my opinion to be classed in the Society's Register Book, and to have records of

L.M.C. 3,45; Screw Shaft seen 11,44; Fitted for oil fuel 3,45, Flash point above 150°F; 1 S.B.

lbs.

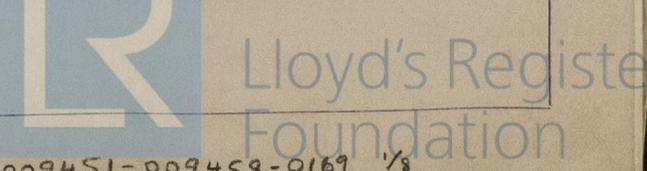
& Rprs. charged on Rpt. 4 & 5a.

Fee (per Section 29) £ : : Fees applied for 7-4-1945
Damage or Repair Fee (if any) £ : : Received by me, W.R.
Installation \$ 375.00
Printing expenses (if chargeable) £ : : 7-4-1945

Committee's Minute

Signed LMC 3,45, S. 11.44
Fitted for oil fuel 3,45 flash point above 150° F.
F.D. C.L.

Ernie Reaney
Engineer Surveyor to Lloyd's Register of Shipping.



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

Yes, This Office

Is a Certificate required? If so, to be sent to

Trawler S.S."CORVINA".

The main boiler opened up for thorough examination internally and externally. Safety valves and all mountings removed from boiler, reconditioned in shop, renewed as necessary and refitted with new studs. All lagging, furnace fronts, uptakes and casings removed, shell and end plates scaled, recoated, boiler tested under hydrostatic pressure of 270 lbs. square inch upon completion of repairs as undernoted and all found tight. Boiler afterwards examined under steam and its safety valves adjusted to W.P. of 180 lbs./square inch.

REPAIRS (W & T).

MAIN BOILER.

Safety valves, and all mountings removed, overhauled, renewed where necessary and refitted.

140 Screw stays renewed.

2 Plain and 1 stay tube removed for examination, found in satisfactory condition and 3 new tubes fitted.

Some scattered pitting at furnaces and combustion chambers built up by electric welding and afterwards dressed up.

Furnaces- 2 Compensating rings 3" x 1" fitted to each furnace by electric welding.

Boiler lagging renewed.

New furnace fronts, uptake casings, smoke box and doors, air casings and ducts now fitted.

Also other minor repairs.-

FUNNEL. complete new funnel fitted.

MAIN ENGINE AND AUXILIARIES ETC:-

Screw shaft machined and refitted, key renewed.

Stern bush rewooded.

Propeller- new 4 bladed cast iron propeller satisfactorily fitted.

Sea connections all overhauled.

Cylinders- H.P, M.P, & L.P. cylinders bored out and all piston rings renewed.

H.P. valve chamber bored out and valve renewed.

M.P. & L.P. slide valves and false faces machined.

Piston rods and valve spindles- all machined, and rebushed.

Crossheads pins and valve motion etc. trued up, brasses renewed as necessary, guide shoes remetalled.

Crankshaft removed to shop, journals crankpins and coupling faces machined true.

Top and bottom halves of all main bearings and bottom end brasses remetalled.

Eccentric sheaves machined and straps relined as necessary.

Crankshaft satisfactorily bedded and complete alignment of shafting checked and adjusted, coupling bolt holes rimmed and new bolts fitted as necessary.

Thrust shaft journals, collars and coupling faces machined. All shoes and bearings remetalled.

Cylinder, relief valves, drains, cooling water pipes and connections, holding down bolts, intermediate stop valve, reversing engine etc. overhauled and placed in good order.

(Please see follower).

Trawler S.S. "CORVINA".MAIN PUMPS.

Main circulating pump renewed completely.

Main air pump liner renewed, bucket and rod machined, valves overhauled and partly renewed.

3 Ram pumps (bilge, feed and Sanitary) skimmed and rebushed. Suction and delivery valves reconditioned.

Main condenser- tube plates rejointed, all tubes, ferrules and packing renewed, afterwards satisfactorily tested.-

Auxiliary condenser- new condenser fitted, (shell fabricated from steel plates of welded construction).

Feed Water Heater (cast iron shell) and feed water filter (bronze) with necessary connections, bye pass valves etc. supplied new.-

Fan Engine- Former steam dynamo engine reconditioned and installed with necessary fan and casings etc. for forced draft.

Auxiliary pumps etc.

"Langes" horizontal duplex pump, reconditioned and placed in good order. Suctions from fresh water peak tanks and delivery to Fresh Water domestic tanks.

Auxiliary Condenser circulating pump.

Horizontal simplex pump, 150 X 100 X 220 m/m. Makers Schaeffer & Budenberg, now reconditioned and placed in good order.

Suctions from sea, deliveries overboard, deck service fire line, S. W. sanitary tanks, auxiliary condenser, also emergency connection for circulating main condenser. (Main sanitary pump ram has similar connections excepting to main condenser).

Auxiliary feed pump, worthington, horizontal duplex 5 $\frac{1}{2}$ " X 3 $\frac{1}{2}$ " X 5", reconditioned and placed in good order. Usual suction from hotwell, drain tank, sea, and F.W. tanks.

Also 2" feed injector fitted with necessary connections.

Independent Bilge Pump. Worthington horizontal duplex 5 $\frac{1}{2}$ " X 4 $\frac{3}{4}$ " X 5", reconditioned and placed in good order.

Connected to main bilge line and three distribution valve chests (of bronze) located port and starboard side respectively at fore end of boiler space (bilge suction to cargo holds) and port side of Engine room (machinery space suction) all N.R. valves.

Also 2" ejector fitted to bilge line and with direct suction to engine room.

For Emergency use the fuel oil tank suction manifold is connected to the bilge line, protected by a change cock, shut off valve and combination blind-open flange.

Miscellaneous practically all piping valves and fittings etc. have been renewed throughout and satisfactorily tested.

Gauges, thermometers, clock, communicating system, reducing valves, etc. supplied new and installed as necessary.

ELECTRICAL INSTALLATION. (Fitted by Taller de Marina de Darsena Norte).Particulars of Generating Plant.

Two (2) Generators, starboard side of Engine Room.

Main Generator, (Forward).

Kilowatts, 18.5

(Please see follower).

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0169 3/8

Trawler S.S. "CORVINA".

Volts 220. Compound wound.

Amps. 84.5

Maker- Ercole Marelli & Co. S.A., Milano. -

Sesto San Giovanni.

Belt Driven by single cylinder steam engine.

Auxiliary Generator (Aft).

Kilowatts 4.

Volts 220. Compound wound.

Amps. 18.

R.P.M. 1040.

Driven by 7 H.P. Lister diesel engine N^o353,370.

Flash point of fuel used, above 150°F.

Diesel oil storage tank efficiently constructed on starboard side of thurst recess. Oil transferred to a conveniently located small daily service tank by means of a hand pump.

Both Generators and engines have been completely overhauled, recontioned, placed in good order and satisfactorily tested,- the armatures and field coils rewound, commutators machined, brushes renewed etc.

New Switchboard supplied and placed in suitable position on starboard side of Engine room. System of distribution- Two wire, direct current, voltage 220., generators not arranged to run in parallel.

For each generator a double-pole linked switch with a fuse on each pole.

For each outgoing circuit a fuse on each pole, and a single-pole change over switch.

INSTRUMENTS. An ammeter for each generator and one voltmeter fitted with a linked double-pole multipole way switch, also earth testing lamps and carbon pile voltage regulators.

Outgoing circuits on switchboard.

- (1) Accommodation aft.
- (2) Engine and boiler space.
- (3) Forward accommodation.
- (4) Amidship accommodation.
- (5) Navigation lights.
- (6) Small motors.

Distribution Boards.

Water tight metal cases, suitably insulated, complete with switches, fuses on each pole, and circuits named are located as follows:-

- (1) Accommodation aft on lower deck.
- (2) Starboard side of Engine room top.
- (3) Starboard side of forecastle space.
- (4) Port side of amidship accommodation.
- (5) Port side of wheel house- accommodation and exterior lighting.
- (6) Starboard side of wheel house- Panel for navigation lamps.

NOTE. Each lamp separately wired, with an automatic indicator separate switch and double pole fuse. Lights connected to waterproof receptacles and plugs.

(Please see follower)

- 2 AUG 1945

Trawler S.S. "CORVINA".

(7) Starboard side of Refrigerating Room.

Panel for lighting and separate power circuits for refrigerating air circulating fans, Nº1 Hold (4.82 amps), Nº2 hold (8.8 amps). Each motor wired separately with an automatic indicator light, and suitable starter.

(8) Starboard side of Engine Room, (near main switchboard).

(a) For lower machinery space lighting.

(b) Separate power circuits to circulating pump motors (two- 1.5 H.P. each) with switches, fuses and starter.

(c) Ventilating fan for after accommodation below main deck.

Cables, fittings etc.

Wiring has been renewed throughout together with necessary fittings which are of substantial pattern and as per rules.

All cable employed was from the Naval yard imported stock, twin type, vulcanized rubber insulated, lead covered and basket weave armoured of ample current carrying capacity.-

The above installation is in accordance with the Society's Rules. The workmanship and materials are good, and on completion was tested under full working conditions and found satisfactory.

ARRANGEMENTS FOR CARRYING AND BURNING OF OIL USED AS FUEL.

Oil fuel is carried in Nos.1 and 2 D.B.Tanks (forward of the boiler space) and in deep tanks constructed on port and starboard side respectively of the boiler space which also serve as settling tanks. These tanks serve only for oil fuel, there being no ballast system.

Tank capacities at .95 S.G.

Nº1 D.B.T- 10.4 tons.

" 2 D.B.T- 19.0 tons.

Port Deep Tank 18.0 tons.

Starboard deep tank 15.3 tons.

Total capacity 62.7 tons.

Cofferdams are fitted at the forward end of Nº1 D.B.T. after end of Nº2 D.B.T., also for one frame space at forward end of the deep tanks.

All tanks have been filled, tested under water pressure and proven tight.

Sounding pipe fitted to each tank and led to the upper deck with bronze W.T. screwed plug.

Air pipes 3" diameter (3" dia. filling line) fitted to each tank, suitably located in open air, about 6'-3" above upper deck, all fitted with wire gauge diaphragm.

No overflow system, but stop valves in filling line can be throttled to limit pressures and avoid overflowing.

All piping is of solid drawn steel, fittings of steel, materials good and workmanship well executed.

Suctions lines to Nº1 D.B.Tank are provided with an expansion loop where passing through Nº2 D.B.Tank. The suction manifolds and valves are arranged in the boiler spaces.

Steam heating coils- each suction is fitted with a suitable coil heater, the exhaust drains discharging into a manifold which is led to an observation tank

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0169 5/8

Trawler S.S. "CORVINA".

with glass sight hole, situated in boiler space.

Steam heating system satisfactorily tested to 400 lbs/sq. inch hydrostatic pressure after being fitted in place.

Fire extinguishing Installation- Steam led to pipes perforated for emission of steam into lower part of boiler room. Also sand bin, drip trays and two 10 litre chemical fire extinguisher ("El Torero") provided.

Control of fuel oil pressure pumps, steam fire extinguishing, and fuel oil suction, from the upper deck, clear of machinery space as per rules.

Filling lines, extend from each side of the engine room casing with blank flanges and valves, with 3" piping led to the port and starboard deep tank respectively, and to the suction manifold of the double bottom tanks.

The two fuel oil service pumps take suction directly from all tanks, and periodically oil can be transferred from the double bottom tanks to the deep tanks by either pump whilst the other is working and of sufficient capacity for full power operation.

In view of this arrangement and the very limited space available the Owners desired to omit a fuel oil transfer pump, having in mind that a small rotary hand pump could later be installed if found desirable.

The oil fuel suction manifolds are connected to the main bilge line, but protected by a change cock, shut off valve and a blind-open flange.

Oil fuel Pumps and Oil burning appliances were manufactured and supplied by S.A. Saclio S.A., Buenos Aires, and installed by the Taller de Marina de Darsena Norte.

The equipment supplied consisted of Duplex suction filters (2½").

Fuel oil service pumps- Worthington Type horizontal duplex, Two (2) 4½" x 2 ¾" x 4".

Main heater and condensing chamber.

Discharge filter.

Necessary pressure gauges, thermometers, valves, fittings, furnace fronts, burners etc.

A suitable type fuel oil heater to serve as a spare unit was made by the Taller de Marina, satisfactorily tested to 600 lbs/sq. inch and afterwards installed.

The burners are of the ordinary pressure atomizer type with air controlling registers. A number of spare burners being supplied with varying sizes of atomizer orifice.

The boiler is fitted with two burners (one to each furnace).

The fuel oil service pump discharge is fitted with air automatic by pass valve discharging to pump suction.

The pipes, heaters and their fittings etc, were satisfactorily tested to a hydrostatic pressure of 400 lbs/ square inch after fitting and the whole installation tested under working conditions upon completion and found in good working order.

SEA TRIALS, ETC.

After preliminary dock trials arrangements were made to carry out Sea Trials on the 10th. February 1945, the Owner, Representatives of the Taller de

(Please see follower)

Trawler S.S. "CORVINA".

Marina, and the undersigned attending. Vessel left berth at 7.30 am and returned 2.30 pm. During this period the whole of the machinery was manoeuvred and satisfactorily tested under full working conditions, Main engines run for two hours continuously at 115 revs. per minute, steady steam pressure maintained, combustion good. At this time the installation of the Refrigerating machinery was not complete and the machines could not be tested under working conditions together with the main engines and auxiliaries.

The crews quarters and accommodations and various other repairs and adjustments remained to be completed.

At 12.30 pm, 27th. February 1945, vessel sailed for Brazil with a cargo of fruit.

Shortly after passing Montevideo, in consequence of various machinery troubles encountered, the Master decided to return to Buenos Aires after being in Radio communication with the Owners. Under her own power vessel was berthed at AM. 2nd. March 1945.-

Attending on board together with other interested parties, it was decided after a preliminary hearing ^{to} discharge the fruit cargo into a refrigerated warehouse pending further investigation and sea trials. The temperatures of the refrigerated chambers had been satisfactorily maintained and the cargo discharged in good condition.

The various complaints and findings are summarized herewith.

(1). Steering engine not working satisfactorily.

Found bronze bush on drum shaft overheated and probably had not been lubricated. Bush dressed up, refitted and steering gear satisfactorily tested.

(2) Independent bilge pump not working well.

Found, suction and delivery valves defective due to 2 broken springs. Valves overhauled and pump afterwards satisfactorily tested.

(3) Emergency motor for wireless telegraphy installation burnt out.

New motor was supplied.

(4) The principal complaint was inability to maintain sufficient steam pressure, and the power of the boiler for all services questioned, very excessive consumption of fresh water, cause unknown, and engine room bilge making water, source of leakage not ascertained.

FOUND.

The firesides of the furnaces, combustion chambers and tubes were found to be very dirty and were cleaned.

Boiler was opened up, generally examined internally and found in order. All the burners which had been in use were taken ashore and tested under hydrostatic water pressure. In all cases the burner tip and tip nut were found leaking and the atomizer plate of one burner incorrectly fitted. It would appear that the cleaning of the burners had been left to incompetent firemen.

All burners were afterwards overhauled, tested hydrostatically, found tight and with fine quality atomization for range of pressure from 75 to 220 lbs in the presence of the engineers.

Inability to maintain steam was due to faulty operation of oil burning installation and excessive amount of cold make up feed water

(Please see follow),

Trawler S.S. "CORVINA".

being used due to leakage as undernoted.

Drain Tank (at starboard side of boiler), below platform plates) fitted with a connection to the feed pump suction manifold, with a three way cock attached directly to the drain tank, the branch connection being fitted with a blank flange. The blank flange found to be in position, but the bolts slack, 3 way cock open/^{to} branch connection and accounting for loss of fresh water and leakage to bilge. As no leakage was observed during the dock trials or sea trials it is presumed that the cock had been turned 180° subsequently.

It would appear that a not very competent engineer personnel became overwhelmed when left in charge, and it may be added that a more experienced Chief Engineer was appointed to take charge.

17th. March 1945. Further sea trials were carried out. Left berth 8.0 am returned 5.30 pm. During this period full power trials were carried out with main engines running at 115 revs. per minute, All essential auxiliaries and both Refrigerating Machines working. Steady steam pressure was maintained with good combustion and all found to be in good working order.- The cargo was reloaded, and the vessel has since made one satisfactory round voyage to Brazil.

WR

