

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

(Received at London Office)

Date of writing Report 18th April 1949. When handed in at Local Office 19th April 1949. Port of HALIFAX, N. S.
 No. in Survey held at Halifax, N. S. Date, First Survey 11th Jan. Last Survey 6th April 1949.
 No. of Book 3001 on the Machinery of the Woodhouse Steel Single Screw M. V. "CORUCHE" (No. of Visits 47)

Gross 1122.5 Vessel built at Quebec By whom St. Lawrence Metal & Marine When 1948-7
 Net 614 Engines made at Beloit, U.S.A. By whom Fairbanks Morse Id. When
 Nominal Power 274 M.N. Boilers, when made (Main) (Donkey)
 Owners Sociedade Geral de Comercio Owners' Address Industriale Transportes
 Managers and Port Lisbon Voyage Montreal
 If Surveyed Afloat in Dry Dock Marine Slipway, Dartmouth, N. S.
 (State name of Dock.) Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

st Report No. Port

Particulars of Examination and Repairs (if any)

Machinery Completion

Periodical Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly 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 details being detailed in the body of the report, should be briefly summarised at the end of the report. State also the names 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.

a damage report made by anyone else? If so, by whom?

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

" " Donkey " " " "

was not done, state for what reasons?

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

Present condition of funnel(s) Good

the Surveyor examine the Safety Valves of the Main Boiler?

To what pressure were they afterwards adjusted under steam?

the Surveyor examine the Safety Valves of Donkey Boiler?

To what pressure were they afterwards adjusted under steam?

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

and of the Donkey Boilers?

the Surveyor examine the drain plugs of the Main Boilers?

and of the Donkey Boilers?

the Surveyor examine all the mountings of the Main Boilers?

and of the Donkey Boilers?

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? Yes

shaft now been changed? No If so, state reasons

the shaft now fitted been previously used? Yes

Has it a continuous liner? No

Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? Yes

date of examination of Screw Shaft 20.1.49

State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft Roller

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

Is electric light and/or power fitted? Yes Bearings

did the Surveyor examine the generators, motors, switchgear, cables and fuses?

No

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

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

DONE During full power trials of this vessel at Quebec 1st Dec. 1948, with vessel in a light draft condition some whipping of the intermediate shafting was observed, being a maximum in way of forward SKF coupling, which whipped as follows: 275 RPM. ahead, estimated 3/64", 282 RPM - 32" to 1/8", reaching est. 3/16" with propeller in loose water at 310 RPM during steering trials at 300 RPM astern estimated 1/8".

Further investigation showed that the shafting and engine crankshaft were not in true alignment. Attempts to rectify this with the vessel afloat were not successful.

account of Ice conditions in Quebec, the vessel was allowed to proceed to Halifax at reduced speed for completion. See Quebec certificate 20.12.48.

the vessel was placed on the Marine Slipway, Dartmouth, the shafts being sighted for 'breakage' of

General Observations, Opinion, and Recommendation:— The machinery of this vessel is eligible P.T.O.

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.E.M.S. 9,11, L.M.C. 9,11, or L.M.C. 140 lb., F.D., &c.) ble, in our opinion to be classed * L.M.C. (with date) T.S. O.G. when

additional bearing, with necessary seating stool has been fitted to the intermediate shaft, close the after side of the forward SKF coupling, and the shafting found under working conditions to

operate to the entire satisfaction of the Society's Surveyors and when a spare complete SKF coupling has been placed on board and subject to the propeller oil glands being removed and the adjacent

roller bearings being examined in drydock after a period of about, but not exceeding (12) months in service and to the remaining requirements of the Rules respecting spare gear being complied with. Meanwhile the machinery installation is considered efficient for satisfactory operation at engine

speeds not exceeding 270 RPM.

Committee's Minute FRI. 12 AUG 1949
 signed See minute on hull. Michy F.E. rpt. 76 W. Nicholas & Geo. Sealder
 Engineer Surveyors to Lloyd's Register of Shipping.

003298-003306-0075/3

M. V. "CORUCHE"NOW DONE (Contd.)

ship before and after docking.

The screw shaft and intermediate shafts were then with-drawn from their bearings and 'sights' set up from aft end of stern tube to thrust shaft, and the bearings brought to that line. Witness marks from the forward 'sight' were punched in the thrust bulkhead for future reference.

The screwshaft and two aft lengths of intermediate shaft were tested in a lathe.

The screwshaft was straight.

The aft length of intermediate shaft was found bent $\frac{11}{1000}$ in way of bearing position and when supported in way of bearing, and one end, the overhung end (5'-6") threw $\frac{16}{1000}$ when shaft rotated.

The centre shaft was bent $\frac{14}{1000}$ in way of bearing, and the overhung end (9'-0 $\frac{15}{16}$ ") threw $\frac{19}{1000}$ when shaft was rotated and supported at bearing.

The forward intermediate shaft (with flange) was tested on board ship and found straight.

The screwshaft was fitted, and vessel refloated, and intermediate shafting refitted using 2 new SKF couplings (ex. 1 spare Covilha, 1 spare Coruche) the original couplings being badly scored on the mating surfaces between the inner and outer sleeves, in dismantling.

With the forward end of intermediate shaft supported to the witness marks, and disconnected from the thrust shaft, it was found necessary to move the engine and thrust blocks, the following amounts in order to bring the thrust and crankshafts into correct alignment with the intermediate shaft, constant gaugings between the webs of the crankshaft being made whilst this was taking place.

Ford. end of engine raised approx. $\frac{5}{16}$ " P. & S. & moved to Port $\frac{9}{32}$ ".

Aft end of engine and thrust block moved to Port approx. $\frac{11}{64}$ " and lowered about $\frac{1}{16}$ "

After Coupling the thrust shaft to the intermediate shaft, the engine was slowly rotated and the shaft adjacent the forward SKF coupling found to throw $\frac{16}{1000}$ ".

Following a dock trial at 120 RPM, the vessel in light draft condition underwent sea trials and the whipping of shafting found to be very considerably less than was observed on the original trials on 1st December, 1948.

The ford. SKF coupling was observed to be 'whipping' the following amounts.

120-250 RPM est. $\frac{1}{64}$ "

270 RPM, steady, est. $\frac{1}{32}$ "

and when racing up 320 RPM (due to vessel pitching) est. $\frac{1}{16}$ ".

With the engine shut in to 240 RPM and racing to 280 RPM - est. up to $\frac{1}{32}$ ".

During astern running 250/260 RPM - $\frac{1}{64}$ " - $\frac{1}{32}$ " max.

The centre SKF couplings whipped less than $\frac{1}{64}$ ", and the aft coupling virtually nothing.

It is considered that an additional bearing should be fitted just aft of the ford. SKF coupling, to prevent the increased whipping at the higher speeds when the engine races.

M. V. "CORUCHE"

This bearing will be fitted at the Owner's convenience, in Lisbon.

Meanwhile, the machinery is considered suitable for operation at engine speeds not exceeding 270 RPM.

A number of minor items and adjustments to machinery necessary to complete the installation were carried out to our satisfaction.

To meet the requirements of the Rules the following spare gear remains to be placed on board:-

Main Engine Spares:-

- (a) One cylinder block complete.
- (b) One camshaft driving wheel for fitting on crankshaft.
- (c) One compression relief valve complete with parts.
- (d) One set of studs and nuts for scavenge pump cylinder lower head.
- (e) One injection pump discharge valve seat extractor.
- (f) One univalve injector pump plunger setting gauge complete.

SKF Coupling Spares:- One inner and one outer sleeve.

Syntron Seal Spares:- One sand excluder garter bank.

Four coil springs.

It was agreed with the Owner's Representative that these items be shipped to Lisbon on board the M/V. "COVILHA"

W.H. & G.B.



© 2020

Lloyd's Register
Foundation