

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

(Received at London Office)

MUN. D.F.C. 10 1923

Date of writing Report Dec. 1<sup>st</sup> 1923. When handed in at Local Office

Port of Belfast.

Survey held at Belfast.

Date, First Survey June 28<sup>th</sup> Last Survey Nov. 23<sup>rd</sup> 1923.124 on the Machinery of the ~~Wood, Iron or Steel~~ Twin S/S "GRAPHIC".

(No. of Visits 42)

Gross 1871  
Net 865

Vessel built at Belfast

By whom Harland &amp; Wolff When 1906

Registered 522

Engines made at "

By whom " When 1906

Main Boilers 22

Boilers, when made (Main) N.B.-1923

(Donkey) in 1906

Donkey Boilers 7

Owners Belfast S.S. Co. Ltd. Port Belfast. Voyage Liverpool

Pressure 215

# Surveyed Afloat in Dry Dock Alexandria dry. Particulars of Classification (which must be inserted precisely as in Register Book &amp; Supplements).

Donkey Boilers 215

Report No.

Port

Particulars of Examination and Repairs (if any) T.S. &amp; oil fuel. Damage, N.B.

Medical Surveys, when held, must be reported in detail and serially in the terms of the Rules. State clearly the nature 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 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.

Where 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? Special Not req<sup>d</sup> Was a damage report made by anyone else? If so, by whom? James Maxton for Underwriters & Boilers renewed at owners.

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Boilers renewed at owners.

Did the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? This time. See separate report.

Where 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? ✓

Did the Surveyor examine the Safety Valves of the Main Boiler? To what pressure were they afterwards adjusted under steam? 220 lbs D

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? ✓, and of the Donkey Boiler? ✓

Did the Surveyor examine the drain plugs of the Main Boilers? ✓, and of the Donkey Boiler? ✓

Did the Surveyor examine all the mountings of the Main Boilers? ✓, and of the Donkey Boiler? ✓

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.

Screw shaft now been changed? No. If so, state reasons ✓

Screw shaft now fitted new? ✓ Has it a continuous liner? ✓ Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? ✓

The distance between bearing metal of stern bush and top of after bearing of screw shaft? Bushes re-metalled.

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

Damage alleged due to collision with S/S "Balsam", and subsequent sinking in Belfast Lough.

Vessel placed in dry dock.

Propellers, Stern Bushes and outside fastenings of underwater fittings examined &amp; found efficient. Bedwall type glands overhauled &amp; adjusted &amp; minor repairs effected. Stern bushes re-metalled. Screw shafts examined &amp; found in good order. Sea connections opened up cleaned &amp; generally overhauled. Two bilge pp. overboard discharge valves &amp; 1 Ballast Pump overboard discharge on the port side were found broken. Now renewed complete with pipes &amp; connections. For a bilge pump in vessel, the reversing engine hunting gear bracket on the port engine (over)

General Observations, Opinion, and Recommendation:— The machinery of this vessel,

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, &amp;c.: thus, for example, B.S. 9, 11, B.&amp;M.S. 9, 11, or L.M.C. 9, 11, 140 lb., E.D., &amp;c.)

in efficient condition, &amp; is eligible in my opinion to remain as classed

with fresh records of L.M.C.-11, 23 and T.S.-11, 23 &amp; notations. "Fitted for Oil Fuel 11, 23. J.P. above

N.H. 522. N.B.-11, 23. (F.D.) H.S.-9922. ~~10.B. 2SB. 12 C.F.~~ 10.B. 2SB. 12 C.F.

New Boilers.

Fee (per Section 25) £45. 11. 0

Oil Fuel Installation 15. 15. 0

Damage or Repairs Fee (if any) 15. 15. 0

(per Section 25.)

Other Expenses (if chargeable) £

Fees applied for 10-12-1923

Received by me, 1924

Committee's Minute 10 JAN 4 1924

Signed L.M.C. 11.23

11.23 fitted for oil fuel

11.23 J.P. above 150°

11.23

11.23

11.23

11.23

11.23

11.23

11.23

11.23

11.23

11.23

11.23

11.23



Damage due to collision & sinking.  
Machinery opened up, repaired &  
repacked.  
3 Boilers renewed & oil burning  
installation fitted.

It is submitted that  
this vessel is eligible for

THE RECORD, LMC 11.23.

Both. Filled for oil fuel 11.23.

S 11.23 F. Fabore 150°F.

1 DB & 2 SB. FD. (S)

12 of. H5 9922

(DB 19 fitted 11.23

SB 11.23) 215 lb.

(new) 660 N.H.

J.W.D.  
3/1/24

Thin 5/5 "GRAPHIC"

found fractured & now renewed. Damaged steam  
& water pipes in the vicinity renewed.

Cylinders, pistons & valves; crank, thrust and  
intermediate shafting; Condensers, pumps and  
their connections; independant feed, ballast, and  
circulating pumps, dynamos & their engines & the fan  
engines opened up cleaned & examined throughout.  
All lagging & insulation renewed & all glands  
repacked.

All piston rods & valve spindles <sup>of main engines</sup> cleaned up in lathe  
& refitted. All piston rings & springs overhauled  
& refitted with minor renewals. All bottom ends reinstalled.

Crank shafts lifted, bottom halves of all main  
bearings reinstalled & shafting lined up and  
readjusted. Thrust block bearings reinstalled  
& bored out in place, & shafts refitted & aligned.

After port condenser door found fractured & after starboard  
condenser door found thin & wasted. Both doors  
renewed. Both forward condenser doors fitted with  
new division plates. Tubes & females overhauled, and  
condensers tested & found tight.

Air pp. bucket valves & studs renewed.  
Both pump crossheads found heavily worn at  
journals & now renewed complete with brasses.  
Impellers & their shafts (air pump) turned up in lathe,  
& rubbing strips in pump casings renewed.

All auxiliary machinery removed to shop, &  
generally overhauled, minor repairs being effected.  
Dynamos entirely rewound & all insulation  
renewed. Switchboards & junction boxes dismantled  
& cleaned & insulation made good; afterwards  
reassembled with minor renewals.

All damaged wiring throughout vessel renewed  
& all instruments calibrated & readjusted.

The owners decided to renew the 3 main boilers  
at this time.

One double ended & 2 single-ended boilers have  
now been fitted on board and satisfactorily  
secured, in place of the 2 double ended & 1 single  
ended boilers originally fitted.

These boilers were built under Board of Trade survey  
and inspection; they have since been examined  
throughout & the scantlings checked with the (over)



3/ Twin S/S "GRAPHIC"

Approved plans herewith.

See Report 5A. on Boilers, attached herewith.

An oil fuel burning installation has now been fitted in accordance with the approved plans.

The suction & discharge systems were tested under hydraulic pressure at 100 lbs & 400 lbs per  $\square$ " respectively.

The oil fuel filling system was tested @ 60 lbs  $\square$  & the Air & overflow pipes were filled with water to the maximum possible head & found tight.

The suction valves on the oil fuel tanks & the steam & the oil fuel pumps are controlled from the main deck outside the boiler room casing.

In addition to the perforated steam fire-extinguishing pipes required by the Rules, a number of portable chemical extinguishers are fitted.

The depth gauges were found to work satisfactorily & the suction from the gutterways were led to the bilge line as requested in Secretary's letter E. 25/9/23.

Remaining rule requirements were carried out, & the system was found efficient under working conditions.

Machinery & boilers examined under working conditions, & Safety valves adjusted as above. Accumulation on the two single ended boilers was 230 lbs, & on the after D.E. boiler 219 lbs.

H. P. Southwell

Plans enclosed herewith:- D.E. Boiler. S.E. Boilers; oil fuel suction; oil fuel discharges; & main steam pipes.

Letters referring to this case:- E 13/8/23. E. 25/9/23. E. 2/10/23. E. 9/8/23 and E/17/8/23.



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