

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

No. 230 Date of Writing Report 21<sup>st</sup> Decemb. 1892 Port of Trieste  
Survey held at Trieste Date, first Survey 23. 11 Last Survey 20. 12 1892  
on the Machinery of the Mineral (late Charles Howard) Master Ashfield No. of Visits 4  
Gross 1304 Tonnage No 849 Vessel built at Sunderland By whom W. Sile When 1866 11  
Registered Horse Power 120 Engines made at York Boilers, when made (Main) 1886 (Donkey) 1877  
No. of Main Boilers 1 Owners A. Stuart Port Sunderland Voyage Atlantic & Black Sea  
Steam Pressure in Main Boilers 65 lbs # Surveyed Afloat & in Dry Dock San Rocco  
in Donkey Boiler 50  
Last Survey No. 386 Port Newcastle  
Class of Vessel & Machinery (As in Register Book, including dates of Special Surveys of Ship and of last Boiler Survey.) F 90 A1  
FNB 3.86  
LMC 6.90

Particulars of Examination and Repairs (if any) Repairs of Damage  
(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 should be separated from Repairs due to other causes. State also the dates and initials of any letters respecting this case

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? yes  
Do. " Donkey " " yes

If this was not done, state for what reasons?

And what parts of the Boilers could not be thus thoroughly examined?

Also 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? yes  
At what pressure were they afterwards adjusted under steam? 65 lbs

Did the Surveyor examine the Safety Valves of Donkey Boiler? yes  
To what pressure were they afterwards adjusted? 50 lbs

On the Request of the Master I went on board & found the following damage to Machinery which were sustained through stress of weather, when the ship was on her voyage from Philadelphia to St. Louis on the 23<sup>rd</sup> September & subsequent date. For particulars see log book.

The Main Engine (a Single Crank Engine) having raced heavily the large fly wheel on coupling of Crank shaft & Thrustshaft was loosened and cracked, the shafts strained & several coupling bolts broken.

After taking out & disconnecting this parts having to bore out 6 coupling bolts, found after web of crankshaft had sustained a bad flaw and the two bottom main bearing brasses were cracked. - Joints between I & L. S. cylinders & between Exhaust column & Condenser appeared started & leaky; L. S. junk ring was cracked, several springs in L. S. piston were broken & valve spindle bent; one Eccentric strap bolt broken & feed valve chest cracked. Several stokehole plates broken & the wood flooring damaged, eight bilge suction pipes broken & bent, & ash guards at front of boiler damaged.

Continued: -

General Observations, Opinion, and Recommendation: - I am of opinion that

(State clearly what alteration, if any, is suggested to be made in the existing classification and notification of the vessel's machinery in the Register Book, consequent upon this survey; thus, for example, B.S. 1, 2, B.S.M.S. 1, 2, or L.M.C. 1, 2, as the case may be.)

Engine & Boilers remain as classed with denotation L.M.C. 12. 92

Office or Registration Fee (per Sec. 27) £ - - - Fees applied for  
Survey Fee (per Section 28) £ - - - 18  
Special Damage Fee (per Section 28) £ 6 - -  
Travelling Expenses (if chargeable) £ - - -  
Received by me, 18  
\*State if Certificate is required

Committee's Minute TUES. 3 JAN 1893  
Assi ned LMC 12, 92

It is submitted that this vessel is eligible for THE RECORD L.M.C. 12 92 on account of damage and crankshaft & fly wheel have been repaired and other repairs carried out. J. Frederick Johnson Esq. 21 12 92  
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

The following Repairs of damage were done as recommended:  
New couplings were welded on Thrust & Crank shafts & coupled up with new bolts, fly wheel patched & hole bored out bigger & fitted on shaft with new keys; also another shaft carriage was fitted on a new support close to wheel. Crank shaft journals taken off & webs reversed & a strong welded ring shrunk on the defective web. Both shafts turned true in lathe, new bottom main brasses fitted & shafts lined up in place, Thrust block reset & liners adjusted.

Engine skylight removed & both cylinders were lifted out, all cleashing taken off put into shop & examined; new gunk ring fitted on L. S. piston, M. S. piston springs renewed, valve spindle turned true & new brass liners fitted in stuffing boxes; felting partly renewed & all parts put together again as before & readjusted.

New bolt fitted for Eccentric strap, a new feed valve chest cast & fitted & feed pipes jointed together where required; space below Engine platforms & bldgs ext. properly cleaned for examination.

Sea cocks & valves opened out & ground in, als discharge valve.

The following ordinary Repairs were made:

Piston rods worn, these were turned up in lathe and new brass bushes put in glands and stuffing boxes. Top connecting rod brass found rather thin a stout liner was pinned into it. White metal of Bottom connecting rod brasses worn - new metal run into both halves. M. S. valve face planed on the machine & bedded to face. L. S. valve leaky - this was faced up & a brass filling piece fitted in one port. Brass stoppers in bldg pump valve chests renewed & valves ground in. Air valves on circulating pump, damaged, new one were fitted & the pump opened out & put right.

Condenser leaky a number of tubes were drawn, some renewed & the rest cleaned and condenser tested. - Spare Crank shaft turned up in lathe & new coupling fitted to correspond to other Crank shaft, holes & keys cut & secured away in Engine room. Propeller shaft examined, need found it only a little worn down on bush.

Main Boiler in good condition, furnace doors & cast Iron plates for bridges in furnaces, these were repaired & renewed. All valves & cocks ground up & overhauled & leaky seams at shell couked.

Donkey Boiler had a leaky seam at furnace door & plate at one of the sludge doors rather thin, the seam was recouked & stiffening ring fitted on sludge door; all valves & cocks overhauled, new internal feed pipe placed. Main & Donkey Boiler feed pumps overhauled & put in working condition.

All tank & bldg valve boxes in Engine room & stock hole, examined, valves ground in & overhauled.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.