

Tw. Sc. S.S. "MAGDALENA"

vicinity of the burst tube. The diameter of all water wall tubes were measured to ascertain the extent of swelling and it was noted that the increase in diameter of the tubes varied from $\frac{1}{4}$ " to nil - greatest increase being in vicinity of damaged tube. The burst was approx. 6" long and 4" across without any appreciable thinning of the tube in way of burst although the diameter below fracture was increased by $\frac{1}{4}$ ".

Examination also made of furnace on superheat side and condition found to be satisfactory. The steam and water drums were examined internally and the appearance of the water drum indicated possible shortage of water.

All apparatus for the control of water level i.e. gauge glasses Weirs 'Robot' feed control and the low-level alarm system were opened out and carefully examined. The inboard gauge glass was found to have defects that might have resulted in a false level being recorded. The gauge glass had been forcibly turned without first slackening the locking nuts, resulting in the shearing of the locating pin. Consequently steam was admitted to the glass only by way of the small annulus surrounding the steam plug. From the fitting expands and a piece of steel machine turning) were removed and although not restricting the flow when found, it is possible partial restriction might have been caused. The 'Robot' when opened appeared to be quite free although in a dusty condition.

The Chief Engineer stated that the piston of the 'Robot' was sticking when the vessel arrived in London from Belfast. With regard to the low-level alarm, adjustments had been made and it was intended to test this apparatus when steam had reached full pressure.

Specimen lengths were cut from the defective tube, A10, the adjacent tube A9, and one other fire row tube A15. These tubes were subjected to mechanical tests i.e. tensile, flattening and drifting and proved satisfactory.

145 tubes in the outboard furnace were renewed as follows:

| | | | |
|---------------------|--------|-------------------|----------|
| Outboard water wall | A3 row | 2" O.D. | 20 tubes |
| Rea wall | U | 2" | 6 " |
| " | V | 2" | 5 " |
| Fire row | A2 | 2" | 27 " |
| " | B2 | 2" | 20 " |
| " | C2 | 1 $\frac{1}{2}$ " | 36 " |
| " | D2 | 1 $\frac{1}{2}$ " | 23 " |
| " | E2 | 1 $\frac{1}{2}$ " | 5 " |
| " | F1 | 1 $\frac{1}{2}$ " | 3 " |

TOTAL

145

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Hoyd's Register
Foundation

W1012-0064/3

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All the distorted tubes noted in Belfast report have now been renewed. On completion the boiler was tested hydraulically to 700 lbs/sq. in. and all tubes found sound and free from leakage. At the first hydra. test the safety valves were found to be leaking and after overhaul they were satisfactorily adjusted at above stated pressure. (570 lbs/sq. in. & 525 lbs/sq. in. spt.).

All gauge glasses have been thoroughly overhauled and Port Boiler inboard gauge glass renewed.

The 'Robot' feed control gear has been examined by the maker's representative & placed in good working order.

The low-level alarm system has been examined, readjusted and tested under full working conditions, found efficient.

DONKEY BOILERS.

The starboard donkey boiler rope ring was fillet electric welded on water and fire landings to tube plate. The boiler was tested to 150 lbs/sq. in. hydra. pressure on completion and found sound & tight.

The Port donkey boiler rope ring was caulked, tested under steam at the working pressure, found tight and in view of this it was agreed with the Owners to waive the hydraulic test at this time.

It is recommended that the rope rings of both donkey boilers be examined on vessels return to U.K. from present voyage and in the meantime the boilers are considered efficient.

P.S.