

SESSION



1910-1911

President : SIR DAVID GILL, K.C.B.

Report on Burst Steam Pipe

CONTRIBUTED BY MR. J. M. BUCHANAN (MEMBER).

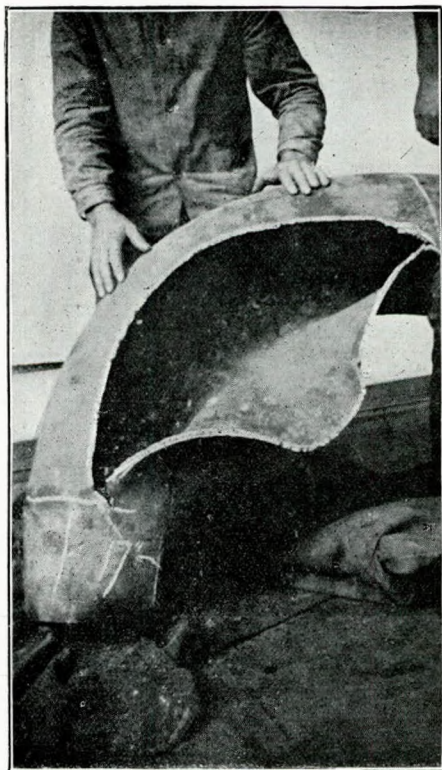
THE following report of an interesting case of the bursting of a copper main steam pipe, photographs of which I enclose herewith, may be of service to include in the Transactions of the Institute. Unfortunately, the explosion was attended with the loss of five lives, and, but for the resources and skill of the chief engineer, the loss of a large steamer and valuable cargo might possibly have been also recorded.

The accident occurred to the Southern Pacific Co.'s steamer *El Alba* of New York, 4,614 tons gross register, on April 23, 1910, shortly after leaving Galveston, Texas, while on a voyage from Galveston to New York. After the accident, the main engines stopped, as the burst pipe was in the main line of piping between the engine stop valve and the branch pipes from the three main boilers. The chief engineer and his assistants drew the fires and set to work to rig up a temporary pipe in order to enable the vessel to reach a port; they disconnected three 3-inch ash hopper pipes, made some alterations in the lengths without having recourse to brazing, put iron flanges over the flanges of the main steam pipes, connected up the 3-inch pipes and raised steam; the vessel made about three knots and was enabled to reach the entrance to the Mississippi River, where she got in touch with the pilot, and, with the assistance of tug boats, reached New Orleans.

I was associated with Mr. Wilson—the non-exclusive Surveyor for the American Record Classification Society—in

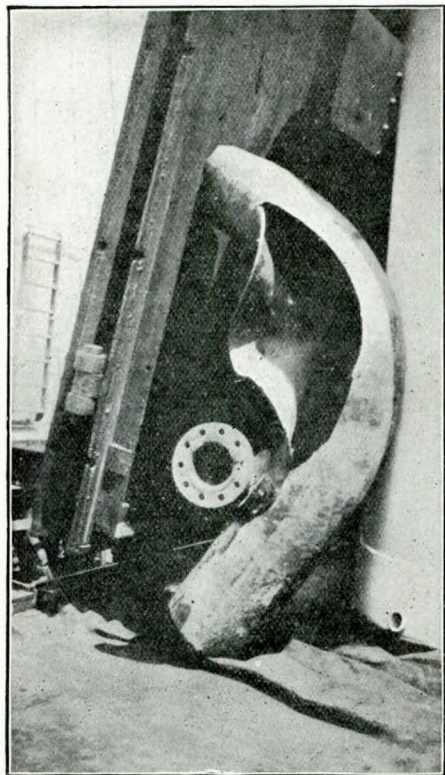
making a damage survey on this case. Temporary repairs were effected at this port and the vessel subsequently reached New York.

The pipe was at the fiddley of the after stokehold, the opening was 33 inches in length by 17 inches in width, the pipe has an elbow bend, is 11 inches in diameter by 15 feet in length,



and lap brazed; the thickness of the copper at the fracture varies between $\cdot305$ and $\cdot315$ inch; the fracture runs parallel, and is close to the brazing. The metal along the line of fracture is very crystalline in appearance. The chief engineer—who has been in the ship since she was built—stated that the main steam pipes had not been annealed since they were made

(about nine years ago). I suggested to Mr. Wilson—Classification Surveyor—that he make the recommendation as a condition of class that all main steam pipes be annealed and



tested, and as a further safeguard, although not a condition of class, that iron bands be fitted on the main steam pipes, spaced about 3 or 4 inches apart.

