

The Vaughan-Horsey design probably embodies the most successful arrangement of any. Owing to its peculiar construction not only is a higher degree of superheat obtainable, but defective parts are more easily repaired or renewed. Should a circulating tube break and another one not on hand, all that is necessary to do is to remove the front plates, uncouple the defective tube and screw a cap on the passage way.

Also it is very little more work to insert a new tube. It is not advisable to plug too many of these tubes for it reduces the total area, thereby restricting the flow of steam and weakening the engine.

In conclusion let it be understood that the addition of a superheater entails no extra expense or attention to be bestowed on an engine aside from that arising from the repairs of mechanical defects, the keeping of the large smoke tubes free from cinders and the keeping of the damper working. It is not unreasonable to expect that the defects should in time be practically eliminated and an engine go from one shopping to another without having the front plates removed, as some of them are now doing. Unless the cleaning of the tubes is thoroughly and regularly done, a material deterioration in the efficiency of not only the superheater but of the engine itself will follow. With any kind of soft coal, cinders are bound to collect in the large smoke tubes and fill in around the circulating tubes, and it is found that the air blast usually applied is not always sufficient to remove them. A strong pressure of water is necessary to thoroughly cleanse the tubes and this should be resorted to at least every washing out of the boiler. The results from this washing, in the better steaming of the engine and the higher superheat obtained, will more than repay for the work performed.

Mr. Black,—

This has been a pretty lengthy paper, Gentlemen, and I must thank you for your very careful attention.

Chairman,—

I am sure you have all listened with a great deal of pleasure to this very interesting paper of Mr. Black's, and I know you will agree with me when I say that, after waiting three or four years for this paper it has paid us to do so, I intend to call on one or two of the older heads of the Club to either ask a few questions, or make a few comments or notes on the paper.

Mr. Wickens,—

I am not much of a locomotive man, nevertheless, there are so many points brought forward in Mr. Black's paper that