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SESSION



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BRISTOL CHANNEL CENTRE.

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Vol. XI.

CONTINUED DISCUSSION

ON

EIGHTY-FIFTH PAPER

(OF TRANSACTIONS)

BOILER WATER IMPURITIES

BY

Mr. WALTER W. HOUFE

(MEMBER, HONG-KONG).

READ AT 58, ROMFORD ROAD, STRATFORD,

ON MONDAY, OCT. 9TH, 1899.

READ AT 3, PARK PLACE, CARDIFF,

ON WEDNESDAY, APRIL 14TH, 1900.

PREFACE.

3, PARK PLACE,

CARDIFF,

April 14th, 1900.

A Meeting of the Bristol Channel Centre of the Institute of Marine Engineers was held here this evening, when a Paper on "Boiler Water Impurities," by Mr. W. W. HOUFFE, read at a former meeting was under consideration. The chair was occupied by Mr WAILES (Vice-President B.C.C.)

The following discussion ensued.

GEO. SLOGGETT,

Hon. Secretary, B.C.C.

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DISCUSSION

ON

BOILER WATER IMPURITIES.

Paper by Mr. W. W. HOUFFE (Member),

AT 3, PARK PLACE, CARDIFF,

ON WEDNESDAY, APRIL 14TH, 1900.

Mr. W. SIMPSON (Member): Said the author had made one or two valuable suggestions in regard to filters. Some years ago a local member, Mr. Edmiston, brought out a filter of which he (the speaker) thought a great deal, and which he believed was still doing good work.

Mr. J. T. SHELTON (Member): Said anything that tended to exclude impurities from boilers must contribute to their longevity. A boiler should be as efficient at the end of a voyage as at the start.

Mr. E. NICHOLL: Did not believe in using oil in the cylinders at all except what got in through swabbing the rods. He did not, therefore, think a filter necessary, as practically no oil reached the boilers.

The CHAIRMAN said reference had been made to the Edmiston filter. The Mount Stuart Dry Dock and Engineering Co., Cardiff, had the honour of making the first of those filters, which proved a great success. Mr. Edmiston sent him the analysis of the deposit in the filter, and he was much astonished to find so great a percentage of copper which, of course, in the form of verdigris was a very deleterious impurity, as it soon eat away iron and steel. In his opinion, every steamer ought to have a filter for the feed water.

On the proposition of Mr. Chellew, seconded by Mr. Fleming, the author of the Paper was accorded a vote of thanks.

CORRESPONDENCE.

Mr. A. FISHER (Member) writes as follows from Port Natal:—

“Like several of the Members, I fail to grasp all the author’s ideas in the paper on the subject of objectionable matter which enters boilers, but the principle of using filters is correct.

“The one we use is a Railton and Campbell, which gives every satisfaction, the filtering material being a Turkish towel drawn over a brass cage placed in a cast-iron chamber. The water is forced by the usual type of main engine driven feed pumps through the filter up into the feed heater, then through the check valve chests into the boilers.

“We use one towel per month, and when it is necessary, change the cages. This is done in a few minutes, using, meanwhile, the by-pass valves, withdrawing the cage with the dirty towel and replacing it with a new one. We are under steam four or five months at a time, and I consider this filtering process keeps the boilers clear of a great deal of dirt and grease which would otherwise enter.

“There is a matter which I should like to see taken

up by some Members of the Institute who have had good sea experience, viz, Feed Pumps, and the efficiency of the air vessels attached to them."

Referring to the paper on the Engine Room Telegraph, I can endorse all that is said by Mr. R. D. Keay as to telegraph wires getting slack.

With twin screw engines and two telegraph stands, one on each side of the bridge, connected to work both sets of engines, it takes a lot of work to readjust them when the chains become slack.

I think it ought to be made compulsory to have an indicator to record the movements from the bridge, such as the course indicator for navigation records how the vessel has been steered.

A good plan to avoid mistakes is to have the telegraph so placed that its pointer looks in the direction the engine is required to run.

REPLY TO DISCUSSION

By THE AUTHOR.

Mr. W. W. HOUFFE: I desire to first tender my apology for having somewhat misstated certain remarks by Mr. List, on page 8. I submit that the mistake was due to my having quoted from a journalistic report instead of from the "Transactions of the R. U. S. I."

In writing paragraph 5, to which Mr. Lawrie draws attention, I fear I have taken it too much for granted that the trend of the discussion following the reading of Mr. Sinclair Cowper's paper, referred to in paragraph 4, was representative of opinions generally accepted respecting the part taken by main engine driven feed

pumps and the influence thereby on boiler corrosion. That such pumps often force gases into the boilers I agree, but that it is right to state these gases as "air" I do not allow, when the general arrangement of "hot well," &c., is after the style as shown in the sketch attached to the paper.

Attention is next drawn to an evident mistake as to the special feed pumps and their cost, which is rightly corrected in the foot note at the bottom of the page on which it occurs.

To my statement on page 7, *re* "internal feed pipes," Mr. Lawrie next draws attention, and in passing I must admit that I purposely stated it as I did, thinking to hear what importance might be attached thereto by members in considering my remarks immediately preceding it in the same paragraph.

Referring to the remarks made regarding the lead of the hot-well overflow pipe, I am a little afraid that the speaker has understood me to mean that I have generally found such pipes led so far below the platform that they all but reached to the ship's bottom. If so, I fear I have again been guilty of taking too much for granted.

On page 33 the same gentleman points out what I hope was to all an obvious oversight; for certainly it is the water's surface that the wood is hammered upon to aerate it. Next, attention is called to my statement as to the comparative medium areas. My statement was an absolute truth. The filters referred to were rated at 500 I.H.P. While my design was of box shape and light, its rival was surrounded with heavy flanges and numerous valves, which are truly parts of the apparatus.

Mr. Lawrie says he has been informed that ten times the medium area is required for filters situated on the suction side of the feed pumps. That filters placed on the suction side must have large area, as the effective pressure on the medium is necessarily small is evident,

but this point is the all essential one so far as the arrest of liquid oil is concerned at any given medium. I consider that the possibilities of high effective pressure, with filters placed between the feed pump and boilers, cause their inefficiency to a very large extent. I have collected more liquid oil in a few months from a filter as set forth in the paper than an approved filter, situated on the delivery side of the feed pump, collected in as many years. The only internal lubrication this engine referred to got was from the usual rod swabbing.

The whole question, however, is a very complex one, being dependent on very many points. For instance, I have noticed the water delivered by the air pump practically free from oil, and then suddenly it began to throw out its water mixed with considerable quantities of oil, without any alterations in the lubricating arrangements whatever.

I am pleased to see that Mr. James Adamson inclines to favour the position of filters advocated in the paper.

The system advocated by Mr. McLaren appears to me to be another of those accessories which relies for its heat economy upon the already over-burdened feed heater. I take it that such an installation with feed heating arrangements, already satisfied with steam from the usual auxiliaries, must impart heat through the exhaust steam to the "circulating water."

From the majority of the opinions offered, I take it that a modification of a boiler, the heating surfaces of which are only submitted to a temperature which cannot damage the metal or its form by over-heating—and is thus far independent of defective conductivity through deposits after the manner of an evaporator—is the apparatus most favoured for the arrest of oil contained in boiler feed water.

In conclusion, I beg to apologise for the many "short comings" in the paper, and to say that it was finished in hot weather haste.

