

TABLE XII.

Abstracts of results of boiler trials 71, 72, 73, 83, 84, 85.

No. of Trial.	Water-tube boiler.			Fire-tube boiler.		
	71	72	73	83	84	85
Net calorific value of fuel as fired, B.Th.U. per pound	7490	7490	6990	7130	6970	7110
Peat fired per hour lbs.	476	586	569	160	214	341
Peat fired per square foot of grate surface per hour	20.5	15.5	15.0	17.7	23.8	37.9
Equivalent evaporation per hour from and at 212° F. lbs.	1950	2322	2250	621	802	1054
Equivalent evaporation per hour per square foot of heating surface lbs.	2.88	3.43	3.32	2.89	3.73	4.9
Pounds of dry flue gas per pound of peat.	12.4	9.8	11.1	9.8	9.1	6.5
Temperature in flue leaving boiler, ° F.	720	760	715	690	690	750
Equivalent evaporation from and at 212° F. per lb. of peat as fired lbs.	4.10	3.96	3.95	3.89	3.74	3.09
Thermal efficiency of boiler furnace and grate, based on the net calorific value, per cent.	53.1	51.3	54.8	52.9	52.1	42.2

General remarks.—Table XII has been prepared in order to compare the results obtained from the trials with the water-tube and fire-tube boilers, respectively. From this table it will be seen that if trial 85 be excluded, the efficiencies of the remaining 5 trials do not vary by more than $3\frac{1}{2}$ per cent, and also that the performance of the smaller fire-tube boiler compares very favourably with that of the larger water-tube boiler at low rates of steaming. The performance at full load (Trial 85) of the fire tube boiler was very poor, and was due to the escape of unburnt gases, the result of having too small a firebox.

The provision of a larger and more suitable firebox would undoubtedly improve the economical working of this boiler, but as such a change would interfere with its essential qualities of portability and compactness, it is unlikely that it would prove practicable.