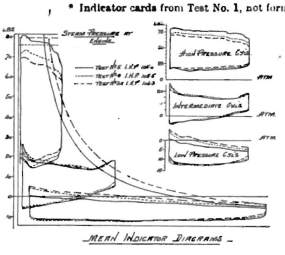
PLATE XVIII.

TABLE OF RESULTS.

Number of Test.	3B.	3A.	2.	5.	1 and 4.
Date, 1899	Nov. 6.	Nov. 6.	Nov. 5.	Nov. 8.	Nov. 4 and 7.
Duration	3 hours.	3 hours.	6 hours.	6 hours.	6 hours each.
Average steam pressure at boiler, pounds	82·0	87·54	84·18	89·04	84·50
" " " engine "	79·3	79·1	76·4	80·9	75·7
Average total head, feet	235·8	238·7	236·5	236·7	240·0
Air-pump discharge per hour, pounds	1966·0	1935·5	1654·1	1773·0	1603·8
Jacket drain per hour, pounds	205·3	207·1	143·6	—	135·5
Total from air-pump and jackets, pounds	2171·3	2102·7	1797·7	1773·0	1744·1
Average length of stroke in feet	1·56	1·55	1·53	1·56	1·53
Average revolutions per minute	34·02	34·06	33·34	33·02	33·66
Average pump horse-power	99·55	99·25	88·02	88·03	97·0
Steam used per pump H.P. per hour	21·81	21·18	18·91	18·52	17·97
Mean effective pressure H.P. cylinders	46·11	44·62	52·15	59·77	51·10*
" " I.P. "	19·52	17·34	19·10	17·65	17·20*
" " L.P. "	9·87	11·06	8·92	8·54	10·27*
Indicated horse-power	106·32	106·79	102·08	105·0	106·05*
Mechanical efficiency	0·9363	0·9307	0·9207	0·9145	0·9306*
Temperatures, Degrees Fahrenheit.					
Air-pump overflow	83·9	83·0	76·6	79·0	80·0
Jacket drain	210·5	210·5	210·3	—	210·2
Water in main suction	54·0	54·0	54·0	54·0	54·0
Exhaust from low-pressure cylinders	—	—	—	1·5·0	134·0
Steam before superheater	326·0	326·0	322·40	325·46	321·60
Steam after superheater	—	—	464·02	479·55	464·78
Steam at engine	319·33	319·15	458·58	447·55	439·10
Degrees superheat at engine	0·0	0·0	118·53	122·47	117·7
Duty.					
Foot-pounds duty per B.T.U. consumed	82·06	84·53	89·56	89·12	94·20
Foot-pounds duty per B.T.U., assuming heater in exhaust to raise temperature of feed water to 120°	84·63	87·14	92·70	92·79	97·25

* Indicator cards from Test No. 1, not forming a complete set, were not used in working up the results.



Tests.—Five runs of six hours each were made on consecutive days, with the engine doing its regular work, but under different conditions of adjustment, as follows :—

Nos. 1 and 4. With superheated steam in cylinders and jackets.

No. 2. Same as above, except with an equalising pipe, 1½in. in diameter, open between the two intermediate exhaust pipes.

No. 3. With saturated steam in engine and jackets, cross exhaust pipe, as above, open half the time, as denoted by 3B.

No. 5. Superheated steam in engine, jackets open to atmosphere.

Fig. I.