

OWNED VS. RENTED CONCRETE CONSTRUCTION PLANTS.

The accompanying table gives some very interesting figures compiled from ledger records kept on four Concrete Mixers by the Aberthaw Construction Company, of Boston, Mass., during the past seven years. The yardage given is as close an approximation as it was possible to obtain.

This company runs a ledger account for each machine charging the original cost, repairs, etc., against it, and crediting a rental of so much per day for the elapsed time while the machine is on a job. The rental is fixed as near as possible at what the rate would be if the machine were leased temporarily from the manufacturer.

An analysis of the table shows a saving of 11.00c. less 8.4 c. or 2.06c. per yard on plant cost for a plant bought outright over a rented outfit, it being assumed that the cost to the Aberthaw Construction Company of renting would be practically the same as their charge to clients as shown in Table B. This saving was effected when the mechanics were on the jobs 45.4 per cent. of the time owned. It will be noted on referring to mixer No. 4 that the saving is 7.84c. per yard when rented 62.7 per cent. of the time owned, while on mixer No. 2 there is actually a loss of 0.55c. per yard when rented 28.1 per cent. of the time owned.

Another variable entering into the question is the time owned. It seems that mixer No. 4 owned 1,302 days shows the maximum economy for the owner, although No. 6, a newer machine on larger yardage showing considerably less plant cost per yard is not as economical for the owner as No. 4.

There are so many conclusions which might be drawn from a careful analysis of these figures that it is left to the reader to draw his own. However, in closing, attention is called to the fact that it appears to the contractors advantage to buy his plant outright when he expects to work on moderate yardage over a considerable length of time. On large yardage quickly placed, there is not much difference between renting and buying.

Furthermore, he should have his plant on jobs at least 50 per cent. of the time and the life of a machine for maximum efficiency is apparently in the neighborhood of 1,300 to 1,500 days—say 4 to 5 years. After that, interest, repairs and depreciation soon throw the balance in favor of rented plants. It is also evident that the entire cost of the original machine should be charged off to depreciation account in about 6 to 7 years. This charge to be over and above all repair costs.

	2	3	4	6	Totals and Ave.
A.					
Mixer Number	8-18-03	6-10-04	6-7-06	6-5-07	
1. Date of purchase	8-18-03	6-10-04	6-7-06	6-5-07	
2. Original cost	\$ 625.00	\$ 975.00	\$ 975.00	\$ 935.00	\$3,510.00
3. Interest at 6 per cent to January 1, 1911	281.51	368.90	220.57	153.37	1,024.35
4. Repairs to January 1, 1911	941.87	350.29	216.43	437.01	1,945.60
5. Total cost to January 1, 1911	1,845.35	1,694.19	1,412.06	1,521.38	6,479.95
6. Inventory value to January 1, 1911	125.00	325.00	400.00	500.00	1,350.00
7. Net cost to January 1, 1911	1,723.38	1,369.19	1,012.06	1,025.38	5,129.95
8. Total yards mixed	12,350	15,500	10,500	19,000	57,350
9. Plant cost per yard	\$0.1395	\$0.0883	\$0.0964	\$0.0540	\$0.0894
	-4.15%	x15.25%	x44.8%	x14.7%	x18.72%
B.					
10. Days owned to January 1, 1911	2,325	2,029	1,302	939	6,595
11. Days rented to January 1, 1911	827	7.8	816	536	2,997
12. Per cent. of days rented	28.1%	28.3%	62.7%	57.0%	45.4%
13. Rental rate per day	\$ 2.00	\$ 2.25	\$ 2.25	\$ 2.25	
14. Total rental to January 1	\$ 1,655.00	\$1,616.25	\$1,835.25	\$1,204.50	\$6,311.00
15. Total yards mixed	12,350	15,500	10,500	19,000	57,350
16. Plant cost per yard	\$1.340	\$0.1042	\$0.1748	\$0.0634	\$0.1100
C.					
Plant cost per yard A	\$0.1395	\$0.0833	\$0.0964	\$0.0540	\$0.0894
Plant cost per yard B	0.1340	0.1048	0.1748	0.0634	0.1100
Per cent. saving by owning plant		x15.25%	44.8%	x14.7%	18.72%
Based on rental cost					-4.1%

ECONOMICAL PROPORTIONING OF CONCRETE.

"Economical proportioning of concrete does not always consist in using the leanest possible mixture. If the quantity to be laid is small, it is sometimes cheaper to use materials at hand, selecting the proportions arbitrarily and adding an excess of cement to insure the required strength and water-tightness, rather than to make the tests required for the more scientifically proportioned mixture. On the other hand, upon large or important work it pays from the standpoint of dollars and cents to make thorough studies of the aggregates, carefully grading the materials so as to use the smallest possible quantity of cement, which is always the most expensive ingredient.

"The fact has been seriously overlooked in the past, and thousands of dollars sometimes have been wasted on single jobs by neglecting laboratory tests and studies or by errors in theory. By adjusting the proportions of the aggregates instead of selecting them arbitrarily a concrete of equal density, strength and water-tightness may be made almost always with the use of less cement. On a certain job, for example, where water-tight concrete was required, a net saving was effected of 74 cents per cubic yard by carefully grading the materials, the resulting concrete being as water-tight as the richer mixture, having proportions selected by judgment."—Sanford E. Thompson, Consulting Engineer.