

System to Eliminate Waste in the Foundry*

A Practical Cost System Worked-Up in the Shops During a Period of Eight Years, to Determine Costs in Such a Way as to Eliminate all Waste from Foundry Operations. System Calls for a Minimum Amount of Bookkeeping and Clerical Work

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If all foundry operations were carried on that no waste would occur, so that costs could not be lowered, it would be of little importance to determine them. If, however, an elaborate system merely determines that costs are high, without also showing why and when they are high, and without indicating how, when and where they can be reduced, it is also of small value. The system described gives, before the work is begun, what its cost is going to be, gives the cost of each separate and single operation, shows exactly when and where failures occur and applies to every item, man, foreman or department, as well as to materials, supplies and methods. This is done with a minimum amount of bookkeeping and clerical labor. The system was not elaborated in the office by a skilled accountant, but was worked out in shops in close touch with actual conditions during a period of eight years,

cent. who fall by the wayside. The cost system recommended is applicable to any kind of business, any class of men, in any part of the world. The system was originated and developed in foundry work, but is equally applicable to jobbing, manufacturing or special work, which does not, however, mean that various local difficulties and problems will not require much care for their solution.

STANDARD OF EXCELLENCE.

The method consists of standards of excellence for every operation and every item of expense, and the registering continuously for every item the difference between what is actually attained and the ideal standard set up. The standard cost of each item, with the added per cent. of average inefficiency shown by the particular shop, is always the actual cost, and as standard costs are known in advance, as it is also the average inefficiency of the previous period, whether week or month, it is always possible, before

nor as difficult as it seems, and it has, on a variety of work, been done on a very large scale.

Standards, to be of value, must be established with the greatest care by the aid of skilled observers, records, competent estimates, allowances, etc. However imperfect the determinations may be at first, the persistent use of records will soon bring up the standards to a high degree of accuracy. The man who by practice can become so expert as to tell by the touch whether the joker is in a pack of cards or a card is missing can, if it is his business from day to day, gauge closely the standard time required for any new work. Men who imagine that this is impossible because they have never done it, can in a short time under guidance become very expert, and it is one of the essentials of the method that the standards shall be self-correcting, so that however wide of the mark they are at first, they will soon approximate closely to what they should be.

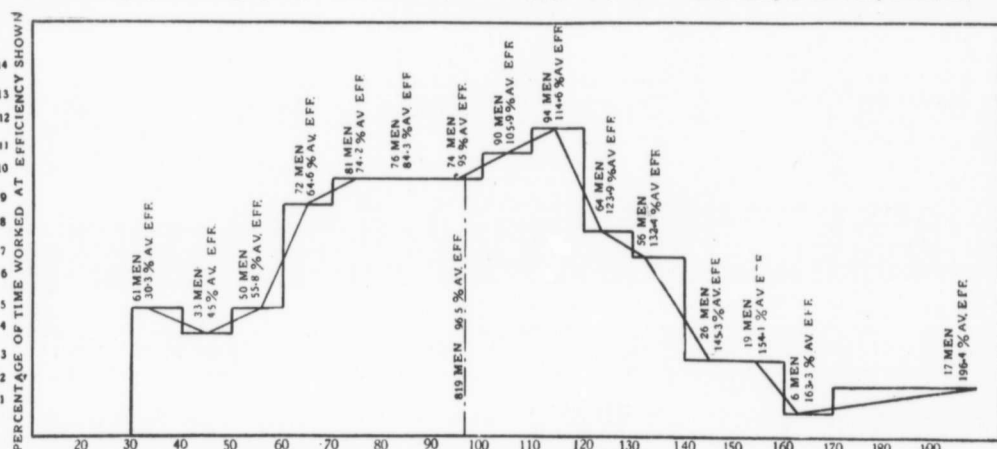


Fig. 1—Efficiency Report, Nov., 1907, 819 Men; Average Efficiency, 96.5 Per Cent.

first in a plant employing 100 men, next in one employing 400 men, then in a series of plants under one management employing over 5,000 men, and finally it is now gradually being worked up in plants employing 25,000 men, one of which is in Pittsburgh.

FAILURE OF INDUSTRIAL ENTERPRISES

Ninety-five per cent. of American industrial enterprises are put out of business before the end of the second generation. A good system should not only tell to-day what next month's costs will be, but also enable business enterprises to escape the fate of the 95 per

cent. who fall by the wayside. The cost system recommended is applicable to any kind of business, any class of men, in any part of the world. The method of predetermining costs was suggested and adapted from the universal practice of life insurance companies, who know to a day the average life probability of selected risks, and they do not care if the person insured lives longer or less than the average. Scientific rates for life insurance were not possible until life standards had been determined, and similarly in shop practice, efficiency determinations are not possible until standards have been carefully worked out.

DETERMINATION OF STANDARDS.

This determination of standards is at once the most important and difficult part of the whole work, but it is not an impossibility

RESULTS OF THE EFFICIENCY SYSTEM.

As an example of results attained by the use of the efficiency system, the following records are quoted from a large shop in which the method was installed, each record being for a separate month:

	No. of men	Standard hours.	Actual hours.	Efficiency percent.
	21	2,011.2	3,613.9	55.6
	50	4,350.2	7,418.8	58.6
	77	7,649.6	12,748.3	60.0
Mar. 1907..	251	27,051.8	41,463.0	89.3
Aug. 1907.	656	122,736.4	126,534.4	97.0
Sept. 1907	731	120,357.5	120,478.0	99.9
Oct. 1907.	771	148,841.0	146,434.0	101.7
Nov. 1907.	819	155,276.5	160,701.0	96.5

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