

overhead far greater than those he experiences himself. Integration results in a truer picture of costs; unless neutralized by the separate handling of cost systems in the separate stages of the integrated process, but it cannot go far enough to prevent all distortion. The economic waste of idle time is vastly greater than the accounts show; and added production would often be self-sustaining though it could not pay its costs as the books show them, or as they actually fall on a particular producer or dealer. He might lose money by doing something that would pay the business community as a whole. This is one reason why the cooperation of producers who realize their joint interests can do so much more than the efforts of one alone.

What should be done about it? We should not expect producers to ruin themselves for the good of the community, as they might if they acted prematurely and alone. But we should expect them to recognize the reality of a community accounting which differs from private accounting; and where they have a margin of doubt or discretion, to follow the policy most in accord with community interest, giving it the benefit of all reasonable doubt. We should also expect them to cooperate, to refrain from imposing on each other burdens of unnecessary irregularity, and in so cooperating to develop a clearer realization of the ways in which business-community accounting differs from customary accountability, and of the very practical stake they all have in developing the unused capacities of the business machine as a whole.

### Discussion

Wallace Clark.<sup>3</sup> Mr. Clark's paper is what Mr. Gilbreth used to call "a thought detonator" and there are several things which I would like to discuss, but there is time for only one point and that is the unabsorbed burden or, as I prefer to call it, the cost of idleness.

In my consulting work I find that the facts in regard to this cost of idleness provide the most effective information for the determination of manufacturing and merchandising policies.

Methods of securing these costs are often shrouded in mystery and, as a result, an executive believes that the clerical work necessary to secure such data is so expensive that he may not be able

to effect sufficient savings to pay for the work. This is a serious mistake, for the methods of cost recording which will give this information can be made far more simple than the usual methods which do not furnish this data.

I will outline briefly one method of doing this in a manufacturing plant.

Past records of expense and plans for the future are studied and the overhead expense of the plant kept ready for work is pre-determined.

As you know, material which is standing on the floor of a shop is not affected in any way by that shop: it is only when machines are applied to the material that any value is added, to it (with machines I would include tools, hand operations, the application of heat, electric current, acids, etc.). Therefore, the plant costs can be applied to the material through the machines, that is, the overhead of the shop is distributed to the machine in the form of a machine hourly expense rate, which we usually refer to as the idle rate, for that is the cost of keeping the machine ready to run. When it does run there is the added cost of power, supplies and other expense due to the actual operation of the machine. This is added to the idle rate and the result is the running rate.

By means of these machine rates the entire overhead of the plant is each day distributed either to production orders by means of running rates, or to certain idleness accounts by means of idle machine rates. These idleness accounts do not merely represent unabsorbed expense, but are built up accurately and are subdivided according to the reasons for the idleness. In a typical machine shop, these accounts are as follows:

- Lack of Help
- Lack of Material
- Lack of Power
- Lack of Tools
- Repairs
- Lack of Orders

These costs of idleness due to repairs, lack of tools, etc., are usually reduced as soon as they come to the attention of the management. Idleness expense due to lack of orders provides a basis for determining sales and pricing policies. For instance, in a plant where the product is made to order, as I pointed out in a paper presented before the Taylor Society in 1921, the raising and lowering of prices should depend on the amount of work ahead of the

plant, because that forecasts the probable losses due to idleness of equipment.

I heartily support Mr. Clark in his efforts to bring about a more intelligent understanding of overhead costs.

Otto F. Taylor.<sup>4</sup> If time permits I should like to mention two things which occur to me in connection with Professor Clark's paper. The first has to do with the problem at what he calls its technical level. Professor Clark has said that differential cost is not an accounting quantity and the books cannot show it. I believe we ought to recognize that there are many things books cannot show, and that a great deal of effort is wasted in trying to construct and operate a mechanism which will produce unit costs continuously. Traditional accounting, as I see it, is a method of recording facts regarding events which have occurred, whereas the cost data which an executive needs as a basis of action are costs under present, prospective, or hypothetical conditions. The discovery of such costs must rely upon the technique of analysis and research rather than of record keeping. The records can and should furnish basic data for analytical study. But if we attempt to make the books of account play a symphony of what may happen and what might have happened, the result is likely to be discord and confusion.

The second point I want to make is that the cost problem often arises at a level intermediate between the company policy and community interest. The

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OVERHEAD costs play a fundamental part in the behavior of business at every stage of that many-sided phenomenon, the business cycle. The part they play is most paradoxical. For they make regular operation peculiarly desirable and peculiarly profitable, so that business feels a definite loss whenever output falls below normal capacity, and yet it is largely due to this very fact of large fixed capital that business breeds these calamities for itself, out of the laws of its own being. And the largest businesses, which have the highest percentage of constant costs due to invested capital, are, as we have seen, precisely the ones which fluctuate the most,

customs of a trade as a whole frequently present serious cost problems. I have in mind, as a simple example, the flaxseed crushing business, in which the cost elements are four: raw flaxseed cost, crushing expense, market price of oil, and market price of the meal produced concurrently with the oil. It is a tradition in the industry that the cost of the principal product, crude linseed oil, is the sum of the cost of flaxseed, plus cost of crushing, minus the market value of the cake and meal. At ten cents a pound for oil and \$45 a ton for meal, the total sales value of the product of a bushel of flaxseed is \$2.65, of which eighty-five cents, or about a third, comes from the meal. This would indicate that the meal is as much a principal product as the oil. An additional fact of importance is that the demand for these two products comes from entirely different sources; the oil is sold to manufacturers of paint, ink, and linoleum; the meal to farmers and stock-raisers. In other words the demand for them is subject to widely different influences. Under the traditional formula, however, these differences are combined. The result is that, as the trade succeeds in educating the farmer to increased use of linseed meal and the price rises, there is a tendency to reduce the price of oil. From an economic point of view each product should bear its fair share of the costs, for which they are jointly responsible, and the profit obtained from the sale of the two products should be separately computed. The benefits to be derived from such a change of view are considerable, but they cannot be obtained by any one manufacturer. The change, to be effective, must be made by the trade as a whole.

so far as employment is an index. There is something about the commercial-industrial system which bewitches business so that it does just the thing it is trying to avoid, and is held back from doing just the thing it yearns to do—maintain steady operation and avoid idle overhead. And while the contributing causes of this strange auto-hypnosis are many and of varied character . . . the underlying fact of large capital plays a central part, and the elasticity of costs, sunk costs, and the shifting and conversion of overhead costs are all facts of major importance. (J. Maurice Clark, *The Economics of Overhead Costs*, p. 386.)

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