Increases to Fixed Capital are shown as a liability in the months in which they will be incurred, and corresponding amounts are added to Fixed Capital as an asset. They are entered as a payment in accordance with the terms of payment for the assets acquired.

Capitalization, representing the entire funded obligations of the company, is shown in one lump sum as a liability on December 31 and in each month thereafter.

Surplus is shown in the same way.

Fixed Charges are shown as a liability to the extent of $50,000 in each month. They are shown as a payment in January and April. The January payment represents a dividend from funds available December 31. A like amount is shown as having been accumulated for payment in July.

Interest is shown as a liability to the extent of $15,000 in each month. It is shown as a payment in such amount and such months as may be needed.

Operations is an item representing the current expenses of operating the group of organization units coming under the general head of Management. The amount is shown under Liabilities in each month and also under Payment as circumstances may require.

Under Production, Materials are figured as a liability at 25 per cent of the monthly production quota of $2,500,000 at list. As Materials and Work in Process as an asset are reduced $100,000 in each month, this amount is also deducted from $625,000 which otherwise would have been used. Payment for these materials is figured as being made in each succeeding month.

Labor is figured as a liability at 20 per cent of the sales quota. Payment is figured as being made in the same month.

Depreciation is figured as a liability at $100,000 in each month and is allowed to accumulate throughout the period.

Operations is an item representing the current expenses of operating the group of organization units coming under the general head of Production. The amount is shown under Liabilities in each month and also under Payment as circumstances may require.

Under Distribution, Discounts are figured as a liability and as a payment at 10 per cent of the sales in each month.

Reserves are figured as a liability at a fixed per centage of sales in each month. Payment is figured as being made in varying amounts from month to month as commissions and one thing and another for which the reserve is made become payable.

Operations is an item representing the current expenses of operating the group of organization units coming under the general head of Distribution. The amount is shown under Liabilities in each month and also under Payment as circumstances may require.

The Assets and Collections and the Liabilities and Payments are then added and the one deducted from the other, showing, as the case may be, Net Profits and Bank Balance under Assets, or Net Loss and Bank Deficiency under Liabilities.

I have purposely made this hypothetical forecast of such a nature that it shows bank deficiencies in certain of the months, so that you may get a sense of how unfavorable features of any proposed basis of operation will be shown up by making a statement of this character. With this statement before you, it is evident that you must either arrange for further loans at the bank or for making more prompt collections. In practice, a shortage of cash in January would have shown up in a similar statement made prior to December 31, and provisions for meeting this condition would previously have been made.

I do not know whether I have made it clear just where I got all of the figures used in this statement. The amounts in the column December 31, are assumed to have been taken from a statement as of that date. The amounts put down under Assets for each of the months are a projection of the figures of December 31 with the addition of the expected sales, income from outside investments, and interest on purchases within the month. The amount put down under Collections is the amount expected to be collected from each of the various items within each month.

Under Liabilities the amounts put down in each month are a projection of the December 31 figures with the addition of the costs for each month's operation based on the standards shown in Exhibit H. You will notice I have filled in Fixed and Variable Cost as shown on Exhibit H after each of the three major subdivisions of responsibility—Management, Production and Distribution.

Thus the items affecting assets and liabilities, bank balance and credit position may be projected over any period on different bases of operations, and the best results under the circumstances determined. Such statements should be made monthly. Their simplicity makes that possible.

It is impossible in one evening to show how one may apply these methods to his own enterprise, but I have tried to make clear their flexibility and applicability to any particular case.

MEASURING WASTE IN INDUSTRY[1]

AN EXAMINATION OF THE METHOD EMPLOYED BY THE COMMITTEE ON ELIMINATION OF WASTE IN INDUSTRY

By C. E. Knoeppel[2]

A TRAVELER riding in a comfortable berth in a modern Pullman car over any of our leading railroads, has little if any conception of the problems and obstacles encountered by those who were behind the original development.

In the case of the report "Waste in Industry" prepared by the Committee on the Elimination of Waste in Industry, there is likely to be the same lack of conception on the part of the reader, of the problems and the obstacles encountered by those responsible for the investigation. The report and its conclusions—we are not to discuss the latter tonight—are the tangible results of a definite work on the part of a group of serious and able men.

Behind anything tangible and definite is always that something which we call vision or imagination or plan or program—that intangible and indefinite thing which makes possible an appraisable result. It is this something which we are here to discuss, and which we should discuss to the fullest, in order not only better to appreciate the finished product as it affects the future of American industry, but in order to interpret for others the whys and wherefores of the work behind the report, that a better mechanism for appraising industry may be developed. Let me therefore hastily sketch for you the background of the work done, that you may have a mental picture of the reasoning behind the development, which of its kind is the first to be presented to American industry by a group of engineers.

We had a paradox on our hands to begin with. Mr. Hoover, on the one hand, asked for an assay of waste in industry, in a few short months, a task to which a lifetime could be devoted, and which some felt should have as many years. Mr. Hoover was the leader and had the vision, and a few short months it had to be. Mr. Wallace, on the other hand, aided and abetted by Mr. Alford, looked through the dictionary for the one word which should guide our activities and finally under the letter "Q" located a most excellent one—"quantitative"—and I can assure you we were not allowed to forget the word or its meaning, from the time we started until we finished. To the best of our several abilities we gave Mr. Wallace his way.

In the early deliberations of those of us constituting the smaller or preliminary committee, Messrs. Channing, Linton, Wolf and the speaker, assisted by Messrs. Williams, Alford, Wallace and Hunt, we realized that we had another problem facing us, which was that unless we had behind our work plan and program, unity in expression, similarity in calculation and comparability in results, there would be as many different reports as there were different individuals making them. If you will mentally visualize the personnel of the committee, you will better appreciate how necessary it was to have uniformity and coordination constantly in our minds. I do not believe there was ever a Committee of eighteen men any stronger and abler than our committee, but this strength constituted our chief weakness, owing to the different schools of thought represented, the individual strength of each man, and the different experiences and pronounced ideas of each.

[1] A paper presented at a meeting of the Taylor Society, New York, Dec. 1, 1921.

In 1921 the Federated American Engineering Societies appointed a Committee on Elimination of Waste in Industry to investigate and report on waste in American industry. The circumstances of the undertaking of this investigation required that it be completed in six months. The report was published by the McGraw-Hill Book Co.—"Waste in Industry." The paper and discussion here printed were not concerned with the findings of the Committee, but with the methods of investigation.

The Committee consisted of Herbert Hoover, President F. A. E. S.; J. Parke Channing, Chairman; L. W. Wallace, Vice-chairman; and L. P. Alford, George D. Babcock, William R. Basset, F. G. Coburn, Morris L. Cooke, Harrington Emerson, Ira M. Hollis, Edward Eyre Hunt, C. E. Knoeppel, Robert Linton, Fred J. Miller, H. V. R. Scheel, Sanford E. Thompson, John H. Williams and Robert B. Wolf.

[2] C. E. Knoeppel & Co., Inc., New York.