THE SOCIETY OF INDUSTRIAL ENGINEERS BULLETIN

PRESIDENT
Joseph W. Roe
New York University

EXECUTIVE SECRETARY
George C. Dent

Published Monthy

EDITOR
John L. Astley-Cock

Office of the Society, 327 South La Salle Street, Chicago

VOL. 5 JANUARY, 1923 No. 1

CINCINNATI SPRING CONVENTION

April 18, 19 and 20, 1923

"EFFECTIVE MANAGEMENT FOR THE MODERATE-SIZED PLANT."

The Executive Secretary attended a meeting of the Executive Committee of the Cincinnati Chapter this month and feels that it is his duty to inform all the S.I.E. members of his firm conviction that the Spring convention will be a banner event in the history of the Society. The local committee is cooperating with the program committee to produce a list of speakers and arrange special events which will surpass all previous efforts.

The title of the major subject is sufficient to indicate that the program of this convention will, in its business aspect, differ considerably from that of other conventions. Hitherto, papers, meetings, and discussions have been mostly occupied with management problems arising in larger plants; but questions of management arising in smaller plants are generally ignored at industrial and technical groups and almost wholly disregarded in technical literature.

It is extremely opportune, therefore, that the Society is drawing attention to a field covering over 90 percent of the country's manufacturing industry where, though little has been said and less written, outstanding examples of efficiency scientifically developed are to be found. Members are urged to return the questionnaire accompanying this Bulletin. Without these replies, no negotiations toward a reduction of the transportation rate can be undertaken. It is imperative, also, that local convention committees be advised with all dispatch as to numbers to ensure the successful completion of all arrangements for the special events planned.

This is impossible unless Headquarters receive answers promptly.

SERVICE

"Service: Labor or effort for the benefit of another." So preaches Webster and so practices the S.I.E.

Without the "helping hand," life would be worthless. The particular aim of this organization is to help put the wagon of business on the highway of commerce by coordinating every shoulder behind the wheel.

During 1922, the service of the S.I.E. materially expanded because many members willingly assumed their share of responsibility. When occasion arose, they spent time in order that information needed by another member might be dug out.

Their tasks have been made easier by the change in attitude of business firms toward the giving out of information. Ten years ago, the interior of a plant was a Forbidden City to the explorer after truth. This is so no longer; facilities are provided on all sides and manufacturers, with but few exceptions, are only too glad to impart their knowledge and experience knowing the time may come when, in turn, they may require and obtain similar favors.

Now, the S.I.E. is the clearing house for information covering almost every phase of industry. Some problem arises; a member communicates with Headquarters, his question is relayed to other members or firms competent to reply, the data are returned, and the tabulated results are passed along to the original enquirer. Thus, one more important contribution is made to the science of industrial engineering which could not have come about except through the combined effort of member and society. In this manner, the S.I.E. lives up to the main article of its Constitution, the solution of problems by exchange of view and coordination of effort.

With so much investigation going on in so many

plants and industrial associations, a great deal of work is unnecessarily done. A firm will collect valuable data which, having served its original purpose, is then buried in a file. Later, a similar problem arises elsewhere where such information would be exceedingly useful, but nothing is known about it, and the ground is covered all over again. The S.I.E. is attempting to abolish such wasteful duplication by collecting the results of these efforts into a reference index for the benefit of others.

But this vast field for cooperative service is barely scratched. Chiefly needed for its development are more members, because more members mean a broader field of operations and greater resources for the extension of the work of the Society.

Everybody should do his utmost to make known the advantages of membership in a society which, indeed, is incorporated not for profit but simply and solely to enhance the efficiency and prosperity of American industry.

EMPLOYMENT BUREAU

This department of the Society's activities is gradually expanding, records on file are being consistently revised and brought up to date in order to provide the most effective service not only for members desiring positions but also for manufacturing concerns needing competent executives. But the efforts of this Bureau could be of more extended mutual benefit if business firms would advise Headquarters immediately that vacancies occur. Send in your job specifications just so soon as a position is open for a high grade executive or assistant and you will be put in communication with the very man you are seeking.

NATIONAL MUSEUM OF ENGINEERING AND INDUSTRY

The Joint Committee, formed by the Founder Societies on a National Museum of Engineering and Industry, is actively at work formulating a plan which will provide for a central institution with branches in different sections of the country as necessity may require. The committee desires to have all engineers interested in this movement in order that the museum to be evolved may be fit to grace the greatest industrial nation of the world. Any S.I.E. member having constructive thought regarding this subject is requested to communicate directly with H. F. J. Porter, 29 West 39th Street, New York City.

NATIONAL BOARD FOR JURISDICTIONAL AWARDS

On Monday, February 19, 1923, at 10 A.M., the National Board for Jurisdictional Awards will hold an important meeting in Washington, D.C.

There has been much argument recently as to whether the Carpenters' Union or the Metal Trades' Union has jurisdiction over hanging metal doors and windows and some other fixtures. The N.B.J.A., some months ago, rendered a decision in favor of the metal workers. This decision led to the withdrawal of the Carpenters' Union from the Building Trades Department of the American Federation of Labor. The entire subject has been a matter of much debate and controversy. Manufacturers have disagreed, contractors have, as well as labor, so it is very important that all concerned should bear in mind the fact and date of this meeting. The N.B.J.A. invites all interested parties to be present, prepared to offer such evidence and testimony or exhibits as may be considered necessary or advisable.

Any S.I.E. member wishing to attend this meeting can obtain full information from L. W. Wallace, Executive Secretary, F.A.B.S., 26 Jackson Place, Washington, D.C.

This is in accordance with the following resolution:

"On motion it is agreed that in compliance with the properly presented request of the Executive Council, American Federation of Labor, and the Associated General Contractors of America, a rehearing on the decision on metal trim be granted in accordance with Section 7 of the Constitution, and the Secretary be instructed to invite all interested parties to be present, prepared to offer such evidence, testimony and exhibits as may be considered necessary or advisable."

MEETING OF DIRECTORS

A special meeting of the Board of Directors will be held at the Old Colony Club, New York City, February 12, at noon. The Executive Committee will hold a meeting that same morning.

THE BUSINESS CYCLE

The two regular monthly meetings of the Chicago Chapter were devoted to a consideration of "The Business Cycle: A Presentation of the Fundamental Causes of Periods of Prosperity and Depression, and the Conditions which make possible the Forecast of their Rise and Fall." Appended are the views of a Banker, an Economist, an Educational Director and a Statistician on this topic of perennial interest to American industry.

"THE BUSINESS CYCLE—GENERAL THEOREM"

Dr. Walter Lichtenstein, M.A., Ph.D.
Executive Secretary
First National Bank, Chicago

Economics and the study of forecasting business development has become a fascinating and most important occupation. More and more business men are trying to regulate their affairs in accordance with definite principles, and some have made public confessions of their indebtedness to the theory of business cycles, notably Mr. Clarence M. Woolley, President of the American Radiator Company. The great French philosopher, Taine, said: "The economic world, like the physical, has its laws. We may misunderstand them, but we cannot escape them. Sometimes they act with us, sometimes against us. They please us, but they never consider us. It is for us to consider them." To be sure, these laws are not always interpreted correctly. For one thing, economic laws are not as rigid as natural laws, and accidents, such as war, will often interrupt the natural progression of events. Then, too, economic laws often work only over long periods and under certain conditions. For one thing, the study of these economic laws has become fundamentally important only as our present industrial system has developed. In the Middle Ages, when practically the whole world was agricultural and business was strictly local, the future depended upon good or bad crops and not upon world-wide movements. But this has become entirely different now, and with the closer and closer relation of all parts of the world,

it is likely to be more and more true that economic conditions will move along definite lines more or less susceptible of being foreseen and foretold.

"The Business Cycle—considered Spirally"

Dr. Horace Secrist
Director of the Bureau of Business Research, Northwestern University

The speaker prefaced his main exposition by saying that the discussion consisted of two parts: first, a presentation of the fundamental causes of periods of prosperity and depression, and second, a statement of the conditions which make it possible to forecast the fluctuations in business.

The general subject, "The Business Cycle," could more properly be called, said the speaker, "The Business Spiral," since periods of fluctuation do not repeat themselves in precisely the same way from time to time. Neither do they begin and end under precisely the same conditions or at the same economic levels. To speak of periods of prosperity and depression and the intermediate stages associated with them as the Business Cycle is unduly to simplify the concept suggested in the term. There is a tendency to generalize about these periods in the same way that in previous times people were wont to generalize about the "economic" man and his next of kin, the "business" man. He who thinks that these concepts are precise and concludes that they can be stated or explained by one formula is committing the same intellectual breach of thought as he who expects to find for industry a single and sovereign solution for economic problems. Periods of prosperity and depression are of unequal length and are far from uniform for all phases of business. They do not synchronize in point of time nor agree as to intensity. They have different characteristics for different businesses.

The speaker characterized the different phases of the business spiral in point of time by speaking of periods of depression, recovery, liquidation and expansion. Business under the stimulus of individual effort and actuated by the incentive of profit tends generally to be in a period of expansion. Business hopes and aspirations of necessity make this so. As a result, periods of relative over-development and under-development come in succession and the only possibility of reducing the swing through which they pass is through caution in periods of expansion and courage in periods of depression.

The speaker outlined in detail the characteristics of the different phases of business in its spiral aspects, touching particularly upon the peculiarities of price fluctuations with their attendant changes in production and consumption. In summary of the first part of the thesis, the speaker assigned as the fundamental causes

of the periodic phases of business

(1) The institution of private property and the freedom of initiative which it implies.
(2) The money and profit stimulus in industry.
(3) The uneven and haphazard development of business.
(4) The interdependence relationship of businesses in their financial, production and consumption aspects.
(5) The reciprocal relationship between individual profits and prosperity.

The speaker dwelt upon the roles played, in the guidance of economic activity, by technical experts, individual enterprises, banks and financial institutions, government encouragement and discouragement, chance and necessity. He held that so long as industry and business rest upon their present fundamental bases, periods of prosperity and depression and the intermediate stages associated with them are bound to occur, but there is some hope of removing the uncertainties associated with them if business men will act intelligently upon the basis of known facts. An accurate forecast of fluctuations in business cannot, in the nature of the case, be made. This, however, is not equivalent to saying that business must continue to operate, as it has largely done in the past, in ignorance of the facts and in the grip of blind routine. Through the developments of modern statistical methods it is now possible to measure with some degree of accuracy the association between, and the causal order of business phenomena. Hope lies in acting in the light of such measurements. The science of business is yet in its initial stages, and business men should beware of being captivated by ready-made, patent nostrums purporting to show with unerring exactness what lies ahead of business as it proceeds on its spiral course. The way to discount the uncertainties of the future is to act intelligently in the present. Such action

ought to be, and can be made, more common through an intelligent use of the data of business now available in many forms.

The speaker summarized the second phase of the topic of his address by saying that there are no conditions which make it possible to forecast with accuracy the rise and fall of business in its spiral development, but with conditions making it possible to act rationally in the present uncertainty in the future can be minimized.

"The Business Cycle—Considered Practically"

F. L. Ham
Educational Director, Business Administration Course La Salle Extension University

Writing on business analysis and control in the May, 1922, issue of Administration, Charles E. Carpenter, President of the E. F. Houghton Company, tells of the meeting of the heads of four leading Philadelphia business concerns at luncheon one day in May, 1920. Each definitely agreed that business was facing just such a slump as actually came in the following months. Yet when the slump came the minimum loss suffered by any of the concerns which they represented

was $300,000, while one of them was obliged to write down its inventories to the tune of two and a half million dollars.

When Henry Ford announced a cut in prices in September, 1920, the spokesman of a leading association of automobile distributors in the Middle West made public a statement to the effect that "there was no economic reason for a reduction in the price of automobiles at that time."

These two instances illustrate fairly the sort of thinking and action which characterized the majority of American business concerns in the initial stages of the down swing of the business cycle in 1920–21,—on the one hand a definite recognition of existing tendencies, but without adequate control to meet these tendencies; on the other a persistent ignoring of the facts and an attempt to resist adverse fundamental conditions with sheer self-induced optimism.

Most cautious students of the economic phenomena which characterize the broad up and down swings of business activity, commonly known as the Business Cycle, are extremely hesitant about predicting the ultimate discovery of any means for eliminating this cyclical movement. In fact, so little is at present known about the forces which make for continuous change in economic activity that even the proposal of measures tending to modify the extent of the cyclical movements and alleviate the suffering and waste which these movements now cause must be based on probability rather than certainty.

The value of well thought out proposals of this character, however, cannot be questioned, and the whole-hearted support of every one interested in the greater stabilization of business should be given to such measures as seem applicable and likely to yield favorable results.

The following proposed methods for mitigating the ill effects arising from depression are worthy of careful consideration. They bear the endorsement of Professor Wesley C. Mitchell, probably one of the most widely known authorities on the Business Cycle. It is important to note in connection with these measures that the prosperity period of the cycle is the time when control should be applied.

First, that the precise point be determined at which a readjustment of the rediscount rate of our federal reserve banks should be made. This might be done by the application of an index figure for physical production.

Secondly, long-range planning of public works in periods of depression when labor and material prices are low. In Pennsylvania and California legislation has been passed with this end in view and similar federal legislation has been proposed.

Thirdly, the purchase by the Federal, State and municipal governments of standard supplies so planned as to take advantage of the low prices prevailing in a period of depression, at the same time exercising a stabilizing influence upon the material markets. This proposal might be extended to large private industrial enterprises, notably the railroads, were it not for the fact that under present laws and financial policies the railroads are forced to live from hand to mouth.

Fourthly, unemployment insurance—Huber Bill.

Fifthly, further study of the Business Cycle by individual business executives, and application of the knowledge gained to the control of the concerns operating under their supervision.

This last proposal offers perhaps the most interesting, or at least more immediate possibilities for the work of the industrial engineer. It involves the education of management first in acquiring the necessary knowledge about the phenomena of the Business Cycle, and, second, in developing the managerial control essential to the application of that knowledge.

The industrial engineer is peculiarly well fitted to undertake this educational task. His staff relationship as counsellor to the management, his breadth of vision and detached point of view combined with the very nature of his work, which in its essence is the development of managerial control, equip him to convey perhaps more effectively than anybody how to use the Business Cycle so badly needed by the majority of American business firms.

In some concerns careful attempts have been made to adjust policies and operations to the curve of the business cycle. Where this has been done scientifically the results have been most hopeful, and encourage further development of control in this direction. For instance, one small Chicago manufacturing concern determined in May, 1921, to put into effect a long-deferred plan to build its plant. A loan was floated, land was purchased, and a carefully laid out building constructed, all at a relatively low cost. Today that concern is well-booked up with orders, yielding a wider margin of profit than secured in the boom period, although prices of their product today are lower than at any time since before the war.

Perhaps the most careful and complete attempt to adjust the operations of a single concern to the movements of the Business Cycle, which has been made public, is that of the Dennison Manufacturing Company. In describing the policies of his company before the American Statistical Society in December, 1921, Mr. Henry Dennison pointed out that what business needed most was careful planning and budgeting. He illustrated the policies of his concern by citing those adopted in five important phases of their business.

1. Purchasing.
2. Expansion of Fixed Assets.
3. Finance and Credit.
4. Sales and Advertising.
5. Labor.

In controlling purchases, the first step was to lay down roughly maximum and minimum inventories of every important raw material to be carried at different stages of the Business Cycle. Then the course of prices for each of these materials over a long period was charted and the secular trend determined. These data were then used by the purchasing department as a guide in buying, actual purchases being varied according to the position of actual prices relative to the maximum and minimum inventory lines. For example, if on certain material the standard quantity to order was a six weeks' supply, and prices were below the secular trend line, they might buy up to twelve weeks' supply, but if prices were above the secular trend line, they might buy not more than two weeks' supply.

This, of course, is not an attempt to make purchasing absolutely automatic, but to serve as a check on purely speculative buying of materials. It worked out so well in their business that in November, 1920, they found themselves with low stocks on hand when so many concerns were in a bad way owing to heavy inventories.

Pursuing the same policy with regard to fixed investments, this company having charted their estimated normal growth, using floor space as the unit, in the case of building requirements, builds more than normal when prices are low and less when prices are high.

In their financial policies they are guided by the movements of the Business Cycle. Recognizing that cash requirements increase as the cycle rises and out of all proportion to the normal lag between outgo and income, they watch closely the relationship between quick assets and quick liabilities with a view to maintaining a sound banking position. Also, in boom times they scan credits more closely and push collections harder than in periods of depression, when a stringent credit policy is an obstacle to securing badly needed orders.

As to their sales policies, during boom periods they can plan for new lines and novelties to be put out in periods of depression when sales resistance must be overcome. Salesmen are not discharged in periods of depression nor is advertising curtailed.

In handling the labor question, a careful record is kept in the Personnel Department of what every employee can do. In periods of depression every effort is made to find odd jobs, repair work, etc., to avoid laying off so far as possible.

These attempts of the Dennison Manu facturing Company point out what may be done by independent business concerns to adapt the course of their affairs to the broad swings of the Business Cycle, in spite of the present lack of information about the underlying forces which activate the cyclical movements.

These adaptations at best are bound to be imperfect. Perhaps the most that can be said of them is that they hold out possibilities of extra profit, or at least the avoidance of too heavy loss.

As stated above, our knowledge of the Business Cycle is exceedingly slight. The volume of convertible data is limited. More intelligent adaptation demands the collection and interpretation of facts which are today obscure. Thus, while American banking statistics are voluminous, thousands of state and private banks issue only an annual report, and no analysis has even been made of bank loans from the point of view of the character of the collateral behind them. Our statistics of unemployment, wages and earnings, and of the whole range of merchandising activities are inadequate. Anyone who has attempted even the most cursory study of the recent business boom and depression with the world-wide fluctuation of the price level must have been impressed with the dearth of quantitative statistics.

One of the blessings—if such a term can be used—resulting from the depression of 1921, is a growing appreciation of statistics and research by business men. An organization like the Society of Industrial Engineers can do a great deal both in stimulating the interest of business concerns in this direction and in cooperating with public and private agencies in the compilation and interpretation of much-needed data which will contribute to a better knowledge of the Business Cycle.

"The Business Cycle—considered Graphically"

Edward P. Farwell
The Babson Organization

The speaker started with a short survey of Mr. Babson's work, beginning in 1905, which not only failed in popularity but even met with passive resistance on the part of business due to that constant inertia of the human mind towards novel ideas. In the course of fifteen years this has been happily overcome and Babson charts now command careful and respectful attention, and it may be safely predicted that within another decade they will be regarded as an absolute necessity to every industry.

Mr. Babson's greatest contribution to graphic statistics is his Law of Equal Reaction, which he was led to discover through a study in England of Sir Isaac Newton's work, whose Law in his Principia states that "action and reaction are equal and opposite." Throughout the years of its existence the Babson Organization has always emphasized the need of cooperation with other similar research bodies and Mr. Farwell noticed particularly the valuable work being done by the Harvard Economic Index. Truth cannot be attained by one avenue only, and the more data obtainable the greater possible degree of accuracy in correlation for the purpose of forecasting.

But Mr. Babson sees no reason for changing his fundamental position of fifteen years ago regarding his basic law; much the reverse, every additional phenomenon tends only to confirm it. Variant factors may be added, some may be subtracted and others substituted; this only decreases or increases the relative superficies of areas expressed in terms of Time and Intensity pictorially illustrative of periods of inflation and deflation on either side of the *xy*-line of norm. This *xy*-line may, indeed, be corrected on its vertical axis for any given year in order to bring the positive and negative

areas into their due complementary proportion, but since this *xy*-line assumes the law and does not attempt to prove it, the chart shows the average condition of business at any moment of time. Of course, the fluctunational curves of business had been platted by the larger industries anterior to 1905, but what the Babson Organization has accomplished is the assembling and presentation of these data to men of moderate means and with a limited opportunity for research.

Mr. Babson does not believe that charts can develop any rule-of-thumb method for forecasting. In fact he vehemently maintains that his service affords most benefit to those who use their individual business judgment in conjunction with his data. Up to 1906 basic data were founded on two or three leading industries as Bank Clearances (excluding those of N. Y. City), Tonnage of unfilled orders of U. S. Steel, Railroad construction. But with the ceasing of the last mentioned and changing conditions generally, this proved too narrow, and accuracy in charting is now obtained by compositing twelve key industries.

But there is one thing that no chart can take into account and that is the factor of human idiosyncrasy. On the other hand, given a certain coincidence of circumstance howsoever people may react to this condition a correct interpretation of the chart will enable a business man so to determine his future business course that he will be prepared for any sudden dip or take advantage of gradual enhancement without financial dislocation.

As for an immediate forecast, it would seem that the post-war adjustment is not yet completed. True, the upward curve has crossed the xy-line to the plus-side but not so permanently. There are yet some aspects of industry still in flux, Immigration, Mechanical production, Tariff and Real Estate, these have still to become stabilized. But the greatest dip of deflation is finished and 1923–1924 will probably show a series of slight oscillations on *xy*-line gradually rising to that sound prosperity which is always founded during the latter half of periods of depression.

CHAPTER NEWS

CINCINNATI

In view of the importance of preparing adequately for the Spring convention in April this chapter has decided to forego, until after that event, all open meetings in order to confine its energies to the completion of all arrangements incident thereto.

On January 18, at a business meeting, the Executive Secretary held a conference with the members regarding the convention program, the appointment of committees, inspection trips, entertainment features and all those other details so necessary to the success of such an

enterprise.

Owing to the diversity and accessibility of manufacturing plants in this city the list of inspection is arranged most attractively and one trip is specially scheduled for the particular delectation

of the ladies attending this convention. Exceptionally fortuitous is the cooperation of the University of Cincinnati. The faculty is in hearty accord with the entire program. Several of the professors and some of the students in engineering will assist in running various parts of

the convention machinery. So much for the present. More will be told in due time, but so far everything bespeaks a top-notcher in the way of conventions at the Queen City.

ATLANTIC

The executive committee of this Chapter held a meeting Wednesday, January 10 at the Engineers' Club when the following business was transacted:

The project of forming a "consulting staff" for the benefit of the local membership was discussed and it was decided that Oscar L. Preble, Vice-President, should issue notices stating that this subject would be brought up again at the next general meeting and that the final decision will be made at the next Executive Committee meeting.

A. G. Coffin, E. B. Morgan and O. L. Preble were appointed as a committee to consider definite plans for the increasing of membership and ordered to report on the same at the next meeting of the Executive Committee.

W. M. C. Kimber was constituted a committee of one in charge of research.

January 31st the Chapter as a body accompanied by guests made an inspection trip to the Richmond and Tioga plant of the Dill and Collins Company.

NEW YORK

The monthly meeting was held Tuesday, January 9, at the Engineers' Building, 29 West 39th Street. It was the second meeting in the Kortex Rubber Co. series and the stockholders had brought some of their friends in to witness the clash between the Works Manager, H. R.

Gilson, and the Sales Manager, H. W. Kuehne. The former did a most discreet thing. He excused himself before the Sales Manager got fairly warmed up. Like all board meetings of defunct companies, much was said about the president who "took up golf," and little was said as to what we must do. At this juncture an irate stockholder arose and after explaining that he had come in from Buffalo to represent a large block of stockholders, said that all the talk about increasing sales and increasing production sounded fine, but what he wanted to know was "where in hell are you going to get the money for advertising and improvements?" This made everybody sit up and take notice. The inquiry turned in the direction of the banker-director, who decided since it was a work of love, his bank would float bonds which would only cost the concern 10 per cent. More exact data was demanded and the final action was laid over for a subsequent meeting. The hard- boiled stockholder from Buffalo proved to be no other than William B. Powell of the F. A. E. S. Executive Board.

The next meeting of this chapter will be held Monday, February 12, which the National officers and directors of the Society are expected to attend.

CLEVELAND

The meeting Wednesday, January 24, was the second under the recent plan of round-table noon-day discussions which is proving so successful. Harry F. Porter led the discussion on "Financial

Control," and the chief point substantiated was the use of the budget as a mechanism for financial control. Considerable time was allotted to determining what information was necessary in order that the budget might be practical in its application. This, however, is an extensive subject and since the ground was not nearly covered at that session it was decided to continue the discussion at some future meeting. The next meeting is scheduled for Wednesday, February 7. The subject will be "Personnel Control," led by F. H. Doolittle, employment manager of the Telling-Belle Vernon Company.

CHICAGO

The February dinner meeting will be held Tuesday, February 20, at the City Club on which occasion the Chicago Section of the Taylor Society and the Western Efficiency Society will be guests of the local chapter.

John F. Gilchrist, Vice-President Commonwealth Edison Company, will speak on "Practical Financing." He will consider some aspects of financing as they present themselves to the executive, the use of finance companies, the discounting of bills, customer ownership of securities, the proper kind of security to issue and similar matters. The Chair will be occupied by Fred. Scheel, Vice-President, Utilities Securities Company, and the leader of the discussion will be R. O. Osgood, Vice-President, First Trust and Savings Bank, Chicago.

Both the regular January meetings were devoted to the same topic, "The Business Cycle." On account of the magnitude and importance of this subject a single session would not have sufficed and a digest of these proceedings is published elsewhere in this issue.

MILWAUKEE

At the regular monthly meeting held Tuesday, January 16, at the Public Library, W. T. Bowker of the American Appraisal Company spoke on "Depreciation." He has made particular study of Depreciation and Obsolescence and combined with his practical experience in the field he was able to explain in detail the procedure for determining depreciation. He stated, however, that there existed no real or average rate which could be used since there were too many variant factors. For instance, in machinery; the time consumed in operating; and in premises, buildings near water deteriorated more rapidly than those inland.

NORTHWEST

Following a considerable period of quiescence in this chapter revival is now under way. W. W. Nichols, Detroit, Chairman of the National Membership Committee, recently visited Minneapolis for a conference with the members. He reports that there will be a meeting in

the near future to elect officers for the current year and that plans are being formulated regarding resumption of chapter activities.

DETROIT

The chapter held its regular evening meeting Tuesday, January 16, at the Hotel Cadillac, with an excellent attendance. A number of guests was present, among whom were representatives from the University of Detroit, University of Toledo, University of Michigan, Detroit Institute of Technology, and groups of foremen from various manufacturing plants in the city.

President Allan B. Crow, following his introductory speech, turned the meeting over to Professor R. B. Gordy, of the Engineering Department of the University of Michigan.

R. S. Perry, Planning Manager of the Hudson Motor Car Co., was the first speaker. He discussed: "The Future Possibilities of the Planning Department in the Automotive Industries."

Coordination is the secret of success in the Planning Department. Designation of the amount of work to be accomplished by every department by day, week, or month is part of its work. As every department is a link in the chain of production it is necessary that each coordinate with other departments performing all preceding and succeeding operations.

A planning department to be effective must have a well-informed personnel; and this information must be accurate. Not only must it have, but it must be able to pass on this information to every unit with which it has to deal. In fact, on efficiency of personnel depends success of operation, consonant with a knowledge of the aims and plans of the company.

A steady daily, monthly, or yearly output, without fluctuation, is the aim to be reached.

Mr. Perry's conception of the perfect factory is one in which the departments are so coordinated that they become a continuous belt, at one end of which the raw material is fed in, at the other the finished product emerges. It is, of course, understood that an attitude of non-interference with the work within the various departments be maintained.

Harrington Emerson was present and gave his "Seven Steps to Successful Enterprise." These steps, progressively stated are as follows:

1. Determining the fundamental bases upon which the industry rests.
2. Reasoning correctly from these bases.
3. Securing correct information regarding the industry itself.
4. Having attainable ideals.
5. Adopting workable methods.
6. Attaining of ideals.
7. Having a habit of attaining ideals.

Everywhere is seen the results of the lack of understanding of the fundamentals underlying industry; a notable example of which are the railroads of this country, representing an investment of $20,000,000,000, but whose revenues are entirely insufficient to sustain such an investment. Remedy may not be found in increased rates, for a reduction in the volume of business follows an increase in rates. Determining the revenue desired from an industry should be the first step in its establishment, and then from this basis determine the amount of money to be invested. Most industries, including railroads, have reversed this order; first fixing the amount of the investment, and then trying to make the revenues sustain that investment. Another element to be considered is the quota of the country labor to which the industry is entitled. Our railroads are entitled to seven and one-half per cent, and were using all of that amount, so when the working day was decreased from ten to eight hours, they were compelled to draw labor from other industries. All industries have costs over which they have no control, such as taxes, insurance, etc., but operating costs which are in most cases entirely too high, may be controlled, and therefore offer a subject for deep consideration.

BULLETIN BINDERS

Several members have commented favorably on the improvement in the Bulletin reports of chapter meetings, and other articles. Our chapter secretaries are taking greater pride in making up their monthly reports and therefore contribute materially to the improvement and are entitled to a share of the praise.

This brings up the question—Are you filing your Bulletin each month? Frequently we receive requests for back numbers to replace missing copies and so far have been able to supply these requests, but our stock of 1922 issues is now almost exhausted.

We venture to again suggest that the I. P. No. 9096 binder makes an ideal bulletin binder. You can obtain one from the S. I. E. office for 75 cents, postpaid.

VALUE OF ACCOUNTING DATA TO EXECUTIVES

M. C. Conick, C. P. A.
Pittsburgh, Pa.

First, let us determine whom we designate by the term executive. The executive of any business is the person or persons upon whom the success of the venture or enterprise depends. In most businesses it is usually found that there is one person who really deserves such title. There may be others who are classed as executives, who perhaps perform some one function of the executive but the real executive is the one who does the "brain-sweating", and whose duty it is to apply the fundamental principles of economics in business if he expects to succeed.

Secondly, let us consider the presentation of accounting data. We need not concern ourselves very much as to who presents the accounting data, whether it be the bookkeeper, the company auditor, the professional auditor, the engineer, the attorney, or any other person holding similar office, but the important thing is the kind of data presented, the use to which it is put and its value.

Now, consider for a moment briefly, the evolution of business in America. Take for example, the distribution of an output nationally. This was practically unknown a century ago, for we had not yet entered the industrial era. Business generally was done in a simple way with narrow range, small production and usually supplied consumers locally. The owners of the business knew their customers personally, and supervised every detail, because the market was small and easily visualized. Business was more in the nature of a personal venture involving practically no administrative duties. Instead of corporations we had partnerships and each partner was a craftsman rather than an organizer. Gradually, but only since 1870, the corporation and limited partnership idea was conceived and the old business was gradually converted into a more complex method of organization. With the coming of the corporation we had for the first time a limited liability for the investor. In the old days no conservative business man would become a partner and risk his own fortune in a business over which he exercised no personal supervision. The limited liability enabled corporations to command large capital and with large capital grew the complex organizations. New machinery was invented, facilities of communication became more numerous, quantity production by the use of modern tools was coming into play, which made it absolutely compulsory for the expansion of the tools of selling and distribution of the products on a broader scale. The purchasing power and the habits of people changed gradually with the change of earning capacity and by the altered relationship towards other world-powers which our country underwent from year to year.

Our methods of living as compared with other countries had a very decided effect upon individual demand, so that business, once the measure of a man, became the measure of an organization, to which there is no limit in size and growth except the power for greater organization.

I had an interesting conversation with a comparatively young man, who only ten or fifteen years ago, occupied quite a meagre position, but through an intensive study of business economics has under his control the management and supervision of several hundred individual units of business, which more or less look to him for advice and depend a great deal upon his ability for steering them through their financial difficulties. I was so much impressed by this individual referred to because from his conversation I deduced that he was able to do this through his ingenious methods of profitably using accounting data presented to him at different times throughout the year. It is common knowledge that the average executive is confronted with problems that are not of the nature solved through the use of accounting data; as for example, the psychology of the customer and of each employee, the relation of political measures towards his particular industry, the effect of possible strikes and railroad tie-ups, and general strategy.

There are, however, many other problems confronting the executive involving accounting so that if this training comprehended an ability to read accounting data effectively, his success would be just that much greater and his worries considerably lessened. There may be sufficient reason and cause why accounting data have not been used by successful executives in the past and we all know of a good many businesses which have succeeded in a very large way without the intensive use of accounting data. But, in most of such cases, the executives did apply in each case, very effectively, the economics of business without the use of more modern statements of production, sales, expenses, or graphic charts. Such executives knew from past experience what their approximate costs were, where their markets were located, what their probable sales would be, and upon such knowledge based their plant output.

Perhaps another fault of figures lies in their limited meaning in that some represent quantitative measures instead of qualitative measures and further because any numerical presentation of facts which is not based upon uniformity in the things counted is misleading. Take for example, the United States census, which is a very ambitious count of our people but which says nothing regarding the multiplex richness, the variety of characters and the temperament of the people counted.

As a general rule, a successful business must, first, conserve the capital entrusted to it; second, administer its affairs so that its owners may be fairly compensated for the use to which the capital is put. Many books have been written on the subject of accounting, industrial engineering, business economics and the value of logic. Time does not permit touching upon any but the more general principles, which relate to the following elements: Labor; material; sales; unused capacity. The old way was to examine the status of a business, as a rule at the end of the year when all is over, - a post mortem, so to speak. The new way is to plan for a year or for a season in advance.

LABOR

It is pretty well established now that the rate of wage is more or less controlled by organized labor. It is unnecessary in this connection to discuss the merits or demerits of trade unions, but there is one thing that can be said in their favor and that is, that they control for the benefit of their members the wage rate. One disadvantage that the wage-payer has in this respect is the fact that all labor is grouped into classes regardless of individual efficiency. One possible remedy for this condition is a proper analysis of the individual efforts of every employee as compared with his fellow-workers and in comparison with the cost of each operator. This would not necessitate an elaborate, detailed and expensive system of time studies and payroll analyses, but only such reasonable methods as would enable an executive to determine the inequality of his wage rates.

Wages are more definitely settled in the matter of department stores; in fact, they are almost entirely controlled through accounting data. The sales of each salesperson are collected daily, compared with the compensation paid therefor and then compared with the sales of other periods and the causes for the increases or decreases determined; so that in this class of business, individual effort as compared to compensation paid therefor counts in a greater degree, so far as it is possible, than in any other line of business.

MATERIAL

Again taking the department store as an example, the matter of inventory to be carried at any particular time is dependent upon a budget plan, which in turn is coupled with accounting data. By estimating the expected sales and assigning a reasonable time for turnovers, it is possible mathematically to calculate the average inventory necessary during a particular season, in order that excess capital may not be tied up; this is somewhat in the nature of a barometer, for the amount of goods to be purchased within a given period.

Inventories in excess of the reasonable requirements, due to lack of proper forecast and accounting data, have been one reason for the financial difficulties of some companies.

SALES

A proper analysis of sales supported with accounting data will sometimes disclose information of inestimable value. Such analyses may be (1) of a commodity sold, (2) of the classes of customers sold, (3) of the territories covered. Such an analysis will sometimes serve the purpose of forecasting, by using data on which to base the further successful continuance of the business.

It may show that a patented or a specialty article sold heretofore should be curtailed by a superseding commodity. It may bring to the attention of the executive the weakened condition of his customers' market, and it may also disclose the disappearance of certain territories heretofore supplied or the expectant disappearance of such territories.

There is one distinct policy followed by some companies which has cost a great deal of money and perhaps was an indirect reason of their failure. I am referring to instances of the creation of new markets, the acquisition of new customers, while at the same time they neglected to obtain refill orders from their old customers. A glance through the Saturday Evening Post discloses the extensive advertising campaigns of some of our large concerns, continuously spending money for new business. It is entirely possible that money would be profitably spent if some of it were diverted to the restoration of business previously acquired by determining the reason why it was lost and making more solid, if possible, the former standing with the old customers, upon whom considerable advertising

undoubtedly was spent in acquiring them in the first instance.

UNUSED CAPACITY

There is nothing more pitiful than a business having the capacity, but using only from fifty to sixty per cent of it productively. This has been the cause of a great many losses, because there are certain expenses of an organization which cannot be cut down even if production be nil.

Through unused capacity, the capital account is very easily depleted by reason of the cost of such unused capacity. Proper accounting data will disclose from day to day, from week to week or

from month to month, whether this condition exists and how it compares with other periods.

SCIENTIFIC OFFICE MANAGEMENT

Harry A. Piper
Wilmington, Delaware

The office manager's job is an important one. It takes a well rounded-out experience to fill it successfully. His value to his company is largely dependent upon himself. He can make of his job what he will. When Vanderlip was injected into the job as an official of a big New York bank, he was ushered into an office containing a chair, an empty desk and a telephone, and told, "There is your job, fill it." He not only filled it, he made it; and so with the job of office manager. It is a job that is difficult to definitely describe. Its functions are largely dependent upon existing conditions in the organization of which it is a part.

The opportunities for creative and constructive work and the introduction of economies are relatively almost unlimited in the average office. It is but comparatively recent that a concerted or organized effort has been made to apply the principles of scientific management and efficiency to the administrative or office end of business. When consideration is given to the fact that the usual economy resulting from a scientific office survey ranges from 10 to 25 per cent and that there are about 2,000,000 office workers in the United States, the tremendous savings that are possible can then be visualized.

What must be emphasized is the real significance of a dollar which is actually saved. When a dollar is once saved, it means that dollar is saved not only this year but each succeeding year. A saving of an office boy's salary, or $500 per year or the equivalent in supplies, equipment or other office expense means the release of $10,000 capital for diversion towards expansion or for other purposes each succeeding year. An accumulation of such savings is, therefore, an important consideration, with any concern.

Every office organization of considerable size should have a staff specialist engaged on office improvement work. He should function directly under the office manager. The office manager should have all clerical workers in the organization directly under his control and his place in the organization should be an executive one and comparable with other of the higher executives. In the smaller office organizations, the office manager or chief clerk should promote the improvement work as part of his regular duties. He may use committees, meetings, a suggestion plan or other means as an aid in the promotion of the work.

The office cannot be brought to the highest state of efficiency unless the importance of the office and its rating in the general organization scheme is fully appreciated and properly recognized.