in many cases, might better have pushed a truck in the plant where they made their so-called installationsemphasis on the "stall."

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So. I say, first we should strike a common objective as to what a planning division should consist of; second we should broadcast that explanation; third we should definitely state what it will do; fourth we should tell should warn those concerned that the actual installation is a major operation and that unless the patient has good heart action and a good physique, although the operation may be successful, the patient can die of complications.

Finally, we must quit talking in the air about this thing as if it were something only for Einsteins, and talk about it like we do our other tools. Too often we think a thing must be shrouded in mystery and steeped in tradition in order to be worth while.

Our problem is simple and can be paralleled by that story told by Dean Johnson of how to play golf: "Here not of opinion or hunch. is the hole; here is the ball; here is a club; put the ball in the hole?

Here is a plant; here is a product; here is an organization. Manufacture a quality product at a low cost and market it at a fair profit, and use the existing organization to do it. The doing of this requires adherence to certain principles but it has been done, in the past, it is being done now, and our job is to do it better in the future. If we fail, if scientific management goes the way of many other great movements, we are to blame for we are the torch bearers. We must keep faith with those who have gone before and pass on to our heritage that which we were so graciously given by the pioneers of industry. 'Again I say, "We are the Torch Bearers."

HOWARD G. BENEDICT: The instruction to the discussors, to prove this paper wrong, is a well nigh impossible task. The advantages of a planning department such as Col. Hall describes may be debated by those not familiar with operating a plant on this basis, but it is undebatable from the basis of fact and accurate knowledge. This being the case, I can only emphasize a few of the points brought out by Col. Hall.

The planning department does not perform new functions so much as it performs tasks, as Col. Hall says, that have to be done by someone, somewhere and somehow. It performs these tasks much more effectively and more economically because of its specializing on

them, and utilizing the best talent available for these planning functions, instead of leaving the planning (such as it is) to be done after the jobs get into the shop. Another point, any planning department that is worthy of the name is continually lowering the cost of production and getting the production and sales under closer control. Some executives are prone to look upon the industrial world what it will not do; and fifth we a planning department as a superfluous adjunct, but even after it has performed its initial task of reducing excessive costs of operations, it is more than paying for itself in holding costs down, in controlling inventories, and in enabling the executive to adjust production and sales to meet current conditions.

As Col. Hall has pointed out, particularly in times of depression does the planning department justify itself, for through it the executive has at hand at all times all the possible information that will enable him to make decisions as to what can be done away with and what must be retained, on the basis of undisputed fact and

The department which Col. Hall has described is somewhat of an innovation as a planning department. In years past when we have spoken of planning, we have usually thought of production planning, and in the last few years we have done a good deal along the lines of sales planning. But you will notice that in the Joseph & Feiss planning department which Col. Hall describes, they plan for the whole business-sales, finance, production, personnel, etc.—and it marks a decided step in advance in management practice. In most cases in the past, while the cost department has frequently been affiliated with the planning department because of its close relation to production activities, yet the general accounting department has been a thing apart, its main contacts being through the weekly or monthly summaries for incorporation into the balance sheet and analvses of expenses: Now, Col. Hall has given to the statistical division a planning function and made it a division of the planning department; and I think we may well stop, look and listen, and consider if this innovation is not a well founded one, and one that should be more generally followed, especially when we use mechanical tabulating equipment as is used at the Joseph & Feiss plant. The average accounting department delivers mainly post-mortem figures that are used but very little, yet all of the statistics which we accumulate should be used intensively and extensively in planning our immediate and future activities—sales, finance, produc-

One of the planning functions of the statistical divi-

sion is the preparation of a budget for each item of expenditure and activity, as pointed out by Col. Hall and also by John Williams in his paper some time ago. We should operate on a budget by all means, but to lay out a budget for expenditures, presupposes a budget for sales actually endorsed by the sales department as their total task or quota, and then used by them in directing their sales through the year. Of course our actual business may vary from the expectancies, and with it we can vary our expenditures on our budget, but a budget for our expenditures must be based on a certain volume of a certain kind of business. If either the volume or the class of business varies greatly; our prediction of expenditures will go wide of the mark. So it is particularly necessary for the sales effort and stimulus to be continually exerted to produce both the volume and kind of business that has been predicted, and upon which the entire remaining activities of the business are being based. There is entirely too much of an inclination in some lines for the sales departments to evade predictions of what they are going to sell and direct the sales efforts to the disposition of those classes of goods. When asked by the production planning division as to what kinds of product shall be built, in what quantities and at what seasons, the sales department frequently replies: "We don't know what we are going to sell, or in what qualities; we can't tell until the salesmen turn in the orders for whatever they happen to dig up, but we want you to have the machines or goods ready for immediate shipment when the orders come in." The result is that with the sales effort and production effort not being directed along uniform lines, the factory builds up stocks of certain goods which the sales department does not dispose of; and other items which do come in strong are not in stock and customers have to wait a long time before delivery, frequently resulting in cancelled orders. So we must have both a sales prediction and sales effort and stimulus along the lines that we make our production and expenditure prediction and

The success of all planning effort, and of all industrial effort, for that matter, is dependent upon the coordination of all activities, but in planning work it is particularly important, as Col. Hall has stated, that while each is working independently on its own part of the scheme, they be fully conscious of the fact that it is a part of the whole and not a thing apart and distinct.

Col. Hall has well brought out that industry to-day is demanding of the engineer more than advisory and consulting services, that he is being called in by manufacturing industries to assume actual responsibility for the continual operation of the plans inaugurated as well as for their initiation. There is a well-marked tendency in this direction as owners have come to realize that sound management practice is not something to be absorbed in a few weeks or months, but that it takes years to develop to its ultimate, and that in the interval there daily arise problems, the proper solution of which, coordinated with the whole plan, is essential to the success. of the entire undertaking and business.

H. K. HATHAWAY: Colonel Hall's paper is to me disappointing in two respects: first, that I can find almost nothing in it with which to disagree, and my disappointment would have been greater if I had; second, that it will leave many up in the air and wondering how and by what sort of mechanism the many and much desired ends described are brought about.

As Colonel Hall intimates, the mere designation of an office by the name Planning Department does not make it one in fact.

The proper organization, equipment and manning of planning department takes one into every phase and activity of a business and hence should only be undertaken in connection with its complete internal reorgan-

Establishing a planning department with all that it involves is only part-perhaps half-of the job. The other part is making it work and accomplish, in connection with the other features of the system, the results for which it was created and which Col. Hall has so convincingly pictured.

The literature of scientific management, not excepting that of the Taylor Society, is still all too meager with respect to the practical means for the application of its principles. This fact, when considered with others, I believe, may be taken as an indication of lack of interest in essential detail or an unwillingness to make the effort necessary to their mastery. I am taking this opportunity to voice my perennial plea for a greater consideration for the mechanism of management and particularly for that developed by or under the direction of Taylor-which even as he left it is far ahead of much of more recent origin and of which even at this date a surprising ignorance exists. I know that Col. Hall will heartily second this plea and not object to my taking his paper as an excuse for making it.

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