

of us agreeing to follow out certain experimental work in the months to come, agreeing to undertake certain sorts of investigation and study of the selling problem and to come together later and exchange experiences. I am certain some concerns will go ahead regardless of a scientific study of the selling problem. I know of one at least that is bound to go ahead, and that is our own. But we can cover only a small part of the field; it would take a generation to get any sort of results. Meanwhile, if we can get the help of twenty-five or thirty other houses doing different kinds of selling, and if we can give in return our small help to them, I believe that the whole art will be advanced, not twenty-five times as rapidly, but two hundred and fifty times as rapidly.

This conference is one, as I said at the beginning, at which you can learn little, but to which I hope you can give something of a suggestive nature,—a challenge, at least, for further study; and I hope there will come an agreement to grind out this problem during the coming months and meet again for its further discussion.

## II. COORDINATION OF SALES WITH SCIENTIFIC PRODUCTION

BY

W. E. FREELAND<sup>1</sup>

I HAVE been handed a rather obscure problem. I have also been handed a half hour in which to discuss it. Therefore, if my talk is rather sketchy, you know the circumstances that caused it.

I shall try to give you something definite to discuss because during a large part of my talk I shall confine myself to our own activities in coordination. It would be well perhaps for me to paint a little background explaining how we were forced into coordination.

As you know, we had a huge war plant. We had in our employ perhaps twenty-two thousand hands at the time of the armistice. We went down to seven thousand in a remarkably short period of time and resumed peace production with considerable speed. But we had a plant and plant facilities enlarged four times beyond the stage of 1914. That plant must be filled with new production. With that background you can see that we had a major problem. I will tell you a little of how we attacked it.

<sup>1</sup>Sales Engineer, Winchester Repeating Arms Co., New Haven, Conn.

In the first place, what are the requirements of scientific production? Ordinarily, in meetings of the Taylor Society, you hear a great deal about proper tools and processes, time studies and wage systems, routing and conveying methods, planning boards, and all of the other paraphernalia of the purely scientific men in production today.

Scientific production needs two things very, very fundamentally. It needs general plans and general schedules for tools, processes, materials, labor and finances. Those things the sales department has some measure of effect upon, to say the least. There is a peculiar inter-dependence of sales and production, not always recognized but always existing. If the business is to prosper, neither can absolutely control or dominate its policies over any considerable period of time. There is necessarily a considerable adjustment needed between the manufacturing facilities and the market demands. I think I am safe in stating that sales is the natural point of origin of new projects in a business because most of the new projects come from somewhere out in the field.

Then, too, there is always a major problem of flattening the peaks in both production and distribution. There is the job of interpreting consumer demands to the factory engineers. Someone must do that. There are certain definite obligations upon sales. First, to discover new uses and new markets for the product; second and perhaps least observed of all there must be a determined effort to resist pressure of any kind that will tend to break down mass production; third, there is a further obligation upon the sales to expand seasonal or territorial limitations.

There are, however, some obligations upon the factory. These are not always observed. One is, to maintain delivery schedules, no small task in these days of lack of labor which most of us are experiencing. The factory also has the task of maintaining or increasing the quality of the product.

Now there is a wide-spread recognition of the function of engineering in production. We recognize, most of us, the essential differences between the planning,—which is the engineering,—and the production groups in the factory organizations. We recognize that there is required special psychological or temperamental adaptations on the part of the men who are to operate the two sides. It has not been so well recognized, however, that there is a definite function for engineering in sales; and I want to interject here that when we use the term "Sales Engineer" in our

factory, we do not use it in the sense so frequently used in the technical papers, of a salesman who goes out to do technical planning for the installation of a manufactured product or a machine. We use it in a sense analogous to that of manufacturing engineer.

I think perhaps many of you are familiar with the fact that we operate on a rather individual modification of the Taylor System in our plant, commonly spoken of as the Otterson system or philosophy of management, because Mr. Otterson, our president, first installed it in some of the Navy Yards of this country. When we faced this great task of filling up the partially vacant factory with the new production, he immediately instituted an organization which we called the Sales Engineering Department. And his reason for that institution was precisely the same reason that has brought about the distinction between the manufacturing engineers and the manufacturing organization. He attempted to put men of the necessary psychological makeup into the planning work which became the sales engineering, and the men of the driving, forceful operating type into what we call sales production.

I suppose I will be challenged somewhat but I think many of you will honestly agree with me that the combination of both the planning and production aptitudes and temperaments in any one sales manager is extremely rare just as it is rare in the factory manager. The man is either strong in one direction or in the other; and if he is to make a success, must surround himself with men who will supplement and fill up the deficiencies.

Now sales engineering with us has changed its color just a little since we first organized it because we have now become the master planning group for the entire organization, and that is where we reach our real work as coordinators.

Generally speaking, the work of the sales engineers is months in advance of that of the operating departments. In other words, the planning for future projects is the work of the sales engineering. The planning of current projects is the work of the production divisions.

It must not be overlooked, too, in our talk about setting up a sales engineering department, that there is a very close and natural alliance between the sales engineers and the advertising department, both doing a rather peculiar and closely allied creative type of work.

I have said that we were a master planning group.

What are the elements of a master plan that will affect and guide a whole organization? In the first place, the master planners must necessarily have close contact with all parts of the organization. They must have or must create facilities for study of markets and of consumer demands. They must make an intensive study of economic trends. They must make a study of the factory facilities, either present or potential.

After these preliminary studies it becomes the sales engineers' duty to select the items and lines to be manufactured. Having done this it is up to him to present this matter in such a way that the operating parts of the organization can go to work in some coordinated manner. Therefore, the sales engineers must determine the elements of the problem and their proper sequence in the order of work. Having done this, they must then write a general plan which will allocate the work to the various divisions of the organization and set up bounds so that there will be little or no overlapping of effort.

Let me come down specifically to the way in which we touch various parts of our organization. We have the usual statistical department with its machines and trained men, and we do not undertake to do any of their work for them but we do undertake to interpret the basic statistics that we have them gather for us, and turn them into workable reports for the benefit of the operating sales organization. For the benefit of the sales production staff, we make field surveys of new production that should be added to our line. We make field surveys to ascertain where new markets may exist. We make field surveys, too, to determine new uses for our old products; and we try and keep an ear to the ground while we are out in the field and to do some intensive thinking in our offices toward accomplishing further refinements in our line of production.

Then, too, because we have built up a staff of research men,—and I challenge anyone to deny that the average salesman is not a research man,—we undertake to ascertain for the benefit of the entire organization the reaction of the dealers and the consumers towards our products and also our selling methods, because some of the worst reactions we have discovered are not directed towards our products but are directed towards the method by which we attempt to sell them.

When you go into an extensive line of production as we are going in,—manufacturing cutlery, fishing