

together and thought it over. We said, "Here, Mr. Taylor has done a lot for us, and he can have anything that he wants in the shop." We wrote and said that we would be glad to have Mr. Portenar come there and work in our plant, under any condition he would like to. We honestly hoped that would happen. It did not happen.

I hope some time some trade unionist leader will work in a plant where he can see the thing from the inside and form his own conclusions. I think it will do a great deal to do away with our misunderstanding, our failure to fully see each other's viewpoint that now exists. I hope this meeting, the spirit of it, may some time lead to that accomplishment. I thank you very much, Mr. President.

MR. PORTENAR: The offer never was made to me. I would not have you under the impression that it had reached me. I would not have you under the impression that Mr. Taylor asked me to do this and I did not do it. This is the first time I knew of it.

MR. KENDALL: We were asked and wrote back that we would be glad to.

MR. PORTENAR: It never reached me.

MR. KENDALL: We understood that you were coming up to look us over, and that you got as far as Boston. We heard that through labor circles. Is that true?

MR. PORTENAR: I intended to come to look it over, if I could get to Boston. I did not get there to do it. So far as going to work there under any circumstances, no one broached it to me. I would not have you or any one else under the impression that such an offer was made and that I refused.

MR. KENDALL: We were asked and consented. We hoped it would come about.

MR. PORTENAR: I never heard it.

MR. KENDALL: I will renew the offer now. I hope that you will come.

MR. R. B. WOLF: I would like to say in concluding my remarks this evening that while I have never

worked with Mr. Taylor, it was my privilege to talk with him a number of times. I never left him without carrying with me the distinct impression that he was constantly endeavoring to get what he called the initiative of the workman, by making his work interesting for him.

I think one of his greatest contributions to the problem of management was the working out of a practical method of measuring a day's work, so that every man can know how much progress he is making. Unless the workman has means for recording his progress, he cannot do creative work. He is, therefore, entitled to be furnished with a means for measuring the results of his efforts.

I think Mr. Portenar does not realize to what an extent the recording of operations helps the workman to do his work more intelligently, and furthermore, I believe that he is not aware how necessary these records are if the men are to be given a chance to enjoy their jobs. A management that is endeavoring to do things of this kind for the workman must inevitably come to take the human element into account to the fullest extent.

Mr. Feiss stated that it was not possible to make a time study without considering the men. I have no doubt, from what I saw of his organization, that he considers his employees to the fullest extent when making time studies; but there is no use blinking at the fact that time studies can be made and are made without the full co-operation of the workman. I find in our own plant that there is a constant tendency to determine standard methods more or less arbitrarily and it is necessary continually to emphasize the necessity for guarding against this tendency.

Just a word in conclusion: we must accept either the illogical premise that industry exists that the few may accumulate wealth by the labor of the many, or that its main function is to furnish a field for the development of men. Acceptance of the latter point of view means that we must plan our industrial organizations so that the men in them can express themselves in their work and thereby accumulate experiences which will enable them to come into a fuller realization of what life means. It is in reality a process of unfolding the inner spiritual consciousness by the externalization of inwardly conceived ideals which are striving to express themselves in the world of material things, through thought into action.

A NOTE ON ROUTING

ILLUSTRATING THE NEED FOR STANDARDIZING THE NOMENCLATURE OF MANAGEMENT ENGINEERING

BY MORRIS LLEWELLYN COOKE¹

To Louis Pasteur is credited a recommendation to the effect that technical and scientific men should report at quite frequent intervals on the results of their studies and labors. In this country we work under a somewhat different theory. I remember being told by a savant in the physics laboratory at Harvard that once in ten years was about the rate at which so-called productive scholars could most profitably bring out papers.

During the next few years at least I believe that it will pay the Taylor Society with its limited membership and with its new and vast field to take heed of Pasteur's counsel. We can best perform our task it seems to me if our members will but take us into their confidence as their work goes along and at relatively frequent intervals. While any technical society needs papers which are more or less complete, even exhaustive, treatises on the topics discussed still the science and art of management has obviously not arrived at that stage where many papers of this general description are possible. I hope therefore that we can induce an ever increasing number of our members to feel that it is incumbent on them to describe at more or less regular intervals some development in their own work or thinking and without the effort at either too formal a presentation or claiming too much importance even for the subject treated.

It is in some such spirit that I suggest that the time has more than arrived when it will be advantageous if we management engineers seek more definition in our nomenclature. For purpose of illustration I want to list a few terms used in that part of our field which we have been in the habit of referring to as "routing" as for instance on page 19, February issue of the BULLETIN² where Sanford E. Thompson alludes to "the various functions of planning, routing, inspection, training of the workers and so on." Precedent certainly warrants this use of the word "routing."

Any close thinking however, on the subject of "routing" will show that we have been using the word in two absolutely different senses, the one much more inclusive than the other. In the sense which Mr. Thompson used it the word seems to include within its scope all those acts and mechanisms by which men and materials are moved within a plant in furtherance of the general object of getting out the maximum product in the shortest time at the least cost. "Routing" is simply one of those grand divisions into which we have subdivided management such as (1) time and motion study, (2) inspection, (3) research, (4)

stores, (5) cost keeping, (6) instruction card work, (7) improvement, (8) personnel, and others. The art and science of routing so conceived can in turn of course be sub-divided into certain minor functions such as order of work, production, scheduling and what I will call for the moment "routing proper" to distinguish it from the word "routing" to which we have given the broader and more inclusive significance. Before taking up in turn several of these subdivisions of routing and their nomenclature allow me to call attention to a further important fact in regard to the use of the word "routing."

So far as I know there is no series of terms which comes anywhere near listing or including all the major functions of management. The whole subject is so new and our literature so incomplete that every writer in this field has been forced in describing the ultimate divisions of the subject to be more or less hazy. At no point have we been more so perhaps than in the use of this word "routing." I take it that there would be a fairly unanimous opinion as to many sub-functions to be included in the "routing" division. But each one of us doubtless would both include within its scope and exclude therefrom some elements upon which at first at least no general agreement could be secured. We would be led to do so through the influence of our own practice. In blazing the way to higher standards of efficiency in management our leaders are necessarily not all following the same road though the direction is for the most part at least the same. It is only natural then that one man puts the emphasis and his thought here today and there tomorrow. Another equally competent and equally well versed may reverse the process. But the ultimate end will probably be the same in both cases. The trouble probably lies at the moment principally in the fact that we do not clearly recognize as definite sub-functions of management certain of the less obvious parts of our work. Necessity sooner or later will force all of these functions and sub-functions into the open where they can be clarified and standardized and described in words and thus become generally not only noted but comprehended. But it is just as well that we should clearly recognize that the word "routing" as used by Mr. Thompson is at present an elastic term. It is in reality little more than a symbol leading us on to further definitions. I am not sure that we should not seek an entirely different word with which ultimately to express the idea we are now struggling to visualize and to limit. For reasons suggested later the word "flow" would have much to recommend it.

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