

I am disposed, however, to think that he is fundamentally wrong in his discussion of the theories. He makes it clear that he believes that the giving of instructions, to the men does more harm than good to the working man, that it is not a good thing for him. If that is so, then we must get him over it. I think Mr. Wolf fools himself purely because he does not think he is as specific as he is. I believe he thinks he is giving the working men more latitude than he really is.

One way of getting at it is to apply the rule to ourselves. It is only a difference of degree between the men in this room and the workmen Mr. Wolf has in mind, and I think anyone of us wants the workman to have just as detailed instructions as we can give them, provided always that these instructions are right. The men I have been associated with are the kind that want you to tell them what to do. If your organization is what it should be, and you have gotten sufficiently near to the workmen, you can give them material to make up, and they will make it according to the instructions. It is not necessary to give them an opportunity to develop this creative power Mr. Wolf speaks of. Mr. Wolf has given us a question to keep before us. There is a very grave difference of opinion between Mr. Wolf and a great many of the men in this Society.

MR. H. K. HATHAWAY: Following up Mr. Cooke's remarks, I have something to say,—namely, a rediscussion of Mr. Wolf's discussion. In the first place, I am very glad to see papers now in the Society dealing with the application of the Taylor principles to the industrial problems. I think we want to operate with the principles of the Taylor Society as they are concerned with the application of the teachings of Mr. Taylor to industry. That application involves a great many things. First, the fact that we are the instructors, second, the development and training of the working men, third, co-operation, and fourth, the proper assumption of responsibility on the part of the management. If we must refrain from giving instructions to the working man we are not applying that principle, so invaluable, in which knowledge must be given to the workman for this scientific training. You cannot train him on instructions; you can only assist him in that training with definite instructions. We cannot convey our ideas to the workman and let him work them out for himself without any instructions. In this particular detail Mr. Wolf is wrong. What right have we to suppose that any workman is unwilling to be taught, provided we do not insist upon his going to school for that teaching? We have a certain belief that education is good for the workman.

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Mr. Wolf has that idea; why, then, should he emphasize unduly these ideas of individuality upon his people? We can easily see that it is perfectly ridiculous to teach people how to play or to work, if what they learn is wrong. It may be desirable that people should receive all their education in school only, but by experience, I believe, we can teach them just as definitely as anyone else.

MR. HAYES: In regard to Mr. Wolf's methods. I have been through his mill, where he does his work, and I might say that he has not endeavored to keep anything from his workmen that will in the slightest degree help them. I do not know that there is anyone more anxious to give them help than he. I do not know where anyone gets a different idea. I did gather from one or two of the speakers that he does not intend to give his workmen what they require, and the only thing I can say about this is that it is not the case.

I think at Managunk we have been unconsciously applying some of the Taylor principles. We feel that the men have to some extent profited by a few of the things that have come up from our efforts. We have lately been training each workman in each department, and the progress has been very satisfactory indeed. Every day we take a record of the work done by each man. These records are given them when they are 24 hours or less, old, in the business. We had a discussion as to whether or not to do this. We did not know whether they would take it gladly or not. They did welcome it, however, and every day they are anxious to see what their record for the last day was. It results both in a greater uniformity of work, and in better work. Very many times suggestions come from the men which help us to help them. It is our intention to help them through their own suggestions, but we will work their own suggestions out for them. We are certain that the results are a good bit more certain.

In regard to the piece work proposition, we have had several different kinds of payments. We have had some piece work, some bonus, and some hours per day. One of the first things that the men thought of was a way to help us to help themselves. Then their time,—why they were making 50 per cent more on piece work than on day's work. Formerly they had been wasting time, but it now has come to a point where they do not waste any time. There is an incentive for them to work, and there is some reason why they should. They like the new way, and would not now go back to the old way. We find that these principles apply to the whole factory. In the box making department, mentioned by Mr. Thompson, we are certain that the men are better satisfied with these methods than with the old method, the day wage.

MR. GREEN: Gentlemen, I should like, with your permission, to take up with great brevity, one or two technical points which my original paper was not intended to emphasize, and then to proceed to another brief consideration of the human side. I value what has been said, and I am grateful to everybody who has discussed the paper. Many points have been brought up which will be inspiring to me in going ahead further.

You remember it was suggested by Mr. William Kent that we could use other means than the drag in studying the problem. I want to remind you again, that this was only a report of progress. In our work we used many other schemes, and our endeavors were centered upon trying to ascertain which gave the most practical results.

I don't intend to bore you with a great deal of technical detail. I hope to place the matter in as full technical detail as I know how before the Technical Association of the Pulp and Paper Industry.

Mr. Lichtner, in speaking of the matter of density, pointed out a different way of supplying the beating machine. At his plant they don't have any stock come in slush form. In that case another method of determining and controlling density may be preferable. There are other ways of doing it, but to take advantage of the slush form of our soda pulp delivered to the beaters by pipe lines was extremely easy. Mr. Lichtner questioned whether variations in speed of turning, of the stock in the beater would not throw the drag readings up or down to the extent of spoiling our control of density. At the time of reaching the thickening point, the speed of turning in all engines is very slow, and is not variable to any practical degree from one time to another. Differences in hydrostatic head on the drag bulb would also introduce errors, but this we have independent means of controlling.

Mr. Lichtner was also concerned as to the fact that a man can follow our instructions and still spoil the job. If so, he asks, have we really got complete control of the man's work? I don't know of any set of instructions, from the law down to instructions given to workmen, that a man cannot beat if he wants to. The way the men can beat us is this: We will assume that the thickening point has been reached and the roll set down to working position. Now, we allow forty minutes for some additional chemicals to be added to the stock and the mixture to be evened out before we take the first reading of the card. During those first forty minutes, if he does not set his roll right, he will spoil the stock. A man tried it on us once and we suspected him. He was setting his roll altogether too hard during that first forty minutes, then easing it so as not to over-run the sixty-minute reading. In that way he got a perfect record, but the stock was so "slow"

as to crush and suck the wire to pieces on the paper machine at 30 feet less than standard speed for that order. I walked in on him and walked around the place. His instructions were not changed, and I gave him no new instructions. Yet when I was there everything went nicely. He had thought he could fool me. He had played a little game on me on the night shift, and we tried to get him to stop playing those games, and if he had he would still be with us. A man who plays games with his work is not the type we want under any system. If the beater man and the management are working together, he will use the roll to the best advantage during that first forty minutes and he would only have to study the instructions given to him to get his future results right. He knows that is the best thing for him to do, and he does it. If he is working against us, he can beat the game in the way I have described. However, he cannot do it very long, and therefore we have control of the job.

I am extremely interested in the work which is being carried on with the Eastern Manufacturing Company under Mr. Thompson, and for our part at Cumberland Mills we wish for the most open kind of co-operation between our work and theirs, and we have already endeavored in one or two ways to serve them. As to the discussion of Mr. Wolf's paper on the human side of the problem, it has been handled so much more ably by those who have discussed my paper that I doubt if anything more is needed from me, except to say that I agree with Mr. Wolf's critics on the whole rather than with Mr. Wolf's paper as he has put it. He and I seem to need the opportunity of talking it out together.

I would like the opportunity of using the time that I would have used for that discussion by saying how the beater men feel about our work, and also this: during the period that we have been engaged in this work, we have been right in the beater room. We have worked right with the men, and we did not try to exercise any authority over them. We put up with all the conditions that they did, and we did that to get ourselves qualified for the study. That was our idea, to qualify the management to carry on its own beating. Now that they have been at it for a little while, the men are finding that they like to follow these instructions better than they liked the old way. I was very much interested a short time ago to have an old man, who began his career in the beater room on the 1st of February, 1857,—and he is still on the job, taking night tricks, as well as the rest of them,—come to me and voluntarily say that since his drags have been limbered up and have been working all right, he likes to do his beating by them better than by the other way, the old way; and he had been doing it the old way for 59 years.