

In Oklahoma, we had, so to speak, to learn to crawl before we could walk. When it was realized that our maintenance was in bad shape, the necessary changes were made. To stay on top of our Maintenance Management System Installation and Personnel Training, we must constantly strive for the betterment of these assets. This can only be accomplished by a continuing "Selling Job" of our maintenance needs through our Maintenance Department and Maintenance Research.

EDITED COMMENTS OF PRESENTATION
BEFORE HIGHWAY RESEARCH BOARD SESSION 26 -
MAINTENANCE MANAGEMENT

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God help the last man! Fellow heroes, you who are still awake - I guess it was proper that they saved Mrs. O'Leary's cow to the last. I would like to take a few potshots around here, not with the idea of breaking any idols, but I think maybe a little daylight in a spot or two wouldn't hurt us, and then I have a prepared paper here which takes about two hours and a half to read which I know you will all be glad to listen to.

There are a couple of things here I would like to toss out - don't ever forget this - that maintenance is people. I am a great believer in doing things better; but don't forget this, maintenance is basically people and you can make all the neat little pigeonholes you wish, but you still get back to the fact that you have some people out there that are dedicated souls. They are generally people who have been around quite a while and they have knowledge of what is going on. I know in some instances they need help. This we should do, but maintenance people, at least in our state, are an intelligent bunch of individuals who know how to take care of highways and do it.

There is about as much analogy between the highway maintenance system in a state such as Oregon and a factory which produces something, as there is between me and a chorus girl. A factory, even a large one, is somewhat compact and is subject to some control and some normal routine of operation. Even in a state like Oregon which isn't one of the larger, population-wise, we have such diverse things as elevations from ten feet below sea level to thirteen or fourteen thousand feet above and everything in between. We have deserts, heavily timbered areas, even rain forests, rivers, areas where we have as much as five and up to fifteen and eighteen feet of snow, and other areas where if it snowed the natives wouldn't know what it was. So you see, it is not quite as simple as putting everything into a little pigeonhole and working out these units of work because sometimes God doesn't cooperate. I have seen a morning when you plan to go out and build a guardrail; but the good Lord in His wisdom turned loose a great big flood of water, full of boulders and a few trees, and sometimes a couple of barns, which took out half a mile of highway, and your schedules are shot gentlemen - and you might just as well face it. For a maintenance foreman, give me a versatile individual with enough initiative to place things in their proper perspective without being restricted but rather guided.

In 1961, the State Highway Department employed a management consultant to analyze activities of the Department and to recommend improvements where such were indicated. He had some very good ideas. We were of the opinion that some of the changes suggested were good and, acting under this, under the heading of "opportunities for improvement" we noted that the Department was chided for not having a specialist as a part of its top management team to make management improvement studies. The recommendation was implemented and a management analyst was added to our top administrative staff. Our experience with this section has been extremely favorable. We feel that results are achieved through the coordination of efforts of management and administration at the top staff level. It is our considered opinion that more effective, more continuing and more compatible results are achieved by this procedure than can be secured by a one-shot time and motion study. Industrial-type management surveys have been made in three particular areas. The first of these had to do with the administration and accounting of the equipment division. Some of the specific achievements are outlined in detail in my written remarks. Seven full-time jobs were eliminated. We also eliminated 35 forms. We took out 220 cubic feet of old records. Our parts inventory was reduced by \$300,000. Four thousand feet of warehouse space were freed for other maintenance use. I have details of this on a sheet which I have here for anyone who is interested.

The second achievement by the management-analyst team based on an industrial-type analysis was the saving of approximately \$100,000 by the rearrangement of our shop facilities. I also have some data on this, with which I will not bore you this evening due to the lateness of the hour. This had to do very strictly with the time and motion thing; in fact, it was more like a factory operation and, as such, was subject to this type of analysis.

The third phase of the application of industrial management to maintenance operations is one which we currently have underway in our five equipment repair shops. At this time, we cannot place a dollar value on the benefits. A period of experience and evaluation must follow before a true analysis can be made. We do know, however, that continuous application of the industrial management techniques to our equipment division operation has resulted in a reduction of personnel from 260 employed at the time the study was made in 1962 to 206 as of this date. There is information with regard to this particular item in my printed material. 1/

You are a brave crowd and I love you all. I thank you.

References

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"Application of Industrial Engineering Techniques to Maintenance Management", Forrest Cooper, State Highway Engineer, Oregon State Highway Department, January 1966.