

into the fundamentals of industry or is it only an embroidery? To answer this we need to understand the nature of the relation between safety and production.

The problems of the executive center about the problem of production. Industry, to be sure, has other objectives besides production, and yet there is no other that comprehends so much. The primary function of the factory is to produce, and produce efficiently. It is probable that every important objective of industry will be found to be associated with the problem of production and, conversely, if any such correlation can be shown to exist, we may be quite sure that we are dealing with a matter of executive importance.

This investigation is directed to the task of proving whether a positive correlation exists between safety in the factory and efficiency of production; in other words, whether the safe factory, in general, is the efficient factory and the efficient factory, in turn, is the safe factory. A specific example of the correlation in question is the Union Pacific Railroad already mentioned. The Union Pacific Railroad not only has the best safety record for its employees of any Class I railroad in the country but it is generally credited with having the highest operating efficiency.

When the safety movement was started, it was felt that the correlation in question might even be negative. It was alleged that the use of safety devices, and the precautionary acts required of employees, interfered with production. This state of mind has almost completely disappeared and has been replaced by a very general feeling that safety and efficiency of production go together.

There are strong theoretical grounds for thinking that such a relationship exists. As long ago as 1919 the National Safety Council was definitely working on the problem. It gave a dinner at the Engineers' Club in New York, on November 17 of that year, attended by some forty of the leading engineers of the country, at which this subject was the topic of discussion. It was on this occasion that S. J. Williams, at that time engineer of the National Safety Council, enunciated a statement of the nature of the relationship between safety and efficiency which will always be a classic.

Mr. Williams said in effect: "Suppose a box falls off a loaded truck and kills a man. For every such case which results in a physical injury there will be perhaps a hundred cases where a box falls off, but without injuring anyone. But in every one of these hundred cases either the box will be broken or in any case the truck will have to be stopped and the load repiled. While, therefore, there will be only one case of physical injury, there will be a hundred and one cases of inefficiency. An accident is something gone wrong and it can result only