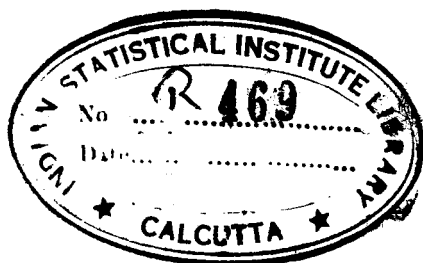


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LUNCHEON COMMENTS
at opening of
CONFERENCE ON ACCEPTANCE SAMPLING
by
Walter A. Shewhart



Robert Treat Hotel, Newark, N. J.
September 27, 1946.

W. A. SHEWHART'S COLLECTION

The first academic institution to offer a course in the application of statistics in the economic control of quality of manufactured product was a sister institution of Newark College of Engineering - Stevens Institute of Technology. That was 16 years ago. From then until 1941 a few scattered courses were given in other centers.

Then came war and the national need for maximum output of high quality war material at minimum cost in terms of man hours. A few industrial leaders caught the vision of the role that statistical quality control might play in this emergency if it were only possible to get trained personnel. But where were they to get such men even with the most elementary training in this field. By and large most colleges and universities had been asleep to the potential contributions of mathematical statistics in all fields of applied science other than perhaps agriculture. Fortunately Harvey N. Davis, president of Stevens, who had introduced the academic world to statistical quality control, was then director of OPRD. In the light of his past experience, he quickly saw the need for personnel in this field and helped organize the OPRD training program that brought thousands of engineers at least the bare elements of the theory and practice of statistical quality control. Through somewhat similar courses in England, Australia, and Canada, other thousands of engineers were introduced to the subject.

Let me here pay high compliment to all who cooperated in thus putting statistical quality control to work in helping to win the war. I need not recount here nor do I have time to do so, the improvement in quality, and the saving in man hours. Such contributions were made by men most of whom had only what we might call a teaspoonful of training in the subject.

Sixteen years ago President Davis of Stevens took a pioneering step by introducing the engineering world to the application of statistics. Today, President Cullimore, you are taking a pioneering step toward training the engineers of tomorrow at a still higher level - a training that is absolutely necessary if industry's needs of tomorrow for thoroughly trained men are to be met.

As yet we have only scratched the surface in putting statistics to work in American industry. Many things even in inspection and manufacturing can be done that are not being done: applications of modern statistics in physical and chemical research, in development, in the establishment of satisfactory consumer standards, in operational research, as well as in accounting, time studies, and other management areas are almost virgin fields. Let me say most emphatically that a teaspoonful of training in statistics is not sufficient for solving the many statistical problems arising in these fields. What progress we shall make in these areas within the next decade depends largely upon the initiative and foresight of college and university administrations by

way of leading the way through at least two types of training: first, in mathematical statistics as mathematical statistics, and second, in the conference type of training in applied statistics at graduate level. Those of us here today are witnessing a pioneering step in this conference type of training - a conference in which a capable and highly trained permanent staff supplemented by special lecturers, chosen because of their experience in special fields, are meeting with a group of some twenty or more capable men and women from industry who have problems to solve. Here those with actual problems to solve will meet with men thoroughly trained in both the theory and practice of solving such problems. To indicate, however, the present state of the art and science of quality control, let me say that I expect that even the faculty do not at the moment know the answers to some of these practical problems, the solution of which would be worth millions to industry.

This is a conference on the limited field of acceptance sampling consisting of 11 long sessions. It is a conference on just one of the many fields to be covered - similar conferences here and elsewhere must follow if we are to meet the opportunity for service through statistics.

In these eleven well-organized sessions, the conferees will doubtless get beneath the surface of this important subject; but unless they burn a lot of midnight oil in addition they cannot master even this very limited field. In my estimation, such a conference would be a failure if it resulted in giving those who attend the feeling that they "know it all" even within this limited field.

The conferees should, however, go away with the ability to solve many typical problems: of far more importance is the fact that they will be started on the path of thinking straight in this rather slippery subject so that further independent study will be much easier and safer.

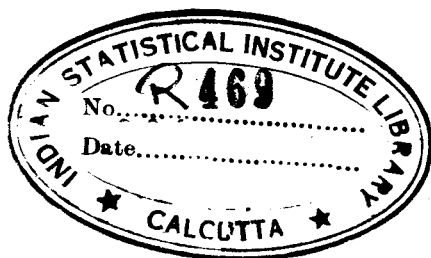
One thoroughly trained in mathematics might master the mathematical theory behind acceptance sampling in eleven weeks but I venture to say that he will not master the art and practice of acceptance sampling in that length of time. What is more, I do not know of any person today, including those who are to address this conference, who I believe would claim to be master of all aspects of the limited field of acceptance sampling: I do not, however, know how today you could gather together a staff whose combined knowledge and experience would be more adequately cover the whole field than the one that Newark College of Engineering has brought together for this conference. That in itself is a pioneering act on the part of this college in bringing to the industrial groups of this area a course of exceptional quality in a very important practical subject.

One last word - knowing

Dr. Littauer and other members of the staff and lecturers, I am sure that the conferees will go away with a picture of acceptance sampling not simply as an inspection engineering tool but also with a picture of acceptance as perhaps the simplest example of the general problem of establishing valid scientific rules of action or inference that will guard against two fundamental kinds of errors present in all kinds of scientific inference. That is to say, they will get a glimpse of the way in which modern statis-

tics is contributing to scientific inference in the broadest possible sense.

In closing, let me publicly congratulate Professors Littauer and Sizelove on the excellency of the program that they have arranged for this conference and congratulate President Cullimore and Newark College of Engineering for making this conference possible. To my knowledge nothing equal to it at this level in the field of industrial statistics has ever been offered.



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