

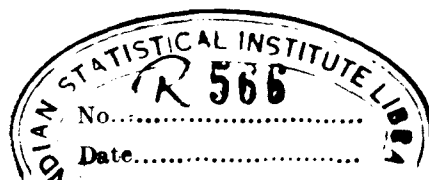
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INTERPRETATION OF SPECIFICATIONS

In inspection engineering we are called upon to interpret the meaning of specifications. Sometimes we like to think that this matter of interpretation is objectively definite if the specification is properly written. That is to say, there are some at least who maintain that specifications should be written so that they say what is meant and mean what they say. The object of the present discussion is to consider some of the reasons why it is impossible to write even the most definite form of specification that is not subject to considerable vagueness and ambiguity. Hence it is that the successful carrying out of the job of inspection engineering, in so far as it involves the interpretation of specifications, depends to a great extent upon the ability of inspection engineers to allow for these factors of vagueness and ambiguity.

We shall consider the demonstrative specification because it has the appearance at least of being definite. Such a specification is characterized for the most part by the words, "that" and "this" with the appropriate gestures. As actually used at some time or other by all of us, such specifications may be phrased in a form such as "Give me that" or "Give me this". Let us consider two people, one



a consumer and the other a producer. Suppose that the consumer approaches the producer and points to an item of product and says "Give me that", whereupon the producer takes the consumer's money and delivers the thing pointed to by the consumer. The question is: Does the simple operation on the part of the producer of delivering the thing pointed to constitute the operational meaning of the demonstrative specification? At first glance one is likely to say: "Why yes, the producer did just what the consumer told him to do". A little consideration, however, soon shows that this is not the case. The specification is not so definite as it may at first seem; on the contrary, it is quite vague and ambiguous.

A recent experience will serve to illustrate some of the points which I wish to make. I dropped into a bookstore the other day accompanied by a friend who was looking for a particular book on differential geometry. Seeing a book that had the appearance of the one he wanted, he picked it up, handed it to the clerk and in effect said: "Give me this". In accord with his request the clerk wrapped up the book and delivered it to him. A short time after returning to the office my friend discovered that several pages were missing and that others appeared more than once. The next day he returned the book to the sales clerk and received another in exchange, there being no question on her part that the book purchased by my friend on the previous day

was not what either he or she had understood him to mean by "this". In other words, it was mutually understood as a basis for this transaction that what "Give me this" meant was not simply "Give me the thing pointed to" but rather "Give me a thing having the readily observable aspects of the thing pointed to and at the same time one that will be found, upon further examination, to have certain characteristics not as yet perceived", such, for example, as not having any duplicated pages or pages that are torn or upside down, misplaced, or the like, and many other characteristics which will at once come to the reader's mind.

It is desirable to note that pointing to a thing as revealed by the observable aspects of that thing at the moment, is only a sign or symbol of that which is actually wanted. In other words, a consumer always wants a manufactured article or thing for the quality which he expects that thing to exhibit when used in a certain way after he has obtained the thing. The sensory aspects of the thing at the moment only serve as a basis for making a probable inference as to what the quality of that thing really is. The consumer expects the thing which has the attributes which he has already perceived to exhibit the quality which he wants. This situation is illustrated by my friend who interpreted certain aspects that he could readily perceive

of the book which he referred to by "this" as constituting a rational basis for inferring that the book pointed to would have the quality characteristics of the book he wanted. The fact that the clerk readily made the exchange and even apologized for the inconvenience to which my friend had been put, indicates that she interpreted the meaning of the demonstrative specification of the book much as he had done.

In the case we have just considered there is, as we have seen, evidence for the belief that both consumer and producer had about the same degree of knowledge of the thing pointed to by the consumer, that is to say, both of them understood pretty well what it was that my friend wanted and presumably neither of them knew that the book was defective. Let us now consider a case in which the knowledge of the thing pointed to is not the same for both the producer and the consumer. Let us take an instance in which the would-be consumer is a child who approaches a producer with the statement "Give me this", where the thing pointed to is some item which, if used in a certain way, might harm the child. The producer would obviously take considerable care to find out why the child wanted the article (i.e. what the object pointed to by the child means to the child) before he would deliver it to him. If, for example, the producer was convinced that what the child meant was to give him that thing pointed to because it appeared to be what his father wanted, the decision of the producer would likely

be quite different from what it would be if the boy wanted the thing for what it meant to him in his play.

Now, let us consider another example. Suppose that a customer points to an article and says "Give me this" and the producer knows that, for the purpose for which the thing pointed to has been commonly used, another thing has been recently developed - perhaps without the knowledge of the consumer - that will likely have a more desirable quality from the consumer's viewpoint than that to which the consumer pointed. Here too the producer takes into consideration whether or not he feels that the consumer would prefer the newly developed article to the one pointed to if he but knew what the producer knows. Once more the producer takes into account the quality of the thing wanted by the consumer as the meaning of the demonstrative specification.

In the case of the child as a purchaser, society imposes upon the producer through rules and laws a duty of taking into account the meaning of the child. In the last example, however, the binding force on the producer is rather a rule of good business or, in some instances, an attempt to do unto the customer what he would like to have done unto himself under like circumstances. In either case, however, the action is one backed by custom. Turning now to the first example, it is perhaps not only an act of good business but it may even be an act which is pretty much binding on the producer by custom and law.

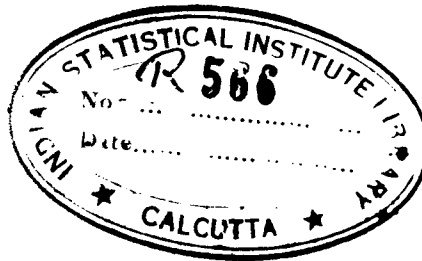
In each of these cases we see that the practical meaning of the demonstrative specification is somewhat ambiguous; that is, there is always some uncertainty as to whether or not the producer knows just exactly what the consumer does want in respect to the quality of the thing signified by the thing pointed to. Now we need only consider the first purchase of some article such as an automobile or radio to realize that we ourselves are somewhat indefinite as to the quality of the thing; that we really want when we pick out the thing we buy. In other words, we do not know nearly so much about the thing wanted at the time we purchase the first thing of that kind as we do after we have had considerable experience with a thing of that kind. The thing pointed to is a symbol of a quality that must be somewhat vague in our mind.

What does this mean from the viewpoint of inspection engineering? For one thing, we cannot hope to mechanize inspection engineering or reduce it to a form of inspection specification in so far as it has to do with judging whether or not the quality of a thing meets even a demonstrative specification. That is to say, even in such a case, it is absolutely essential that the inspection engineer exercise judgment in interpreting the meaning of the specification. Only to the extent to which an inspection engineer can out-guess others in interpreting the meaning under such conditions

and make judgments that will, in the majority of cases, be sustained by the producer and consumer, can he hope to maintain his position as a judge of quality. But to interpret the meanings of even the most definite form of specification requires, among other things, a broad understanding of present and potential human wants. Hence, we as inspection engineers need special training in this field.

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