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Engineering Ethics

By DONALD T. JOHNSTONE, '29

(The following essay is the winner of this year's Tau Beta Pi Prize.—Editor.)

The rapid economic and scientific progress of civilization since the beginning of the nineteenth century has caused mankind in general to recognize the value of scientific generalizations in every department of human conduct. The engineer is largely responsible for our progress and he is now recognized as the representative and leader of scientific research and development but in order to maintain the proper respect of man it is very necessary that he conduct himself according to a code of ethics which will assure him of the confidence and trust of the world in general.

Ethics has been defined as "the science of moral duty," or, "the science of the ideal human character" and the chief problem with which ethics deals is that which concerns the nature of the highest good. Engineering is truly a profession and the underlying concept of any professional code is that the ideals inspiring the practitioner arise from a desire to do a lasting and general good rather than to derive a personal benefit from a particular commercial transaction. The engineer should put allegiance to his art or science, allegiance to his client, allegiance to his fellow man before the desire for the dollar. These are the fundamental principles upon which the engineer should build the structure of his life work and in case it is necessary he should withdraw from any association in which conflicting duties to patron and to principle might force him to sacrifice the latter in the service of the former. The precepts of the profession must be held inviolate in order that he maintain the leadership that he is rapidly acquiring and that is rightfully his.

We may therefore compose a more detailed code of ethics from the fundamental principles which have already been stated, and parts of which will cover practically all phases of engineering activities. This code is not intended to cover any particular case but is a code to all who are interested in the engineering field.

An engineer should investigate the character of all concerns before he enters into professional relationship with them for any one permitting the use of his name in connection with any enterprise becomes morally responsible for the character of the enterprise.

He should always protect his client's interest to the best of his ability.

He should not use for personal benefit any private data given to him by a client for a specific purpose unless he has the permission of the owner.

He should be willing to help subordinates by giving advice and conducting himself as an example of honesty and good.

He should assist others to obtain a fair understanding of engineering matters and should make no statements to any one that might be misunderstood or lead to false impressions.

He should see that the credit for any engineering work is attributed to the real author of the work.

He should not exploit natural resources which belong to the nation, states or municipalities without making just returns to the rightful owners.

He should publish the first announcements of inventions or other engineering advances through the technical press and engineering societies rather than the public press.

He should not say anything about any brother that will hurt a reputation unless it can be substantially proven and then only as a protection to others.

He should not resort to self laudation and advertising in order to build up his own reputation and business. He should state briefly his experience, enumerate responsible positions which he has held and give references.

He should have due regard for the public safety and comfort in the construction of any machine or engineering project.

More technical achievement is not the thing that endures. Among the peoples of the ancient world the engineers of Egypt were probably the greatest, and considering the means at their command, the things they did were extraordinary. They did some things which, even with the things at our command, we can hardly duplicate. They used their abilities in the service of a dominant priestly caste, and therefore, while their work is admirable, it does not appeal to us as does the work of the Roman engineers a few centuries later, who built roads, aqueducts and bridges, and thus took the lead side by side with the Roman lawyers in establishing the basis of our modern civilization. The roads and bridges of Rome, simple and straightforward as they are, constitute a more enduring monument to the Roman engineers than all the obelisks and pyramids that were ever erected.

This larger view of engineering obligations is not so fully recognized as it should be. We have made so much progress in the technical field that we sometimes forget the need of anything more than technical training. A man ought to have a clear conception of the public service which his profession can render, and the public duty which its members owe. Thus and thus only can a professional man rise to the full dignity of his calling.