

ENGINEERING AS A PROFESSION

SOME CHARACTERISTICS OF THE ENGINEER AND OF HIS PROFESSION THAT ARE NOT GENERALLY KNOWN—EXTRACTS FROM AN ADDRESS TO THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY, OCTOBER 15TH, 1913

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ENGINEERING is such a material thing, such a practical thing, and such an engrossing thing, that it is very difficult to talk about it in the abstract. Moreover, the engineer is known as a man who does things, and one who is doing things is too busy to talk. You will, therefore, appreciate the greater difficulty experienced by one who is supposed to be an engineer talking in the abstract on such a subject as engineering.

In order that we may have some appreciation of the subject, it is necessary for us to arrive at some definite understanding of the two words "Engineering" and "Profession," although I cannot promise you that these definitions will entirely sweep away the mist.

"Professions."—We all have our ideas what a profession is, yet it might be very difficult for us to name many professions and, having named them, to state the reasons why they are professions. Probably the first of the professions that would come to our mind would be that of law, medicine and theology. Later we would add pedagogy, dentistry, architecture, and surveying. Some might even go so far as to add engineering. The predominant characteristic of all these callings is their protection by law and their recognition as lawfully constituted bodies by the powers that be and by the people themselves. The distinguishing feature of a profession is that it requires its members to have special training and to perform mental rather than physical labor. Custom has decreed that an individual member must earn his livelihood by his chosen profession. The representative society or societies of each profession have a written or an unwritten code of ethics. This code requires, amongst other things, that the remuneration received by a member for his services shall not be in any way contingent upon the result of his work, or, in other words, the professional man may not share in the profits. Thus, a lawyer may not, theoretically at least, accept a case on the understanding that he will be recompensed only in event of a victory over the opposing party, or a doctor may not perform an operation on the understanding that his fee will be greater if his patient should live than it would be if he should die. Further, the law recognizes, more or less, certain fees that must be paid in court for the services of certain professional men, the surveyor, for example. You will doubtless be pleased to learn that the law allows a surveyor six dollars a day for attendance at court, while engineers and other ordinary mortals receive one dollar and a quarter as an emolument for such service.

The standing of the professions in the popular mind is due largely to the character, ability and dignity of the men engaged therein.

The societies representing the professions are the result of the interest that the leaders of the professions have taken in order that the professions may be recognized as such by the world at large.

Generally speaking, a man is no longer considered a member of a profession when he ceases to earn his livelihood by the practice of the profession. A dentist leaving his calling to become a vendor of real estate is no longer considered a dentist, although he has had his training and may still be holding his diploma. A doctor may have received all his degrees and may have practised for decades, but let him devote his energies to commercially exploiting, say, some well-tried prescription, and the medical profession no longer recognizes him as a member. And so we see that the connection of earning that which is needful to purchase food, clothing and the necessities of life is intimately connected with the recognition of a person as a member of a profession.

"Engineering."—It is much more difficult to define engineering. What is an engineer? I confess I have been trying for twenty-five years to find out—and I am still trying. I remember two boys, now both on the list of graduates of this university, arguing about whether a civil engineer should know all about a locomotive or not. He thought he should. I didn't know. The other fellow is now practising surveying. Once I heard a judge of the Supreme Court of the United States struggle with the definition of an engineer in a brilliant twenty-minute speech, and he wound up by concluding that he didn't know anything definite about engineers excepting that they were jolly good fellows. In the daily press we often read of engineers, but before we get through the description we are fully aware that the person referred to drove locomotive No. 522 between two given stations at seventy miles an hour, or that he was the man who turned the throttle valve of the engine in the hold of the excursion boat.

The term "engineer" is very much overworked. It is not surprising that the great public gets confused in the multiplicity of engineers that are sometimes referred to. There are the civil engineer, the mechanical engineer, the military engineer, the electrical engineer, the hydraulic engineer, the sanitary engineer, the municipal engineer, the production engineer, the publicity engineer, the mining engineer, the chemical engineer, the structural engineer, the bridge engineer, the elevator engineer, the harbor engineer, the stationary engineer, the government engineer, the city engineer, the town engineer, the tunnel engineer, the county engineer, the marine engineer, the railway engineer and the consulting engineer.

Mr. Dunn, the president of the American Institute of Electrical Engineers, in Boston last year referred to twenty-seven recognized classes of engineers, and I understand that someone of a statistical turn of mind has succeeded in isolating over one hundred and ten separate and distinct varieties of the bacterium *Engineerious Universalis*. Is it any wonder the public gets confused?

Compared with the professional men of law, medicine and theology, the engineer never comes to the at-