A BUILDER AND AN EXECUTIVE

The recent speech of Major General Lytle Brown, Chief of Engineers, United States Army, before the American Engineering Council at their annual dinner, besides describing the peace time work of the Corps of Engineers, is fraught with philosophy on that always interesting question—must the successful engineer necessarily be a good executive? We are indebted to the Bulletin of the American Engineering Council for General Brown's speech. He said in part:

"Long years ago when I was attending classes at a university we studied engineering. Among the structures that we studied were the steel arch bridge across the Mississippi at St. Louis and the jetties at the mouth of that river. They were built by James B. Eads whom we considered to be the greatest of all engineers, and we aspired to be like him. But one day after we had been out in the field laying out a railroad and were thinking that every engineer must be a first class instrument man, the professor told us that Eads could not run a transit. He had to have a young fellow named Corthell to do that for him. Eads at once fell considerably in my estimation as an engineer. Years afterward I saw about the most skillful instrument man of all my acquaintance, and that was all the kind of a man he was. His salary was about one hundred dollars a month.

Another time, many years ago, I was a rodman and masonry inspector on a lock in the Cumberland River. The contractor on the work had failed and his bondsman came down from Columbus, Indiana, to do the work. That old contractor was a sleepy, hesitating old fellow, but what kind of a fellow was the bondsman?

That bondsman was a white haired, red faced Irishman, with cold light grey eyes. Never have I seen such a driver of men. He would go to Columbus, Indiana, every once in a while, leaving the old contractor in charge. In a day or two the old Irishman’s buggy would be seen coming over the hill a mile away, and before he got there, all kinks would be out of things and the job would be humming along again. I used to wonder what made the difference, but could not tell except that the old bondsman was the superior in profanity. But there was quite a difference, as I have come to learn later. The old bondsman knew which man to shoot the swear words at, and the old contractor did not. It makes a lot of difference. The old Irishman never wasted any swear words on a common laborer. He shot at bigger game, at the man who was in charge at the point of trouble. He knew how to hold men to their responsibilities. Maybe the old contractor knew also, but perhaps he was afraid to do so.

I have called attention to engineers, builders, and executives. By that I do not mean that when a man is one he may not be all three, but that is the rare exception. Only an engineer may be all three. A really good builder must be a good executive, but he may not be an engineer as we know the term, nor is a good executive necessarily an engineer.

Really when we say engineer, we have in mind a technical man. He may be a very fine technical man and nothing else. If so, he is fitted but for the staff, so to speak; not fitted to make decisions; not fitted to lead men or to greatly influence them. He is lacking in certain well recognized qualities.

I have heard it said that the training of an engineer has a tendency to destroy him as an executive. I have also heard it said that the training of an engineer forbade his being a great commander. If training can destroy the native qualities, those sayings are true. I have never seen training destroy any native qualities. I have seen it strengthen them, never weaken them. It does not change them. Only failure to exercise the native qualities seems to make a man forget that he has them.

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I was intimately associated with a great executive once in a time of great emergency, and noted his actions with much care. He had the power of decision to a very marked degree, and we quickly knew what was wanted. He was a man of capacity, or, in other words, he could absorb knowledge rapidly, and had a great deal of it. He had the faculty of knowing what must be done now, what should be put off until tomorrow, and what could be put off indefinitely. The first he said do; the second he laid aside; the third he threw into the waste basket. He knew his organization and therefore who was responsible for what. He failed in one thing—he did not know how to deal with men over whom he had no authority, and therefore made enemies out of them, and they were finally his undoing.

No man who has large responsibilities is free from executive duties no matter whether he be engineer or builder. If he directs others, he performs executive duties. To do these duties well, he must have natural qualities beyond the ordinary. The knowledge of what these qualities are may tend to call them out of slumber and summon the will to strive for their development.

The executive qualities are the same as those of a commander. They are such as make possible rapid and accurate decisions, and constancy in abiding by them. These qualities are quick intelligence, sound judgment, energy, a strong will, and far, far above all else, a great moral courage. These qualities are greatly aided by a broad general knowledge of men and affairs. Knowledge of the fundamentals and appreciation of them is required.

These requirements bring to mind thoughts of what the education of a young engineer should be. I fully agree with my old professor of engineering when he used to say: "We will give you the general principles, the fundamentals, and enjoin on you to keep them in memory as the foundation without which no lasting structure can be built. You may elaborate on them all through life and make the structure as complete as you please. They will always support you."

Our engineering colleges will not have failed at all in their mission if they turn out once in a while an executive great enough to be President of the United States. They may give and emphasize the fundamentals of engineering and show the way to a broad general knowledge so as to encourage all to attain it, though as a matter of fact only those of great industry and capacity will attain it.

Before one of the committees of Congress last year I thought that I saw a tendency to regard the engineer as a purely technical being who had no mind for anything but cold facts and figures. So he is if his capacity is limited to such things. And if he is so, then he is not fitted to solve great problems of engineering, because other factors than cold facts and figures enter them. Their solution is for the benefit of humanity, and unless he understands society in its economics, its law, and its psychology, his solution of the physical problem will be at best an entirely blind one and may result in his being pilloried as one without vision or sense. His work must have the benefit of all the capacity and the knowledge that within him lies. It will even be of benefit to know politics, for it benefits the traveller to know pitfalls in order to avoid them."

Based on a point ratio of 3.0 or above during the last quarter of residence, the following are the members of the junior and senior electrical engineering classes who, because of the excellence of their work during the autumn quarter of 1930 have been placed on the honors list of the department of electrical engineering.

**JUNIORS**

Chanon, H. J.

Leydort, G. F.

Parrish, V. D.

Wills, R. L.

Hahn, P. T.

Ware, R. B.

Grooms, A. D.

Harvey, G. C.

Patterson, E. H.

Hoening, N. J.

Schwartz, P. W.

Nolan, R. A.

**SENIORS**

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CHOOING A CAREER

Investigation has proven that very large percentage of the students wandering about our halls of learning, supposedly in search of knowledge, have not the slightest idea what they are going to do after they get out of college. With a very definite choice available there is little excuse for so much dilly-dallying.

Of course, some students are trying to find out by means of their college work what they are best suited for but on the other hand living with themselves for approximately eighteen years before coming to the university should have given them some idea as to what field they should enter.

The point in bringing this up is that with some definite goal ahead a student can get much more out of his school work. The study of the Calculus would be much easier if the student was able to see applications of it in the work toward which he was striving. This, of course, is impossible when he has no definite goal. The same thing applies to other forms of endeavor in school and it is on this basis that we feel that a student would profit greatly by making a choice before entering college.

It does not matter if the selection is discarded for another for which he seems more fit later on, for after all it is the idea of having a goal that counts rather than what the goal is.

—R. M. E.