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THE ENGINEER, AN EMPLOYEE-EMPLOYER

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It is not uncommon to-day to read in a newspaper a glowing account of some outstanding engineering work and in the same issue of that paper to be confronted with the news that engineers are organizing into labor unions. Thus, we have public recognition that this is the age of the engineer, that the material progress of the world to-day is dependent upon his achievements; and, yet, engineers are resorting to collective bargaining because of a lack of economic recognition of the individual engineer.

In 1930, John F. Coleman, Hon. M. and Past-President, Am. Soc. C. E., opened his address² before the Annual Convention of the American Society of Civil Engineers, with the statement:

"For years there was a constant cry to the effect that the engineer did not receive the recognition which he deserved. Lately, the same cry is heard although less frequently. In the past there was much to justify such complaint, and even now there is some excuse for it.

"It seems probable, however, that the engineer himself is in great degree responsible for such a state of affairs in that he has been until recent times almost inarticulate in the councils of men; * * *."

During the seven years since the Society was so challenged, this country has passed through a period of severe depression out of which arose the most ambitious program of public works the world has ever known. Engineers by the thousands and tens of thousands have been employed in the design and on the construction of such works, all of which have been publicized to the extent that the names of many projects have become household words.

Yet, whenever engineers get together, at meetings of the Society or in other groups, at social gatherings or in their homes, an inevitable subject of conversation is the lack of professional recognition of the engineer by

¹ Cons. Engr. (Quinton, Code & Hill-Leeds & Barnard), Los Angeles, Calif.

² *Transactions*, Am. Soc. C. E., Vol. 94 (1930), p. 1344.

the public. Do these men mean professional recognition in the sense of public acknowledgment of the importance of engineering work in general, or do they mean something more material which affects them as individuals? I believe that little of the discussion so prevalent to-day has its origin in any failure of the world at large to appreciate the Engineering Profession in the abstract. Rather, I think it is the economic status of the engineer, his material and mundane reward, which is of consuming interest.

The basic reason for this situation was suggested by the late Harrison P. Eddy, Past-President, Am. Soc. C. E., in his address¹ before the Annual Convention of the Society in 1934, when he defined Engineering as a true profession, although of a different character from those of Law and Medicine. In that address he brought out that lawyers and doctors in large measure are independent professional practitioners, whereas engineers are generally employees. The validity of his distinction is evident from the fact that when one is sick the personal services of a doctor of medicine are sought, and the services of a particular lawyer are engaged when one is faced with legal difficulty. On the other hand, the engineer is employed only rarely by another individual. Only a very few persons have any appreciation of the function of the engineer as an individual, even though every citizen of this country, whose reading goes beyond the tabloids and the sport sheets, must be conscious of the tremendous part which the Engineering Profession plays in affairs of the modern world.

The engineer has little more association with those who make daily use of his works than the men who produce the materials which go into his works have with him. Even the engineer in private practice meets professionally only a few laymen. From the nature of his employment, he deals generally with corporations, both public and private; where he has one client, a lawyer may have twenty and a doctor a hundred. Most engineers, therefore, by the very conditions which make their work possible, are substantially barred from individual personal contacts with the public.

To have a basis for action and at the same time to be frank with ourselves, we must accept the condition that engineers comprise fundamentally an employee group in which the world at large has the greatest confidence, but regarding whom the public has little individual concern. Going a little further with our introspective analysis, we must consider the significance of the unique fact that ours is the only profession in modern society which both works for itself and employs itself. It is because of this anomaly that each engineer is in great measure responsible for the status of his profession, both abstractly and concretely.

The current roster reveals that approximately 42% of the entire membership of the Society are in the public employ. Almost half of these are employees of the Federal Government; the others work for various State and county governments, municipalities, and other political subdivisions. About 6% of the members are connected with colleges and universities,

¹ *Transactions, Am. Soc. C. E., Vol. 99 (1934), p. 1383.*

many of which are State institutions. In round numbers, then, one-half the members of the American Society of Civil Engineers in all grades are employed in some capacity by governmental agencies. Probably a greater proportion of the civil engineers not members of this Society are likewise employed.

About two-thirds of the other half of the membership are employees of private corporations, a few in high executive positions, the great mass in subordinate or employee positions. Little more than 10% of the total membership are evidently in private practice as consulting engineers or as principals and associates of engineering firms. The unclassified remainder includes those retired, or temporarily unemployed, and those engaged in special pursuits.

This predominance of the employee status in Society membership is even more significant when the occupational distribution of the members in the various grades is considered. Substantially 34% of those in the grade of Member and 42% of the Associate Members are employed by some governmental agency; nearly 60% of the young men in the Society, that is, those in the grade of Junior, are likewise governmental employees. If to these be added the hundreds who are on the faculties of institutions supported by taxation, it is apparent that many more than one-third of the Members, almost one-half of the Associate Members, and nearly two-thirds of the Juniors are public employees.

This greater proportion of young engineers who are employees of governmental agencies may be due in part to the fact that private practice is largely closed to them, but more likely it is due to changing conditions. Comparable statistics of twenty years ago probably would have shown that more than one-half the younger engineers in the Society were in the employ of private firms and corporations. Such a conclusion follows from analysis of the membership distribution of those now in the employ of private corporations: in that, roughly one-third the Corporate Members of the Society are corporation employees, as compared to only about one-quarter of the Juniors. It is evident, therefore, that any consideration of the economic status of the engineer must take into account the evident trend toward governmental employment.

Anomalous as it may seem, a large proportion of the engineers who are employees are at the same time employers of engineers. Particularly is this true of those in responsible charge of work, even though few engineers may be employers in the sense that they have authority to engage, to retain, or to dismiss subordinates according to their individual ideas of policy. In a very large measure, however, all of us who are Corporate Members of the Society are responsible for the work done by our subordinates and their assistants, and rarely will changes in their positions or salaries be made by our superiors or employers except on our recommendation.

In general, therefore, the engineer in responsible charge of work occupies the dual position of an employer of engineers while he himself is an employee of a public or a private corporation. To the same extent that he is responsible

to his superiors for the execution of engineering work done by his subordinates, the engineer in charge is responsible to his subordinates for any recognition or lack of recognition given them by his superiors.

Much of this is not new to us. Other Presidents of the Society have pointed out that the responsibility is our own, and in papers read at the Annual Convention at Portland, Ore., in 1936, attention was called to conditions affecting the status of the engineer. Thus, it may well be asked: What has been done to advance the Engineering Profession in the eyes of the public and what has been done to improve the social and economic status of the individual members of the profession?

As to the former question, great progress has been made: Engineering works are news to-day and, in the abstract, the world at large has conceded to our profession the recognition we deserve. In all this the American Society of Civil Engineers has played a major part. Also, as a Society, we aided many engineers in obtaining employment during the depression, and we were effective in establishing salary scales for engineers on emergency relief works which were at least as high as the wages paid to skilled labor. Again, as a Society, we are seeking to establish standards for the proper compensation of engineers in the employ of public and private corporations.

However, so definite have become the demands for more effective action and more tangible results that quasi-technical organizations have been formed which have as their primary objective the improvement of the economic status of the engineer. Guilds and other associations are in existence for similar purposes, which make no pretense of being technical in character, and in some localities the younger engineers and engineering aides have gone so far as to join militant labor organizations.

It should be obvious that this trend toward trade unionism, if permitted to continue, will destroy whatever standing the engineer has obtained as a member of an acknowledged profession. Hence, it is imperative that we consider what line of action is available to us other than the direct action of collective bargaining.

It is evident to me that the answer lies in recognition of the responsibility of each engineer to his subordinates. I wish to emphasize that point: It means that most of the members of this Society must assume, actively and individually, the obligations of the dual function of employee-employer. Such a duty goes far beyond the administration of the work of engineers subordinate to him; it involves real concern for the working conditions of those subordinates and for the monetary and other rewards they receive for the work which they do.

With full appreciation of the altruism, ideals, and ethics of our profession, we must admit that the desire for money, with the power and security that money gives, is the controlling motive of modern civilization. Rightly or wrongly, the world to-day measures its recognition of the work of the individual by a money standard. Such being the situation, it is desirable and proper that each engineer should further the interests of every engineer subordinate to him by emphasizing to his superior or employer the importance of the engineering problem, the accuracy of execu-

tion, the responsibility, and the integrity of purpose that characterize the work of his subordinates. Just as often as he does so, he will take a positive step toward improvement of the status of his profession and at the same time promote his own well-being. On the contrary, each time such an engineer understates the worth of engineering services, he does positive injury to the profession and to himself.

In this latter category falls the consulting engineer who obtains work on the basis of its cheapness, and thus is required to hold down the rates of pay to his subordinates. The engineering executive of a governmental agency who promotes the use of his personnel by political subdivisions at costs to them which cannot be met by engineers in private practice likewise does a direct injury to the Engineering Profession. Similarly, each time that the chief engineer of a corporation reports to the executive officer that he has saved money by employing engineering talent at the market price for skilled labor, he belittles his profession, and he brings nearer the day when he himself becomes only the foreman of such labor, an honorable but not a professional position.

Such practices were challenged seven years ago by Past-President Coleman when he told the Society that the standing of the engineer was his own responsibility and that advancement must come from within the profession.² Instead of accepting this responsibility as an individual, the engineer generally has shifted it to some organization with the hope that something would be done. When he did so, and failed to sell to his superiors the value of the services of his subordinates, he failed also in his obligation to the profession. Improvement in the social and economic status of the members of the Engineering Profession can come as a result of our own individual efforts, if every engineer will acknowledge the responsibility of the employee-employer relation which is peculiar to the Engineering Profession, if also he will accept the obligation of this relationship, and, finally, if he will make that obligation the basis of his own professional action.

Failure to accept that obligation will jeopardize the professional standing of engineers and engineering, because any further trend toward trade unionism among engineers will destroy public confidence in us as members of a true profession. By our own efforts we can correct the conditions which already have forced many engineers to put aside the standards of the profession and accept those of a trade instead; but effective action may not be postponed and the responsibility rests directly upon the individual members of the American Society of Civil Engineers.

