

# Engineering Professionalism

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This article deals with professionalism as applied to engineering. The concept of professionalism - the expression of the ideals by which our profession should strive to serve the community - has occupied our professional forebears a good deal, and the ideas set out here are drawn from them in large measure. In outlining the distinctive marks of professional life, what follows could appear to be too idealistic. But surely the concept of professionalism must be based on an ideal.

No doubt there would be some who claim to be professional engineers who would not recognise a concept of professionalism involving altruism and obligation. But shame on the engineer who regards his professional function as a business transaction to be judged by the question: "Just what do I get out of it?". Such a man would have difficulty in recognising that he belongs to a profession and he does not deserve the honourable title "professional engineer". There are many who will be guided by the principles discussed - they are the true professionals.

## What and Why is a Profession ?

The word "profession" connotes a learned calling having a special body of knowledge and skill, distinctive functions and recognised obligations. To the layman, a professional man has a mystique arising from functions and language not understood, and from the tendency of professionals to form themselves together into exclusive brotherhoods. A profession is much more than a recognised occupation; it carries with it the ideas of advanced learning and a special way of life, involving a corporate group of practitioners from which the profession is constituted. In the highest sense, a profession is an occupation which has the following six distinguishing marks:

- (1) A body of knowledge and art, held as a common possession and to be extended through united effort.
- (2) An educational process, based on the body of knowledge and art, and in the ordering of which the professional group has a recognised responsibility.
- (3) A standard of personal qualification for admission, based on character, education and proved competence.
- (4) A standard of conduct, based upon an ethical code to guide the practitioner in his relationships with his employer or client, his colleagues and the community.
- (5) A formally recognised status, either by members of the profession or by the State.
- (6) Organisations of the profession, devoted to common advancement, social duty and economic well-being.

A profession, then, is a group selected through an educational process, and having the authority that stems from the fact that the professional alone has the knowledge and skills that are needed by members of the public or by the public at large. Much professional service is such that only the professional can judge whether or not it is well done. In most cases, the professional determines detailed needs of the client or employer, and how such needs should be met. Thus, there is the obligation of trust and of ethical practice.

To ensure that the professional group is compe-

tent and that only qualified persons can claim membership, the community allows the professional group to determine the criteria for entry to it. This is a privilege as well as an obligation, but it is one of the most precious rights of a profession: the right of self-determination. A profession becomes of real value to society when the members of the professional group associate with each other, learn from each other, and are imbued with the spirit of service excellence and self-expression. The organisations of the profession, therefore, are the keystones of professional life.

## Professionalism

Professionalism is a way of thinking and living rather than an accumulation of learning. Professionalism cannot be taught by stating a code of ethics nor by memorising a set of rules. A strong professional sense is of undoubted benefit to the profession concerned in terms of morale and vocational satisfaction. It is also a fact that the community benefits when it is served by a professional whose standing is recognised, in terms both of status and rewards.

It is through the development of a strong professional attitude that the professional man is motivated to give his biggest contribution to the community. It is probable that professional attitudes and professional motivation are prerequisites to community recognition and to a reasonable level of reward, but the one depends very much upon the other.

## The Professional Man

It follows from these considerations that the professional man also must bear some distinctive marks. Again, in the highest sense, the marks of a professional man are:

- (1) Professional activity of a type carrying high individual responsibility, requiring application of special skills to activities that are predominantly intellectual and varied rather than routine and normal.
- (2) Motivation for service takes first place over consideration of reward.
- (3) Motivation for self-expression implies joy and pride in the work to be done, and self-imposed standards of excellence in its performance.
- (4) Recognition of social duty, fulfilled through guarding the ideals and standards of the profession, by advancing it in public understanding and esteem, by sharing advances in professional knowledge, by rendering gratuitous public service, all as a return to society for the advantages that flow from professional education and status.

## The Engineer As A Professional Man

Engineering is predominantly an employee profession. The most important way in which engineering differs from most other professions is in the absence of a personal practitioner-client relationship. Engineers tend to practise their profession as members of teams, led and managed by senior engineers who are employees, even though they also assume the role of employers in many aspects of their relationships with their juniors.

The professions of law, medicine and architecture, for example, differ to a large extent in these respects from engineering. The senior barrister is the leader of the practice of his profession. It is he who appears at the bar and gives detailed personal guidance to his juniors. The roles of the senior physician and surgeon are similar. The senior architects in a consulting office usually do the creative architectural work and leave the more mundane work to junior professionals. In each of these professions, senior men maintain an intimate involvement in the details of technical practice.

It is not so, in the main, with engineering. Senior engineers tend to be concerned with large staffs and are occupied with engineering management of the resources of men, materials and finance over which they have control. It is the juniors who, in this case, tend to be involved more in detailed technical practice of the profession; and technical direction comes from middle levels of the organisational structure.

In general, in the engineering profession the direct client-practitioner characteristic is replaced by the characteristic of management. Management implies responsibility, and in engineering management the professional engineer is responsible, in a very direct sense, for control over the resources of the community. It is this large element of management that adds a dimension to engineering that is absent from other professions, and perhaps, in a sense, diminishes them by comparison with engineering.

This is the nature of the profession, and the end result is that the criterion of success for most engineers has less to do with the high-level technical skills of the engineer than with his professional skills in engineering management. In fact, elevation to the grade of Fellow, for most members of the Institution, depends upon being promoted beyond the job in which the engineer is most productive and creative in a technological sense. It is the responsibility level reached in employment, as determined by his superiors, that is the criterion for high professional standing, rather than a recognition of a highly developed technical expertise as judged by his peers.

Engineering, therefore, is a unique profession in which all of the marks of the professional man have crucial importance: he must have high-level skills and he must develop different skills as his career advances; he must have a strong motivation for service, because everything he does impinges on the community in some way or other. Motivations for self-expression and high professional standards must exist from junior levels upwards. Because the most senior men frequently are not in the position to give direct technical leadership, their functions usually differ very much from those of their juniors. Social duty must be seen as a personal obligation, shared at all responsibility levels. The whole community is the ultimate client, rather than the individual clients, as is the case with other professions.

### **Ethics And Professionalism**

In the practice of engineering, most engineers, no matter whether they are employees or private practitio-

ners, or whether they are in public or private enterprise, find that in their professional lives they encounter problems that are far removed from the technical and the impersonal. Engineering is closely involved in human relations, and in business and commerce. A great many of the special problems in personal conduct met by engineers are likely to arise from this fact. The scale of engineering projects and the all-pervading influence of engineering systems, products and utilities on the life of the community extends the influence of what engineers do into almost all spheres of human activity. This makes the engineer unique among professional men. In these circumstances, the personal attitudes, relationships and conduct of the engineer have a significance reaching far beyond the realm of purely personal morals. The Code of Ethics, therefore, assumes particular importance in the profession of engineering, in providing guidance for conduct in all aspects of professional life.

Ethics means something more than "law" and "morals"; it carries an additional connotation of "rightness". The Code, therefore, is not a list of rules to govern every problem of conduct, nor is it a broad statement of ideals. It is a statement of the principles of "rightness", of broad scope, and with enough detail to enable an intelligent man to deduce for himself the course of his own professional conduct.

The essence of all professional codes is that the professional man must be worthy, through his conduct, of the trust placed in him by the community and by colleagues. This gives rise to a universal rule of life for every engineer who aspires to true professional status: to act in every situation in a manner that will add to the confidence and esteem in which his profession is held by the community.

In the difficult sphere of industrial relations, where the profession ensured that it is represented by an association exclusive to professional engineers, the same principles apply, even though opinions may range from quite radical to ultra-conservative. The keystones of APEA policy, in difficult industrial situations, are first, that public welfare and safety is superior to personal interest, and second, that the private conscience and judgment of the professional engineer must be protected in any decision he may make.

It is also a mark of our profession that there are remarkably few cases of breach of ethics requiring disciplinary action against members. This is not an indication of laxity; rather, it results from the fact that the engineer's work and relationships are so much in the open that purely moral sanctions prove to be sufficient - and this is a matter for pride. A profession is no better than its individual members. If they do not have the professional attitude and live by the rules of the profession, they will have no profession.

### **Instrumental and Institutional Views**

One very important mark of a profession has been identified as the propensity to form organisations devoted to common advancement, social duty and economic well-being. Translated into more everyday terms and applied to engineering in Australia, our profession is represented by:

- (a) The Institution to cater principally for learned society and accreditation functions.
- (b) APEA concerned with the interests of engineers as employees, that is the terms, conditions, and organisational aspects of professional practice as employees.
- (c) ACEA concerned with the interests of engineers engaged in private practice and as employers of other engineers.

Most professional engineers adopt an institutional view of the organisations of the profession: they perceive them as bodies representing the profession and therefore deserving, even requiring, the loyalty of each engineer as an expression of his identity as a professional engineer. The institutional view implies that the professional organisations are the manifestation of the professional entity, and they require the giving of effort, loyalty and financial support without thought to direct personal gain. However, there are among the ranks of all professions those who take the instrumental view of their professional organisations: support is given, sometimes grudgingly, on the basis of an expected return in some tangible form.

The instrumental view should have no place in the value system of the man who aspires to true professional status. The institutional view is the one expected of the professional: of course he desires that his technical and economic needs will be advanced and protected, but his life also is imbued with the fourth mark of true professional— the recognition of social duty, both to his fellows and to the community. It is doubtful if the man whose life is dominated by an instrumental view of his profession is, at heart, a member of the profession at all.

#### **No Conflict of Commitment**

Those employee professionals who take an institutional view of their profession will experience no conflict between loyalty to employer and profession, whether they practise their profession in the base grade or at the highest levels of management. With the guidance of their professional code and their spirit of professionalism, their perception of their professional life will be as a continuum embracing their duties in employment, their technical development through learned society activities, and the maintenance of their professional ideals and morale through the status and economic well-being that flows from the protective functions of their professional organisations.

In contrast, it is likely that those who take an instrumental view of their professional organisations will also take a similar view of their employment. Loyalty to the employing body and commitment to a wholehearted professional performance cannot be expected, nor can a responsible attitude be looked for in times of potential industrial conflict. The instrumental view is likely to co-exist with a low sense of professionalism.

From these considerations, it is evident that the interests of the employer, and ultimately of the community, are best served when professional employees have a strong sense of professionalism, when their

morale and vocational satisfaction is high, and when their rewards are in keeping with their professional performance.

There certainly is no conflict of interest: the fostering of a strong, united and well-rewarded profession obviously benefits the members of the profession, but these factors also are essential if the profession is to make an effective contribution to the community it serves.

#### **Conclusion**

There is one overriding theme in the concepts of professionalism that have been outlined: professional status involves an implied contract of service to the community and to the profession over and beyond all specific duty to the employer or client, in consideration of the privileges and protection extended to the professional by the community and by his profession. The possession and practice of special skills does not, in itself, make a man a professional.

William Wickenden, an American writing 25 years ago, used the Sermon on the Mount as a succinct statement of a philosophy of professional life: "Whoever shall compel thee to go one mile - go with him twain". (Matthew 5:41.)

(Roman law provided that when a soldier travelled through the land he could compel a civilian to help him with his burden for one mile. The limit of legal obligation was one mile; after that it was voluntary service, it was more than the law required.) Wickenden put it this way:

*Every calling has its mile of compulsion: its round of tasks and duties, its prescribed man-to-man relationships, which one must traverse daily if he is to survive. Beyond that is the mile of voluntary effort where men strive for special excellence, seek self expression more than material gain, and give the unrequited margin of service to the common good which invests work with a wide and enduring significance. The best fun of life, and most of its durable satisfactions lie in this second mile, and it is only here that a calling can attain to the dignity and distinction of a profession. [From The Second Mile Engineers Council for Professional Development, New York, 1949.]*

In preparing this article, the thought has crossed my mind that perhaps this philosophy of life, that I find attractive and by which I attempt to live, could be regarded as being out of date, especially by the young. But I am convinced that the young engineer will be inspired by the professional ideal, even though he might prefer to express it in a somewhat different way.

The young of today rise to idealism and altruistic motivation perhaps more readily than any previous generation. It must be the responsibility of this generation of our profession, and of the next generation, to see that our profession never will lose sight of its prime objective - the use of our professional talents in the service of the community. This is professionalism.